

SCOTTISH HOSPITALS INQUIRY

Bundle of witness statements for the Oral hearing commencing on 12 June 2023

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Scottish Hospitals Inquiry
Witness Statement of
Professor Brenda Gibson

PERSONAL DETAILS

1. My name is Professor Brenda Elizabeth Simpson Gibson. I am a Consultant Paediatric Haematologist and Lead Clinician for the Haematology and Oncology service based in the Royal Hospital for Children (RHC) Glasgow, and the Departmental Lead for Systemic Administration of Chemotherapy (SACT). In these roles I am employed by Greater Glasgow and Clyde Health Board. I am also the Programme Director for Haematopoietic Stem Cell Transplantation (HSCT) which is a national service.

EDUCATION

2. I studied Medicine (MB ChB) at Aberdeen University. I went on to obtain the MRCP UK from the Royal College of Physicians and the MRCPPath from the Royal College of Pathologists. I was appointed FRCP by the Glasgow Royal College of Physicians and Surgeons, FRCPPath by the Royal College of Pathologists and FRCPC by the Royal College of Paediatrics and Child Health. At Glasgow University I achieved a Diploma in Forensic Medicine and a Certificate in Law and Ethics in Medicine.

PROFESSIONAL BACKGROUND

3. My main areas of interest have always been leukaemia, particularly Acute Myeloid Leukaemia (AML), and Haematopoietic Stem Cell Transplantation (HSCT).

4. Latterly, at Yorkhill Children's Hospital, my primary duties were the care of children with leukaemia and those undergoing HSCT. I was responsible for the haematology laboratory and had responsibilities for patients with benign haematology on a rotational basis. I was the Lead for Haematology and Oncology services and the Programme Director for Haematopoietic SCT.

5. I was the President of the British Society of Haematology between 2007 and 2009, and Chair of the Managed Service Network for Children and Young People with Cancer in Scotland from 2011 to 2015.
6. Whilst at Yorkhill I established and supported a molecular laboratory to measure minimal residual disease (MRD) which is the main prognostic indicator of outcome for children with acute lymphoblastic leukaemia (ALL). This I did with endowment funds. Initially the prognostic value of MRD was tested within a national clinical trial and this laboratory provided a national service for Scotland and a service for Northern Ireland, Newcastle and Liverpool. When the importance of MRD was recognised, this service was integrated into the QEUH molecular service and remains a national service for Scotland. The current national ALL trial has a strict risk stratification which dictates the intensity of treatment and requires MRD measurement at several time points. Two methodologies will be used – molecular and flow cytometry. Departmental endowment funds will support flow cytometry MRD as a national service.
7. I have had representation on various National and International Committees, Colleges and Learned Societies. At present I am a Member of the Blood wise Strategic Advisory Committee, Member of National Cancer Research Institute (NCRI) Children's Cancer & Leukaemia Clinical Studies Group (CCLCSG) Leukaemia Sub-group, Member of SACDA DDRB, Expert for Acute Lymphoblastic Leukaemia (ALL) and AML on European Medicines Authority (EMA) Paediatric Committee on Medicine for Children, Member of European Bone Marrow Transplantation (EBMT) Paediatric Diseases Working Party, UK representative on the I BFM AML Steering Committee, Member of Childhood Leukaemia Research UK and Member of CCLG Bone Marrow Transplant Committee. Previously in my career I have been a member of Task Forces producing Guideline Documents and Advisory Committees, including a role as an External advisor to the London Paediatric Oncology Review.

8. I have been awarded 21 research grants between 1994 and 2016 and have been a reviewer for several Journals, Organisations and Annual Scientific Meetings. I have 181 publications spanning from 1986 to 2021. I have contributed to 17 chapters in textbooks and 93 presentations and abstracts.

CURRENT ROLE AND SPECIALISM

9. I am currently based in the RHC Glasgow as the Lead Clinician for the Haematology and Oncology service. My main responsibilities are provision of the West of Scotland Paediatric Leukaemia Service and Programme Director of the National Allogeneic Stem Cell Transplantation Programme. I have colleagues who specialise in Haemostasis and Thrombosis, Haemoglobinopathies and benign haematology.
10. My role changed slightly when we moved from Yorkhill. My primary duties remained the care of children with leukaemia and those undergoing HSCT. I devolved responsibilities for patients with benign haematology and more latterly for the haematology laboratory in favour of work in clinical trials. I remained the Lead for the Haematology and Oncology service and the Programme Director for Haematopoietic SCT. I am the departmental Lead for SACT but am demitting this role. I chair a number of Multidisciplinary meetings related to patient care including the Unit Multidisciplinary Meeting. I have a number of academic responsibilities. I am the Chief Investigator for an international trial in childhood AML which includes assessing serious adverse events and toxicities of patients entered into this trial. I am the Principal Investigator for a number of early phase I/II trials. I sit on several national and international committees where I represent Scotland or the UK. I peer review articles for publication and presentation at international scientific meetings and assess grant applications for national and international fund holders.

Clinical Trials

11. I have been asked by the Public Inquiry to clarify the difference between Phase I/II/III trials. Phase I trials are conducted to establish the maximum tolerated dose in children of a new / emerging drug.

12. All chemotherapy is associated with toxicity, but the maximum dose is the dose associated with acceptable toxicity. Phase II trials establish efficacy or not for a drug at this dose level. A Phase III trial will add a drug which has shown efficacy to an established chemotherapy regimen and compare it by randomisation to the established chemotherapy regimen. All trials aim to improve cure rates. Early phase trials – Phase I/II - are only open in a limited number of centres. Families will travel within the UK and indeed around the world to access these trials and gain access to new agents for their child. It is for this reason that we established an Early Phase Trial Unit in Glasgow in 2017 following a very successive year long fundraising campaign.

THE CANCER JOURNEY

Effect of Diagnosis

13. There is nothing more devastating for parents than the diagnosis of cancer in their child. Most fear the worst and although they may be overwhelmed by the prospect of intensive and prolonged chemotherapy, their real fear is that their child will not respond to treatment or will respond and then relapse and die. This fear overrides everything. The amount of time spent in hospital, the effect on other family members, the devastation to normal family life are initially of little consequence but gain importance with time.

14. Every cancer is associated with a different relapse risk, treatment related mortality and long-term outcome. After the diagnosis has been made the responsible Consultant will sit down with the parents and give them the precise diagnosis, discuss any necessary additional investigations, detail the treatment including the side effects, obtain informed consent and give a prognosis or explain what determines outcome. Written information is provided. Most children with cancer are treated on national or international trials or guidelines, and every effort is made to give families the comfort and reassurance that their child will receive the same treatment as every other child in the UK and indeed as every other child in the developed world. Consent is now taken on a UK wide consent form.

15. Most children have had symptoms for some time before diagnosis and many have had one or several General Practitioner (GP) or Emergency Department (ED) visits. Some parents feel that they were not listened to at these visits. However, childhood cancer is very rare and symptoms can be non-specific. Parents often express some relief that a diagnosis has now been made and that treatment will start. In children all treatment is initially given with curative intent. Whatever the predicted survival rates some parents will remember/concentrate on the number of children who remain in remission and do well, and others will concentrate on the number who relapse and do badly. However, the fear of relapse remains with all parents and indeed clinicians.
16. This diagnosis will change their child's life, their lives and that of siblings and other family members. The era of social media does mean that many search the internet for information and discuss issues on Facebook. We try to discourage them from doing this, because it is often not helpful and can be harmful, but we rarely succeed.

The Nature of the Different Types of Treatment for Cancer

17. Cancer is divided into leukaemias, lymphomas and a range of solid tumours, with the most common being brain tumours. The two most common cancers in children are leukaemia and brain tumours. Some patients require only surgery, others radiotherapy, chemotherapy, immunotherapy or a HSCT (haematopoietic stem cell transplant).
18. In terms of vulnerability to infection this relates to the depth and length of neutropenia (absence of healthy white cells) and the exposure to immunosuppressants, particularly steroid therapy. Leukaemia involves the bone marrow and therefore all patients with leukaemia are neutropenic (have no healthy white cells) until their disease goes into remission. One of the important drugs to achieve this is steroids, in particular Dexamethasone, which is a very potent steroid and immunosuppressant. Children with leukaemia may face profound neutropenia for four to six weeks after diagnosis and further periods of chemotherapy-related neutropenia throughout treatment. Only solid tumour patients with stage four disease have involvement of the bone marrow.

19. These patients have shorter periods of chemotherapy related neutropenia and are generally not treated with prolonged steroid /immunosuppressant therapy. The risk of serious infection is therefore much less for children with solid tumours than for children with leukaemia and those who undergo HSCT. The most vulnerable are transplant patients who have undergone a HSCT because they have prolonged and profound immunosuppression including steroid therapy. In summary it is those with disease which affects the bone marrow, who have profound and prolonged neutropenia and receive steroids/immunosuppression who are at greatest risk of overwhelming infection. This mirrors the reported incidence of infection or sepsis in the RHC cohort.

The Impact of Treatment on the Patient

20. The impact of treatment on the patient varies by the treatment and can be psychosocial as well as medical. Chemotherapy has generic side effects and drug specific side effects. The most serious generic side effect is infection or sepsis. All children receiving chemotherapy have a central line inserted to deliver chemotherapy and support them through treatment. This increases their risk of infection. The other main generic side effects of chemotherapy are anorexia, nausea, vomiting and mucositis (inflammation of the mouth) which are very difficult for children and parents. Older children may find it difficult to lose their hair. Different drugs have different specific side effects. In general, teenagers suffer a greater toll from chemotherapy toxicity than younger children.

21. Children may have a number of procedures, cannula insertion, lumbar punctures, bone marrows, trephine biopsies, nasogastric tubes; all except cannula insertion and nasogastric tubes are done under general anaesthesia although even the latter may also be inserted under general anaesthetic. It can be very difficult to place a cannula in children with small veins and this can be very distressing for children, particularly small children.

22. Different disease and treatment protocols carry a different risk of treatment related mortality. For example, in acute lymphoblastic leukaemia (ALL: the most common cancer in children treated with chemotherapy), the remission rate (chance of clearing disease morphologically after four weeks of chemotherapy) is between 95-98%. The results from the most recent trial reported a death rate during those four weeks of 0.7% and mainly from infection and a further 1.3% died in remission and again mainly from infection (courtesy of CI of UK ALL 2011). The most significant prognosticator of outcome is response to induction therapy which is now measured by residual leukaemia DNA. Children who respond best to induction treatment have a long-term relapse rate of around 4-5%. About 50% are salvaged with further treatment giving an overall survival rate of about 98% for this group. Therefore, even a treatment related mortality rate of 1-2% means that the chance of dying from infection or sepsis is almost as great as the chance of dying from disease in this group.
23. Children with ALL who respond less well to induction chemotherapy have a higher relapse risk, but infection remains a significant cause of death. In acute myeloid leukaemia (AML) the expected international treatment related mortality for those treated with chemotherapy alone is about 6%, again mostly from infection. Those with high-risk AML have a higher treatment related mortality. The treatment related mortality in transplantation is around 10-15% dependent on co morbidities, donor, and underlying disease. The treatment related mortality for solid tumours is much lower because of lack of involvement of the bone marrow in most patients, less neutropenia and generally absence of steroid/ immunosuppressant therapy. However, they have a higher relapse risk.
24. There is also a psychosocial impact. This includes hospitalisation and a lack of contact with peers, and inability to attend school can be difficult for teenagers. Separation from siblings and other close family members is hard for all children. Holidays and family events are restricted.

Vulnerability to Infection

25. Risk of infection for a cancer patient relates to depth and length of neutropenia, inclusion of steroid therapy in treatment, level of immunosuppression, and presence of a central line. This translates into transplant patients being at greatest risk > leukaemia patients > solid tumours. Patients with profound and prolonged neutropenia who are on immunosuppressive agents, particularly those who have a central line in situ, which is almost invariably the case, will always be at risk of bacterial and fungal infection. Measures such as good hand hygiene, good line care and prophylaxis will reduce the risk but not eradicate it.
26. There are two types of central lines, Hickman and Port-a-cath. Peripheral venous access includes cannulas and PICC lines. Plastic provides a nidus for bacteria. Port-a-cath and single lumen lines are associated with a lower risk of infection, but the choice of central line is disease and treatment dependent. The most common line related infections are gram positive organisms and are due to skin commensals. Good surgical skin preparation at the time of insertion and good line care afterwards may reduce the risk. Some gram-negative organisms create a biofilm in the line which prevents antibiotic penetration. These infections cannot be completely eradicated by antibiotics, and it is for this reason that some lines infected with gram negative bacteraemia require removal. *Stenotrophomonas* is an example of such an organism.

Treating infection

27. If a child has a temperature, blood cultures and samples for a viral screen are taken and sent to the microbiology / virology laboratory for investigation. If the patient has a central line in situ, blood cultures are taken from each lumen – single or double – and generally by nursing staff. Erythema around the line site suggests infection. Lines which are not aspirating normally, or malfunctioning, are at increased risk of becoming infected.

28. Broad spectrum antibiotics are started empirically before blood culture results are available because this may take 48 hours. The clinical team caring for the child will always discuss the choice of antibiotics for a child with a positive blood culture with the microbiologist and take advice on any change when sensitivities are available. However, generally, if the only symptom is fever, the antibiotics are chosen to cover gram-negative organisms initially because these are the most serious. If there is erythema, malfunctioning, persistence of fever despite gram negative cover or a gram-positive organism is cultured, the antibiotic cover will be broadened to cover gram positive organisms. Positive blood cultures are phoned directly to the ward by microbiology to allow a rapid change in antibiotics if required, but later reported on the IT system. Negative blood cultures are only reported after 48 hours of incubation. If the organism is one associated with biofilm formation, the line will be removed.
29. There is a duty to communicate to patients and families that they have an infection, the cause of the infection and the impact on health and treatment. Parents will know that their child has an infection because they will have had a temperature and parents understand what that means because it is something that is discussed with them in detail from the outset, due to its significance. The parents will know which antibiotics their child is receiving. This information will be given to parents on the daily ward round. If the organism is identified parents will be told what is causing the infection. If they require x-rays or scans to investigate the infection or assess organ involvement the need for these will be explained. If this is a serious infection, the parents will be told this. Parents will be made aware of any treatment interruptions.

The Impact of Infection

30. The risks of infection are sepsis, which can be life threatening, line removal, and treatment delay. Almost all children will have a temperature at some stage of treatment with temporary interruption of treatment. If a central line has to be removed and re-inserted this will interrupt treatment.

31. Patients require an anaesthetic for line removal and there is a risk with any anaesthetic. There is also a risk that, when the line is removed / pulled, bacteria will be showered into the bloodstream. Fungal infections in particular may significantly interrupt treatment because of the need to maintain a neutrophil count.

Surveillance, Monitoring and Reporting of Infection

32. When a patient is found to have an infection, the clinicians' focus will be on treating this, and monitoring, investigating, acting upon and reporting infection is the responsibility of Infection Control. Positive blood cultures are detected in the microbiology laboratory and the microbiologists who are members of the IC team would know about these infections before the patient's clinician. It is the responsibility of the Infection Control team to ascertain whether it was acquired in the hospital or elsewhere. A HAI is a Hospital Acquired Infection. I am not sure if there is a true distinction between Hospital Acquired Infection and Healthcare Associated Infection, but I am aware that in evaluating the significance / relationship of positive blood cultures to the environment, the IMT make a distinction based on whether the infection has occurred in a patient who could only have acquired the infection in hospital (inpatient for over 48 hours) and those who could have acquired the infection at home. The latter would include patients who had been at home in the previous 48 hours but may have attended the Day Care Unit as an outpatient during that time.

33. I think the procedures within the QEUH and RHC are very effective, and the IC team is strong.

Prophylaxis

34. Generally speaking, prophylaxis is given to prevent infection and can be primary or secondary. Primary prophylaxis is given to prevent infection because the risk for that group of patients is considered high, whilst secondary prophylaxis is given to a patient who has already had an infection, to prevent recurrence.

35. National and international protocols and guidelines may specify the use of antifungal and antibiotic prophylaxis where the patient group is either particularly vulnerable or the treatment protocol is particularly intensive and recognised to be associated with a high risk of serious infection, usually due to the inclusion of high dose steroids or profound and prolonged neutropenia. We know from experience and clinical trials the hierarchy of vulnerability: HSCT, Infant ALL, Relapsed AML, AML, Relapsed ALL, ALL (particularly those with Down syndrome). Protocols / guidelines for these patients will include recommendations for prophylaxis.
36. Out with such recommendations, local circumstances may indicate the use of prophylaxis, such as building works on site or outbreaks of infection. In summary, some prophylactics are mandated by protocol and some by perceived risk. There is no controversy around the prescription of prophylaxis in either context. Prophylaxis will be given for the duration for the risk period.
37. Standard antifungal prophylaxis prescribed in accordance with standard and national practice for certain high-risk groups would include drugs such as AmBisome, Caspofungin or Posaconazole. Septrin is routinely prescribed as prophylaxis against *Pneumocystis Carnii* Pneumonia (PCP) (now known as *Pneumocystis Jiroveci* Pneumonia) as per protocol to all children with leukaemia, during treatment and for 3 months after stopping treatment. It is also prescribed to post transplant patients as standard practice. Patients receiving very intensive chemotherapy and thought to be at particular risk of gram-negative bacteraemia because of poor immunity (which would include Down syndrome ALL and Infant ALL) often receive Ciprofloxacin prophylaxis. The next national ALL trial will have a subsidiary randomised trial to receive or not to receive Ciprofloxacin prophylaxis during induction.
38. As with all medications, there are possible side effects with prophylactic drugs. Septrin can be associated with myelosuppression, AmBisome can be associated with anaphylaxis and renal impairment, Caspofungin and Posaconazole can be associated with hepatic toxicity and Ciprofloxacin can cause gastro-intestinal symptoms. All drugs can upset hepatic or renal function.

The Importance of the Hospital Environment

39. The hospital environment clearly must be safe in terms of infection. The most vulnerable patients are those undergoing transplantation. Such patients should be nursed in an environment which protects them from microbial infection. This involves nursing these patients in High Efficiency Particulate Air (HEPA) filtered positive pressure rooms. HEPA filtration primarily protects against fungal infection. Whilst there are guidelines for hospital buildings, I am not aware of any specific national environmental guidelines for cancer patients who are not undergoing bone marrow transplantation. Even the Joint Accreditation Committee ISCT-Europe (JACIE) guidelines, which set out the standards for Transplant Units, set loose standards for the environment and merely state that patients should be nursed in an environment which protects them against microbial infection. They do not stipulate how this is achieved. The standard is loose to allow low- and middle- income countries to comply.
40. It is also important to understand that children who are treated on the Schiehallion unit have a range of underlying conditions which dictate their vulnerability to infection, for example, not all patients have malignancies; some have haemophilia or sickle cell disease. Patients with benign haematological conditions may have no predisposing factors. Many children with solid tumours are only neutropenic for a limited period of time and will receive no immunosuppressants although they will have a central line in situ. They are generally only in hospital for the delivery of chemotherapy which will only be given if they are not neutropenic. They are discharged home after completing chemotherapy and it is during this phase that they will become neutropenic. They will only be readmitted if they develop a temperature. These patients would be considered at low risk of significant sepsis. One can question the level of protection such patients require.
41. All rooms on the Schiehallion Unit are single rooms. These prevent spread of infection, particularly viral infection.

42. The hospital environment should also be supportive of the children and their families. It should provide age-appropriate facilities and an area that parents can meet and draw support from each other.

The Specialised Nature of Care Required for Cancer Patients

43. Cancer patients require paediatric cancer trained staff across all disciplines. This includes consultant trained staff in paediatric haematology and oncology, nurses trained to give chemotherapy and importantly pharmacy staff with training and experience in cancer therapy. The latter is vital. Dedicated physiotherapy, dietetics, psychology and social work are important. Unique to paediatrics is the need for Play Therapists who help children cope with procedures.

The Cancer Journey – Impact on Patients and Families

44. There are psychosocial impacts on patients and families because of the cancer journey. Children do not attend school for a period of time. Normal activities and family life are suspended. Parents stop working for a period which can have significant financial implications. The public sector is generally very sympathetic, private sector less so. The self-employed suffer the greatest financial deficit. Social work advice is available but cannot always compensate. Siblings are not just separated from resident parents but feel less important.

45. The length of treatment varies by underlying disease. Children with the most common type of leukaemia, ALL, receive treatment for two to three years. Other children may just receive surgery or a few months of chemotherapy. However, many children will require prolonged periods of time or recurrent admissions to hospital, regular hospital attendances as an outpatient and regular procedures and investigations.

The Role of Communication and Trust in the Cancer Journey

46. Trust is essential and this is the greatest toll taken by issues being investigated by this Public Inquiry. Families deserve to believe that their child is receiving the best treatment. Children at RHC are receiving the best treatment delivered by an experienced and knowledgeable team but sadly publicity has questioned this.
47. Communication between clinicians and families is good. Families are given regular comprehensive information on diagnosis, prognosis, treatment and side effects. They are regularly updated on progress and future treatment. This is very much a consultant led and consultant delivered service. Sadly, families take to Facebook and the internet which often provides misinformation.

THE SCHIEHALLION UNIT

Overview

48. The Schiehallion Unit, wards 2A and 2B, of the Royal Hospital for Children is a paediatric haemato-oncology unit which aims to provide patient centred holistic care to the children and their families. This includes not just their medical care but psychosocial care and support. The type of treatment offered varies by disease. Within the unit there are dedicated teams - Pharmacy, Physiotherapy, Occupational therapy, Dieticians, Outreach Nurses to deliver some treatment at home and limit hospital visits, Psychologists and Social Workers for support and Play Therapists to help children cope with procedures.
49. Infection control is very important on the Schiehallion Unit but is equally important throughout the hospital and should not differ between wards. Staff, and indeed parents, are trained to recognise the early signs of infection to facilitate the early instigation of antibiotic treatment.
50. In the Schiehallion Unit, most children have a central line in situ which can act as a nidus for infection. Nursing staff are trained to access central lines (both Hickman lines and Port-a-caths) to deliver chemotherapy and antibiotics.

51. Patients undergoing Stem Cell Transplantation are nursed in positive pressure HEPA filtered rooms.
52. The unit has a Teenage Cancer Trust (TCT) facility.
53. The Unit has Play Specialists trained to help children cope with procedures. Many children and their families are resident in the ward for many weeks or indeed in some instances for months. The environment and ethos try to recognise this.

Senior Management in the Schiehallion Unit

54. All consultants report to the Clinical Director who is Dr Phil Davies, a Respiratory Physician. Although the Lead Clinician I have no management responsibilities and no budgetary control. Phil Davies reports to Alan Mathers who is the Medical Director (MD) and I believe that he in turn reports to Jennifer Armstrong, who is the MD at the Board. I simply sign off colleagues' annual leave, sort rota gaps, disseminate information to colleagues which has come to me as Lead Clinician and attempt to resolve minor issues within the department. Significant issues would be escalated to Service / General management.
55. The inpatient unit has two Ward Managers (previously referred to as Ward Sisters) who are full time managers, with no practical nursing duties, and whose role it is to manage the nursing staff and the ward. There is no comparable role for doctors. Any responsibilities doctors assume for the smooth running of the Unit (e.g. Lead Clinician) are merely absorbed into their day to day work. A significant issue on the ward would be referred from the Ward Manager to the Lead Nurse and up the managerial line to the Service or General Manager.

Standard Operating Procedures (SOPs)

56. Within the Schiehallion Unit, there are SOPs in place for many procedures and situations such as the Administration of Blood Products, and the Antibiotic Policy, which includes the investigation of infections, as well as appropriate antibiotics to administer. In fact, there are few situations for which there is not a SOP.

57. SOPs cover a wide range of situations. There are 131 SOPs related to the HSCT Programme and 62 non transplant related haemato-oncology SOPs.
58. SOPs are not just used in Schiehallion. They are used throughout the hospital and provide step-by-step guidance on various processes / procedures. There is a template for writing SOPs which starts with the background on the purpose of the SOP. It then explains who is authorised to carry out the process/ procedure, what equipment is needed, how the process/procedure is performed etc. It is written in such detail that anyone should be able to follow it and perform the procedure. SOPs provide consistency of care.
59. Numerous members of staff are responsible for writing SOPs, although the majority are written by medical staff. SOPs are wide ranging and written by the individuals most involved in that area. Those more relevant to nursing practice will be written by nurses and others may be written by Pharmacy, Data Management, Quality Management etc. Some SOPs are very specific to one area of practice, e.g. transplantation, but others are generic. For example the SOP on vomiting is generic and applicable to any child experiencing chemotherapy related nausea/vomiting irrespective of the situation. SOPs are very time consuming to write well and are updated every two years. They all follow a similar template. Each will have a lead author and then be reviewed by a number of individuals who may make additions or changes. Once finalised I will do the last check of any Schiehallion SOPs as the Programme Director or Lead Clinician and sign the SOP off along with the Quality Manager. The Quality Manager will then upload the SOP to “Q Pulse” which is a password protected IT system where SOPs and protocols are stored. All staff in the department have access to the SOPs for reference.
60. Many SOPs although not primarily written about environmental issues have relevance to the environment. There is a list on the NHS GGC Clinical guidelines website – ilnkA4316 – Haematology/Oncology (paediatric) – Guidelines – Standard Operating Procedures. This is the list that can be accessed on Q- Pulse.
61. Infection Control have their own SOPs.

JACIE standards

62. Transplant units have to adhere to JACIE standards and be accredited by JACIE. All of Europe adheres to the JACIE standards. The US and associated countries have a similar accreditation system – FACT. Standards relate to the whole transplant programme and are divided into 3 sections: 1) Collection of haematopoietic stem cells, 2) Clinical care and 3) Cell processing. The standards state that patients will be nursed in an environment which protects against microbial infections. The terminology is loose, non-specific and aims to be inclusive. There is also a standard which states that facilities should allow post- transplant outpatients to wait in a separate area from other outpatients who might pose an infection risk to them. The standards are stated below:

JACIE Standard B2.1 There shall be a designated inpatient unit of appropriate location and adequate space and design that minimizes microbial contamination.

JACIE Standard B2. There shall be a designated outpatient care area that protects the patient from transmission of infectious agents and allows as necessary, for appropriate patient isolation; confidential examination and evaluation; and administration of intravenous fluids, medications, or blood products.

63. When we moved to the new Schiehallion Unit we were told that the HEPA filtration which had been installed met the JACIE standards of protection against microbial infection. There was also a small waiting room in the Day Care Unit where transplant outpatients could be separated from other outpatients, so it appeared that the HSCT unit met the JACIE standards.

64. JACIE standards only apply to Transplant Units. Some hospitals have stand- alone Transplant Units; we do not. Our transplant cubicles are within the same ward as the rest of the Schiehallion patients. Only the rooms used for transplant require to meet JACIE standards.

65. In Yorkhill, the Transplant Unit was at the far end of the ward and was therefore semi-separated from the rest of the ward. The design of the current Schiehallion Unit is such that the Transplant cubicles are incorporated into the ward and there is no separation from other areas. Only the TCT is separated in any way from the rest of the ward and with hindsight that would have been the best area to have built the Transplant Unit.
66. We had intended to apply for JACIE re-inspection about 6 months after moving to the new site. The Quality Manager tried to get information in preparation for this application and requested details of the specification of the transplant cubicles, air handling, air sampling etc. I can't remember the details, other than it was difficult to get this information.

Benefits of a specialised unit

67. There are many benefits to a specialist unit dealing with haemato-oncology patients. Staff are trained in the early recognition of infection which is extremely important. Age specific facilities are important to children. Chemotherapy trained nurses are essential for the safe delivery of treatment. A nursing team which can deliver some treatment at home reduces hospital visits for families. Play therapists help children cope with procedures and are very important as is psychological support for children and parents.
68. There are occasions when some patients have to be nursed out with the Unit because of lack of bed capacity. When this happens, we prioritise children who are receiving chemotherapy and those who are most unwell to remain on the Unit. We would move children who are only in hospital for antibiotics or investigations. It would be an exceptional occurrence for chemotherapy to be given out with our Unit; for example, it might happen if the child is in PICU and has to receive chemotherapy in that setting. In such cases our chemotherapy trained nurses would deliver the chemotherapy in PICU. Chemotherapy treatment protocols are not available in other wards within the hospital and nor should they be. Staff on other wards don't have the experience to deliver chemotherapy and should not be doing so.

69. When children require to be nursed out with Schiehallion, there is no doubt that parents do not like this. They are unfamiliar with new staff and every ward does things slightly differently. However, the care they receive should not change irrespective of setting. The SOPs are available to all staff in the hospital. The same Schiehallion medical team see patients who are being nursed out with the Unit as part of their ward round. They remain a Schiehallion patient. If they need chemotherapy and it has to be given out with Schiehallion, our chemotherapy trained nurses do this. If they need a play therapist, or a psychologist, they still have access to this.

Views on The Schiehallion Unit when based at Yorkhill

70. The main advantage of the Schiehallion Unit at Yorkhill was that it accommodated everyone within the team, creating an atmosphere and culture of a cohesive team where all were equally important. It included accommodation not just for nursing and medical staff, but parents, pharmacy, social work, outreach nursing, data management and teachers. Like all units it would have outgrown the space in time as staff numbers increased, but other than that, it had everything we needed. Problems were minor.

71. I admit to having had strong emotional ties to Yorkhill. I had not only built the Schiehallion Unit in 1996 mainly from endowment funds but had overseen the service development from a two, and at times, single-handed consultant base in the 1980s to a large multidisciplinary team. I was very reluctant to move.

Views on the relocation to the new Royal Hospital for Children (RHC)

72. We didn't move from Yorkhill because of a problem with our Unit but because the whole hospital was relocated. We were promised and expected a state-of-the-art facility with like for like accommodation, but we didn't get this.

73. When the relocation was discussed, I was not involved in any option appraisal. My recollection and understanding is that the relocation evolved from the decision to close the Queen Mothers Hospital because of the need to locate maternity services on the same campus as an adult ITU. The relocation of RHC followed.
74. As a Unit we had to move with other paediatric support specialities, particularly radiology and PICU.
75. I do not remember myself or my colleagues being asked for our views on the decision to re-locate. I did see some advantages of moving to the same site as the adult Transplant Unit. Unfortunately, because there were problems with the adult HSCT ward 4B the adult Transplant Unit didn't actually relocate from the Beatson until much later. The main adult haematology malignant hub is at the Beatson and most benign haematology, i.e. the Haemophilia Unit and facility for Haemoglobinopathy patients are at the Royal Infirmary Hospital. Apart from the Transplant Unit, we were not co-locating with specialised adult haematology services.
76. When we did move, I thought the problem was going to be that of inadequate accommodation for the multidisciplinary team. It never crossed my mind there would be a problem with either the ventilation or water supply. I would have assumed that Management, Estates, Facilities and IC would ensure that this was of an appropriate standard. Yorkhill was an old building, but in terms of our Unit we had a good facility, particularly because everyone could be accommodated within it and be readily available to patients and parents. It is difficult to describe how important and beneficial this is. Parents could knock on the office door of anyone whom they wanted to talk to – consultant, outreach nurse, social worker. Consultants were very close to the ward but are now accommodated in an Office Building about 10 minutes' walk from the ward. We had to adjust to a completely different culture, which was a deliberate decision by those designing the building. All space and all equipment are to be shared. When COVID came it became apparent how difficult this was. It was impossible for a Unit with our level of staffing for individuals to be two metres apart.

77. There were many people who thought the move to the new hospital was a good idea. However, opinions of most changed.

CHRONOLOGY OF EVENTS

Involvement in the planning the New Schiehallion Unit

78. From a clinical perspective, our requirement for the new Schiehallion Unit was that it should be a safe environment in which to deliver treatment and care for children with cancer. At a minimum we expected a like for like facility or a better facility than we had at Yorkhill.

79. As a clinician, I expected that the building, ventilation and water supply would meet all relevant standards, albeit I did not have knowledge of what regulations would apply.

80. The only input that my colleagues and I had into the planning of the new Schiehallion Unit was when we attended maybe three or four meetings with the Project Manager, Mairi MacLeod. We were shown the floor plan and allowed to input into how available space should be used. However, it was made very clear to us that there could be no increase in the available space irrespective of our concerns about the inadequacy.

81. We were told by the Project Manager that this was our allocated space and told very firmly that this could not be expanded. We could do anything we liked with the space we had been given, but that was all the space we would get. I assume Mairi MacLeod had probably been given an instruction from her superiors, but the meetings were extremely unpleasant.

82. We could decide on co-locations, e.g. where the preparation room used by nurses to make up drugs would best be situated. We left this type of decision to nursing staff.

83. We could comment on how many plug sockets were needed in any area, but again this decision was deferred to nursing staff. I think that we could have insisted on some accommodation for the multidisciplinary team, but we didn't want to lose patient accommodation because we knew from experience how difficult it was for patients and families to be boarded out with the ward, so as much as we wanted to maintain the multidisciplinary team that we had at Yorkhill, we prioritised patient accommodation, kept the optimal number of cubicles and sacrificed other things.
84. We had no staff room or seminar room in the new Schiehallion, both enormous losses. The pharmacy facilities were poor and the transplant administration facility was a narrow area with bench space for three individuals and their computers. There were no facilities for parents: no parent accommodation or rest area. There was very limited office accommodation, and except for ward nursing, almost all other staff could not be accommodated on the Unit or close to the ward. I do not know why these decisions were made.
85. As the Lead Clinician, I was asked to sign off the plans for the Unit. I refused to do so as I did not agree that we had adequate space to accommodate the patients, parents and multidisciplinary team in a manner which allowed us to operate optimally. We had gained nothing and lost much. I believed, and still believe, that in a Unit such as ours where children can become very unwell very quickly, senior medical staff should be accommodated on or close to the Unit and not a 10-15 minute walk away. Prior to the recent refurbishment, the accommodation allocated to consultants who wished to be present on the ward was a windowless room, which was probably intended as a storage cupboard, with benching and computers for four staff who were on call. There was no mobile phone reception.
86. I refused to sign off the plans. I'm not sure what happened in the end. Our Business Manager, Coral McGowan tells me that she has an email which states that she attended a meeting where it was said that the plans had been signed off by someone else. I don't know who that person was. My refusal to sign off the plan was entirely in relation to the inadequate facilities. It was not because of concerns related to ventilation or the water supply, because I never dreamt that there would be a problem with either.

87. I am of the opinion that the cohesion of the Unit was destroyed. A lot of the families have talked about the family of Schiehallion, the “umbrella”, and the inadequacy of the new Unit challenged that.
88. My concerns were known to management. Jamie Redfern, the General Manager at the time, was aware of my concerns about the absence of a parents’ facility and in my opinion the poor pharmacy facility. However, it wasn’t necessarily within his gift to rectify this.
89. I was not asked my opinion on the suitability of the site. I would question why one would build a new hospital close to sewage works. I can’t justify this comment, but the smell can be pretty bad.
90. I was not involved in the commissioning or the validation stages of the new Schiehallion Unit.

Concerns about the environment pre-patient migration – 2015

91. When the hospital was built and before the patients were migrated, there were opportunities for myself and my colleagues to visit the new Unit. I visited two or three times, both very close to the time of relocation.
92. I have already stated my concerns about the inadequacy of space and facilities.
93. The Unit was gloomy with few rooms having windows with a view or exposure to day light. The most impressive area was the TCT unit which had been funded by the Teenage Cancer Trust. The TCT unit is outstanding and decorated to a very high standard. We decorated the rest of the Unit with the same interior design group using endowment funds. The difference would otherwise have been unacceptable.

94. I was particularly concerned by the lack of parent facilities and organised a small group of mothers to meet with myself and Jamie Redfern (GM). I had previously tried to negotiate a parents' kitchen / room and failed. I think this was because, by the time I raised it as an issue, the building work was already quite far on, and it would have taken a lot of work to convert the only room that was suitable. However, with the support of the mothers I was successful in getting agreement to convert the classroom to a parents' kitchen / room.
95. We also used endowment funds to fund two extra parent bedrooms in Marion House (CLIC parent accommodation) and the salary of a housekeeper. This was to compensate for the loss of parent bedroom facilities which we had had at Yorkhill. We had three bedrooms in Yorkhill and a sitting room for the parents. That was a nice facility because it meant parents didn't have to sleep in the same room as their child and could get a proper rest, without leaving the hospital. This was an important facility which we lost.
96. During a visit to the new hospital shortly before the planned move, the Quality Manager Alanna McVeigh and the Ward Manager Jean Kirkwood, were advised that HEPA filtration was not in place in the HSCT rooms. The casings were in place but not the HEPA filters. I cannot remember the precise date of this visit, but I think that it was within a few weeks of the transfer. This was rectified quickly before our transfer, and I was assured that the HEPA filtration met the required standard at the time of transfer. I can't remember who confirmed this, but at that time Professor Craig Williams was Lead ICD. We were told that everything was now in order and that there was no reason not to move. Everything was in place for the move, and it would have been very difficult to postpone.
97. The lack of HEPA filtration was a concern. My understanding is that when a building is handed over (something of which I have little experience) the Estates department check that the building has met the commissioned standards. I would expect this to be an ongoing process and was surprised that the omission of HEPA filters was detected at a late stage.

98. I was told that the specification of the ward was to standard, and I trusted this guarantee. I expected Management / Estates to ensure that the building met necessary building standards and IC to ensure that it met all control of infection regulations. At the time of the move, I had no concerns about the safety of the environment in terms of ventilation and water safety. I expected a safe environment in which to treat children and never questioned that this would not be provided by those responsible.
99. I am aware of an email exchange between myself and Craig Williams, Consultant Microbiologist whom I believe was the Lead Infection Control Doctor (Lead ICD), shortly before relocation. Craig responded that it will be safe to start transplanting as soon as we move into our new Unit. I do not recall what I queried which prompted his response, but I obviously questioned something.

General views on the opening of RHC and Schiehallion Unit

100. Had I had a say around the design of the Schiehallion Unit on the QEUH campus I would have duplicated what we had at Yorkhill but made it a bit bigger to keep the team intact. Some consultants are very happy to embrace accommodation in an office block. I'm not, but that's a personal view. I have valued my proximity to patients and parents.
101. In the Schiehallion Unit only the transplant cubicles were HEPA filtered. The corridor was not HEPA filtered and the entry doors to the Unit were not air locked. At Yorkhill the corridor was HEPA filtered and the entry doors air locked. We were told (I cannot remember by whom) that it was not necessary to HEPA filter the corridors. I am a JACIE Inspector and have inspected most Transplant Units in the UK. Many are not completely HEPA filtered so it was hard to argue against this decision because it was not exceptional.
102. Following the recent refurbishment, we now have what is said to be the most highly spec'd ventilation system in the world. The entire Unit is HEPA filtered and the entry doors are air locked.

Upgrades to ward 2A between 2015 and 2018

103. Before the decant to ward 6A and the major refurbishment, there was a smaller refurbishment of some of the transplant cubicles on ward 2A. I think that this was done sometime in 2018 although I don't recall the detail.

104. I also recall that there was some refurbishment work carried out just after we first moved to the new hospital. I went to Australia for a month around July 2015 and I think it was around that time. Particle counts were being done regularly at that time and these may have been higher than expected. Craig Williams was the Lead ICD and when this was raised with him, his view was that the results were not reliable because the corridors weren't filtered. Smoke testing was carried out in the HSCT cubicles. The smoke testing showed that the air flow was in the wrong direction and that sockets and light fittings hadn't been properly sealed by the contractor. Everything had to be resealed.

105. The Unit has now been refurbished after a 3 and half year decant and at a cost of many millions of pounds. We are told that the ventilation is now of the highest possible standard and the water is as pure as it can be, although no water can be sterile. The Unit has been completely HEPA filtrated and airlock doors have been installed.

106. I don't know if the ward should have been built in 2015 to the current specification or not. As Clinicians we took advice from CI and Estates who are the experts and were assured at the time of relocation that the Unit met the necessary standards and was safe.

Common Issues

107. In the new hospital, there have been problems with cladding, windows falling out and an unpleasant odour from the sewage works.

108. I was aware of some common issues with the building in a peripheral manner, such as the temperature of rooms, blinds, TVs, Wi-Fi, adequacy/suitability of plug points and battery packs, power outages, the ward entry system, a sewage leak, the roof and the playpark. I could see that the blinds didn't work and neither did some of the TVs. I knew that the Wi-Fi didn't work particularly well because there were teenagers who wanted to use it. I was aware of these issues, but they weren't major issues compared to what eventually transpired.

109. It is important to remember that some families spend many weeks on the Unit. If you're only in hospital one night and your TV doesn't work, it's not the end of the world. If you're in for two months and your TV doesn't work, that is more challenging. When COVID arrived, it became even more challenging because patients/ parents couldn't leave their room and had to be entertained.

110. I was aware of the smell which was often very strong outside the hospital. I am not sure that I was that aware of the effect on nausea for patients undergoing chemotherapy. I knew nothing of the glazing panels until they fell out.

Cladding Issue and Prophylaxis

111. The cladding issue happened before the decant to ward 6A. The Lead ICD, Teresa Inkster, suggested that patients receive antifungal prophylaxis and that the entry to the hospital be re-directed whilst remedial works were being carried out. She provided written information for families which included how to enter the hospital using a different entrance.

112. As clinicians, we prescribe the prophylaxis, but the decision that patients should receive prophylaxis was taken at the IMT. I don't think that all patients received prophylaxis. Patients would fall into three groups - those who did not receive prophylaxis because they were considered at very low risk, those already on antifungal prophylaxis because that was mandated by their protocol or underlying disease, and those who would have been considered at risk and received prophylaxis because of the cladding associated risk.

113. Any kind of building work which disturbs soil can release fungus. There are many hospitals with building works on site. Giving patients prophylaxis is a very common practice in these circumstances.

Communication around the Cladding and Prophylaxis

114. I don't remember the exact details, but I know there was communication for staff and patients and families with reference to the cladding. Teresa Inkster wrote this. Communication was easiest for inpatients who could be given a written handout or who could be spoken to. Outpatients who attended regularly were also relatively easy to communicate with. Outpatients who attended irregularly were hardest to reach and communicate with and initially we were not particularly good at reaching this group. There was a period when Teresa Inkster would come to the Leukaemia Clinic on a Tuesday morning and offer to meet the parents. I don't remember if this was related to cladding associated antifungal prophylaxis or Ciprofloxacin for water related infection.

Flooding in en-suites

115. There was flooding in en-suite bathrooms in Schiehallion and the associated risk of infection concerned me. This also triggered parental concerns.

116. All problems detailed above caused inconvenience and concern to parents and children which made their stay in hospital more difficult than it need have been. The cladding was particularly concerning because entry to the hospital was compromised, and patients required prophylaxis.

Water Supply/ Concern about infection

117. I was not aware of any problems related to the water supply prior to relocation. I knew nothing of the DMA Canyon Ltd report of 2015 or indeed in any subsequent year.

118. After the relocation to RHC, we noticed an increased incidence of unusual organisms identified in blood cultures. Some were organisms which we had never met before, and we would ask microbiology colleagues if these were new organisms or renamed organisms. As clinicians we would expect microbiology colleagues to detect trends in positive blood cultures and escalate any concerns to IC. It is IC's responsibility to decide whether incidences are out with a natural variation and hence a true concern. I don't think that we questioned whether these organisms were environmental or that there was a cause for concern potentially linked to the environment until 2018.
119. Our clinical team has always worked closely with the microbiology team because of the significance of infection within our patient cohort. We have meetings every lunchtime either in person or by telephone. Many of our microbiology colleagues have roles in IC and they attend our clinical governance meetings as IC, so we have very close contact with them.
120. The increased incidence of unusual bacteria was discussed with microbiology from the outset, and whilst this was a matter of concern, there was no suspicion during the early period that there was any link to the hospital environment. As such, I do not believe there was any discussion with patients or parents about environmental issues associated with any infection diagnosed before the spring of 2018, although they would of course have been informed of any infections in their child and the treatment plan.
121. I do recall that Dr Penelope Redding, a Consultant Microbiologist, called me asking me for support for her concerns about the environment. I think she had retired by that time. I can't remember the detail of those concerns but my recollection is that they were about the hospital in general and not our Unit in particular. I don't remember when this contact happened. I am not sure what she thought I could do to help, and I don't think she ever came back to me.

122. My recollection is that, as clinicians, we first learned of a potential link between unusual infections and the water supply in the spring of 2018. I have some memory of a consultant meeting with Teresa Inkster, who was at that time the Lead ICD. She told us of her concerns about a blood culture positive for Cupriavidus in a patient on Ward 2A and gave us a brief history of previous positive Cupriavidus blood cultures in RHC. This was followed by an IMT on 2 March 2018-**A36690451 – IMT Water Incident Minutes – Ward 2A – Water Contamination – 2 March 2018 – Bundle 1 – page 54**. Cupriavidus was subsequently grown from several water outlets on Ward 2A, and Pseudomonas from another outlet. After Teresa Inkster raised the water issue in the spring of 2018, filters were fitted to the taps in March 2018. Thereafter we were advised by IC that these water filters were effective and that the tap water was clean. The water from taps post filters was tested for bacteria and was negative.

Concerns about Stenotrophomonas in 2017

123. The PI have informed me that around December 2018, Dr Anna-Maria Ewins and I raised concerns with Teresa Inkster about Stenotrophomonas infections we had seen in ward 2A in 2017. I don't remember this meeting although I do remember that when the issues with water related infection came to light in 2018, I looked back at infections in 2017 and questioned if the infections, including Stenotrophomonas, that we saw in 2017 were related to the water supply.

124. One of the Stenotrophomonas infections that I reflected on around this time was in a patient who died in 2017. [REDACTED]

[REDACTED] I had been very troubled by [REDACTED] death, and the way [REDACTED] had deteriorated despite all of our efforts to treat [REDACTED] infection. Stenotrophomonas is not the most common bacteria but we do see it from time to time. Usually if appropriate antibiotics are given and the central line is removed, the infection will be eradicated and the patient will survive. This was not the case with this patient.

125. I had many meetings with Teresa Inkster, and I got to know her very well during 2018. At some point I may have said to her that with the advantage of hindsight I thought that the problem started in 2017 and not 2018. It has been said that I had a database of positive blood cultures which I showed her. This is not true. Although upset by my patient's death in 2017 and aware of unusual infections I didn't suspect that there was anything wrong with the environment until 2018 when Teresa Inkster met with the consultant team and made this connection. I do remember a printout of positive blood cultures, but I am sure I did not create this.

126. We both approached Dr Alan Mathers in his role as MD with this printout. I don't remember the exact timeframe this covered. He acted on this information. He wrote an SBAR – **A39243760 – Email chain dated 4 March 2019 containing SBAR dated 1 March 2019 – Water Issues – RHC – 3 year retrospective – Bundle 4 – page 151** which he sent to Jennifer Armstrong. I received a copy. He then asked me to look at the patients on this list who had positive blood cultures and to determine what had happened to these children.

127. I asked one of my colleagues, Dr Shahzya Chaudhury to do this because she had only recently joined the department and I thought it was better that this be done by somebody who had not been involved in any of the cases. We agreed to try to identify the children who had died following infection and assess whether this was due to their underlying disease or infection.

128. Dr Chaudhury collated this information. I then reported this back to Dr Mathers in an email. This took longer than expected. Dr Chaudhury identified three children who had died: [REDACTED]; the second was the child who died in 2017; [REDACTED]
[REDACTED]

129. The latter two cases were the two deaths identified by Mike Stevens in the CNR. I'm not sure that I agree with Mike Stevens that the [REDACTED] death was due to infection. [REDACTED]

130. Of the three deaths, it was the death of my patient in 2017 which I was concerned might have been related to infection, Stenotrophomonas. I asked Dr Mathers whether [REDACTED] death should be externally reviewed because, although Stenotrophomonas is not that unusual an organism, what was unusual was [REDACTED] mode of death.

131. It's common that we as clinicians ask for an external opinion if we have concerns about a patient. We routinely do this informally at a national MDT. Often this is to reassure ourselves that nothing more could have been done and that everything that was done was done correctly.

132. With regard to the external review, I do know that there was a review, but I don't know if it was external. [REDACTED]
[REDACTED]
[REDACTED] the hospital did not carry out a SCI (Serious Clinical Investigation). My understanding is that either a review or a SCI was subsequently carried out by Dr Jim Beattie, retired Medical Director. I have never seen the outcome, but I'm told that Dr Beattie did not find anything of concern.

133. [REDACTED]
[REDACTED]
[REDACTED]

134. [REDACTED]

135. [REDACTED]

Water Incident on ward 2A – March to September 2018

136. The concerns around the water supply on ward 2A in 2018 arose because of the investigation of a blood culture which was positive for *Cupriavidus*, and subsequent sampling of water outlets on ward 2A from which *Cupriavidus*, *Pseudomonas* and fungus were isolated.

137. Other investigations included swabbing of taps and shower heads, which were also positive for environmental organisms. Later drains were swabbed and found positive. There were frequently workmen on the ward.
138. Corrective actions took place such as taps and showerheads being replaced and water was initially dosed with silver hydrogen peroxide and then later, chlorine dioxide. Point of use filters were placed on taps. Water was turned off at times to allow dosing.
139. Various safety measures were brought in like alcohol gel, bottled water for washing and cleaning teeth, and sterile water for drinking. Patients were advised not to shower and to use wipes to clean their child and mobile sinks were in place for a period. Ciprofloxacin prophylaxis was recommended at an IMT on 16 March 2018 – **A36690477 – IMT Water Incident Minutes – Ward 2A and 2B – Water Contamination – 16 March 2018 – Bundle 1 – page 66**. Transplants were postponed in March 2018 until results of water testing, post fitting of PAL filters, were available and later to allow drains to be cleaned and Hydrogen Peroxide Vapor (HPV) cleaning of rooms to take place.
140. I can't remember the exact dates that different measures were brought in. However, the chronology of events and measures to resolve these are well documented in the IMT minutes as is the way knowledge and understanding evolved with time.
141. The main location of problems was ward 2A and 2B, but water outlets on 3C and PICU also tested positive for bacteria. This suggested that water throughout RHC might be affected. The water tanks were clear, suggesting that the water coming into the hospital was not the issue.
142. There was uncertainty about the risk of infection from the water supply. Gram-negative bacteria isolated from patient's blood cultures were often environmental and known to be associated with water.

143. Similar organisms were isolated from drains and water outlets in the unit. Sequencing did not identify these organisms as identical but suggested that they were different strains. I have no reason to doubt the view that bacteria could not breach the point of care filters.

Impact of corrective measures – Water issues

Water Incident Management Team (IMT) Meetings - 2018

144. My role at the IMT meetings was usually restricted to providing a clinical update to the group and reporting on the effect of remedial works on families and staff, and communicating information to colleagues, parents and patients as requested.

145. The point of an IMT was to identify the cause of any infection outbreak, form a hypothesis on aetiology and remediate it. The IMT investigated the issue thoroughly and put a number of remedial actions in place, but the issue was complex and repeated problems arose. It may have been impossible to resolve without a major refurbishment because nobody knew what the problem was.

146. I would say that the IMTs tried to resolve the problem with the environment, but serial issues arose and as each problem was dealt with another appeared. I remember that Teresa Inkster brought a tap to an IMT to show us the different parts and how they could trap bacteria. I could appreciate the problem but had no real knowledge of different types of taps and even less of chilled beams which I had previously never heard of until these meetings. There were also ancillary meetings which I didn't attend. For example, there was a Water Group meeting before the IMTs sometimes. As the IMTs progressed, particularly when held to deal with issues on ward 6A, the number of attendees increased. I remember large numbers of Infection Control Nurses (ICN) attending and presumably this was because problems were identified in wards that they had responsibility for.

Hypotheses

147. There were multiple causes/ hypotheses discussed at the IMT meetings. This included discussion about the inclusion of “straighteners” in taps which encouraged biofilm and very complex taps with mixing valves, which had been a subject of a SBAR in 2014. I was not involved in 2014 and knew nothing of this. Other theories considered were: (1) that the water outlets were contaminated, and bacteria was being spread by staff and parents. This was thought to be less likely when similar organisms were isolated on other wards; (2) Contamination of water outlets from drains; (3) low level contamination of main water supply which increased over time by the formation of a biofilm; and (4) contamination of water pipes and taps during commissioning. Whether the cleaners were cleaning properly and then whether the nurses and doctors were washing their hands properly was raised. This did not help morale.

148. As the IMT situation moved on, it became more apparent that a major refurbishment was needed as the problems were not being resolved. *Cupriavidus* was found in March 2018, and we moved out in September 2018, six months later. I don't know if steps should have been taken to relocate the ward and start the refurbishment any earlier. Potentially corrective measures were put in place and time had to be allowed to see if they would work. An area for relocation also had to be identified.

Communication about the Water Supply Issues

149. I acknowledge that it is likely that the uncertainty or confusion on the part of clinicians impacted on our communications with patients and parents. However, there is no doubt in my mind that I was always absolutely honest with parents/families in my discussions of the nature of their child's infection and in communicating what we knew about its source. At no time was I ever asked to hide, nor did I ever seek to hide, any information from them. Teresa Inkster and I regularly met with families to discuss these issues.

150. Often when a child was diagnosed with an infection, we would instigate the meeting, where we would advise the parents that there had been a positive blood culture, what the organism was, whether it was environmental or not, and would offer to answer any queries they might have. During these meetings we were often asked where the infection had come from. Teresa Inkster would tell the parents what she knew but usually she did not have a definitive answer.
151. Teresa Inkster and I also had meetings with parents whenever they requested this, and there were a number of occasions when we met with parents to discuss their concerns about what was happening on the ward even though their child had not been diagnosed with an infection. As the consultant responsible for their child's care, it was important for me to be present at these meetings, but Teresa Inkster tended to take the lead because she was better placed to answer questions about infection, and as the Lead ICD, she had the data from any testing of the water or drains. I cannot remember any occasion where Teresa Inkster was not honest with parents in communicating what she knew.
152. As I remember, the information provided from management to clinical staff came after IMTs. Staff were asked by the Chief Nurse to adopt many changes in practice agreed at the IMTs, such as the use of portable sinks and bottled water. When the IMTs first started, information came as a written statement from management after the IMT had taken place, and this was shared with staff and parents. I recall that Teresa Inkster produced information for families at the time of significant events such as around the cladding and the introduction of prophylaxis.
153. There was a person from the communication (Comms) team at most of the IMTs. When agreement was reached on the current situation and any necessary actions to be taken, the Comms person was responsible for writing the script. This is only my understanding; I don't exactly know what happened and wasn't involved in the writing of this information.

154. My understanding is that the script / communication would be approved at Board level. The written communication would then come to the ward for staff to disseminate to the families. This generally happened at about six o'clock at night and nearly always on a Friday. The nurses would be asked by Jamie Redfern, or Jennifer Rodgers the Chief Nurse, who were both very involved, to communicate the information to patients and families. Copies of the communication would be sent to the ward, and we would go round all of the parents and give them a copy and summarise the contents. I usually stayed to help as I didn't want the nurses to have to deal with any unhappy families, although generally families were understanding with ward staff.
155. There was no doubt that the scripted communication was the message from management, but it wasn't dishonest or inaccurate. It was just written in an unusual style and lacked meaningful information.
156. The communication to staff was limited but I think that was mainly due to the fact that neither the IMTs nor local or senior management understood the problem or knew how to resolve it. For this reason, staff felt that they were given limited guidance from management on what to say to patients and families.
157. When communicating information to patients and families, I do think that face-to-face meetings are better than a written script. As time moved on, I think management became aware that parents were dissatisfied with the level of communication and did try to improve this. The job of a communications team is to put a positive perspective on a situation whilst being honest. As staff, we couldn't really challenge the message being given to us because this was the only information we had.
158. Generally speaking, when information was given to the patients and families, they didn't come back asking for more information. They accepted the information that they were given even if they were concerned and not really satisfied. When there was dissatisfaction, particularly surrounding infections, Teresa Inkster and I tried to address this by having meetings with individual families.

159. There was at least one occasion when I was asked by Jane Grant, through Jamie Redfern, to phone a number of families, on a Saturday morning, with information. I don't remember the reason. This was either because something was about to appear in the press on the Sunday which they should be alerted to, or there was some restriction to access for treatment which was due to happen on the Monday, which they needed to know about. I was given a list of names and telephone numbers. I agreed to do this because I thought that it was better for families to get a phone call from somebody they could semi identify with rather than someone who was a stranger to them.

160. Most of the families were accepting, but others felt that this should have been the responsibility of management. I do think that the information was better coming from me as someone they knew or semi-knew and that it was the right thing to do.

Impacts from Water Supply Concerns

161. There were a number of impacts that arose in relation to the water supply, including work being carried out within the Unit, the closure of facilities and restrictions to the ability to wash/ shower. The parent's kitchen and the TCT communal area were closed. There was a period when families were asked not to shower but to use wipes to wash their children.

162. The presence of workmen on the ward was a constant reminder of the problem. If rooms were closed off for remedial work, a large orange screen was erected. An orange screen over a door is a huge indicator to families that work is ongoing. It didn't stop routine clinical work but did question trust. I suspect that the families probably thought that we knew more than we did. They were wrong, but I can understand why they might think this. The ward staff were the face of the hospital to them. Jamie Redfern and Jennifer Rodgers did visit the ward and were very approachable but were remote in comparison to the ward staff, who represented the hospital to families, and I suppose it's not unreasonable for them to assume that we knew what was going on, but that doesn't make it true.

163. Turning off water had an impact because no one could go to the toilet, and no one could wash their hands. We either had to gel our hands or have somebody pour water from a bottle over our hands to wash them.
164. In 2018, transplants were postponed until the results of water testing post fitting of PAL filters was available. The postponement was short and would not have impacted on patient care. If the postponement had impacted on patient care patients would have been referred to an alternative transplant centre. As clinicians we were at all times guided by the ICDs, who had the relevant expertise. Throughout the period, there was uncertainty on the part of the clinicians. We were advised by Teresa Inkster that there was a link between the hospital environment and the infections. We were later advised by Professor Alistair Leanord that the increased number of infections was likely not indicative of any water related problem but represented a natural fluctuation referred to as a “pseudo-outbreak”. He said that sequencing of the bacteria demonstrated that there is no proven link between these infections in almost all cases. . At the time of the problem, we had little or no direct face-to-face contact with him, but his views were relayed to us by management. There has therefore been uncertainty and confusion amongst clinicians throughout the period, and this continues to be the case even today.
165. Morale was particularly low amongst the nurses. Infections were thought to be line related and it was the nursing staff who were accessing lines. It was difficult to understand how bacteria got into the lines; there was much we didn't understand.
166. Comments have been made by witnesses and the Public Inquiry which suggest that there was a greater use of source isolation at times. I am not aware of this. Patients would be put in source isolation for viral infections e.g., Norovirus, Rotavirus, Astrovirus, rather than bacterial infection, except for Extended Spectrum Beta Lactamase (ESBL) in stools. This is a bacteria in your stool, which influences the choice of antibiotics patients might be given. There was an outbreak of Norovirus, and this might be the period being referred to. If there was a greater use of source isolation, I expect this would have been unrelated to any concerns with the water supply.

167. There was a change in the approach to hygiene and cleaning. Deep cleaning was more commonly used, but I think that Facilities and Nursing staff would be best placed to give this information. Rooms were closed for a number of reasons including cleaning and repairs. There were at times restrictions. At one point, which I can't remember, the ward was closed to siblings and visiting medical teams were asked to restrict numbers. Access was definitely restricted during COVID as it was to all other wards.

168. In relation to patients being boarded on wards other than Schiehallion, this has always happened due to limited bed capacity. I cannot say if this was a more common occurrence when work was being carried out because of the issues with the water supply. Rooms were closed for work to be carried out so it might have happened. When we moved to Ward 6A, the ward had a reduced number of beds and we had to accommodate our Day Care Unit within ward bed numbers. I don't know whether this led to more patients being boarded or not.

169. The nurses on wards other than Schiehallion may have had limited experience in accessing central lines, particularly Port-a-caths as they are not commonly used out with Schiehallion. If nurses on other wards did not have the necessary skills, nurses from Schiehallion would have attended to assist. Treatment would have been delivered according to national protocols and guidelines irrespective of where the patient was nursed, and Schiehallion nurses would have delivered this chemotherapy. SOPs would have been available to all staff on the GGC guideline website.

170. All of the above had an impact on staff and patients. The staff were anxious, demoralised and felt poorly informed and concerned about their role in events. Patients and families became angry at times.

Ventilation

171. The ventilation system has most relevance to the transplant unit. JACIE, which is the regulatory body for the transplant programme sets loose guidelines for the microbial protection of patients going through transplant.

172. Most Units employ positive pressure HEPA filtered rooms. The main aim is to prevent fungal infection, particularly *Aspergillus* present in the air. Ventilation is not about bacterial infection from the water.

173. There are no specific guidelines for a non-transplant haematology and oncology Unit that I am aware of. In Yorkhill the corridor was HEPA filtered and the entry doors air locked. This was not duplicated at RHC. At the time of relocation, we were assured that the ventilation system met building regulations and was appropriate for a haemato-oncology ward.

174. I am unable to comment on the different room types that were built on the Schiehallion Unit and had no involvement in the planning/ decisions.

Concerns about the ventilation

175. From early on I was aware that there were issues with the ventilation in the transplant cubicles on ward 2A. The electric sockets and light fittings hadn't been sealed properly within the HSCT rooms. This was identified around August 2015 not long after we moved in when Craig Williams was the Lead ICD. Steps were taken to remediate the issues when the problems first came to light. Some of the HSCT rooms were then upgraded before the decant to ward 6A, so this was before September 2018. My recollection is that not all the rooms were done at the same time. I recall two rooms being upgraded followed by another two. We allocated the upgraded rooms to patients at highest risk. Although we have eight HSCT rooms, four are at a higher specification than the others, and we would prioritise rooms of the highest specification to the patients at greatest risk of fungal infection. After the decant to ward 6A, we were told at a meeting by the Director, Kevin Hill, that a problem had been identified with the ventilation and this would be rectified during the decant.

176. Ventilation appears to have been a very large element of the major refurbishment and I understand that this is now of the highest standard.

177. I am unaware of Aspergillus in any of the transplant patients on ward 2A. Details of fungal infection out with transplant patients and from environmental screening can be confirmed with microbiology. Fungal infections are difficult to diagnose, and treatment is mostly empirical. Antifungals are usually prescribed when a patient's temperature doesn't resolve on antibiotics and the patient is considered to be at risk for fungal infection. There are fungal markers in the blood which can be useful but obtaining samples for culture can be difficult and biopsying the lesion a major procedure.

178. Transplant patients receive prophylaxis against Aspergillus and that is generally effective.

Technical aspects of ventilation

179. There was some discussion at IMTs in relation to the optimal number of air changes. My understanding is that there were three air changes in ward 2A before the refurbishment but six were said to be optimal at an IMT. Some would favour 10 air changes. As clinicians we would want the optimum number.

180. I cannot comment on chilled beams other than what I have read.

181. In the 13 November 2018 IMT, - **A36629308 – IMT Water Incident Minutes – Ward 2A – Water Contamination – 13 November 2018 – Bundle 1 – page 227** it was agreed that I would tell staff that ward 2A was getting a refurbishment with a specification for a Haematology/Oncology ward. As I have already said, at the time of moving to the new hospital in 2015, I was told that there was a technical team working with a GGC team and that the Unit would meet standards for a haemato-oncology ward.

182. I had no real knowledge of the technical aspects of building standards. I knew that you needed HEPA filtration for transplant cubicles. However, I didn't have any knowledge of the technicalities surrounding the ventilation or plant rooms. I put my faith in the people who were employed to deal with this.

Concerns being raised by Clinicians 2018-201

183. At the IMT on 6 March 2018 - **A36690471- Water Incident Ward 2A RHC IMT Minutes – Bundle 1 – page 56** - Dr Murphy and I raised concerns about the infections as they seemed to be environmental. We also expressed concerns that Teresa Inkster had already raised these concerns with senior management a couple of years earlier. Personally, I did not know whether Teresa Inkster had already raised these concerns.

184. These concerns continued following the decant to ward 6A and, as the IMTs continued into 2019, we as staff had little or no direct communication from senior (Board level) management and this left clinicians unclear as to whether the gravity of the situation was appreciated. I do not consider that it should be the role of clinicians to share concerns with the Senior Management Team (SMT). A situation of such gravity should have been escalated from local management or the MD to Jennifer Armstrong (Board MD) and to Jane Grant (Chief Executive). Teresa Inkster as Lead ICD would escalate concerns to the Board Lead for IC who I understood to be Jennifer Armstrong. However, the clinicians were close to the patients and parents and felt responsibility. We wanted some evidence that the Board knew about the issues and that the problem was being given their highest level of priority. Teresa Inkster had stated at the IMT on 6 March 2018 that she had highlighted concerns about environmental issues to GGC and Health Protect Scotland (HPS) via an SBAR two years earlier but had had no response.

185. Whilst we did not consider it our responsibility as clinicians to share our concerns with the SMT, we decided to do this, nonetheless. There was a general feeling of frustration and anxiety that the problems were evolving from one thing to the next with no resolution. As clinicians we were accustomed to seeking advice from external experts when we needed help and we felt that an external, independent expert with no vested interest in defending their own involvement in the hospital build, might be able to provide valuable input and advice.

186. When Professor Leanord expressed his view that we were not dealing with a real outbreak of gram-negative bacteria but with a pseudo-outbreak, we wrote as a consultant body (in August 2019) to Jane Grant to ask if she considered that we were facing a real outbreak or not and asked for an external review. Professor Leanord's view led to confusion within the consultant body, and we wanted clarity.
187. We had not escalated these concerns prior to 2019 because there was always someone from the SMT present at the IMT meetings. This included Directors, Scott Davidson (MD) and Jamie Redfern, GM. Jennifer Armstrong and Alan Mathers sometimes attended. I don't think there was any doubt that SMT knew the severity of the situation. This was often described to me as the worst thing that had happened in GGC in 20 years.
188. As consultants we had concerns about the safety of the environment in ward 6A and the need for long term prophylaxis.
189. I can't recall the full response to the letter we sent to Jane Grant, but the external review didn't happen in the way we expected. Experts were contacted by individuals who attended the IMT and their advice was followed. However, we expected something more extensive and transparent.

The Closure of ward 2A and 2B and the Move to Ward 6A and 4B – September 2018

190. I was present at IMTs in September 2018 when the decision to close wards 2A/2B and move to wards 6A/4B was discussed – **A36629302 – IMT Water Incident Minutes – Ward 2A – Water Contamination – 10 September 2018 – Bundle 1 – page 154**. By September 2018 many potentially remedial actions had taken place, but problems with infections persisted. Taps and sinks were to be replaced. Black material had been seen coming up drains and drains were being scoped and cleaned. Some pipes were to be replaced and rooms were to be HPV cleaned after chlorine dioxide dosing. A drain expert had been engaged and there was a plan to scope and investigate the drains.

191. Rooms were closed to allow works to take place and patients were being referred elsewhere where possible. Concerns persisted about the safety of the unit but primarily it was not thought practical to carry out the required remedial work whilst patients remained in the ward. We had never had any experience of the issues we were experiencing, or the work required to try and fix them, so we didn't know what it involved and had not anticipated the level of work required.
192. The rationale behind closing ward 2A and 2B was to allow necessary remedial works, which were extensive, to be carried out. However, the initial plan was that the decant would be short and we were told that we would be back in ward 2A and 2B for Christmas.
193. Ward 4B was selected as a decant location for HSCT patients, because it was the adult HSCT Unit. Consultants wanted to relocate everybody to 4B. I understand that there is some suggestion that, had the clinicians not wanted to relocate to ward 6A then another location would have been found. That is not strictly true. We didn't get to choose which ward we would relocate to.
194. There was an option appraisal which set out a few different options: (1) another ward at RHC was not an option because of a shared water supply; (2) a move to the Beatson would have meant no access to PICU; (3) a temporary, Army type facility, in the car park would have taken some time to construct.; (4) a transfer of patients to other Scottish Facilities, but there was not thought to be adequate capacity. We had sent some of our patients to Aberdeen and Edinburgh, but, despite the problems at RHC, patients who were sent to other centres were often critical of facilities in those centres and would not return; (5) the other option was a ward in QEUH.
195. I do not know why 6A was selected as I was not involved in the decision. Ward 4B was an obvious choice for the transplant patients because it is the adult transplant unit. I and my colleagues were not involved in any negotiations between the RHC and the adult hospital management teams to find a suitable ward.

196. We would have preferred for all of our patients to relocate to ward 4B, but I can understand that the adults didn't want to give up their transplant unit. They had only just moved there. I think that I remember a visit to ward 6A and was told that this was the only option. I know that a lot of parents felt that ward 6A was not suitable, but ward 4B also had its problems. Neither ward was optimal, but they were the best that could be provided and the decant was meant to be for a short time.
197. When we moved to wards 4B and 6A two wards had to be staffed, which stretched staffing capacity. Transplant patients on ward 4B required two nurses to be present on that ward at all times. This put a strain on nursing staff which would not have happened had all patients been nursed on the same ward. However, even more problematic was medical staffing. There were no paediatric doctors resident on ward 4B. If a patient was unwell or stem cells were being returned which required a medical presence, a doctor had to leave ward 6A and remain on ward 4B. The advantage of ward 6A was that there was always a medical presence.
198. I think that it was the IMT which made the decision that a decant was necessary to allow remedial work to take place. There were meetings out with the IMT to discuss the appraisal of the best option for decant. The meetings were organised by local management. Consultants and, I think, senior nursing staff were present, although I can't remember with certainty exactly who was present. My recollection is that Kevin Hill chaired these meetings of which I think there were two or three. I have already rehearsed the options and how the only possible/practical option was a ward in the QUEH. Our preference would have been to relocate all patient to ward 4B. We were not involved in the choice of ward 6A.
199. I did not consider that there were any risks involved in the physical movement of patients. The Service Manager, Lynne Robertson, was extremely diligent in planning and considered every eventuality. Patient pathways were put in place, phone numbers were retained, IT was secured, and SOPs were amended to acknowledge the different setting and facilities. I thought that the decant went well and was safely organised.

200. It was decided that we should move on the Wednesday after the September Bank Holiday weekend. I probably decided the order in which patients should be moved.

201. Ward 6A had been the Rheumatology ward and was not designed for immunocompromised patients. Prior to the move it was painted and cleaned to make it as pleasant as possible. There was initially no HEPA filtration on ward 6A, but the cubicles on ward 2A for the use of non-transplant patients hadn't been HEPA filtered either. Later portable HEPA filtered Units were put in place after Cryptococcus was identified in January 2019. We expected to be on ward 6A for three or four months only, so, although it was not an ideal environment, it was probably acceptable for that short period.

202. Ward 4B was the adult transplant unit, and as such was considered fit for paediatric transplant patients.

Concerns about ward 6A

203. Facilities on ward 6A, particularly space, were challenging. Both ward 2A inpatients and ward 2B DCU patients had to be accommodated; an important concern was the distance from HAN (Hospital at Night), radiology and PICU, particularly PICU. PICU was on the 1st floor of RHC whilst we were on the 4th and 6th floors of QUEH. If we had a very sick child who was at risk of requiring PICU we would have all equipment ready on the ward, so that the PICU team only had to get to us, but everything would be prepared and available to them. PICU had passes which could give them priority for the lifts. Switchboard was challenged when asked to put out a paediatric arrest call to an adult ward.

204. After 10pm the wards are covered by a HAN medical team based at RHC with support from haematology–oncology Consultants on call, but at home. To have the HAN medical team in another hospital was concerning. We were fortunate in that initially after the decant our ANPs agreed to be present on ward 6A overnight, although this, in turn, diluted daytime staffing. Every effort was made to make the situation as safe as possible.

205. There were some positives about ward 6A. The patients' rooms had windows and there was a lot more natural light. The waiting area for the Day Care Unit was particularly bright. Children could play by a large window with views of the foyer. One of the 3 elevators for the whole hospital was dedicated to the ward. A separate lift for our children meant that they were not exposed to some adult patients inappropriate to children, but it did create problems for adult patients and their visitors in QUEH.

Communication about the decant to wards 6A/4B

206. There was communication to patients /parents in relation to the closure of wards 2A and 2B, and the move to wards 6A/4B. A letter was drafted by management. My recollection is that Teresa Inkster also drafted a letter about the need for drain cleaning and HPV.

207. I think that initially patients and families were accepting of the decant. Opinions changed with time.

Environmental Issues on Ward 6A

Cryptococcus and Mould

[REDACTED]

208. [REDACTED]
[REDACTED]

209. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

210. [REDACTED]

Concerns raised by the Clinicians – cryptococcus

211. When the issues with Cryptococcus arose, the clinicians on ward 6A became concerned about the safety of the ward. I sent an email to Jennifer Armstrong dated 8 January 2019- **A42506190- Email from Professor Gibson to Jennifer Armstrong dated 8 January 2019- Bundle 6 – page 43** expressing my concerns, and the concerns of my colleagues in relation to the safety of the environment and the steps we had been asked to take to protect patients, namely the introduction of portable HEPA filters and the use of prophylaxis. She did not meet with us, but I think she sent her deputy in CI, Marion Bain.

212. IMT decided that patients should receive prophylaxis against Cryptococcus. My colleagues and I had concerns about the prophylaxis that we were prescribing because of possible side effects but were told that this would be a short-term measure.

213. We faced a number of problems in delivering antifungals. Firstly, some patients reacted to AmBisome and we would normally have given these patients Caspofungin but Cryptococcus was not sensitive to Caspofungin. None of the “azole” drugs can be given to patients receiving vincristine as chemotherapy, which included all those with ALL.

214. The decision to use prophylaxis was more difficult for solid tumour patients than for those with AML and ALL who may have received prophylaxis on protocol.

215. I think that Jamie Redfern and Jennifer Rodgers did their best to meet with families, but the families expected to meet with more senior management.

Decant to Clinical Decisions Unit (CDU) – January 2019

216. When mould was identified on Ward 6A in January 2019 patients were decanted to ward 4B or Clinical Decisions Unit (CDU) based on needs and bed availability to allow remedial work to take place. We were only there for a few weeks and the transplant patients remained on ward 4B.

217. I felt that this additional decant was a significant disruption to services. Parents were anxious and frustrated and we were admitting patients on a case-by-case basis, with some patients being sent to other centres, depending on their needs. At the IMT of 4 February 2019 – **A36690558 – IMT Meeting Minutes – Ward 1D PICU – Cryptococcus – 4 February 2019 – Bundle 1 – page 303** - I made my concerns about the environmental risks and the disruption to services clear. At this meeting, I felt that the HIIAT score for impact to services, which was one of the 4 elements considered when scoring the HIIAT, should be Major and not Moderate as it was scored. This would have changed the overall HIIAT from Amber to Red. I was perhaps more affected by the disruption and understood better the effect on patients and families, hence my view on the score. Others at the IMT felt that it could be lowered to Amber. This happened because the score was a consensus. I don't know if there was a way to challenge or escalate disagreement about HIIAT scores, other than for it to be noted in the minute.

Concerns about HIIAT tool

218. I don't think that the HIIAT tool is a helpful tool. I understand that many countries have abandoned it. It wasn't that I thought that the HIIATs were wrongly scored, I just thought the HIIAT process was unhelpful. The impact of the illness to the patient was scored on their condition on the day of the IMT and not their condition when they were most unwell. I thought that the score for the patient should reflect the impact when they were most unwell. I know that Anwar Sarwar has said in parliament that the HIIATs were underscored. It was not the scores which were wrong. It is the method of scoring. The HIIAT guided the need for referral to SG and for a press statement release. Whilst Teresa Inkster was Chair of the IMT, I think that she was fair with HIIAT scoring even if I did not agree with how impact on patients was scored.

219. I understand that the HIIAT scoring system is under review.

220. I don't think that the HIIAT was the best tool in our unique scenario and an alternative approach may have been preferred. It is more appropriately used for outbreaks of rotavirus and norovirus. I refer you to Susie Dodd, Antimicrobial Resistance and Healthcare Associated Infection (ARHAI), who is dealing with a modification.

221. Our view as clinicians was that the problems that we encountered were generic to the hospital (building) but that our patient cohort had experienced the problems because they were immunocompromised.

Gram Negative IMT Spring/Summer 2019

222. After we moved back to ward 6A following the short decant to the CDU, things improved for a short time. Portable HEPA filters were in place. Later in 2019, I believe July, blood cultures positive for gram negative organisms were reported and IMTs resumed.

223. Initially Teresa Inkster was the chair of this IMT until a point in August 2019 when she was replaced as Chair by Emilia Crighton (Public Health). I recall attending an IMT chaired by Sandra Devine. I was unaware of the change in Chair and asked the reason. It was suggested that I ask the reason for the change in Chair to the Chair. Sandra Devine didn't give a clear answer. Emilia Crighton was the Chair thereafter.
224. I was at IMTs about the gram-negative bacteraemia in 2019 chaired by Teresa Inkster. Throughout 2019 I was aware that the hypotheses on the cause of infections were challenged, but I was not aware of major conflict between IMT members.
225. The PI tells me that I was at a reduced number of IMTs between August and December 2019. There was discussion about reopening the ward to new patients. My recollection is that the ward was never completely closed. Decisions were made on a case-by-case basis. New patients may have been referred to other centres but patients further into treatment who were returning for subsequent courses of treatment were given the option to go elsewhere, delay treatment or have it in on our Unit. As clinicians we were unhappy that whilst we had had little input to many previous decisions, we were asked to make these most difficult of decisions.

Hypotheses

226. The hypothesis before Teresa Inkster as Chair, was that the problems might be caused by the chilled beams leaking water. Professor Alistair Leanord and Professor Brian Jones became involved after Teresa Inkster demitted Chair and the hypothesis changed. Dr Iain Kennedy from Public Health spoke to us about the epidemiology and showed graphs of incidences of gram-negative blood cultures at Yorkhill and RHC by year. Professor Leanord told us that sequencing of organisms showed no commonality between organisms cultured from patients and those from water. I don't know if sampling was done at the same time as the blood cultures were taken and bacteria can mutate. I don't know the time intervals for mutation for these organisms.

227. Teresa Inkster as Chair tried to identify the problem, confirm the hypothesis and consider how this might be remediated. Emilia Crighton as Chair changed the emphasis to one of positivity. Teresa Inkster hypothesised that water was dripping from chilled beams. I had no knowledge of chilled beams and if the Director of Estates said that the chilled beams could not be involved, I could not contradict this with authority. I might ask why it can't happen, but I couldn't challenge it.

228. In terms of the IMTs throughout 2019, no solutions were forthcoming and the problems with infections continued. Enormous damage was done to the reputation of our Unit which as consultants we didn't feel was appreciated.

229. During the IMT on 8 August 2019 – A37991958 – IMT Water Incident Minutes – Ward 6A – Gram Negative – Paediatric Haem Onc – 8 August 2019 – Bundle 1 – page 338 there was discussion of a further decant from Ward 6A to somewhere else. The role of leakage of water from chilled beam was discussed. Although these were thought to be a fully sealed system, swabs from the chilled beams grew gram negative organisms. Chilled beams are in place throughout the RHC and QEUH campus with the exception of adult transplant unit ward 4B. There was discussion around the suitability of chilled beams for a haemato-oncology unit and there was discussion around a second decant to a location with no chilled beams; temporary mobile unit or to the cardiac transplant ward in Golden Jubilee Hospital. However, this was not an option because we had to remain co-located with PICU. I can see from the minutes that an option appraisal was to take place on the Monday following this IMT, but I can't remember if this meeting took place or if I attended. I am only minuted as attending one further IMT on 6 September 2019, but I don't remember if I attended any others.

Communication in relation to the Ward 6A IMTs

230. Most communication in relation to the events on wards 6A and 4B between management and clinical staff came in the form of letters or statements from SMT after an IMT. The letter was written by Comms and presumably approved by SMT. The same information went to staff and families. The problem was that no one knew how to resolve the problem and therefore information had to be limited.

231. We have regular multidisciplinary Schiehallion Unit meetings. Local management and the Lead ICD are invited and did attend on a number of occasions to update staff, particularly at times of significant events. This is the meeting we asked Jennifer Armstrong to attend in our email in January 2019 and which Marion Bain attended in her place.

232. Information came down from the SMT to the clinical team. The families felt that they should have been spoken to directly by SMT. I did at one point suggest that SMT meet directly with the families but that was not accepted. I had taken this approach at Yorkhill at times of disquiet, and it had worked.

233. I was never asked to lie to patients and families. However, I think the answers we were giving to families were inadequate because no one knew the real answer.

234. I am aware that an IMT recorded that Jane Grant had sent two letters to parents which had not been reviewed by the IMT. I don't think I ever saw those letters; I am not sure what they said. I think this was in early 2019. The view was that no communication about environmental issues should go to families without being approved / reviewed by the IMT. I do know that Jane Grant wrote to families around the time of the Case Note Review, but I don't think that these were the same letters. This letter apologised to families but contained an apology for the care children had received. The Consultant team wrote to her to make their position clear. Her apology should be about the environment, which was the responsibility of management, and not the clinical care. She agreed to send an amendment, but I never saw the amendment.

November 2019 onwards

235. One of the difficulties that we faced in wards 6A and 4B was that we had to staff two wards. During the COVID era we had to comply with the restrictions imposed by the adult HSCT Unit. The risk to life for an adult undergoing transplant from COVID is much greater than that of a child. As a result, our families were much more restricted than families on other paediatric HSCT Units in the UK.

236. This was incredibly stressful for staff and for a parent who might find themselves confined to a cubicle with a toddler for 28 days or more and not allowed to leave that cubicle.

The New Ward 2A/2B

237. We are now back in the refurbished ward 2A/2B and there have been changes made to the ward environment. The ventilation has been upgraded. Filters remain on taps. The décor is lighter. Some accommodation has been provided for staff adjacent to the Unit. Pharmacy facilities are much improved. A cubicle has been turned into play accommodation for 8-12-year-olds.

238. I think that confidence has been restored. New patients who have not experienced the previous problems seem impressed and I have not heard of any complaints about the environment.

239. There is never enough accommodation in an expanding Unit.

240. Since returning to the refurbished ward, infections have reduced dramatically. If this was a pseudo-outbreak/ natural variation, the variation has come to an end, which I suppose all natural variations do, or alternatively if there was a problem, this has resolved. Many measures have been put in place and I don't know which led to the improvement. Regardless, we can't deny that we have observed a change.

INFECTION CONTROL

Concerns about infection

241. The reason that concern was raised over the infections on ward 2A and then ward 6A, was that many would be considered environmental.

242. Organisms isolated from patient's blood cultures were also isolated from water outlets before point of care filters were fitted and then from drains. However, unless the sequencing of these organisms is similar my understanding is that it cannot be confirmed that the water and drains were the source of the infection in the patients. Whilst staff had concerns of a potential link, they deferred to IC colleagues who were the experts in this field. I remain unclear as to the true position and continue to rely on the advice of the specialists. The latest information we have received has been from Alistair Leanord, whose position is that there is no evidence to support a link to the environment. My understanding is that he is referring to the whole period of the incident from 2017 onwards.

243. There was disagreement amongst the microbiologists in relation to the epidemiology and perhaps significance of the sequencing.

244. I have no knowledge of how or when concerns were escalated to the Board. There were a number of presentations about the incidence and type of organisms by year after relocation to RHC compared to Yorkhill from Iain Kennedy, Public Health. I believe that the SMT and Board would have been aware of this information.

245. The IMT recommended escalation to HPS, Health Facilities Scotland (HFS), and SG. These bodies have data from all over Scotland and are in the best position to make comparisons.

246. The IMT did receive reports from HPS but some were slow to be produced. Annette Rankin was the representative of HPS and would have had information on infection rates and organisms across Scotland. This information would have put our Unit in context.

Management and Control of Infection

247. There was good and frequent interaction between clinicians and IC. IC Nurses were frequently on the ward. The Lead ICD met with parents along with their consultant and was available.

248. There were frequent Hand Hygiene audits and inspection of the ward in terms of cleanliness. Root Cause Analysis (RCA) was carried out by ICNs on all new gram - negative organisms, although I can't remember when this started. The RCA will include tracking a patient through the different locations they visited in addition to the ward e.g. radiology and theatre. The ICNs will note the rooms occupied by a patient and whether more than one patient with the same infection had been in the same room. The ICN will also consider whether the patients could have acquired the infection at home, or whether it must have been acquired in hospital.
249. The ICNs will report to the ICD. The IPCT have guidelines that they work to. If I am correct, one gram-negative organism would trigger a Problem Assessment Group (PAG) meeting whilst two gram-negative infections would trigger an Incident Management Team meeting (IMT). The responsibility of informing management would lie with the ICD.
250. The need for good hand hygiene was stressed and from my observations was of a high standard. Other measures taken to control infection included asking parents not to pour coffee etc. down sinks in their rooms because this encouraged a biofilm and to try to unclutter the rooms so that the cleaning of surfaces was easier. The inspections of cleanliness, frequency of cleaning, was the remit of ward nursing staff and ICNs. Specific measures related to the handling of central lines were introduced. The management of each episode of bacteraemia was discussed with microbiology. The use of prophylaxis was discussed with microbiology / IC and generally agreed at IMTs. Whether we can link patients' infections to the environment is a specialist area and is not straightforward. It is easy to assume that, if an organism is identified in a patient and is then isolated from the environment, the two are linked. However, this is not necessarily the case. There are different strains of bacteria, and bacteria mutate. There were a number of cases where a link between an infection and the hospital environment was considered or explored, but I believe there was only one case where there was sufficient evidence to confirm the link. This was a case of mycobacteria in a patient where the organism was isolated from both the patient and pre-filter water and sequencing suggested a link.

251. There were other cases where a link was suspected, but where I am told that further investigation and sequencing excluded this. Colleagues in microbiology would be better placed to provide this information.

Prophylactic Medication

252. There was an increase in the prescribing of prophylaxis at RHC at times of increased risk. This was appropriate care and was done in the best interests of patients and for their protection against infection from gram negative bacteraemia or fungus. The IMTs record discussion around starting and stopping prophylaxis in response to perceived environmental risk. Prophylaxis was given in our Unit either as per protocol or on the advice of or recommendations from IMT / Microbiology or IC, and for the period of risk only.

253. Ciprofloxacin was given to patients with central lines to address the risk of gram-negative bacteraemia. Ciprofloxacin is an oral antibiotic which is effective against gram-negative bacteria. It was given to children with central lines in situ during the period when the incidence of gram-negative organisms was causing concern. It was given on the advice of IMT/ microbiology/IC. Previously we would have restricted our use of Ciprofloxacin to very high-risk patients with very poor immunity who tolerate sepsis poorly e.g. Infant ALL, DS ALL, post-transplant. However, there is now a new national trial whereby Ciprofloxacin will be offered to all patients with ALL as part of a randomised study. The fact that this trial has been approved means that several experts have agreed that it is safe and appropriate to do so, which might help understand the context around the use of Ciprofloxacin.

254. Some parents reported that their child was experiencing gastrointestinal side effects, predominantly diarrhoea, whilst on Ciprofloxacin. I raised this at an IMT. A small group was established which included haemato-oncology clinicians and Infection Disease doctors to re-examine the risk / benefits. A step-down approach was recommended with a change to Taurolock which is now our current practice. Taurolock is installed into the central line and a few patients have had severe reactions. Nothing we do is without risk.

255. Antifungals were given around the time of the cladding work and after detection of *Cryptococcus*. Antifungal prophylaxis is routine in some protocols/diseases/settings.
256. It was more common for children with leukaemia to receive prophylaxis because they had central lines, received steroids and had profound and prolonged neutropenia. Most children with solid tumours did not have these risk factors. It is not true to say that parents were not told that their child was receiving prophylaxis.
257. As I mentioned above, at IMT on 6 September 2019 - **A36591637 – IMT Water Incident Minutes – Ward 6A – Gram Negative – Paediatric Haem Onc – 6 September 2019 – Bundle 1 – page 354** – a group was established to look at the need for prophylaxis and this included Infectious Disease representation. This group was set up because of concerns of side effects with Ciprofloxacin. I was not directly involved in the group, but I have seen the minutes of a meeting held on 24 September 2019, the aim of which was to review the prophylaxis strategies against gram negative bacteraemia and fungal infections among paediatric haemato-oncological patients. At this point the side effects had been reported by the families. The minutes record discussion around the use of Ciprofloxacin prophylaxis at that time and acknowledge that whilst Ciprofloxacin was used as standard in certain patient cohorts to reduce the risk of non-environmental gram-negative infection, its usage was more widespread amongst paediatric haemato-oncological patients to mitigate environmental risk. It was agreed that there was a need to balance the potential for Ciprofloxacin side effects and the generation of further resistance against its efficacy in preventing infection.
258. It was agreed that further environmental sampling data was needed and a possible step-down approach to the usage of Ciprofloxacin prophylaxis in select patients would be considered in light of that data. The sampling would have been for gram-negative bacteraemia. A step-down approach is when you remove the treatment from patients at lesser risk.

259. The minutes of this meeting also summarise the background and chronology in relation to the widespread usage of anti-fungal prophylaxis. It was agreed at the meeting that there was potential to specify which patients require antifungal prophylaxis more clearly and that this would also be reviewed after further environmental sampling data was made available. I cannot remember the specific details or timings thereafter, but I recall that a step-down policy was initiated in respect of Ciprofloxacin and antifungal prophylaxis at some point following this meeting. IMT minutes record that I regularly raised concerns in relation to the side effects of Ciprofloxacin and antifungals if given long term.

Communication related to Prophylaxis

260. Decisions in relation to prophylaxis were made at IMTs and then communicated to clinical staff on the ward, who were responsible for prescribing the medication in accordance with those decisions. Each Consultant discussed the prescription of prophylactic medication to their patients with each family. I cannot remember what information the communications team or management produced in relation to prophylaxis but there is a note in the IMT minutes for 16 March 2018 - **A36690477 – IMT Water Incident Minutes – Ward 2A and 2B – Water Contamination – 16 March 2018 – Bundle 1 – page 66** saying that patients should be told that prophylaxis was to be given “*just as a precaution due to issues with the water supply*”. For me it’s splitting hairs, but it’s a question of what you mean by a precaution. In my mind, a precaution is quite an unlikely event or a not very serious event. I felt it wasn’t the best word to use in this situation because we had serious concerns about the risk of infection. I do not think I used the word “precaution” when discussing the issue with parents despite the IMT’s instruction on this. I believe I told parents that we recommended that their children receive prophylaxis (most often Ciprofloxacin) to reduce to reduce the risk of infection. This was accurate.

261. It’s my recollection that the parents of the children were told that the medication was being given due to concerns about infections which were potentially linked to the environment, and we were recommending that they receive prophylaxis.

262. These were parents well educated in their child's treatment, who knew exactly what medication their child received. If there was a new medication, they would ask what it was for. There would have been no merit in not explaining this to them. I have no knowledge of there being any withholding of information about the prescription of prophylactic medication from patients/ parents.

COMMUNICATION

Treatment

263. There are key aspects of the duty to communicate effectively with patients generally and with paediatric haemato-oncology patients specifically. At diagnosis parents have a detailed discussion with their consultant about all aspects of treatment, side effects and outcome. This is accompanied by written information which is usually provided as a Parent and Patient Information Sheet including information about clinical trials, MacMillan and Children's Cancer and Leukaemia Group (CCLG). Wherever possible patients and parents are given time to read this information before consent for treatment is taken. In the event of relapse or any other event which requires a change in treatment, the same process is followed. Honesty is important. Information will also be given by nursing staff, particularly Outreach Nurses visiting families at home.

Clinical Governance

264. If something has gone wrong during care or treatment, patients and families will be told what has happened and an explanation given. This will be recorded in the case record. It is likely that a DATIX will be raised, and the issue discussed at the Clinical Governance Meeting.

265. DATIX is a reporting system that is used by GGC to report clinical incidents. Any clinical incident can be reported by any member of staff. These reports are discussed at our clinical governance meeting, and those related to transplant are discussed at the HSCT Quality Management meeting. Their significance is graded as minor, or no consequence, or significant.

266. DATIX reports are escalated to the Trust Clinical Governance group who should be able to detect a trend. What is most important is that they can be used as learning points and outcomes should be disseminated throughout the department.

Duty of Candour

267. GGC has a Duty of Candour policy which stipulates the time frame for Duty of Candour disclosures to families. I personally have never received any training in Duty of Candour; however, I have completed a LearnPro which is online learning.

268. I think that we are good at meeting the Duty of Candour guideline. In retrospect, we were probably not good at recording what we said to families. We now over-record. We have a handover at lunchtime every day, but on Friday, we have an extended handover which microbiology attends, and where we review all positive blood cultures, any lines removals and any complaints. We confirm that parents have been informed of any positive blood cultures, and that this discussion has been documented in the child's case record.

269. Duty of Candour was discussed at the IMTs, and it was always clearly decided who would inform the parents of any new infection. Parents met their consultant and the Lead ICD +/- a manager and were told which infection their child had and the likely source if known.

Whistleblowing

270. If I have any concerns regarding wrongdoing, failure or inadequacy within the hospital, there are procedures in place to report this. For example, with formal whistleblowing, there is a GGC Whistleblowing Policy, which can be found on the website. I am not aware of any other procedures. There were opportunities to raise concerns at IMT's and other meetings with management.

Communication and Infection

271. The main communication from management to clinical staff regarding infection risk was in the form of written statements from SMT following IMTs. The written statements were a script to be followed by clinical staff when communicating with patients.

272. The communication between management and patients was done via clinicians, using the scripts issued following IMTs.

273. Communication from management to media was sometimes agreed at IMTs when a Press statement would be prepared, but I don't remember having access to any.

274. I don't remember receiving any pre-broadcast advice regarding the BBC programme, Dispatches. I think that we received an email alert that the programme would be broadcast.

Facebook

275. There are two Facebook pages that relate to the Schiehallion Unit. One was set up by GGC as a result of discussion at an IMT regarding positive communication with patients and families. I understand that useful information has been posted on the Facebook page, but the majority of traffic is between parents. The FB page is administered by the GGC and Coral McGowan manages and screens the content. Clinical staff have no access to the page.

276. There is a second Facebook page which is run by parents. I understand that the content on that page is not always constructive and at times has been very damaging to staff and parent relationships. I have been asked by staff to stress how destructive this FB page has been. We don't have access to it, although some staff have seen some of the posts.

277. My view is that all Facebook pages are unhelpful. You can write anything you like on Facebook with no consequences. Some of the postings have not been acceptable.

Information from external bodies

278. I am not aware of any instructions or information from bodies external to GGC apart from a representative of Health Protection Scotland (HPS), Annette Rankin, at IMTs. Information was escalated to SG.

279. Early in 2018 when the water incident was first recognised, Eddie Doyle, who is the Medical Director in Edinburgh, and someone else whom I cannot recall visited us on behalf of SG to see how we were coping. That was probably the most supportive event that we had at the time.

280. I am aware that there was a meeting between the parents and Jeanne Freeman, but staff were not present at those meetings.

281. I know that Anwar Sarwar has had a lot of influence with the families and still has. We are not involved, and he has never approached any clinical staff.

282. Jeanne Freeman came to meet us once in Ward 6A. I think this was after she had met with the families.

Other Reviews and Change

283. I have provided oral evidence to the Independent Review and provided evidence to the Health and Safety Executive (HSE) Investigation. I have had no involvement with the Oversight Board.

284. I have found engagement with all investigations and inquiries stressful and time consuming. I do accept that I have a responsibility to provide evidence as honestly as I can, but even remembering much of the information is difficult. So much happened and much of it was over 4 years ago.

285. Whilst at Yorkhill our department enjoyed a reputation as one of the best in the UK. However, the relentless bad publicity over the past 4 years related to the environmental problems is known nationally and indeed internationally. There is a national shortage of Paediatric Haematologists and Oncologists with many posts unfilled. The last three trainees in Glasgow have all taken Consultant posts out with Glasgow. Staff are demoralised and there is an atmosphere of a broken department staffed by broken people. I think that it will take at least 5 years after the Public Inquiry for the reputation to recover, if it can recover. There is no doubt that relationships between staff and families have been severely damaged.

286. I have seen some change because of these reviews. With HAI reporting procedures, every episode of gram-negative bacteraemia has a root cause analysis and may trigger a PAG or IMT. Communication has changed. Patients and families are told that their child has had a HAI and given the name of the organism. If there is a cause identified patients and families will be given this information. Their consultant will be involved in the discussion and he or she may be joined by IC. This is documented in the case record. Whilst this process was in place from at least 2018, I believe there has been a change in terms of the documentation of such discussions. These are now very carefully documented in the case notes to keep a record that the duty of candour obligations have been fulfilled within the appropriate timescale. Once a week all positive blood cultures and line removals are presented at a departmental meeting and reported to management.

287. Encouragement to raise issues hasn't changed much as we have always raised issues. This is done at a departmental meeting which management often attend. I don't think that we have had any concerns to raise recently.

288. There have been positive changes in the way that we engage with the IC team. We have a Schiehallion Unit meeting and a Clinical Governance meeting which is attended by the ICD and a microbiologist, but we have always had good communication with microbiology.

289. Estates are more proactive.

290. There is always room for improvement, but I think that Infection control issues are very tightly controlled.

CLOSING STATEMENT

291. An £8-11 million refurbishment has taken place which has required a decant of clinical services for 3 and a half years. We are told that the Unit has the optimal ventilation system and that the water supply is as clean as can be achieved.

292. The floor plan remains inadequate for a comprehensive and inclusive service, but staff are adapting. Management has recognised the need to accommodate staff close to patients. The transplant patients are the most vulnerable and the associated staff have been accommodated in close proximity. Pharmacy have been given improved facilities. A staff room has been provided. A facility has been provided for 8–12-year-olds.

293. . The reputation of the Unit has been severely damaged with a demoralising effect on staff. However, relocation to wards 2A and 2B has increased accommodation and emphasis on training and education has helped.

294. It would be helpful to include clinicians during the planning stage for any new healthcare facility.

295. As difficult and as unbearable as the last 3 and a half years have been, as a multidisciplinary team we all recognise that we are privileged to look after this group of children and engage with their families at the worst time in their lives. I chose the name Schiehallion for our Unit to symbolise the uphill struggle that these families face. We are now back in our refurbished Unit and this summer will climb our mountain as we did in other years before this problem. Those who can walk up the steep but broad path will do so with staff, family and friends and those who can't will spend the day in the field at the bottom catching tad poles in the stream, having their faces painted, having a massage, or toasting marshmallows on a bonfire because that is what we are about.

296. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Emma Somerville

Witness Details

1. My name is Emma Somerville. I am a Senior Charge Nurse, otherwise known as Designated Senior Nurse of ward 2A, referred to as the Schiehallion Ward, at the Royal Hospital for Children (RHC) in Glasgow. My employer is the National Health Service Greater Glasgow and Clyde (NHSGGC). I joined the RHC in Yorkhill around 2002, so have been employed with NHS GGC for approximately 20 years.

Professional Background

2. I began my nurse training in 1999 at Caledonian University, which was a three-year Diploma in Higher Education. I qualified as a Registered Nurse in Paediatrics (also referred to as Child Branch).
3. My first job was in the Schiehallion ward in Yorkhill hospital. I went on to do obtain a degree in Palliative Care and Pain Management at the University of Paisley.
4. Around 2012, I did a further qualification in administering chemotherapy at Robert Gordon University, which allowed me to administer chemotherapy safely to patients in the Schiehallion ward. It was in the old Yorkhill Hospital. - and it was an Open University course. It was mostly online learning and our Nurse Educator, who was on the ward at that time, led on it, but the governing body was Robert Gordon.
5. In 2015 I returned to Caledonian University where I completed a non-medical prescribing course, which allowed me to prescribe drugs as a non-medical

prescriber. The phrase, 'non-medical prescriber' refers to individuals who are not doctors but are legally permitted to prescribe medicines, such as nurses, physiotherapists and pharmacists.

Awareness of Families and Patients' Evidence

6. I am aware that there has been evidence given by families to this Inquiry. I was on maternity leave for a year when most of the families were being interviewed. I came back to work in September 2021 and there were a lot of families giving evidence at that time. A lot of the evidence was not very nice, so I chose not to watch anything. I did not see how it would have been helpful at that moment in my time at work. I think my name was mentioned during the evidence. This was something the Lead Nurse discussed with me.

Current Role and Specialism

7. I am the Designated Senior Charge Nurse in Ward 2A in the RHC in Glasgow. Ward 2A is a haematology and oncology Ward. I worked in the Schiehallion Ward within the old Yorkhill hospital and moved over to Ward 2A in 2015 when the RHC opened. I have now been working at the RHC for seven years and can discuss the following topics: my role and duties; ward 2A, including the facilities available and the treatment it offers; the decant to ward 6A; communication between staff and families and communication between staff and management; Infection Control (IC) including our Standard Operating Procedures (SOPs); and my involvement with Incident Management Meetings (IMTs).
8. My Line Manager is the Lead Nurse, to whom I report. There have been several changes in the Lead Nurse since I have been in role: Melanie Hutton, Kathleen Thompson, Gael Rolls and now my current Line Manager is Catriona Riddle. I escalate any issues which may arise to the Lead Nurse and Chief Nurse.

9. I am responsible for the day-to-day running of the ward's nursing side. I manage the core group of nurses and ensure that all the families and children are safe on a day-to-day basis. This also includes the coordination of nurses looking after the patients. I also work alongside the Day Care Unit (Ward 2B), and check if there are patients who will be transferred over to Ward 2A for admission.
10. A typical day would start with me receiving a handover from the night shift and I would address any issues that had occurred overnight. Then we have a RHC hospital-wide safety huddle at 8am. This takes place twice daily. These are meetings that the nurse in charge or SCN would attend at 8am and 3pm and are chaired by the Lead Nurse and the Hospital Coordinator. At the safety meeting, the nurses in charge/ SCNs for the RHC hospital record their patient numbers for the day, patient acuity and predicted bed numbers. The numbers of staff on shift during the day and on night shift are recorded and any shortages noted. If we did not have safe staffing levels, I would report that along with the requirements I needed to make the unit safe. Unfortunately, sometimes, since we are quite a specialised core group of nurses, with chemotherapy or Bone Marrow Transplant (BMT) skills, there is not always help available from nurses with the requisite skills, in which case we would require to resolve any staffing issues ourselves. At the huddle, we would also record anything that may affect the running of the ward, such as any patients who need to attend other wards or hospitals. After the safety huddle, the Lead Nurse begins a post huddle meeting, referred to as a touch point, with the Senior Management Team for the RHC. There is a separate safety huddle for QEUH.
11. At the safety huddle, we discuss issues such as bed capacity. If the ward is full and we need to bring in children for chemotherapy, we discuss with the consultant on call or the patient's consultant whether it is safe to move particular patients out to other wards. We generally only do that when the ward is full. However, when we were closed to admissions previously, we did move

children out to other wards, but that would have been the decision of the patient's consultant and it would have been on the basis of a balance of risk.

12. We always need to have our transplant patients or patients who require chemotherapy on the ward because the nurses in other areas cannot deliver that care; only our specialised nurses can. If, on the rare occasion chemotherapy has to be administered elsewhere, for example, if a patient is ventilated in intensive care, then two of our ward nurses would deliver the chemotherapy there and support the patient care at this time.
13. Other issues that would be raised at the safety huddle are: patients in Ward 2A who have been or will be transferred to other wards; patients who require high-risk infusions. Any incidents (Datix) which have been reported can be escalated; or drug administration errors. Datix is the reporting system for the hospital, managed under health and safety protocols, where any issues, near-misses or accidents are recorded.
14. I also investigate any drug errors that occur and these would also be included on the Datix. We administer a significant number of drugs in the unit, approximately 200 to 300 drugs in 24 hours. Unfortunately, there can occasionally be human error with prescribing or administration. At that point we would report it in a Datix and discuss it at the Clinical Governance meeting. We would investigate the incident and why it happened. We would explore whether it was a nursing error and whether extra teaching is required. Most of the time we request nurses to do a reflection on what happened as a lesson learned. A Nurse Educator would be involved, and the Datix goes to the Lead Nurse for final sign-off, as well as alerting all of the Senior Management Team (SMT) and, if it was a prescribing error by one of the medics, the consultants would normally manage the medical side.
15. At 7.30 a.m. all nursing staff on shift attend handover meetings and also at this time a safety brief is given. We started providing electronic copies of the safety brief a few years ago, and we have that on a shared drive. Logging in and

checking the electronic safety briefs is something I would advise my staff to do if they had been on annual leave, or if they are running late.

16. We have a handover with the medical staff at 9am which is attended by the Nurse in Charge (Senior Staff Nurse or Charge nurse). The Nurse in Charge also participates in the ward round. At half past 12, we carry out ward handover: all the medics and the Nurse in Charge discuss and make plans of care and treatment following patients being reviewed on the ward round.
17. I am responsible for resolving complaints from families and I try to resolve any issues locally. If this is not possible, I escalate them to the Lead Nurse, Chief Nurse or General Manager.
18. If there are any Estates issues, I make sure that these have been recorded on the Facilities Management (FM) system (the reporting system for any Estates issues) and contact the relevant people in Estates. If there is any cleaning to be carried out on the ward, I make sure that we know where we will move patients to allow this to be done.
19. I ensure that we are carrying out all necessary checks on the patients. If a child has sickness and diarrhoea or anything infectious, or which could cause an outbreak, we will isolate the child. At that point, we would ensure that a nursing care plan is put in place, in accordance with the local guidance which we follow and implement all necessary measures. The domestics would clean the rooms twice a day so that these rooms receive increased domestic cleaning. The nursing staff would wear PPE which includes a yellow apron, as a visible sign that there is a difference in the way in which we nurse those patients and complete all necessary nursing documentation. We ensure that the room doors are closed all the time and we would advise the patient and their family members not to use the communal areas with other children.
20. I work closely with IC when treating the children in the ward. If the children have infections that require to be isolated, then the Infection Prevention

Control Team (IPCT) would advise accordingly. They would then monitor the patient daily and we would provide an update on that patient to the IPCT usually when they contact the nurse in charge by phone call, or come to the ward to review the patient, and act on any further advice they provide.

21. If a child is in isolation and is going to theatre, we would let theatre know. The patient would then go on a red pathway which means that they would go last on the list so that the theatre room can undergo a deep clean once the procedure is carried out.

22. I currently oversee health and safety matters on the ward. This includes ensuring that all of the nurses have completed their moving and handling training. In addition, I make ensure risk assessments are completed/updated. This would include ensuring that the risk register is followed. I attend the Clinical Governance bi-monthly meeting and we discuss the risk register and risk assessments. The risk register is something I would review and that is local. There is a corporate risk register, but I do not review that. I believe that any risks that we put on the risk register are uploaded into a shared drive and the Clinical Services Manager then reviews the risks. With risk assessments, IC now comes to our Clinical Governance meeting and, at this meeting, we discuss all risk, and one of the medical staff will lead on to going through any reported Datix. We review the previous months Datix once they have been investigated. Lessons learned are then discussed so that the wider team knows the outcome and this would then be available in a minute. I would usually submit the risk register the week before to Dr Sastry, the consultant leading on Clinical Governance. Our Quality Manager would circulate it and, if anybody has any comments and if there were any additional risk, it is raised. Staffing levels when we were in Ward 6A is an example of something which was on the risk register because we were working over two floors in Wards 6A and 4B. Another example is when we had issues with the water on Ward 2A and one of the ways of mitigating risk was putting filters on taps and instructing an external company to carry out water testing.

23. I also complete audits through the Care Assurance system or LanQip system. LanQip is the system we use to monitor central lines. We conduct an audit, which reviews the documentation by assessing whether there is continued evidence of care and maintenance of central line care. The same audit is carried out with peripheral cannulas, for example to see whether the cannula was needed; whether hand hygiene was performed before insertion; and whether there is continued evidence of care and maintenance of the peripheral cannula.
24. Another audit we carry out is Standard Infection Control Practices (SICPs), which is conducted as a spot-check of rooms. We normally try to arrange for that to coincide with the enhanced supervision in respect of IC measures (as referred to at paragraph 40 below), which is conducted once a month and has been in place since May 2017.
25. We carry out local peer audits in place for the patients for whom we are responsible. These came in shortly after I was in post. For example, once a month, we would do a local hand hygiene review. We all make sure we conduct peer audits and spot checks of staff hand hygiene and the results are recorded on our feedback board for everyone to see.
26. My role also includes some responsibilities for Human Resources (HR), such as reviewing nurse absences and carrying out any subsequent return to work interviews. I am also responsible for ensuring a safe level of nurses on each shift and if not, I escalate the issue at the safety huddle, as mentioned earlier at paragraph 10.
27. My role requires that I attend various meetings within the Multi-disciplinary Team and wider hospital service. These are varied and include Child Protection and IC meetings, among others. Previously, when we were experiencing difficulties in the ward, I would attend Problem Assessment Group (PAG) and Incident Management Team (IMT) meetings. A PAG is convened to undertake an initial assessment in respect of a suspected

infection incident, with the aim of managing this locally in the first instance, if appropriate. My role at the PAG would be to provide an update regarding the patient. This would be given to a representative from both IC and microbiology. I would relay any concerns I had regarding the patient. In attendance at a PAG, generally, would be IC colleagues, a Senior Nurse and Infection Control. Sometimes Microbiology would attend. The Lead Nurse would want to be aware of it, and may attend, and maybe the Chief Nurse, although they are more visible at IMTs than at PAGs. The PAG is a smaller group because, at that point, the concerns do not need to be escalated. We would collectively try to find a solution at these meetings. If there were two or three patients with the same infection or an increased infection, or IC were worried about something, they would normally call a PAG. I would attend from the nursing side, if available, and then we would put actions in place and review these if there were any more infections.

28. If there were still an increase in infections, and if the issues were not able to be resolved at the PAG stage, then at that point it would be escalated to an IMT meeting. In the last five years, attending IMT meetings was a large part of my day-to-day role. I still attend IMT meetings when required. My role at the IMT is to represent the nursing side. The consultant or a medic attends from the medical side. They enquire how a patient, or the patient group, is, as well as asking about staffing and whether I have any concerns. I will also be asked whether I want to escalate or raise anything at the time. If we are planning deep cleans or Hydrogen Peroxide Vapour (HPV) cleaning, then I would coordinate those processes, ensuring there are adequate numbers of staff and considering whether we need to move patients to allow this to happen. I need to have an overview of what is happening on the ward at that time and be involved in decisions affecting the ward, so that is generally why I am invited to the IMTs.

General views on the opening of RHC, QEUH and Schiehallion Unit - 2015

29. When the RHC opened in 2015 I was a Senior Staff Nurse. I carried out some visits and thought it looked impressive. Then when we moved in and we encountered some challenges because of the different shaped ward, which was curved. We were used to the Schiehallion in Yorkhill being a straight corridor with the rooms off it, which made it easier to see all of the patient cubicles. Due to the difference in the shape of the ward, we had to use a different approach to the way we nursed. We initially found the change challenging but, as time went on everyone settled and got used to it.

Description of Ward 2A from June 2015 – September 2018

30. Ward 2A is on level 2 of the RHC. It is a 24-bedded unit, with two entrances. The hospital was a lot larger than we were used to in Yorkhill, as was the ward. Ward 2A has the Teenage Cancer Trust (TCT) unit, which has a social space including a kitchen and activity area for our teenage patients. The TCT was part of Ward 2A when the hospital opened in 2015. When we were back in the old Yorkhill, the TCT was on the seventh floor out with the ward, therefore, moving to the new hospital was an improvement for the teenagers.
31. We were told that the facilities in the new hospital would be “like-for-like” when we moved, but having no staff room was a bit disappointing. The children were getting better facilities, as were the parents, so that felt good enough.
32. There were eight BMT rooms which meant we could look after more BMT patients, so that was better. The scanners were better, as was the other equipment we would use. If you put all these factors together, along with the location of the hospital, everything being next to the Queen Elizabeth University Hospital (QEUH), I can understand why it would be described as “state of the art”. The old hospital Yorkhill was also getting a bit tired; it was an older building.

Standard Operating Procedures (SOPs)

33. We have protocols which only apply to wards 2A and 2B. There are also SOPs which are followed, many of which apply only to haematology-oncology. These are accessed through the Q-Pulse system and are used in situations such as setting up a BMT room or reading the fridge temperatures in our unit. We provide the necessary information to the Unit Quality Manager and she generates it into a SOP.
34. As a team, the senior nurses and the Nurse Educator developed all of the SOPs for the new Metaiodobenzylguanidine (MIBG) suite which is where we deliver high-dose radiation to patients. This was a new service, following the major refurbishment of Ward 2A. Other areas would not use these SOPs because they are quite specific to our area.
35. Local Schiehallion protocols in relation to antibiotic use can be accessed via NHS GGC Staffnet. If the Schiehallion patients are moved between wards, or are in the Emergency Department, the medics in Clinical Decisions Unit (CDU) can refer to these protocols, However, there are some SOPs that are hospital-wide, for example, IC protocols in relation to nursing patients with diarrhoea and vomiting.
36. Other protocols that we use are Chemotherapy protocols.. For example, the treatment for a patient with Leukaemia is administered in different phases. Induction, which is the first phase of treatment, lasts for five weeks. When induction is completed they move on to the next phase. All treatments are guided by the appropriate protocol.
37. The SOPs are reviewed every two years, which is noted in the footer of the SOP. These can be accessed via Q-Pulse. The Unit Quality Manager would email them to all the staff in the wider group for comment.

Paediatric Early Warning Scoring (PEWS)

38. The Paediatric Early Warning Scoring (PEWS) chart is a tool we use for all patients and is used as an early indicator for the deteriorating patient. We carry out peer audits to ensure the correct escalation process is followed. This would include: ensuring that the correct information is recorded, confirming whether the nurse in charge was contacted; confirming whether the patient needed a medical review; and ensuring the correct score is recorded for the patient. For example, a patient may score one for having a temperature and another one for low blood pressure and, as part of your audit, you are checking that the clinical scores have been recorded correctly.
39. All of this information is submitted onto Care Assurance, which is a shared database that can be accessed by the ward senior nurses. The Lead Nurse and Chief nurse access that database and escalate it accordingly.

Enhanced Supervision

40. Once a month the unit is currently undergoing enhanced supervision and external hand hygiene audits. It is IC who carry this out. Enhanced supervision has been in place since May 2017, which is when we had the increased line infections, in Ward 2A. It would be myself, as the designated SCN, who coordinates this, or one of the other senior nurses from the ward if I am not available. We have representation from Facilities, Estates and IC. One of the Lead Nurses would also attend. Generally, five people, maybe six are in attendance. IC carry out some checks in the ward and, if there are any causes for concern, we would all work together and formulate an action plan to rectify it, which is ultimately returned to IC. For example, if they find dust on a drip stand, that would be a nursing action because a drip stand is nursing equipment. We would take that drip stand out of use, clean it, check it and then put it back in use. If IC found dust or something on a shower head, that would be a matter for Facilities. They would arrange for one of the domestics to clean that or replace the shower head, or whatever they had to do before it's put back in action. If there were a tear on the floor, that would be a matter for Estates colleagues. We would close the room, give them access and they

would organise the repair. Sometimes they will look at the equipment we use for monitoring blood sugars. If it required to be cleaned, we would arrange for this to be cleaned and put it back to use. Each department would document the actions carried out by them on the action plan. This is then returned to IC with the SMTs copied in.

41. IC would previously have visited patients' rooms, but they now focus on reviewing empty rooms, ready to receive patients. That process was a result of COVID and trying to reduce the footfall in the rooms, and it has stayed that way. I think it is better, because it is less invasive for patients who may be unwell in their rooms. While we all appreciate the importance of ensuring that the ward is safe from an IC perspective, I am aware that enhanced supervision has led to added pressure on staff, increasing workloads, due to the additional cleaning and tasks that we do, which can sometimes demotivate staff.

42. Prior to the enhanced supervision taking place, Stefan Morton, a hand hygiene specialist from IC, attends the unit to carry out hand hygiene checks. He then completes a local audit which include watching members of our staff washing their hands. This would be scored, and he would let us know any areas for improvement. These results would be shared with the staff and attached to the enhanced supervision results. We would also be informed if we were performing well in any areas, which would also be shared with staff. I believe that these added measures give assurance to the patients and families that we are doing extra checks and being as vigilant as we can be. We always try to carry out these processes in the least invasive manner possible for the patients.

Patients boarded on other wards

43. If a patient is transferred out with the Schiehallion Ward, for example, if there are no beds available, the same protocols apply to the patient even though they are being treated in other wards. We obviously would not move the chemotherapy patients or transplant patients. If a patient came in with a fever or was about to commence antibiotics, they could appropriately be nursed in

another area, because the nurses would have the necessary skills. The patient would continue to be discussed at the nine o'clock handover with the medics, because they would be on our haematology oncology patient list. They would be discussed at half past 12 at the handover, following the ward round. They would be reviewed by Haematology/Oncology medical staff each day. There is continuity of care in respect of our medical staff for these patients. The only difference is that the nursing staff would not review them because it would be the nursing staff in that ward who would be looking after them, as we would be looking after the patients in our ward. If they needed something like a line dressing, or something that the nurses in the other wards would not be happy to do, we would usually send a nurse from the Schiehallion Ward to do it, or an Advanced Nurse Practitioner.

44. There would also be patient movement if there were pressures on bed numbers. If the ward was full, we would prioritise taking the BMT patients and the patients requiring chemotherapy because we have the nurse skill set to deliver care. We would follow the patient pathway if a patient had a temperature when they arrived, and could be treated in another ward, if our ward was already full.
45. The patient pathway means that a patient would transfer to another ward with the priority given to patients needing chemotherapy or a BMT. We would ensure as far as possible the level of care the patients received did not change. Those patients who had to get moved would not require a specialist nurse. We follow a patient pathway for COVID, so patients would go to the CDU. If they are lateral flow-negative, they can be admitted directly to the ward. Throughout COVID, that pathway has changed. The patient pathway, back then, would have been the same, although we checked PCR screening for COVID. If a child presents with a temperature, they would attend CDU and receive their first dose of antibiotics in CDU, before transferring up to Ward 2A. If a patient was receiving chemotherapy, the pathway is that they would arrive at Schiehallion Day Care, which is ward 2B, and chemotherapy would be

commenced and when a bed space was available, the patient would transfer through to the ward.

Issues in the new hospital

Temperature of rooms

46. When we were in Ward 2A before the move to Ward 6A, we received some complaints from families and staff that the ward was too warm and humid. These complaints were escalated to Estates who carried out checks, but everything came back as normal. If families were complaining, we would have submitted a Datix in order to have it raised as a concern at the governance group. This is no longer an issue on Ward 2A.

Proximity of sewage works

47. Families and staff complained about the smells from the sewage works before we moved from Ward 2A to Ward 6A. I would raise an FM job with Estates colleagues, explaining that there was a smell in the ward, receive the FM number, email Estates, copy in the Lead Nurse and Service Manager and I would ask for it to be double-checked. The FM system will generate a job number. We would generally log that, and then if you are following up at the safety huddle, you would be asked for the FM job number.
48. I am aware that chemotherapy patients were upset by the smell. When I spoke to one father, he told me that his daughter was having chemotherapy on the ward and the smell was making her nausea worse. I escalated the situation and reported it. Estates arrived at the ward, looked through the vents and double-checked the plant room for anything that could be causing the smell, but did not find anything. This is still an issue in the newly refurbished Ward 2A, probably more so over the summer months. The smell was reported on FM at some point last summer. I remember emailing Estates colleagues, and this was checked. I am not sure why, but it is the same smell as you smell

outside when you park your car before walking into the hospital. Generally, you can smell on the ward a kind of sewage-like smell. There have been no complaints this year.

Cladding

49. I recall the cladding had to be replaced when we were in Ward 6A. I have been shown two documents: **(A38845623 – Core Brief dated 12 July 2017 – Bundle 5 – Page 67 and A38845660 – Core Brief dated 10 August 2017 – Bundle 5 – Page 73)** which are in relation to the work being carried out on the cladding. I do not remember seeing these specific core briefs. I was aware about Grenfell, but until I started getting the communications that we were to advise the patients not to use the normal entrance, I probably was not paying much attention. I think Dr Inkster was worried because there were skips at the front of the building and that is where they were pulling the panelling off and her concern was that there may have been an Aspergillus risk. There were face-to-face communications with the families, asking them to use another door, but it took one or two weeks for the follow-up written communications to be issued. I know that because I forwarded the email to follow it up. When we did ask the patients and families to use the other entrance, they gave feedback that they could not get through the doors for the volume of smokers and cigarette smoke that they were having to pass. I cannot remember what the resolution for that was or what happened.

Flooding

50. Occasionally, we experienced flooding from some of the showers in Ward 2A. Parents would tell me that the shower was blocked or had overflowed, and these issues would have been raised with Estates. I believe it was raised at IMTs since I recall one occasion where two Estates members accompanied me back to the ward to double-check a few rooms. On another occasion I reported a concern about a shower to FM and raised it at an IMT meeting. I would have stated that the families' complaints were the reason for this, but I

cannot recall which patients were affected. The wet rooms, where the showers were, were sometimes obviously not draining. Then the floor would be wet, and we would probably then need to move the patient into another room to allow Estates access to look at the drain to find out why that was happening. It did happen a few times and, again, it would have been put on the FM system. However, there have not been any problems since we returned to the refurbished Ward 2A.

Infections

Hospital Acquired Infections

51. If a patient comes into the hospital and they then became ill with an infection more than 48 hours after being admitted, this would be classed as a hospital acquired infection. I recall this being discussed at an IMT meeting.

Central lines and the risk of infection

52. As our patient group is immunocompromised, this means that they are more vulnerable to infection. This is because some of the drugs we administer lowers their immune system, meaning they are more susceptible to infections. BMT patients are even more vulnerable due to the high-dose chemotherapy which they receive. Most of these children are in-patients for at least 4 to 6 weeks.
53. The measures we take to ensure children do not get infections include: always adhering to good hand hygiene standards; extra cleaning of the environment; and ensuring that central lines and cannulas are well cared for. We also ensure that we use the correct PPE at all times. All these additional steps are taken to reduce infection in this vulnerable patient group.
54. When staff are preparing a child to go to theatre, they always ensure that the patient is clean, i.e. that they have had a shower and their skin was clean. If it

is a baby that's an in-patient, we would make sure that regular nappy care is carried out.

55. There are, however, bacteria that live on your skin and your gut. If you have a low immune system, they can sometimes get into your bloodstream and cause infections. Although we always try to prevent patients from getting infections, this is not always possible due to the vulnerability of the patient group.
56. Often the children in Schiehallion receive a large volume of intravenous (IV) drugs and also IV chemotherapy which require a process to ensure safe administration. There are various ways to do this. One way is to use peripheral cannulas, which is a plastic tube, which is inserted into the child's vein. These are not used often because they only last a couple of days.
57. Central lines are a plastic line that is inserted in theatre. They generally have two lumens (access points) which allow blood to be removed, blood products and chemotherapy to be delivered and provide direct access if the child becomes ill and we require to deliver drugs or fluids quickly.
58. Another type of central line is a port-a-cath. These are also inserted in theatre and are situated under the skin. In order to access it you put a gripper needle in. This means that when the gripper needles are taken out of the skin, there is nothing over the skin so your child could then be bathed without the port getting wet.
59. Any foreign body whether it be a central line, a PICC (Peripherally Inserted Central Catheter) line, a port-a-cath, a catheter, that all comes with additional risk of infection. Most of our patient group have a central line or a port-a-cath because of chemotherapy administration.
60. In choosing whether to use a central line or port-a-cath, it is very patient-centred. If the patient is a toddler who going to be in the bath often, or trying to pull at their line, it may be safer to insert a port-a-cath, because the gripper needle is removed between treatments. Some of the teenagers prefer a port-

a-cath because they attend school in between treatments and they do not want to have a visible line in their chest. There are a whole variety of things to be considered: the type of treatment; when you would need access to the line; what medications they are going to get; whether they are at risk; whether they might pull it out; and whether they are going to be taking a bath. We consider quite a lot of things and it's usually a Consultant's decision, but obviously if nursing colleagues have concerns, we could discuss that with the patient's consultant.

61. Another option is a PICC line. This line is not as invasive, although usually inserted in theatre. A PICC line is usually in your arm and goes into the body that way. This is a long-term device, but not as long-term as some other central lines.
62. Then there is the peripheral cannula, which should only last 72 hours. Sometimes we have them in longer because our patient group does not have good intravenous access, and that is because we need to use their veins so much. It's very patient specific.

Central Line care

63. We try to mitigate infections in these lines by doing several things. We ensure that the child is kept clean and that they have the appropriate dressings, and we ensure that the line care is recorded on a Care and Maintenance bundle every day, which provides evidence of good line care. Something that is now used are disinfectant caps. This is a little disinfecting cap on the end of the line, which is designed to keep the end of the line disinfected. When this cap is removed it now means that the end of the central line is clean for access.
64. If the line is not in use, it has a cap on it. These caps were introduced a couple of years ago. They came as a recommendation from our quality improvement group, which I will talk about later, as one of the ways of trying to reduce line infections. At one point I recall that there may have been concerns around these caps and the drying time for them, but I cannot remember the detail. I

think the disinfecting caps, along with ensuring the line dressings were changed every 7 days, were introduced as an additional measure for mitigating the risks for line infections.

65. If the child is going to theatre for the insertion of a central line, we make sure that they have had the appropriate shower and skin cleaning beforehand. At one point we were using a special cleaning agent that was recommended by the quality improvement group as a preparation for the skin before putting central lines in. I cannot remember the name of it, but you cleaned the chest with it. However, IC advised that we stop doing that, as I think there may have been a risk associated with it, so we just went back to using soap and water.
66. If there were a line infection on the ward, one of the things that might happen is a practice developer would monitor nursing practice. I did speak about it at the time to the Chief Nurse. She gave me added assurance that nursing staff were demonstrating good practice, which is why she was keen to monitor, to demonstrate that we had good practice and to give added assurance. She noted that the nurses on the floor might be a bit more sensitive to it. It is just trying to strike a balance.
67. I do not think the infections stopped until we moved out of Ward 2A. Something that we have kept in place are the Bio Patches, which are a chlorohexidine impregnated dressings. We used to change the line dressings after 48 hours, we only now do it every 7 days so you are not disturbing the skin unnecessarily. This was recommended best practice from the CLABSI group.

Protocols around suspected line infections

68. Children may spike temperatures and become unwell after chemotherapy or when they have a low immune system (neutropenic). That is why we closely monitor patient observations using the PEWS chart. We would generally do observations every four hours, or more frequently if required. If the patient

scores on the PEWS chart, you refer to the chart and it will tell you what the correct escalation is, for example whether you should report to the nurse in charge, or report to a medic. Some of the drugs that we deliver to our BMT patients require close monitoring and therefore more frequent observations.

69. If a child spikes a temperature and is neutropenic, we have a SOP that we follow and standard antibiotics that we give the child, namely: Tazocin and Gentamicin. These are broad-spectrum antibiotics which would cover everything. If the patient continues to be unwell, we look for a source and working closely with Microbiology, to try to find the cause and solution. Microbiology would then recommend the antibiotics for each patient.
70. We then take bloods to send for culture and send them to microbiology. We receive the results from microbiology and these would show if there were any bacteria and what the specific type was. These results would also show if there was anything else present that needed to be treated.
71. If a patient's clinical condition does not improve over a period of time, we ask microbiology for advice and there would then be a discussion between the medical team and Microbiology whether another type of antibiotic could be used, or if the treatment plan in general should be altered.
72. If these infections are not treated quickly, the risks to the patient can be severe. Children who are immunocompromised and have a central line in-situ are at risk of becoming seriously unwell. This could result in the patient having to have their line removed and or having to transfer to Intensive Care for more invasive treatment.
73. Chemotherapy cannot be administered if a patient becomes unwell with an infection and therefore treatment can be delayed.
74. We would generally find out if one of our patients had an infection when we were informed by Microbiology and IC. Microbiology would advise us what

antibiotics should be used and if the central line could remain in place. These were usually things like, gram negative and gram positive infections.

Monitoring infections and infection prevention and control

Meetings with Microbiology and Infection Control

75. We work closely with Microbiology and a representative from Microbiology is contactable on a daily basis. There is a departmental meeting on a Friday, which the Microbiologists attend. They would also explain the individual patient plans and which treatment they would recommend for particular patients. Microbiology also receive a clinical update about patients and their clinical presentation.
76. There is an IC meeting the first week of the month. The meetings are on Tuesdays and are led by the Chief Nurse and IC. The purpose of these meetings is for IC to update on anything from the IC perspective, for example, any wards that have had any outbreaks, themes of the month, winter planning, immunisations. They will then go round each individual person and ask if anybody has any IC issues to raise, or anything they want to escalate or discuss. I know this is my opportunity to raise any issues. If I have any urgent IC issues, I can contact IC at any time.

Infection Prevention and Control Procedures

77. With regard to my involvement with IC procedures and governance on the ward, I would ensure that the IC procedures are kept up to date, like the local policies, the hand hygiene and the SICP audits. We closely follow the IC SOP for patient placement. If there are concerns, such as a patient with a particular virus we check with IC about the safety of treating that patient in a particular room.

78. If we have any concerns regarding infections generally, we contact IC. If, however, it is over a weekend, or out with working hours, we check with the on-call Microbiologists just to make sure that we are placing the patients in the most suitable and secure room.
79. Additionally, if there are any patients in source isolation, I check that the appropriate care plan is in place and that everything on this plan has been completed. Along with this, I ensure that the appropriate documentation is in place. If I am not available to do this, I would deputise this task and one of my senior staff will take my place.

Prophylactic Medication

80. Given that many of our patients have a lowered immune system and are extremely vulnerable to infection, they are prescribed prophylactic medication. A common one we give to children is Co-trimoxazole, which is a prophylactic antibiotic sometimes known as Septrin. The children get that twice a week. That prevents against a type of chest pneumonia. Some of the children receive AmBisome, which is a prophylactic antifungal, and they would receive as part of their treatment plan. Amphotericin is also an anti-fungal. It would be normal practice to give that to some children to prevent against any fungal infections. Some of the children get Aciclovir which is preventative against some viruses. This is normal for this patient group. It can be oral or it can be administered by IV. Not all children get this; it depends which protocol the children are on.
81. The transplant patients would receive Aciclovir, an antiviral drug, to prevent them getting any viruses. It would be prescribed at a certain part of their treatment and is usually when they are starting their conditioning. Another prophylactic drug is called defibrotide that can prevent renal occlusive disease of the liver can be sometimes used. Generally, as part of their schedule, BMT patients get prophylactic medication. We follow a transplant schedule which states the drugs and route of administration. There are lots of drugs prescribed

prophylactically to prevent the patient group from becoming unwell. The above drugs would be planned prophylactics.

82. Another prophylactic, Ciprofloxacin was prescribed to some patients. This was a prophylaxis that is not generally prescribed routinely, although I do know that it has been prescribed to some patients with down syndrome before. On this occasion, the recommendation to administer this prophylactic came from the IMT and was microbiology led. This was an additional measure for the patient group that the patients generally would not be prescribed routinely, but it was decided case-by-case.
83. It would be the clinician's decision as to whether their patient group would receive ciprofloxacin or indeed prophylactics in general. Most children were on them. On one occasion a concern was raised at an IMT meeting that some of the children were not tolerating ciprofloxacin, which gave some of them gastric upset. Loose stools and vomiting are the only side effects I can recall the patients experiencing, after being administered these drugs.
84. Some patients were on Ciprofloxacin for quite a few months, I recall them being discussed at the IMT. At some point it was changed and the patients received TauroLock, which is something patients continue to receive. All the patients on Ward 2A receive Taurolock and it is now standard practice unless a child has an allergy. This is an antibiotic line lock and it is an extra measure to prevent line infections. That was a recommendation which came from the IMTs, in response to increased line infections, Dr Murphy led on that. We have a SOP for the use of TauroLock administration.

Communication around prophylactic medication

85. I recall that some families raised concerns about their children receiving additional medication which they would not be getting if they were being treated in any other hospital. That would probably be in relation to the ciprofloxacin and I think we were in Ward 6A at the time those concerns were

raised, but I can't really remember timeframes. I recall that the medics and the consultants were updating families. Whoever prescribes the prophylactic should be updating the families and the patients would be reviewed regularly.

86. I am not aware that the patients were being prescribed more prophylactic medication than patients in other hospitals. The only difference would be oral Ciprofloxacin, which I seem to recall was an IC recommendation.

Chronology of events: Ward 2A/2B RHC

Issues relating to the water supply: 2015- September 2018

CLABSI Group

87. There was a period of time in Ward 2A when there was an increase in central line infections and I think that may have been the reason that the IMT was created, along with the Quality Improvement Team (CLABSI). I think this may have been around March 2018; it was a year we had really bad snow. IC were concerned about the type of infections from the patients in Ward 2A before we moved to Ward 6A. This was because they were waterborne infections and one of the hypotheses discussed at the IMT was whether these central line infections were coming from the water, although I do not think it was ever confirmed.
88. When we realised that there was an increase in central line infections in the ward, there was a Central Line Associated Blood Stream Infections (CLABSI) working group set up, maybe in February 2018. It was a quality improvement project, set up by Tim Bradnock (a surgeon) and attended by him, the Senior Charge Nurse from day care, IC, tissue viability team and nurse educators. Our objective was to reduce the central line infections in patients on the ward. We were looking at practices and benchmarking ourselves against other centres, to see what we could improve. This process of continuous

improvement has continued. We now have a low level of central line infections and, through this group, this level continues. We are now one of the gold standard providers for line care within this specialised patient group.

Improvements in practice

89. We benchmarked against Cincinnati Hospital in America and Jen Rodgers carried out a significant amount of work with them. They are gold standard for central line care, so we adapted some of their practice.

90. Members of staff are always focused on what is best for the patients. Groups like the CLABSI group focus on best practice and are not uncommon. Everyone involved was working together to see what we could improve and then feedback any findings or recommendations. I do not think there was any negative feeling amongst the ward staff, as we were trying to improve patient care, and that is what nursing is all about; making improvements and doing the best for the patients.

Concerns about infections and potential link to the environment

91. Although I did not have any specific concerns around the infections or locations of the infections when the hospital first opened, I did become concerned when the volume of infections caused Microbiology to be concerned. The results that we were receiving showed that the bacteria or infections that were present in patients were ones which are normally found in water. We had a lot of children with these infections and this was worrying. We were getting infections like Pseudomonas and Stenotrophomonas, which were infections that we had heard of before and maybe seen in Yorkhill, but not in the numbers being reported in the RHC. Cupriavidus was another infection which was found and IC said that these were all infections which are usually found in water and soil. I have never been involved in anything like this incident before and not on this scale in terms of the presence of Estates, Facilities, cleaning and additional measures that were put in place.

92. IC were concerned about the type of infections, in that they were waterborne, but also the number of children that were having the same infections all at one time. I was concerned because they were concerned and they were the specialists in that area. Staff also did raise concerns about the patients and the types of infections being reported. We had experienced them before but not in the numbers at this time. However, our patient group do get infections and it was not clear if there was a definite link with the environment.
93. Similarly, when we first moved into the new hospital in 2015, I did not have any immediate worries about the water supply. Due to the increase in the central line infections, we were testing the water more frequently and it was during this additional testing that some bacteria were discovered in the water. That led to the IMT being set up, and additional measures being put in place to an extent that I had not seen before.

Concerns about the environment

94. There were a few times we thought the drains may be posing a risk to patients. One of the families had alerted me one morning that there was black gunge coming from one of the trough sinks in one of the transplant rooms. I asked Estates to have a look at it. I do not think they could find anything. There was also a trough sink in the drug preparation room which was bubbling at that point. Teresa Inkster investigated this and, when the ward was refurbished, the trough sinks were removed, and the one in the drug preparation room was replaced with a hand hygiene sink.

Infection Control measures and impact

95. The issues with the infections and the bacteria in the water were being discussed at the IMT's meetings and also with Susie Dodd from IC. I recall that one night (I think in March 2018) she called the nurse-in-charge phone and

told me that something had been found in the water and asked me to advise all of the families not to use the water until further instruction. It must have been a Thursday or a Friday night because I went round and told all the families and handed them two little bottles of water. Over the weekend they were advised to use wipes to wash and use bottled water for drinking and teeth brushing. I cannot recall how long this went on for, but that was probably the start of some of the concerns.

96. The instruction not to use the water and to use bottled water and wipes came from a phone call from IC. As a general rule, if anybody from IC phoned me and gave me an instruction, I would have carried it out, and then, generally, there would be a follow-up meeting. It was not unusual that, if something was urgent, we would get a phone call from IC.
97. There were occasions when there were issues, or on-going work, with the water supply that it would have to be turned off. When this happened, we had to provide the families with bottled water and skin wipes and advise patients and their families not to use the water at all. This was due to advice from our colleagues in Facilities and IC. It happened more than once, sometimes for 4 hours, then sometimes for 24 hours. Having no water in an area where we were cleaning our hands, where patients needed to brush their teeth and clean themselves, and where we were carrying out nappy care, caused quite a lot of disruption. Patients had to wash themselves with moist skin wipes and bottled water. I recall on one occasion pouring a two-litre bottle of water over one of the surgeon's hands while he washed his hands.
98. There was one weekend when we were advised to tell the families not to use the water all weekend. This is when we were given the portable sinks so that the families had access to washing facilities. I think this was while the water tanks were being dosed with chlorine dioxide. I cannot remember having any reactions from patients or families, but it was probably quite odd for them. They would not expect to have to use a foot pump portable sink in hospital.

Whilst the tanks were getting cleaned, the water went off, so it would have had an impact on the patients at that point.

99. It was probably quite a prolonged period that the families and children were advised not to use the water. Staff were obviously really concerned for their patients because when you become a nurse, handwashing and keeping children clean especially when they have central lines in is a huge part of the role. To go from working in this way to then not using the water, it was a change in practice. Staff probably did have some concerns that we were looking after children in this environment. Using the portable sinks and washing our hands in bottled water was unusual practice for staff.
100. During the period where we had the portable sinks, we added another stage to our hand hygiene routine that included Sterilium 90-second gel. We used this after we washed our hands. It would not have been normal practice to add in gel after washing our hands, but it was brought in as a recommendation from IC when we were using bottled water.
101. The additional hand hygiene audits and the introduction of enhanced supervision, along with all the other audits, had an impact on the staff. It put them under more pressure. They were trying to do their jobs and were being subjected to added checks and scrutiny. I can understand why staff were stressed. I do not think it impacted on patient safety. If anything, it was the opposite. We were continually making sure that the environment was clean and safe, and carrying out all these additional checks. I do think it impacted on our relationships with the families. We would be in their rooms checking the vents or looking at the sinks and the families were wanting to chat about other things.
102. During all of this we were thinking about what the best thing was for our patients. I would attend an IMT, and then await further instructions, and then make sure the instructions were carried out. Having portable sinks in your clinical environment and then asking the families to use bottled water for

washing is probably quite unheard of, but at the time we thought that was the safest thing to do for the patients.

103. Although I did not personally have any worries about the water system, it is clear that Microbiologists and IC did, which would cause me concern. Both Teresa and Susie always seemed very concerned. The types of bacteria and the increased number of children with infections caused the concern and it was always apparent that they were acting in the best interests of our patient group.

Closure of Rooms

104. There were periods of time during this where we closed rooms. This happened if Estates needed access, if IC recommended it, or if I discovered a day-to-day issue, such as a leaking toilet or a blocked sink which required to be fixed. I would close the room and raise the issue if it was an Estates issue, such as a leaking toilet. I would immediately close a room if IC called and asked me to do so, because they needed to do checks or they had concerns. After moving the patient, we would wait for instructions.
105. The patient could not be in the room during the work which was being done to change taps and shower heads and replace drains. At that point facilities we were also conducting drain cleaning with a brush so patients had to be moved out because there was a spray risk. When this work was being carried out, or for some day-to-day issues which required to be fixed, patients had to be moved. Families may have had to move rooms on a number of occasions, I can understand why that would not have been ideal for the patient if they had just settled into a room and then had to leave for any reason. I do recall, though, that the families were actually fine with it, provided you explained why you had to move them and that it was for safety reasons or the rooms were being checked. It must, however, have been quite stressful for the families who may have been asked to move rooms to allow access for one thing and then we were back asking them to move again.

106. Now we would only ask the families to move rooms if there are more day-to-day issues, like a blocked toilet, a blocked sink or if Estates needed access to the room, for example, to clean the vents. The room changes would not be as frequent as it was in 2018.
107. We still carry out drain cleaning, but now the patients can be in their rooms because it is a solution that gets poured down the sink.

Source Isolation and extra cleaning

108. I am familiar with the use of source isolation; this is implemented to stop the spread of infection and is used where necessary within our patient group. It is difficult because haematology/oncology patients have a lowered immune system, making them more prone to infection. I do not recall any increase in patients being placed in source isolation.
109. When a patient is in source isolation, we carry out extra cleaning which is a chlorine disinfectant called Antichlor. This is completed twice daily. At the IMT meeting there were also discussions that there was no drain cleaning program in place, so a separate drain cleaning process was also introduced on a weekly basis. I do not know what it is called but that still continues now. On a Monday, Facilities colleagues come in and clean the drain. They dissolve the solvent in a couple of litres of water and pour this into every drain in the ward.
110. In order to accommodate this extra cleaning on the ward (HPV), this would result in the relocation of the children and families. This affected the entire ward. I recall that it happened twice in Ward 2A prior to the move to Ward 6A. This resulted in an increased workload, mostly for nursing auxiliaries, as they were supporting the nursing team. They would be relocating the patient, moving the patient's belongings, emptying the room, moving the furniture and further cleaning. It takes you away from patient care. If I was coordinating that, I am not looking after the patients; I am on the floor coordinating room moves

with my healthcare support workers. For example, I remember one Friday night I was trying to coordinate the HPV cleaning, so that the Healthcare Support worker could still give out the meals and make sure the children were fed, all whilst I was still running a full ward, administering chemotherapy, intravenous antibiotics and supporting the patients and their families.

111. The HPV cleaning continues to be carried out every six months. It was last completed in September. It is much easier to co-ordinate now as they use a hand spray, rather than machines.

IMTs and Hypotheses

112. When the problems were ongoing in the ward, they were exceptional circumstances and I have not experienced anything like this before, nor have I heard of similar issues or levels of infection elsewhere. The issues were continuous: various people needed access to the ward; we were going to continual meetings; and we were updating problem after problem. Nothing seemed to get resolved. Usually, a ward has its normal issues like being short-staffed or maybe a blocked toilet, but they always get resolved.
113. I was attending IMT meetings and there were hypotheses being discussed. They would come from the IC and IMT Chair. One of the hypotheses from the March 2018 IMT was that patients might have been at risk from infection or exposure to pathogens through the water. The hypothesis was never proven. The water was tested and it was recommended as safe which gave me the reassurance I needed. The filters were put on the taps and they remain on at present. We continue to monitor our line infections every month and that data is good. The good results reflect that the measures which we put in place are working.
114. It did take us a while to return to drinking the tap water. From the issues arising to receiving assurances that the water was safe took a while, because I think we continued to use bottled water. I cannot really remember the time

frame, but we did not go back to using jugs of water for a while. We were offering bottled water for drinking and sterile water for the transplant patients for a number of months after all of the additional measures were put in place.

115. I do not believe the precise site of the water problems in Ward 2A was ever identified. We were never certain of the origin of the central line infections. I believe that some water tests revealed the presence of bacteria, which is why we added chlorine dosing and tap filters as additional control measures, but I am not sure if this was ever verified. All of them were hypotheses. Then when we moved to Ward 6A, Estates realised that there were other issues with the ward and it was decided that there was going to be an upgrade of the ventilation. I do not know who decided that, but it resulted in the initial four weeks that we were decanted turning into years.

Problem Assessment Groups (PAG) and Incident Management Team (IMT)

Meetings - 2017/2018

116. Around the time that I came into the role of Senior Charge Nurse in 2017, I began to be involved in PAGs and IMTs. As I have said above at paragraph 27, a PAG takes place if there are one or two infections, in which case we will try to resolve the issue locally. If there are more infections, then we hold an IMT.
117. In the IMTs naturally there was disagreement now and again. I do not think there was ever anything major that impacted decisions. Everybody was around the table, so if anybody wanted to speak, they had the opportunity to do so.

PAG – 3 March 2017

(A37988938 – PAG Minutes – Ward 2A 2B RHC – Elizabethkingia miricola – Bundle 2 – Page 16)

118. The first PAG I recall attending in relation to bacteria related to the water was in March 2017. Leading up to a PAG in March 2017, I can remember going to other PAGs because they were the smaller meetings, but I cannot remember what they were about.
119. I attended a PAG on 3 March 2017, which was called to discuss the increase of positive blood cultures in our patients. This specific organism we were discussing was called Elizabethkingia miricola. I have heard of this before; it is a bacterium in a blood culture and I believe it is normally found in water. Any patient suffering from this would need antibiotics.
120. I do not really remember much about the meeting, but I do recall that Jean Kirkwood, who was the Senior Charge Nurse, was concerned about the humidity and the heat of the ward. I am not sure exactly what happened, but I imagine that she would have escalated her concerns.
121. The minute says that "IPCT would sample water and they would get it tested". I do not know anything about this.

Water IMTs – 2018

122. I was then involved in the IMTs during March 2018 when there was an increase in infections in Ward 2A. I have been to so many meetings over the last few years that I cannot recall the ones that I attended.

IMT – 2 March 2018

(A36690451 – Water Incident Ward 2A RHC IMT Minutes 02.03.2018 – Bundle 1 – Page 54)

123. An IMT was called to discuss water contamination in Ward 2A. I can see that from the minute that I was present, but I cannot recall the detail of that meeting.

IMT – 9 March 2018

(A36690458- Water Incident Ward 2A RHC IMT Minutes 09.03.2018 – Bundle 1 – Page 60)

124. The next meeting I attended was on 9 March 2018. This was called as a follow-up to the previous IMT meeting. The minutes state that I was to speak with parents about the concerns they may have around the water supply when the taps were being replaced. I do not recall the details of this meeting but, as it is stated in the minutes that I should speak to the parents, I would have carried out that action. I do not recall that there were any issues with staff morale at this time.

IMT – 12 March 2018

(A36690457- Water Incident Ward 2A RHC IMT Minutes 12.03.2018 – Bundle 1- Page 63)

125. I attended a meeting on 12 March 2018. I can see that we discussed the fact that *Stenotrophomonas* was showing in the results of the tests that were taken from the taps in Ward 2A. The minute noted that Professor Gibson and I updated the patients and families. I cannot remember giving families feedback about this specific meeting. I can remember going into the patients' rooms and giving updates generally, but I cannot differentiate the occasions as it happened so often.

126. Generally, when I give updates to families it will be some written information. At the start of all the IMTs we maybe did not give out written communications but that was something we improved on. I cannot remember if I had written information for this particular incident. Any information I did give out verbally would have been followed up with a written statement from the Communications team. I would be advised what to say and I would only have said what the recommendations from the meeting would have been, but I cannot recall.

IMT – 23 March 2018

(A36690544 - Water Incident Ward 2A RHC IMT Minutes 23.03.2018 – Bundle 1 – Page 81)

127. I can see from the minutes that the next meeting I was involved with was on 23 March 2018. I do not remember this specific meeting but I can see that I am mentioned in the minutes and I asked if we could get filters for the tap in the bath on Ward 2A but I was informed that there was nothing available.
128. I am not sure if it was at this meeting, but it was decided that, as there was no filter, this bath should not be used and it would be removed. Then I asked if we could get that bathroom made into a treatment room. Further down the line this did happen.
129. I do not recall telling the families and staff about the bath not being used but it would have affected the families. The consequence of this was that we could not offer a bath for patients unless it was a baby bath, otherwise they would only be able to have a shower.

IMT – 6 June 2018

(A36690461 – IMT Water Incident Ward 2A RHC 06.06.2018 – Bundle 1 - Page 99)

130. The next meeting I attended was on 6 June. I do not recall if it was at this meeting, but I do recall a meeting when it was suggested that nursing staff were putting chemotherapy down the sink. This would not be possible as chemotherapy is infused into the patient and there is never any excess. We are strict with PPE and the disposal of cytotoxic waste. It is administered to the patient, and then the bag or syringe is disposed of in a cytotoxic waste bin. Around this time, we had an issue where there was black sludge coming up from the sinks and the sink in the drug preparation room had bubbly foam coming up. This was inspected by Dr Inkster.

131. The minute notes that a parent of a patient had informed me that they were scared to use their bath using water from the tap. I do not recall this but a parent did express concerns to me about the water from the shower. They were instead invited to use the shower facilities at Marion's House, which is the CLIC Sargent house where parents can stay whilst their child is in hospital, if they live far away from the hospital. I do recall that the parent was more comfortable taking their child there to have a shower.

IMT 12 June, 14 June and 18 June 2018

(A36690486- IMT Water Incident Ward 2A RHC 12.06.2018 – Bundle 1 – Page - 119)

(A36690521 – IMT Water Incident Ward 2A RHC 14.06.2018 – Bundle 1 - Page 128)

(A36690540 – IMT Water Incident Ward 2A RHC 18.06.2018 – Bundle 1 - Page 132)

132. I do not have any recollection of these meetings, although I can see from the minutes that I was present.
133. The minutes from 14 June 2018, note that I was printing off advice from Dr Inkster and distributing this to the patients and parents. I did this on several occasions, but I do not specifically recall doing it at that time.
134. The minutes from 18 June 2018 note that I had to compile a list of patients who had their chemotherapy delayed. I would interpret from that that the ward had been closed to admissions, but I cannot remember. Generally, it would be Angela Howat who would coordinate that because the patients would attend day care to receive chemotherapy and then come to the ward. She would coordinate that and knew the schedule of the patients coming in. I cannot remember why the ward was closed at that time.

IMT – 21 June 2018

(A36629264- IMT Water Incident Ward 2A RHC 21.06.2018 – Bundle 1 – Page - 136)

135. The next meeting I attended was on 21 June. I was concerned about the staffing level over the next two weeks as two transplant patients were being admitted in the ward during that time. We had delayed transplants, so we must have been delaying admissions, which resulted in having to schedule two transplant patients at the same time. We would normally try and space these procedures out over a two-week period each, so that we can deliver safe levels of care and have appropriate nurse staffing levels. I would have had concerns about staff levels as transplant patients can become very unwell and need an increase in nursing care. I vaguely remember this meeting, but I cannot remember why we closed admissions at this time. I do not remember anything significant about this meeting.

IMT – 17 September 2018

(A36629315 - Minutes Ward 2A IMT 17.09.2018 -Bundle 1 – Page 169)

136. From looking at the minutes, the next IMT meeting I was present at was on 17 September and it related to positive blood cultures in the ward. I do remember this meeting because I mentioned that staff had approached their unions for advice that we were nursing patients in a ward that had so many infections. I do not know what advice they were given as it would have been confidential. I personally did speak with the union but I cannot remember if it was specifically around this time. My concern was whether the environment was safe to treat patients and whether we were putting patients at risk by continuing to treat them in this environment with increased infections and all the building work and investigations going on. I phoned the union for advice, but I cannot remember what was said during the phone call. I do not think there was any action taken as a result of me or any of my colleagues contacting the Union.
137. I also remember a note being read out from Professor Gibson. She could not be there as she was in London. She expressed her concern and wanted

assurance that the unit was safe and that, by continuing to look after the patients in the ward, we were not putting them at risk. I agreed with her concerns.

138. At this time staff morale was low. There was a meeting held in the TCT social space with management and staff. I was not at that as I was on a day off, but I think staff expressed concerns to the senior management team. I do not think anything specifically happened as a result of these concerns but we were ready to move to Ward 6A anyway.

IMT – 25 September 2018

(A36629324 – Minutes Ward 2A IMT 25.09.2018 – Bundle 1 - Page 190)

139. The next meeting I attended was on 25 September. I remember this meeting because it was the September weekend and we were moving wards. I see from the minutes that I was in the process of informing the remaining outpatients of the decant details, since the decant was due to take place the following day.
140. I remember telling the parents about the imminent decant of the ward. I spoke to families on a Friday, late at night. A Senior Charge Nurse from day care helped me and then Jen Rodgers came to the ward to assist. We spoke to all of the families present.
141. I do not remember any families being upset specifically that night, or there being any other issues. There were other times when I gave updates the families got upset but not this time.
142. This minute mentions that I requested that Estates should carry out any additional works and HAI SCRIBE whilst 2A and 2B were empty. I was to formulate a list for Estates of items requiring to be fixed, for example doors, windows and TVs, which are difficult to arrange to be fixed with patients in the rooms. This was all eventually done during the larger refurbishment of Ward

2A. I was probably trying to make it clear that I wanted all of these things fixed while we were decanted, so that there was less disruption when we moved back in.

IMT – 5 October 2018

(A36629290 – Minutes Ward 2A IMT 05.10.2018 – Bundle 1 – Page 199)

143. I can see from the minutes that the next meeting I attended was 5 October 2018. We were in Ward 6A by then. At this meeting we discussed the possibility of implementing some of the measures in Ward 2A that have been recommended for waterless Intensive Therapy Units (ITU) and what could realistically be implemented in the paediatric BMT setting. One of the things recommended was to remove all of the trough sinks on Dr Inkster's recommendation. She advised that the more water outlets you have, the more we were putting the patients at risk. To me it sounded like the safest thing to do.
144. The trough sinks are the large, deep sinks that you would get in theatre, so you can scrub right up to your elbows. The surgeons use them before they do any surgical procedures. We had them in Yorkhill in the BMT rooms. In Ward 2A we had them in the anterooms for the BMT rooms. Then Dr Inkster advised that we had to reduce the water outlets. At that point, two of the sinks were problematic. There was black sludge in one sink in the anteroom of the BMT rooms and there was a further sink in the treatment room which had bubbles coming from the drain. Dr Inkster recommended that we remove those sinks. We would still have hand gel before entering the room, and we would still have a wash hand sink in the patient's bedroom if we had to wash our hands. Professor Gibson did not agree with Dr Inkster about the removal of the sinks as other BMT units would not have them removed. However, Dr Inkster recommended that this was the safest thing to do for the children. As she is the expert in that field, I trusted that she was doing the right thing for this patient group.

145. "Waterless" did not mean the removal of all sinks but trying to reduce the use of water. Some things cannot be reduced when trying to go waterless. In the patient rooms, you still need a wash hand sink, a toilet, and a shower. They all had additional filters put on them. The trough sinks were removed from the anterooms and the sink in the prep room and treatment room were replaced with normal wash hand basins, so that was one less risk. There has not been any issues since we moved back to Ward 2A.

IMT – 11 October 2018

(A36629306- Minutes Ward 2A IMT 11.10.2018– Bundle 1 – Page 204)

146. I see from the minutes that the next IMT I was at was on 11 October 2018. The minutes state that I will attend a meeting to discuss the literature regarding a waterless ITU and will feed back at the next IMT. It was decided at that meeting that we could not completely go waterless, but Dr Inkster had recommended that we could remove the trough sinks. As noted above, Dr Inkster and Professor Gibson had a difference of opinion about this course of action.

IMT – 19 October 2018

(A36629317- Minutes Ward 2A IMT 19.10.2018 – Bundle 1 – Page 208)

147. The next IMT I attended was on 19 October. The IMT discussed the possibility of having the bathroom on Ward 2A that was no longer being used, changed into a treatment room. We did not have our own treatment room; it was a preparation room/shared room that we made up for the drugs, so this seemed like a good idea at the time. I contacted Ian Powrie and requested the specifications and he approved the design. Now that we have moved back to Ward 2A, that bathroom is now a treatment room and is being well used.

148. I do not remember there being any more IMTs until 27 December 2018. After the move to Ward 6A, between September and December, things seemed to settle for a few months. Then the IMTs recommenced.

Communication: Water issues

Patients & Families

149. Most of the information that we were giving to parents was coming from the IMTs. We would get information from management at IMT meetings and, if there was information to be given out to families, the Chief Nurse and Jamie Redfern, the GM at that point, would come on site to speak to them.
150. We would have to wait for the correct communications to come from senior management after an IMT meeting had finished as I could not update anyone until I had received them. Sometimes that could take a while. That was something we fed back on because it could be four or five o'clock on a Friday before we could update. I think that this did improve as time went on. Once the communication was received that would instruct us what to say to the patients and families.
151. We would verbally update the families and then hand out a letter from the communications team so that they could refer to it. I would be emailed that, or the Chief Nurse, or GM, would come and deliver that. If a family asked a question that we could not answer locally, the Chief Nurse and GM were happy to speak to the families directly. If I had any families who needed any more questions answered, I would contact them and they would come to the ward. For example, I was aware that families were concerned about the increase in infections and I escalated that. When things were happening more and more each week, the Chief Nurse and the GM would come to the ward more often and they would help issue information to the families. Additionally, the Microbiologist, Dr Inkster, would attend the ward; she was very good at speaking with the families if they had concerns about certain infections and she also provided reassurance over the ward move. If any children developed infections whilst in hospital, the consultant and possibly the Microbiologist would speak to the families.

152. When instructions started to come out that we should not drink the water, or when rooms were closed, I suppose it was a bit concerning for the patients, but I believed that IC and Microbiology were providing the best guidance to keep the patients safe. These are professional, experienced people, so I would trust their advice and comply with their requests. This might include what would occur if a room needed to be closed, if we allowed water sampling, or if tap filters were installed. I would also make sure that families received updates by passing on any letters that came from the Communications team and by going into their rooms and speaking with the families, updating them on any information we had.
153. At the time, information would be passed to us in different ways. Generally, if it was something that needed actioned straight away, there would be a phone call followed up by a meeting. Then, probably, as the process went on, there was written information, usually for staff, in the form of a A4 sheet of paper, for them to pass on between each shift, and that would be added to the safety brief. There would generally be the same updates for the families. There would be one for staff and one for families, and that was the same process as matters progressed. If I was giving the families an update, it would have been requested by the Chief Nurse, Jen Rodgers.
- A38662234- Update for parents on cleaning dated 13 June 2018 – Bundle 5 – Page 144)** is an example of information being given to parents. I cannot remember handing that out, but the information contained in it is correct. That is when HPV cleaning was taking place and when we changed the taps. Estates were also looking at the drains and they took a drain apart, and I think that is why they asked whether we were putting chemotherapy down the sink because there was a concern that there was something wrong with the drains. At that point, Estates and IC wanted to ensure that nothing else was being poured down the wash hand basins and a sign was developed. **(A39123918 – CWH8 – referenced as Poster for hand wash basins within the index – Bundle 5 – Page 143)** is an example of this. We have since replaced that sign and made it a bit more

child-friendly, but that information is still in place at the sinks even after the refurbishment. The signs in the unit are above the sink, exactly where you would be washing your hands.

154. I was instructed to tell the families that we could use the tap water, but only from the pantry or the parent's kitchen. The sinks in the patient rooms were for handwashing only.
155. I do not recall when we advised the families that the water was safe to drink, but I remember having a conversation and handing out an update about the water. Some were a bit nervous and some quite happy. I think they would have been nervous with all the changes but, everyone seemed quite accepting of it. I trusted the advice given to me and I would never advise them to do something that I did not think was safe.

Staff

156. As time went on, staff were asking questions about the water and the infections. I know that Jamie Redfern came to the ward and spoke to a group of my staff as morale was low, although I was off at the time. We were getting regular updates. Central line infections were, however, still increasing and we were not getting to the bottom of them, staff were concerned. It was around that same time that staff were approaching their Unions.
157. As far as I am aware, the concerns were about the environment in which we were looking after the children. I recall that I once had three members of staff absent due to illness. Staff members revealed that they were absent from work due to work-related stress in later meetings with HR. I was unable to help them with this as a manager, but I made sure that HR were aware. The frequent ward moves added to the strain and pressure on our employees.

158. After all the filters were added to taps and the water tanks had been cleaned with chlorine dioxide, we were told that the water was wholesome, clean, and safe and that we could use it.

Closure of wards 2A/2B and move to ward 6A and 4B – September 2018

159. I was involved in the IMT meetings when the decision to relocate from Ward 2A to Ward 6A was being discussed, but I had no input as this decision was taken by those more senior than me. I believe that this was around July 2018. The recommendation from the IMT around this time was that we would decant.
160. Estates had an increase in work to carry out in Ward 2A, therefore, it was decided that it was safer to move the patient group to allow them to carry out the necessary work and this allowed us to carry on caring for the patients. These works included gaining access to rooms and checking sinks and drains. Initially the plan was to relocate to Ward 6A and Ward 4B for four weeks to allow this work to be done.
161. There was a planning document regarding the decant of the patients and this was followed closely to ensure that all necessary actions were covered, along with risk assessments which had to be completed. The document would usually be completed by the Service Manager, Melanie Hutton, but she was off on annual leave, so Lynn Robertson helped us. We were planning the allocation of the patients and how operationally we were going to move them and where the furniture was going to go, as well as managing the transfer of medications. We now have experience of moving wards, having moved from Yorkhill to the RHC, from Ward 2A to Ward 6A and then back to Ward 2A.
162. The risk assessments and the updated SOPs were completed by our Quality Manager. She was leading on that. One of the Senior Staff Nurses, April McDade, and I were involved with the Service Manager in relation to the patient pathway for what we would do on the day of the move.

163. Angela, the Senior Charge Nurse from Day Care, the Lead Nurse, the Chief Nurse, the GM and I would meet up and go through all of the actions. We used the same document to move back to Ward 2A. I would imagine that this would have been classed as a Risk Assessment. The document was shared and actions allocated to everyone. I cannot remember who did what, but if I was shown the document; I would be able to go over who had carried out which actions.
164. When we moved to Ward 6A we continued to follow the patient pathway but we had to adapt it. Ward 2B (day care) was in 6A with us, so we were all in the one unit together. We had to work out which areas would be used as waiting areas and rooms. Angela Howat would have led from that side. There were some challenges, especially since CDU, where on occasion patients would come into the hospital, was in a different building. Also some patients were going back and forth to theatre in the RHC, but we managed to work round it.
165. My understanding was that Ward 2A closed due to water problems, issues with the sinks and the drains. In addition, Estates needed access to carry out further investigations with the drains but, at this time, there was no mention of the ventilation system.

Suitability of wards 6A and 4B

166. I am not aware of the reason why Ward 6A was chosen. The reason Ward 4B was chosen was because it was thought to be the safest as it had the ventilation system that was best for our transplant patients. Children would receive a BMT in Ward 4B and this then led to the medical staff requesting all other patients to be decanted next to Ward 4B. This would allow for ease of looking after the two patient groups. Ward 6A was recommended, but I do not recall whether or not the consultants were consulted about the location of the move.
167. I was involved in a walkthrough of Ward 6A with Susie Dodd and Teresa Inkster from IC. I needed to start planning: how we were going to move the

children safely; patient placement, i.e. where the Ward 2A patients would be accommodated in the ward and where day care would go; where our stock was going to be: where we were going to keep our drugs: and where the emergency trolleys would be located. It was an operational walkabout to try and start planning for the children's care. We did not have as much time to prepare in comparison to previous moves I have been involved in. The staff in the wards into which we were moving, were also packing up to leave and this resulted in it being quite difficult for us to gain access.

168. IC wanted to have a look to see if the environment was safe. They did highlight that changes needed to be made to make the environment safe for our patients. There was some minor Estates and Facilities work being done before we moved over, which was organised by IC, for example fixing of extra wall brackets to allow hand gel to be displayed in the corridor.
169. There was work to be carried out to make the new wards suitable for our patients, lots of additional cleaning along with some Estates work. Estates would do all the building work. Facilities would do all the additional cleaning, organise HPV and, at the time, Teresa and Susie would have checked the area to make sure it was suitable before we moved over. I believe, on the day of the move, myself and Lynn Robertson, the Service Manager, carried out a walkabout before we started moving patients ensuring the ward was ready to receive the patients. Everything was in place, and then it was my responsibility to make sure that everything was moved over and that no patient-identifiable documentation was left in Ward 2A.
170. We had involvement the Children's Charity who worked with us and made the environment in Ward 6A more child-friendly. We did initially think the decant was only going to be for 4 weeks and I thought that Ward 6A was a good safe environment for our patients. Once all the Estates work and deep cleaning had been completed in Ward 6A, I felt it was suitable and was safe for us to deliver patient care. I liked Ward 6A. It was bright; it had better visibility because the

patient rooms were off a long corridor. Due to it being a temporary short term move I felt that it was a safe environment for the children.

171. Ward 6A was not built with the intention that paediatric children and teenagers were going to be there, so we did not have the same facilities. We had our teenage cancer worker, Ronan, and he would try and carry out activities at the bedside organise Facebook groups, but it was not the same as having the TCT social space.
172. There was no playroom or parents room on Ward 6A. After a while there were some complaints and feedback from the families about this. I think there was a face-to-face feedback session with the families and Jane Grant and John Brown attended. MSP Jeane Freeman also visited the ward and spoke to families. After that, a parents' kitchen and the playroom were developed. I do not know if it was from their involvement, but certainly, after they visited, things seemed to move quickly. Once in place, the families were happy with it, and then when we had to implement measures in respect of COVID, we had to stop the use of this space. I do not even think it was in use for that long, which is a shame.
173. There was a lot of planning involved in the move. Everything had to be updated, including risk assessments locally and SOPs. We had to work out which rooms would be used to administer chemotherapy and which rooms we would give lumbar punctures in. One concern that most staff had was the distance for moving our patients to intensive care or to theatre if they were unwell. Ward 2A is one floor above the intensive care unit. If there is a clinical emergency, the crash page goes off, and your patients have to go to intensive care. That does not take long when there is only one floor to cover. Ward 6A was in a different building from intensive care and on the 6th floor and we had to take lifts. Staff had some anxieties about the distance, so we did some planning and had a mock run of the route. This involved walking with staff and taking a cot, then covering the route from the wards to the intensive care unit. This allowed us to come up with a workable plan of how to deal with any

eventualities and we were as confident as we could be. The Service Manager signed the plan off, along with the Resuscitation Officer, and they came to the ward to assess the situation and ensure that all these things were safe. We were provided with an extra resuscitation trolley. The fire officer came to the ward, updated the fire plans and spoke to staff. That would have been on the planning document. If we had had anxieties or concerns, that would have certainly been raised to the Lead Nurse or Chief Nurse.

174. The intensive care teams, along with theatre staff, also visited and familiarised themselves with the new ward. We made sure everyone knew the planned route in case there was an emergency and ensured that everyone knew the quickest and safest route back into RHC. Making plans like that helped us. SOPs and protocols were amended. One thing we did was, instead of sending patients on our Tuesday list to theatre in the RHC, we started performing some less invasive procedures in the ward. Two of the rooms in 6A were used for theatre. This enabled the children to remain within the ward and not have to travel from theatre all the way back into the children's hospital. The theatre equipment was relocated up on Ward 6A and we had a theatre recovery room. Patients would only have to go to the RHC if they needed more invasive surgery, a scan or to go to Intensive Care Unit.
175. Patients and families had concerns about having to share the lifts with adults in the hospital, some of whom smelled of smoke. That was escalated at the time, and the workaround was that colleagues in Estates closed one lift off so that only Ward 6A patients could use it. There was a barrier around it, and the security would coordinate the patients going up and down. If we had a patient going down, we would phone security and they would meet the family and the child at the entrance of the lifts and take them up and down, so they did not have to share with anyone else. It took a little bit of time to resolve that issue and we had some complaints and feedback, but it certainly was able to be resolved eventually. As I have said, we were only supposed to be there for a short timeframe and we had to take feedback and resolve issues as they arose.

Ward 4B

176. The layout of ward 4B resulted in the rooms we were allocated being at the end of the ward. I found the staff very helpful and the Senior Charge Nurse helped us settle in and gave us storage space for our stock. The staff allocation was one nurse to every patient and this made me feel confident that the children were receiving good care.

Impact of Closure of ward 2A**Patients and Families**

177. When we moved wards from Ward 2A to Ward 6A, some of the families struggled with all of the audits, investigations and additional cleaning we were doing. If there were any complaints made, I would be informed and I would have this investigated. It was the disruption that caused the most issues. Their children had cancer and we had increased infections in 2A. The ward was having various investigations carried out by Estates and Facilities colleagues, and there was extra cleaning. That in itself would have been stressful for the families. We then told them that we were moving over to an adult hospital, which does not really have any provision for children. We told them that we were moving for four weeks: we were there for over for three and a half years.

178. Then we moved from 6A, to CDU, then from CDU back to 6A. We then continued to update the families that we were going to be moving back to 2A soon and the date kept getting pushed back. There was also negative press in the media, so I can understand why some of the families were upset.

The Ventilation System

179. My knowledge of the ventilation system in Ward 2A is limited. My understanding is that it must be of a high specification because of our

children's weaker immune systems. They receive chemotherapy, making them prone to infection. Unfortunately, I don't have any technical knowledge, but I am aware that the description of the newly refurbished ventilation system in Ward 2A is state-of-the-art.

180. I was not aware of any issues with the ventilation system in Ward 2A before we moved to Ward 6A. It was when we were transferred to Ward 6A that we learned there was going to be an upgrade to the ventilation system in Ward 2A, while we were decanted, and this was going to extend our decant on Ward 6A. I cannot say exactly what changes have been made but I believe that the system we have now is the safest ventilation for our patient group. James Huddleston, who was the Capital Project Manager, attended meetings with us when we were in Ward 6A and explained this to us. At these update meetings, he was briefing everybody on what was happening with Ward 2A, what was happening with the ventilation, and at the update in respect of the builders. Then we made a video for the patients and families moving back over at 2A, and James did the technical update on that, which I understood. I trust that it is one of the best ventilation systems because he explained that to me.

Extension of decant

181. I cannot remember the exact details, but families and staff were told that there would be delays in returning from Ward 6A to Ward 2A due to the ongoing work to the ventilation system. At that point we were not doing any IMT meetings; that had all stopped. We received updates through the re-mobilisation group led by James Huddleston and Emma Heggarty, both from the Capital Project Team. My colleague, April McDade, was covering for me on maternity leave and, when returned from leave because she had been leading on the ward move, she continued to do that. We would have been updated through that group and she would have attended and updated me.
182. The date for moving back to ward 2A kept getting pushed back, and then COVID came along and there were outbreaks amongst the workmen. Then

other challenges came up, but that would have been discussed at the re-mobilisation group which was scheduled in the calendars. It was monthly, although it increased as we prepared for the move back to Ward 2A.

Issues with the ventilation

183. I was first aware that there was a potential issue with fungal infections when Kathleen Thompson, the Lead Nurse, informed me that there had been some fungus found throughout the campus, although I was not told at the time that it was Cryptococcus. I was asked to update the families about this and to inform them that, as an additional measure, we were installing mobile HEPA filters in the ward. Estates brought the HEPA filters to the ward and April McDade and I cleaned them all and put them into the rooms.

184. I know that we had chilled beams in Ward 6A and we had some issues with them. I think that there was a tube in the chilled beams that was leaking condensation and it had to be replaced I do not know the technical term for this. I also understand that some of the chilled beams were dusty. This led to the cleaning of the chilled beams being increased because we were a high-risk area. Dr Christine Peters from Microbiology advised that we carry out additional cleaning. This was a contingency which was put in place. I cannot remember the timeframe for this, but I resulted in another workaround for Estates to complete the work. There was a lot of building disruption whilst we were in Ward 6A.

Environmental Issues on Ward 6A – 2018/2019

Cryptococcus – December 2019

185. In December 2018 I attended an IMT on 27 December 2018 (**A36605180-IMT Cryptococcus 27.12.2018 – Bundle 1 – Page 250**) which was to discuss [REDACTED] cases of a very rare fungus, Cryptococcus which had been

found on the campus. As I mentioned above, as a result of this HEPA filters were installed in Ward 6A and I had to speak with the families about the situation. I was given communication lines from the Lead Nurse, which spoke about the fungus and the additional measures we were putting in place. It said there had been two incidents of fungus in the QEUH campus, therefore, the mobile HEPA filters were being installed as an additional measure. It was on a sheet of paper which I then handed out to patients and families.

186. The installation of the HEPA filters on the ward impacted our ability to do our jobs because it diverted us from patient care, having to clean them and place them in rooms. Having recently moved wards, this resulted in further disruption for patients and families.
187. I do not remember Cryptococcus having a direct link with the ventilation. I remember that around this same time, there were reports of mould in the showers in Ward 6A and we found that there were problems with the seals in the showers, which needed to be replaced. This resulted in significant building work being carried out, access to rooms and having to relocate patients again.
188. Microbiology and IC advised that this work could not be carried out with our patient group in the ward. We tried to move the patients to one end of the ward and close the other, but that led to bed pressures. Ward 6A was two long corridors, so you could move the patients to one corridor and close the other one. That is what we tried to do initially, and then either Teresa or Susie advised that an alternative approach was required. Their concern was that this disruption could lead to fungal spores in the air, so at that point the safest thing to do would be to decant from Ward 6A to CDU.

Decant to the Clinical Decisions Unit (CDU) – January 2019

189. An instruction came from the IMT that the safest thing to do was close Ward 6A and move the patient group. We moved down to CDU in RHC. We did not

have the same amount of time to plan this move, so it was coordinated in a short space of time. This was not ideal as we had only just started to settle into Ward 6A and then we had to move again. Moving wards is always a difficult thing to do. We moved into Ward 6A in September 2018, and then decanted to CDU at the start of the year, in January 2019.

Impact on Patients and Staff

190. Families were already anxious about the extended decant to Ward 6A. When the additional move to CDU, and then the subsequent move back to Ward 6A, happened, we began to receive complaints about the moves. I can understand why families were concerned and made these complaints; there was a lot of movement in a short period of time. Some families were not happy about all of the moving, but I do not think there were complaints around the communications that related to the moving. Staff were put under a lot of stress, as everyone was, with all of the ward moves.
191. I would pass any feedback and complaints from families onto the Lead Nurse or the GM or, if it was an IC concern, I would contact Teresa Inkster. If it was related to treatment, then I would advise the patient's consultant. I certainly would not try and resolve anything if it was technical or IC issues. I would contact the appropriate colleagues to speak to the families. When the Chief Nurse and GM arrived on the ward with additional information, I would accompany them while they spoke to the families.
192. I know staff were worried about the presence of Estates and IC on the ward and they did not know what was going on and why there was another move to the CDU. It is physically demanding moving beds and, even with the help of porter, staff continued to move the patients and all their belongings and their medications. The housekeepers were packing up all the treatment rooms and all of the items and medications that we need to look after patients on a daily basis.

193. During the decant, we needed additional staff since we were working over two wards. Staff members were coming in when they should have been off. Initially, when we thought that the decant to 6A was only going to be for four weeks, I was relying on my staff's goodwill and they were happy to help. Staff also came in on bank overtime and extra shifts. When we had staffing pressures and I would take it to the safety huddle at 0800h. and 1500h and we would be recorded as unsafe. Sometimes we would get back-filled with a nurse from the hospital, but generally we are the core group of nurses with chemotherapy skills, so we cannot always get support from the rest of the hospital, as nursing staff would not have the requisite chemotherapy skills.
194. Initially, when we first moved, I was not concerned about patient safety on Wards 6A and 4B. We were then advised that there was some fungus in the campus, we were exploring the possibility that there was potentially something wrong with the shower seals. We were putting in HEPA filters in the bathrooms; and then Estates and Facilities had a presence again. The patients again were having to move rooms to allow estates colleague's access. It felt like we had not really achieved much in moving to Ward 6A.

Ward 6A - IMT – August 2019 – November 2019

195. Between January 2019 and August 2019, there were concerns about the fungus and that resulted in the decant to the CDU. I cannot recall there being any concerns about the water. I do remember attending a lot of IMTs, but I would not be able to differentiate between them all as there were so many.
196. We had the decant to CDU early in 2019 and, following the return to Ward 6A, we had a closure to admissions later on in that year, while Estates were carrying out investigations and works. It was deemed safer to manage the smaller in-patient group and any new admissions would go to Edinburgh or Aberdeen if they could do so, and we would prioritise working with a smaller group. This resulted in new patients who received a diagnosis being looked after in other centres. As a result, we did not have bed pressures and added

activity at a time when we did not really know what was going on, when building work was underway and when rooms might have needed to be investigated. Whether the ward should be reopened would have been discussed at the IMT meetings. We then reopened admissions again in November 2019. I do not recall that existing patient care was ever affected.

197. All the communication surrounding this came from the IMT.

198. There were various IMTs throughout 2019 that I attended where the closure of the ward was discussed.

IMT – 14 August 2019

(A36591626 – IMT Ward 6A Gam Negative Blood 14.08.2019 – Bundle 1 – Page 343)

199. After December 2018, this was the next IMT meeting I attended. At this meeting, I spoke about the T3 machine which is the machine used to clean the floors. I had received complaints from families regarding the floor cleaning. It turned out that the machine being used was faulty. Once I reported this to Facilities someone came to the ward and the matter was resolved.

IMT – 6 September 2018

(A36591637 – IMT Ward 6A Gram Negative Blood 06.09.2019 – Bundle 1 – Page 354)

200. The next meeting I attended was an IMT meeting on 6 September 2019. At this meeting I informed the IMT about a change in practice regarding dressings for line care. These were called Biopatches, a chlorhexidine-impregnated dressing which the children wore for the first three weeks post-line insertion, previously they remained in-situ for 48 hours post line insertion. We still use these dressings. The current position is that some children like to keep them on throughout their treatment, and it is fine to do that; it provides added protection.

201. We introduced this change as a result of a peer review from Great Ormond Street Hospital. It was an improved dressing at the time. We had previously used a IV3000 dressing. It was good practice and we wanted to replicate that.
202. There were more IMT meetings that I attended, but I cannot recall anything I did at them. The IMT meetings have all merged into one and I am finding it hard to recall incidents precisely. It is difficult for me to remember. I can visualise speaking with families and handing information out, but whether it was in Wards 2A or 6A is hard to differentiate. There were so many issues and I had to deliver so much information.

Effectiveness of IMTs

203. I did feel that the IMT meetings were effective because different groups with different specialities could meet and discuss what needed to be done and what actions were needed. If you needed a deep clean of the ward and the facilities were there, they would coordinate that straight away. If you needed any Estates work done, Estates were there and they would arrange that straight away. If patients needed to be moved out or rooms needed to be closed, I could organise that. Microbiology would advise what they thought was going on; and IC were there. Having all teams around the table means it is quicker for getting things done.
204. I do recall that Dr Emilia Crighton took over from Teresa Inkster as Chair of the IMT at one point. I remember Dr Inkster being there and questioning why she was no longer Chair.

Current Situation in ward 2A

Description of Ward 2A from March 2022 to present day

205. We returned to Ward 2A in March 2022, after all of the works had been completed, including upgrading of the ventilation system, and the ward is certainly better than it was previously. I believe that the ventilation is one of the highest specifications available. We now have a pharmacy room, which we did not have before. Since we have moved back to Ward 2A, one of the patients was feeding back and saying how good it was to have the TCT social space again. She was saying that she does not mind being in hospital now because we have really good facilities, whereas in 6A she felt isolated. It is much better that we now have this service again.
206. The children have a playroom and, since moving back from Ward 6A to Ward 2A, we now also have a “tween room” which is for ages 8-12. This was lacking before and was created following feedback from families and some fundraising which was carried out by two of our previous patients. The feedback was addressed and the new tween room is being well used.
207. We now have airlock doors in the ward and we also have a new treatment room. This treatment room was previously a bathroom; however, it means that we can carry lumbar punctures on the ward. The drug preparation room is now of a higher standard. It has cupboards and other facilities that we requested, as they were missing initially. It is certainly much better.
208. There is one Metaiodobenzylguanidine (MIBG) suite where we can deliver high-dose radiation to patients. MIBG is a radioisotope. It is the name of the drug and it is a lead-lined room. When the patient receive this drug, they are excreting high doses of radiation as each day radiation doses reduce. They have to be looked after in this room, to reduce exposure to other members of the public and, if nursing staff go into the room, we work behind a lead shield, and we try and do minimal nursing. There is a camera in the room that we can access from the nurses’ station. Only a radiation-trained nurse has access to the room, so we carry radiation monitors, and they are analysed monthly. That is something we did not have before, and it means patients now do not have to go to London and receive that treatment.

209. All the rooms except one, are Positive-Pressure Ventilation Lobby or Isolation rooms they had an upgrade in their ventilation. PPVL means the pressure coming out of the room is positive which makes it safer for our patient group, and we have one negative pressure room. Negative pressure rooms, also called isolation rooms, are a type of hospital room that keeps patients with infectious illnesses isolated. Dr Teresa Inkster from Microbiology recommended that should have a negative pressure room for infectious patients and that is the room that we currently use if any patients have COVID. If I have any concerns or worries about which room to isolate or nurse the patients in, I phone IC. We have guidelines on which rooms we can use for patients, but I always also like to seek guidance from IC. I can also consult Estates colleagues if I have any questions regarding the ventilation.
210. I think Ward 2A is a good ward and it does have good facilities. Now it has even better facilities since our move back from Ward 6A earlier this year. I think it is state-of-the-art.

Additional Infection Prevention and Control Measures still in place

211. Although we have moved back to the newly refurbished Ward 2A, some of the control measures mentioned above are still in place.
212. Enhanced supervision is carried out every four weeks. We also continue to carry out vent cleaning, which takes place every four to six weeks. We are starting again this week, so that is the domino effect, moving all the patients out of their rooms and giving the external company, Correctair, access. They clean the vents and the room then gets a Facilities clean. HPV cleaning happens every six months. The first time is happened since we moved back was September 2022. The Service Manager advised that it was going to be something that we were commencing. Staffing levels and the transplant schedule were planned to accommodate the HPV clean. This safely could be accommodated in September, so it was carried out then.

213. It is additional work for staff, but we manage to do it all safely. It is a different company that we are using now than pre-decant. They used to have to use a machine. Now they come in and spray it locally, so it is easier. This process has just been completed again in March 2023.
214. We still do routine water testing, and the results are passed back to IC. IC must analyse their results, but I am not involved in that, nor do I receive the sampling results. I would make sure that they get access to do their job. Generally, if any samples needed to be repeated, IC would ask us to check the filter and close the room. They would come and do the extra checks and we would work with them to do that. Enhanced supervision covers this. With the water testing, the same company that change the filters on the taps and showers also carry out routine water sampling.
215. All the checks are still ongoing as an added assurance because of everything that happened, and it is the same with the vent cleaning. I know we clean more than the manufacturer's recommendation, but perhaps it is because of a reluctance to change the process as it is working, and the infections have continued to be at a reduced level. Although it is extra work, if it is keeping the patients safe and there are no infections, then I can understand why nobody would want to change it.
216. Currently, we are still asked to close rooms by IC from time to time because they still need to swab them. IC will tell us to close a room if a patient has something that is found to be suspicious or concerning; they will come to the ward and do environmental swabs and complete checks of the room. The water sampling is still ongoing, and I believe it is happening monthly.
217. There continues to be filters on the taps and they are changed every second month by DMA Canyon. They keep us updated on what they are doing. They will ask if there any rooms that they should not access or if there are any issues. If a filter falls off, we would just call DMA Canyon, or go through

Estates. It is the same core staff group within DMA who manage these issues. They are very good, they know about PPE and are quite visible on the ward quite often. IC would not do check-ups on the filters but, if something was noticed whilst washing hands, it would be raised. I do not have to carry out any other additional checks with the filters.

218. We advise families that they can drink the water. I drink it myself. The filters are there as an additional safety precaution. We continue to do routine water testing and the results are fed back to IC. If anybody has concerns, we would act on them.

Current Issues and Concerns

219. Currently, there are no ongoing concerns about the environment amongst the staff. When issues arise, these are acted upon. For example, there was a recent situation where vents became dusty. I escalated to IC who began to investigate this.
220. Since our return from Ward 6A to 2A there have been some minor problems. We were having issues with doors alarming and some leaking toilets, but this has all been rectified with Estates. We work regularly with Estates around cleaning and other day-to-day matters. If there is a risk with moving the patient, for example for the vent cleaning to take place, we would wait until the patient was getting discharged. We work on a case-by-case, risk-by-risk basis.
221. The standard of cleaning in the ward since we returned here has not changed. We have more areas that need cleaning, hence the extra time allocated. I do not have any concerns with the domestic cleaning and. if I did, I would raise it with the domestic supervisor.
222. As far as I understand the frequency of the cleaning means that isolation rooms get cleaned twice a day and the other rooms once a day. This is a level of cleaning I am happy with.

223. There have been no ward closures since we moved back in March. I have not attended any IMT meetings. I do not think I've attended any PAGs.

Current situation: Infections

224. I do not have any concerns that patients in Ward 2A are currently at risk of infections relating to the water or ventilation systems. I do not think anything has been found in the water testing. The filters remain on the taps and we monitor our central line infections every month. The data is really good in relation to that. Looking back from when we first moved, we maybe only have one or two line infections per month, some months there are none.

General Communication

Department Communications

225. As a department there are many opportunities to meet and discuss any concerns we may have. There are handover meetings and review meetings between the team and Microbiology and IC. Along with daily communication, there are regular Multi-Disciplinary Team (MDT) meetings in which our unit is involved. We have an MDT meeting if a patient is going home, or a patient has a particular issue or problem and requires input from various disciplines. For example, there would be someone from nursing, medical, physiotherapy, pharmacy, and an occupational therapist. All the wider teams involved in that patient's care would have a discussion about the patient.

226. There is an oncology on treatment meeting, along with a haematology on treatment meeting. These are meetings where all patients who are receiving treatment on the ward or in day care are discussed and they are held weekly.

Board Communications

Staff

227. The process for communication between the Board and staff would be through core briefs, IMTs and emails. There were also occasions, when Jane Grant and other Board members did come out and do walkabouts when we had issues on Ward 6A and they did listen to staff. A staff room was provided after staff fed back at this visit. They did not really come out when we were in 2A; it was after we had moved to 6A and 4B.

Core Briefs

228. The method the GGC Board uses to communicate information to staff throughout the NHS is through the core brief issued by the Communications Team. The information in the core briefs can be varied. It contains Board-wide issues and communications and updates, for example, in relation to flu vaccinations, COVID, and generally what has been happening in GGC, for example, there might be information about staff awards, congratulating staff on innovations, or there might be information about concerns, like cladding. They are sent via email. I do not know how often, but definitely at least once a week, on a Friday. Not all staff have the same ability to check their emails and read the core brief as they are not office-based, or do not always have time in light of busy shift patterns. I have regular access to my emails and I encourage staff to check their emails when they can. If I want to communicate with my staff, the best place to do it is at the safety brief before handover as all nursing staff attend.

229. I am not sure how effective the core briefs are. I personally also have a staff WhatsApp Group. If I want any of my staff to see particular information on the core brief, I put it on a WhatsApp group, which is encrypted, and it is more likely that it will be read.

Building and Environmental Issues

230. With issues related to the building and the built environment within the hospital, I had exposure to communications from the Board. I would read the core brief, and I would have exposure at IMTs. I received updates on issues like the cladding. That was in the core brief recently. I read the core briefs and staff are advised to, but I do not know how effective the communication has been. I think that the Board could make improvements on how they communicate to staff, maybe through social media or similar. Currently, that is something that people have access to, more so than work emails.

Infection Outbreaks

231. In respect of Board communication in relation to infection outbreaks within the hospital, that would be through IMTs. That was effective. Core briefs would also have information on any issues in GGC, but again, it is not guaranteed that all staff will always regularly read their emails.

Treatment

232. In respect of patient treatment, the Board would not communicate about this. Any information would be more general and might give information on how busy emergency departments have been, or whether there has been an increase in COVID. There would not be updates on something specific in relation to a patient.

Communication with Patients, Carers and Families

233. During the period that there were issues related to the building, the built environment and within the hospital, any information from an IMT meeting that required to be communicated to the families or staff would be communicated to staff verbally or via an email. Staff would then pass that information on to families verbally and then it would be followed up with the families in writing, for example, in a letter. If the families had further questions and the ward staff were unable to deal with these locally, it would be escalated to either the Lead

Nurse, the Chief Nurse, Jen Rodgers or Jamie Redfern the GM. When we were in Ward 6A the Lead Nurse would have been Gael Rolls or Kathleen Thompson.

234. An example of a document I would hand out to families is **(A39123885 – Update for parents on ward date 6 June 2018 – Bundle number 5 – Page 142)**. Somebody from the communications team would draft it, and then they would send it to the Board for authorisation, and then I would receive it via the Lead Nurse or Chief Nurse, directly in an email or asking me to hand it out. I would then confirm in an email or a phone call that I had updated the families. We do not have as many updates now because we do not have as many issues. In terms of the effectiveness of this communication method, I do not know if there was any better way to do it, but that was the process we used and it seemed to work.
235. As I have mentioned, initially there were delays with this information coming from management so that we could speak to the families. This improved as time went on, following feedback from staff and families.
236. As the situation developed over time, both the Chief Nurse, Jen Rodgers and the GM, Jamie Redfern, would come to the ward and they would assist ward staff in passing information to the families. Again, these communications normally took the form of verbal messages, followed by a letter so that the families could keep it for reference.
237. Families did talk to us about their anxieties. Sometimes they just wanted to talk and tell you about how they were feeling. I felt that I had a good relationship with patients and families and made sure I was checking on them. If they had concerns or feedback, I would then escalate that to the Lead Nurse, Chief Nurse or GM. They were always quite happy to be contacted to come and speak to the families.

238. The Chief Nurse at this time was Jen Rodgers and the Lead Nurse was Melanie Hutton, followed by Kathleen Thomson and then Gael Rolls. Gael was the previous Senior Charge Nurse in intensive care. She was very supportive. She understood it was like to run a large unit and have issues, so I would feel really supported when Gael was in post. She would always communicate back to me and, if I had any issues or needed help doing anything, I could contact her. If I needed to contact Jen Rodgers or Jamie, as the GM, I would send an email or ask them to come to the ward and speak to families with me. It was not an issue; they would come as soon as they could.

The Closed Facebook Group

239. Following feedback from patients and families, GGC set up a closed Facebook Group for families in the Schiehallion Unit. This was in an effort to avoid delays in information being communicated to the families. Information and updates are uploaded by the Communications team and I am one of the administrators for the Group. I have access and can put updates on it and share any good news stories. The Facebook page was well received by the families. I have not really heard otherwise. To become a member, a parent has to confirm that their child is a patient on ward 2A and that they will abide by the group rules to be kind to each other.

240. Some of the information I put on the Facebook Group is as follows: invitations to afternoon tea with Psychology and the Young Life vs Cancer; information from the feedback board on the ward; local updates, or information from charities who want to reach out to families.

241. If there is a letter to go out to all the parents, it is now posted on the Facebook Group. It is a quicker way to communicate and it also means that parents can communicate with each other and share stories about their children, or they can ask questions about the ward. It is a way of getting information out to parents quickly and avoids the situation we had previously where parents were hearing information in the media before they were hearing it from the hospital.

242. There are other Facebook pages, a Glasgow charity one and a hospital wide one. There was also a closed Facebook page set up and run by the families. I do not have access to that one but some of the families would tell me things that were written on that and I am aware that sometimes there were comments that were not so nice. Maybe that was a way for the parents to vent, which is fine.

Media Communication

243. The media printed stories on various occasions which was not always helpful as they were not accurate. This led families to think that we were hiding things. Being on the front line, we were on the receiving end of a lot of negative and often inaccurate publicity.

The Duty of Candour

244. The duty of candour is all about being open, transparent, and honest with patients and families. I have never had any concerns about wrongdoings or failures in the hospital. I have never been directly involved in anything like that.

Current situation

245. Communication processes have changed since all of the issues have arisen. We now have the closed Facebook group, so that we can update the families and, for the staff, we have always carried out the safety brief, but we now keep it electronically and accessible on the shared drive, which is an improvement, as it used to be sheets of paper in a folder. Now we have got a more robust system which is easier to refer back to.

Closing Comments

246. On reflection, we were trying to do everything safely for the patients. All the ward moves and all the additional things that we done was to do with patient safety. It was definitely a difficult time, but hopefully that is us now settled and we will not ever have anything like that again. If anything, there have been good lessons learned on what to do in these situations, although hopefully we will never be in that situation again, nor will any otherward.

247. I believe that the facts stated in this witness statement are true, that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Dr S Chaudhury

Personal Details

1. My name is Dr Shahzya Shahrin Chaudhury. I am a Consultant in Paediatric Haematology at Glasgow Royal Hospital for Children (“RHC”).

Education

2. I studied at the University of Cambridge in 2002 and gained my BA (Hons) degree, then my MBBChir followed in 2005. The next year in 2006, I received my MA from the University of Cambridge (honorary). In 2009, I achieved my MRCP UK from the Royal College of Physicians and in 2013, FRCPATH from the Royal College of Pathologists. In 2017, I completed my PHD in Leukaemia at the University of Glasgow.
3. I also have the following qualifications: Advanced Life Support in 2006; Advanced Trauma Life Support in 2007; and Basic Paediatric Life Support and Recognition of a Sick Child in 2016. These qualifications were gained when I worked in previous jobs, prior to taking up my post as a consultant in the paediatric hospital. The courses are national courses (for example, through the Resuscitation Council, UK) but were delivered through the hospital board I worked at.
4. I have achieved several awards and prizes. In 2013, I received the Yorkhill Leukaemia and Lymphoma Fund research grant. In 2014 I won the Yorkhill Research Day Prize Winner – Short Communication, and the 3 Minute Thesis Heat Winner (University of Glasgow, MVLS). In 2016, I won the American Haematology Society Merit Award, University of Glasgow Conference Funding Award and the European Haematology Association Travel Award.

Professional Background

5. I qualified from medical school in 2005. Between February and August 2005, I worked as a pre-registration house officer in the West Sussex Hospital in Bury St Edmunds in Respiratory and General Medicine. I then started Foundation Training in South-East Scotland. My Foundation posts were as follows:

FY1 Medical Combined Assessment and Cardiology at the Royal Infirmary of Edinburgh, August 2005 – February 2006.

FY1 Surgical Combined Assessment, General Surgery and Plastic Surgery at the Royal Infirmary of Edinburgh and St John's Hospital Livingston, February 2006 – August 2006.

FY2 Gastroenterology at the Royal Infirmary of Edinburgh, August 2006 – December 2006.

FY2 Orthopaedic Surgery and Accident and Emergency at the Borders General Hospital, Melrose, December 2006 – April 2007.

FY2 Paediatrics at the Royal Hospital for Sick Children, Edinburgh, April 2007 – August 2007.

6. In August 2007, I moved to the West of Scotland for Speciality Training (ST) in Medicine. My posts were as follows:

ST1 Oncology at the Beatson West of Scotland Cancer Centre, August 2007 – December 2007.

ST1 Respiratory Medicine at Gartnavel General Hospital, Glasgow, December 2007 – April 2008.

ST1 Rheumatology and General Medicine at Gartnavel General Hospital, April 2008 – August 2008.

ST2 General and Stroke Medicine at the Western Infirmary, Glasgow, August 2008 – December 2008.

ST2 General Medicine at the Vale of Leven District General Hospital, Alexandria, December 2008 – April 2009.

ST2 Renal Medicine at the Western Infirmary, Glasgow, April 2009 – August 2009.

7. I commenced Specialty Training in Haematology in August 2009 in South-East Scotland. I took 3 years out of training between August 2013 and August 2016 to gain my PhD in Leukaemia from the University of Glasgow. My ST posts were as follows:

ST3 Haematology at the Royal Infirmary of Edinburgh, August 2009 – February 2010.

ST3 Haematology at the Western General Hospital, Edinburgh, February 2010 – August 2010.

ST4 Haematology at Victoria Hospital and Queen Margaret Hospital, Fife, August 2010 – February 2011.

ST4 Haematology at St John's Hospital, Livingston, February 2011 – August 2011.

ST5 Transfusion Haematology at the Scottish Blood Transfusion Service, Edinburgh, August 2011 – February 2012.

ST5 Haematology at the Western General Hospital, Edinburgh, February 2012 – April 2012.

ST5/6 Paediatric Haematology at the Royal Hospital for Sick Children, Edinburgh, April 2012 – November 2012.

ST6 Haematology at the Western General Hospital, Edinburgh, November 2012 – August 2013.

ST7 Paediatric Haematology at the Royal Hospital for Children, Glasgow, August 2016 – February 2017.

ST7 Paediatric Haematology at the Royal Hospital for Sick Children, Edinburgh, February 2017 – August 2017.

8. Since commencing Haematology training 13 years ago, I have gained extensive and broad experience in both clinical and laboratory Haematology. Towards the end of training I focused on Paediatric Haematology as I knew this was the area in Haematology I wished to pursue after completion of training. I reflect on my practice and update my knowledge through self-directed learning and attendance at local, national and international meetings. I understand the importance of integrating research into clinical practice and I plan to maintain active research during my clinical work.
9. I have completed and attended various courses and meetings, delivered presentations, prepared publications, and conducted audits and research throughout my career. I have also delivered formal teaching to undergraduate and postgraduate students.
10. My first post working at the RHC was in August 2016. I had a 6-month rotational post in my ST7 year of Haematology training, which was my final year of training. I then returned to Edinburgh which was my training Deanery, and did a further 6 months in the Royal Hospital for Sick Children, Edinburgh Sick Kids, before taking up my Consultant role at RHC Glasgow in September 2017.

Awareness of Patients/Families Evidence

11. I am aware that evidence has been given by patients and families and I have read some of the transcripts. I think it is good that the patients and families have had the opportunity to express how they feel and explain their experience of this process, as all the information regarding the ward came to light. I hope it has been cathartic and a way in which they could offload, as it was clear that families were very stressed by the whole process.

Current Role and Specialism

12. I am currently a Consultant in Paediatric Haematology at the RHC. This is a tertiary referral centre for malignant and benign Haematology and the national centre for Haematopoietic Stem Cell Transplantation (HSCT). My primary role is in the management of patients with Leukaemia, Lymphoma and undergoing HSCT. I am developing a training programme for Haematology trainees, including instigation of weekly Morphology meetings. I am based at the Schiehallion Unit which consists of the in-patient Ward 2A, day care Ward 2B and out-patient clinics for haemato-oncology and benign Haematology. There are 3 separate on-call rotas for the Schiehallion Unit in RHC, and I participate in all of them. The on-call commitment is 1 in 5 for HSCT, 1 in 4 for laboratory Haematology and 1 in 6 for ward cover, which includes Paediatric Oncology and Benign Haematology. We tend to do a week (7 days) of on-call which covers the day, overnight and the weekend. We are not resident on-call but can be called at any time and may need to come to the Hospital. The on-call week can be very varied and there is no 'typical' on-call week. As I participate in all 3 on-call rotas, my on-call commitments are often merged, so I may be on-call on all 3 rotas at once. The on-call ward consultant is responsible for all in-patients and new patients out of hours. The HSCT consultant is responsible for all HSCT patients. If on-call for the ward or HSCT the consultant comes into the Hospital at the weekend to do a ward round of the in-patients. The consultant on-call for the Haematology laboratory is responsible for Haematology advice. This can be responding to abnormal blood results highlighted by laboratory medical scientists or from other medical specialities seeking Haematology advice (but not necessarily cancer advice). The

laboratory consultant is also responsible for benign Haematology patients out of hours. The Haematology laboratory is completely separate from the Microbiology laboratory.

13. My day-to-day work involves looking after children with haematological diseases and in particular, children with malignant diseases such as Leukaemias and Lymphomas. I am also part of the HSCT team, so I also look after children who are being worked up for, are receiving or have received a HSCT. Patients can be referred for a transplant by myself or other colleagues in Glasgow. They can also be referred from other hospitals, both within and out-with Scotland. 'Work up' for a transplant includes counselling the patient and family about the indication for and risk of a HSCT and arranging standard and patient specific investigations and procedures which must take place before a child can receive a transplant. Once patients are admitted for a transplant I am part of the team that looks after them, both as an in-patient and for out-patient follow up. Whilst the Haematology consultants have named patients, we cross cover looking after patients with the same condition.
14. Whilst my day-to-day work is usually focused on malignant Haematology and HSCT patients, when on call, I would cover everything. This includes children with solid organ tumours and those with benign haematological conditions, like Sickle Cell disease. I give haematological opinions to other specialities and I also report blood films, bone marrows and cerebrospinal fluid.
15. The patients I look after are usually aged under 16 years old. If a child has been diagnosed before the age of 16 years but they are still going through treatment and have not transitioned into adult care, we will continue to look after them in the paediatric hospital. The oldest patients we have looked after have been 19 or 20 years old.
16. When I started at the RHC as a ST7 in 2016, I was a Registrar and had limited management responsibility. I did not have any responsibility over infection control management or facilities. As a Registrar I would occasionally help author Standard Operating Procedures (SOPs). In general, Registrars do not

attend quality meetings or governance meetings. They have little input into how the department is run or how procedures are implemented, save for conducting audits. As a Registrar, your experience in management is very limited.

17. As I have gained more experience in management in my consultant role I have taken on management responsibilities. One of them is being part of the Haematology Laboratory Management Team. This team assesses how the laboratory is functioning and considers whether there needs to be any changes in process. For example, we review the turnaround times for haematological blood tests and work force plan. This is completely separate from the microbiology laboratory; we do not discuss infection rates. I also participate in unit meetings, clinical governance meetings and quality meetings. Management duties can be a heavy workload at times, and are in addition to our clinical duties.
18. All Haematology laboratories must have clinical Haematology input from Consultant Haematologists. This is a prerequisite for the laboratory to be accredited. It directly benefits the Hospital as a whole because there is clinical oversight over the running of the Haematology laboratory, and any speciality that uses the Haematology laboratory (be it a hospital speciality or general practice) will have clinical Haematology input if needed. The Haematology laboratory at the Queen Elizabeth University Hospital (QEUP) processes adult and paediatric samples, both in the Hospital and from the community. Within the Haematology laboratory there is a paediatric section; should the laboratory staff require clinical input for a paediatric sample, they would contact one of the Paediatric Haematologists.
19. In terms of other management roles, like my consultant colleagues, I will be involved in unit, clinical governance and quality management meetings. I have authored SOPs. The most recent SOPs I have written are for the investigation and management for Macrophage Activation Syndrome Post-Transplant, Cytokine Release Syndrome and I have also updated the SOP on Use of Immunosuppression post-HSCT. Before SOPs are finalised a draft is

circulated to the Governance Group for review. I have reviewed SOPs that have been drafted by other colleagues.

20. The unit meetings, clinical governance and quality meetings are specific to the Haemato-oncology unit or stem cell service (Schiehallion). The Haematology laboratory meetings pertain to the running of the Haematology laboratory that serves South Glasgow – adult, paediatric, in-patient, out-patient and in the community. For example, some of the topics that we discuss in our management meetings are turnaround times for full blood counts from A&E.

Leukaemia and Lymphoma

21. Leukaemia and Lymphoma are blood cancers. Simplistically, Leukaemia is a liquid disease and lymphoma is a solid disease, but both are cancers of the immune or blood system. In children, they are usually aggressive cancers that require aggressive, intense chemotherapy and sometimes a HSCT. The treatment often requires long in-patient admissions or frequent day admissions to receive chemotherapy and manage toxicities of treatment. The therapy is associated with a high incidence of pyrexial or infective complications and other toxicities. Regarding immunocompromise and risk of infection, both the disease itself will cause a patient to become immunocompromised because it is the blood and immune system that is disordered, as will the treatment. As the treatment is intense and associated with significant toxicity, often children need to stay in hospital, (a) because they may have to be in strict isolation to protect them, or (b) because the treatment is associated with significant toxicity that requires in-patient support.
22. Immunocompromise is the main toxicity associated with chemotherapy. However, any organ can be affected by chemotherapy and can make the child unwell.
23. The mitigation of infective risk is tailored to the patient and is dependent on disease and individual patient factors. Some low grade Leukaemias and Lymphomas may not need any or very little chemotherapy, and therefore are

associated with a low risk of infective complications. For aggressive cancers that require intensive therapy, the risk of infection is high and mitigating measures do need to be taken. One measure is the use of prophylactic antimicrobials. This is tailored to the disease, the treatment protocol and the patient themselves. For example, most children going through Lymphoma or Leukaemia treatment will receive prophylaxis against Pneumocystis Pneumonia (PCP), which is a fungal chest infection. Depending on the intensity of the chemotherapy and the types of agents used, they may require prophylaxis against other fungal infections and viral infections. For example, if the patient develops a viral infection, antivirals may be started as secondary prophylaxis. Patients are advised to avoid crowded spaces to minimise the risk of contracting an infection from other individuals and they are advised to avoid close contact with people who have infectious symptoms. For some children, if they are going through relatively intense therapy but do not require in-patient therapy, they may be advised to stay off school. The advice we give is tailored to the patient.

General views on the opening of RHC, QEUH and the Schiehallion Unit

24. I was not in post at the time of the planning and design of the RHC. My first impression of the Hospital was that it was big and looked very impressive and bright. It was clean and the majority of rooms were single rooms. The Hospital certainly looked like a 'state-of-the-art facility'.
25. Ward 2A appeared to be a good ward to house patients who were at risk of infection. Patients could be isolated from each other as all the rooms were single rooms, and each room had a hand basin and en-suite shower room. In the HSCT rooms, there was an anteroom with a hand basin so staff could wash their hands. Hand washing is one of the keyways to prevent infection. The whole hospital is very big, and all of the wards are very long. Departments are very spread out and staff can spend a lot of time walking between departments. For example, it takes 10 minutes to walk from the office to the ward. Practically, there were never enough computers and sometimes there

was not enough space for all the doctors to be in the doctors' room. However as staff, we would always like to have more space and more computers.

Common Issues (Interior of building)

26. I have been asked if I can remember various problems in the unit after opening.
27. I cannot remember there being any problems with the temperature in the rooms, or with the window blinds.
28. Each patient room had a TV. I am aware that the TVs would sometimes break down. There was patient WI-FI, but I cannot comment on how fast or reliable it was. Some of our patients have to stay in isolation for over a month which can be boring, so not having access to TVs and WI-FI could be quite frustrating.
29. I am not aware of issues with plug points or battery packs; however, I recognise there could always be more plug points. If a child is going through intensive therapies, they could be using multiple plug points in their room and sometimes all of them can be in use to power intravenous (IV) lines and machines. The beeping of the machines can be annoying for patients.
30. I am not aware of any issues with power outages. If there were, there would be documentation in the form of a DATIX raised or it would be reported on the Facilities Management (FM) system. I also cannot remember any issues with the door entry system. The door requires a pass to enter.
31. Regarding the sewage system, toilets did sometimes block. However, over a period of about 5 years, this did not happen often. I cannot remember any details of sewage leaks. I do remember that, around 2019/2020, when we had decanted HSCTs to Ward 4B, there was an issue on that ward. I cannot remember if it was a blocked toilet or a leak. From memory, it may have occurred after inappropriate material was flushed down the toilet. I cannot recall the exact details, but I know it was not a common occurrence. There will

be documentation of the incident. I do remember that the issue was fixed quickly. Generally, any breakdowns in a ward for immunocompromised patients tend to get sorted quickly.

32. I do not remember any issues with flooding in en-suite shower rooms.

Common Issues (Exterior of building)

33. From memory, following a storm, there were some leaks from the ceiling on Ward 6A. I do not remember exactly where in Ward 6A the leaks occurred. The leaks happened over a weekend but they were resolved quite quickly. This would be documented as a DATIX or on the FM system. I do not remember any leaks from the roof in any other situation.

34. I am not aware of any issues with the play park.

Cladding Issues

35. I knew the cladding was being changed on the front of the RHC, but I cannot remember if it was changed at the front of the QEUH. There will be documentation pertaining to this. The risk of cladding works to patients who are immunocompromised is exposure to fungal spores that are released from the works. Therefore children were at greater risk of developing fungal infections. We changed the entrance/exit our patients used to access the Hospital to try and avoid them being exposed to the cladding works. There are several entrances to the Hospital, and in consultation with Infection Control (IC), we advised the patients to use the side entrance. I have been provided with briefings from the Inquiry (**A38845769 – Cladding briefing for inpatients dated 7 September 2018 – Bundle 5 – Page 101**) and (**A38845789 – Cladding briefing for Outpatients dates 7 September 2018 – Bundle 5 -Page 103**) which have reminded me that the entrance changed several times. At one point, I believe our patients entered/exited the Hospital via what was the discharge lounge opposite the main car park. At another time, I think they entered through the side entrance beside A&E; but this may

have been for all paediatric patients. We widened the cohort of patient groups that would receive fungal prophylaxis during this time.

Smell from sewage plant

36. The RHC is located quite close to a sewage plant. I could sometimes smell sewage outside the Hospital, but I could not smell sewage within the Hospital. It is not pleasant, but I think this has been looked into and deemed not to pose a risk. The presence of a smell does not mean that there is bacteria floating around in the air that is harmful. An expert in sewage work could expand on this point. To this day, the smell is sometimes present, but it is not there all the time.

Impacts of internal/external issues

37. The moving of the entrance/exit had an impact on staff and patients. The Hospital is big and the entrance by the former discharge lounge was further away from the RHC, Ward 2A (in-patient) and Ward 2A (day care). I imagine that could have been frustrating for the parents. This alternative entrance was very far away from the children's car park, however the main car park is close to it. The main complaint from parents was that there were a lot of smokers who used to stand around that entrance. Smoking is prohibited in all hospital sites, however no one policed this. It is understandable that the public would feel intimidated to ask someone to stop smoking. This issue was raised, and I believe someone was stationed at the entrance to ask people to cease smoking, but I cannot be sure that this is accurate. Those were the main complaints parents expressed to me. Whilst staff had to deal with parents' complaints, overall, the parents did not really complain much and I do not remember parents being difficult or unreasonable. Sometimes the parents would have questions around the reason for the entrance/s being moved. They had very reasonable questions and wanted clarification. At that point, a conversation between clinical staff and parents was enough to alleviate any concerns. Management were not required to speak to them. In general, it was the nurses and doctors who answered any questions that parents had.

38. If a room develops a leak or the toilet does not flush, the patient cannot stay in that room. The patient must move to a different room while the issue is investigated and fixed. We would never have work going on in a room without vacating it first. Patients would move from a single room to another single room so the room was no different in terms of suitability. There is also a rolling schedule of room maintenance which can require patients to move room. Moving rooms can be cumbersome but parents are usually very understanding about the reasons behind this. Sometimes, it can be a novelty, especially if the patient has been an in-patient for a long time. I have not had any difficult conversations with parents about their child moving rooms.
39. There is an impact on the staff when things break in patient rooms. When TVs or the WI-FI stop working, the nurses and auxiliaries probably receive more complaints than the doctors. When patients move rooms, the nurses and the auxiliary staff bear the brunt of the work of physically moving the patient and their belongings. The domestic staff will also be impacted because they have to ensure that the rooms are cleaned.

Issues with Built Hospital Environment

Water Supply

Concerns about Infection – Ward 2A

40. Initially, I did not have any concerns about the water supply in Ward 2A. Gradually, my colleagues and I noticed an increase in unusual central venous line (CVL) associated infections. Typically, CVL infections are caused by gram-positive organisms found on the skin. However, we perceived an increase in the proportion of gram-negative associated CVL infections. Sometimes multiple organisms were found in a single blood culture. In addition, unusual gram-negative organisms were being isolated, some of which we had never heard of before or had rarely come across. Some examples of these were: Elizabethkingia, Cupriavadis and unusual

Pseudomonaii, such as Pseudomonas Putida. My consultant colleagues and I thought it was strange and could not explain the perceived increase in gram-negative infections and the change in the type of organisms identified.

41. The awareness of the problem with infection rates on the ward happened very slowly. The difficulty is that infections are very common in immunocompromised patients. It is the most common side effect of cancer therapy. An infection usually manifests as a high temperature. Nearly all patients going through chemotherapy will have a high temperature at some point and usually on multiple occasions. In a proportion of them, a causative microbe is isolated. The most common microbes isolated are those that reside within the patient themselves: Streptococcus from the oral cavity, Staphylococcus from the skin or E. coli and Pseudomonas from the gut. On occasion, rarer organisms can be isolated. In previous jobs I have looked after patients in whom Stenotrophomonas and Elizabethkingia have been isolated. Therefore, whilst these bacterias are uncommon, most were recognised bacteria that we knew could infect people who are immunocompromised. This made it very difficult to ascertain if the increase in infection rates we were seeing could be explained as normal background rates of infection, or a true problem. Initially, ward staff heard about positive blood cultures during our handover meetings or from phone calls from Microbiology. Over time, both the medical and microbiology staff noticed an increase in infection rates. I cannot remember when the water system was postulated as a possible source but thereafter, Incident Management Team meetings (IMTs) were held with increasing frequency. Weekly IMTs were held at the height of the water problem.

Concerns about links to the environment

42. At the time it was very difficult to ascertain if the perceived increase in infections was due to a true problem in the environment or if what we were observing was coincidental. On one hand, we were seeing a higher proportion of gram-negative infections due to bacteria that we either had not heard of before, or had seen rarely. However, there is no data on 'standard'

background rates of infections from specific organisms. For example, there is no data on the 'standard' incidence of *Stenotrophomonas* infection in a haemato-oncology population.

43. The lack of a benchmark around what the level of infection should be made it difficult to actually define whether the perceived increase in gram-negative infections was out of proportion to what is expected or considered 'normal'. Whilst we, as a consultant group, had a feeling that the rate of infections was higher than expected, we could not back that up with published data on standards that we should be adhering to, or background rates of these sorts of infections. However, we all agreed that we had never experienced this number of unusual gram-negative infections before.
44. The gram-negative infections are most prominent in my memory. We (the consultant group) felt there was a higher number of gram-negative infections than usual and significantly more unusual organisms isolated than we had previously experienced. We did not hypothesise the source of the change in the infective landscape; we looked to our colleagues in IC and Microbiology to hypothesise the cause of the problem. It is their role to investigate spikes in infection rates. The environment/water as a potential source was postulated but I cannot recall the timeline of when this happened. I cannot remember when or if the ventilation system was considered as a contributory factor in fungal infections. Fungal infections are a recognised complication in patients who received a HSCT or patients going through intensive cancer treatment.

Remedial Actions on Ward 2A

45. Once it was recognised that there was an abnormal increase in infection rates and the environment/water supply was hypothesised as a possible source, several remedial controls were put in place. I cannot recall the exact timeline and sequence of events but it occurred in the months preceding the decant of Ward 2A/2B to 6A and 4B in September 2018. The remedial actions I remember included: Installation of point of use filters on taps in Ward 2A, 2B and other hospital areas our patients accessed; drain cleaning within the ward;

chlorine treatment and hydrogen peroxide vapour (HPV) treatment. I believe patients had to temporarily vacate their rooms for HPV treatment.

Hypotheses – water issues and infections

46. As the numbers of gram-negative and unusual infections increased, the medical and IC team all agreed that this was out-with expected infection rates in a haemato-oncology unit. From my understanding, whilst water supplied to the Hospital is not sterile, an investigation was carried out to check whether the water at source, had a higher concentration of bacteria than is normal. It was postulated that a biofilm may have developed around the internal pipework in the sinks, drains and taps that resulted in a high level of bacteria in the water coming from the taps. It was also postulated that splashback from water hitting the drains may have contaminated central lines.

47. At IMTs prior to the decant in September 2018, various hypotheses were considered as to the perceived increase in gram-negative infections on Ward 2A/2B. IC led on this, as the IC Team have the relevant expertise to identify the source of different organisms for the purposes of developing hypotheses and carrying out investigations around the same. The IC Team postulated a water source for the spike in infections. One complicating factor is that our patients are exposed to water supplies out with the Hospital. I remember one of the questions raised was whether the children could be getting these infections from home. However, the Hospital can only investigate within their remit and thus investigated the water supply to the Hospital. As not everyone on the clinical team could attend the IMTs, IC often came to the Ward to discuss their hypotheses with the senior medical and nursing staff on the Schiehallion Unit. Once the water supply and specifically the sinks and drains, were hypothesised as being a possible cause, trying to investigate that while Ward 2A/B were still working wards was very difficult. The remedial measures were very disruptive for the patients and understandably caused some anxiety in the parents.

Impact of water issues

48. Prior to the decant, I recall that all patients were asked to use bottled water for drinking and brushing their teeth. This would have been recommended by IC. This was instigated as a safeguard whilst the water was being investigated, rather than being based on results from investigations or being evidence based. Parents were temporarily asked to use wipes to clean their children rather than using the showers.
49. The biggest impact of the water issues was that Wards 2A and 2B were closed and decanted to Wards 6A and 4B.

Ventilation

50. I myself never raised nor observed issues with the ventilation systems. The ventilation systems are not visible. When Yorkhill initially moved to Ward 2A, there was a different ventilation system to the one in place now. At Yorkhill Hospital (the predecessor of RHC), the middle section of the Ward was filtered and had to be entered via two interlocking doors, that is, two doors to get into the ward in order to reduce unfiltered air getting in. This is now in place in Ward 2A following the refurbishment. I was not aware of any problems with the ventilation on Ward 2A, but I understand that when we decanted out of this ward, there were changes made to the ventilation systems. There are now interlocking doors and other modifications. We have been assured that the Ward has been upgraded and is fit for purpose. I do not recall patients mentioning any issues about the ventilation system to me.
51. I have a general understanding of the basic principles of air pressure, the different types of rooms and different air pressures within those rooms. Transplant patients and patients going through intensive chemotherapy are the most high-risk patients with the greatest risk of developing severe infection from airborne organisms. They would be nursed in a room with positive pressure ventilation i.e. air from their room would be pushed out, minimising airborne pathogens entering their room. Patients with infections that produce airborne pathogens, such as a respiratory virus, would be nursed in a room

with negative pressure ventilation i.e. air from outside the room would be pushed in, preventing airborne pathogens within the room getting out. It is helpful if a ward that undertakes HSCT has filtered air, to minimise airborne pathogens. When I first started on Ward 2A, I was not told anything about the ventilation system.

52. Once we moved into Ward 6A, we had portable High Efficiency Particulate Air (HEPA) filters, to help remedy issues with ventilation because it was not a bespoke ward for immunocompromised patients. From memory, they were there from the beginning of the decant to Ward 6A. I cannot remember HEPA filters on Ward 2A prior to the refurbishment.

Concerns about Stenotrophomonas in 2018

(A36591710 – SBAR – Review of 2017 Mortalities in which Stenotrophomonas was isolated dated 19 November prepared by Dr Alan Mathers)

53. When it was apparent there was an increased incidence of gram-negative infections, Professor Gibson wished to retrospectively review gram-negative infections that had occurred prior to 2018. Microbiology provided a list of patients who had gram-negative blood infections at the end of 2016 and 2017. Professor Gibson asked if I would provide clinical context to these incidents.
54. Professor Gibson asked me to collect the data to be used in a review of gram-negative infections in 2016 - 2017. I was asked to do this because in 2016 and for the majority of 2017, I was a trainee, based either in Glasgow or Edinburgh and not working as a consultant within the department.
55. My contribution was in data collection, not analysis. I gathered clinical data around the use of antibiotics, whether the CVL was removed and if the patient was still alive, and entered it into a table. I did not review the patient notes and I did not draw any conclusions. I provided the table to Professor Gibson (by email dated 10 July 2019) who passed it onto our Medical Director, Alan Mathers. She did not copy me into that email, and I was not involved in any

further discussions around this task. Someone else completed the review from the data I had collected.

56. I did not write the SBAR (Situation Background Assessment Recommendation) supplied to me by the Inquiry at interview. I have read the SBAR and compared it to the table I produced within an Excel spreadsheet ('Water organisms 2017'). My document contained some basic clinical and outcome data. The SBAR went into more clinical detail, drew conclusions and made recommendations. I had no input in writing the SBAR.

Communication with patients and families

57. When we were dealing with the problems caused by the increase in infections in the Wards 2A / 2B and whilst investigations were ongoing, communication for families was challenging. This was because we (the clinical staff) did not have clarity on the situation ourselves which was recognised by the parents. We were guided by the IMT and statements which were prepared by the Communications Team following an IMT.
58. Unfortunately, on occasion, it took many hours for the statement to become available. This was difficult for parents as they knew there were ongoing investigations and meetings, and they often knew when the meetings were taking place an update was going to be released. Waiting several hours for a communication increased the anxiety felt by the parents.
59. Distributing written statements to the parents was usually done by the senior ward nurses with support from the consultant staff. Sometimes the nurse in charge of Ward 2A and the Head of Department, Professor Gibson, would go around each in-patient family individually to hand out and discuss the contents of a written statement. They were sometimes joined by a representative from IC/Microbiology and Management (such as the General Manager or Nurse Manager).
60. I was less involved in distributing widespread information but rather was more involved with individuals. I might further discuss the communications

statement with one of my named patients/parents if they had questions or discuss the reason my patient had to transfer to a different hospital to receive high dosage chemotherapy when our ward was closed. I had new patients come in who had to go to a different hospital to start their treatment and I would personally discuss the reasons for that with them.

61. Written statements were a good method of communication because it ensured everyone (staff and patients/parents) received the same information and that the information was accurate. Often families wanted face to face communication with the clinical staff. At the time Jamie Redfern was a General Manager and Jennifer Rodgers was the Nurse Manager for the paediatric hospital. Both were often in the wards and were very good at coming to the Ward to help distribute information and answer patient queries. Parents often had questions that were best answered by Management rather than the clinical or IC/Microbiology Teams. More senior management were not present for the distribution of information. I do remember that members of the Senior Management Team had meetings with parents but I was not present at these.
62. We were never dictated to by Management about what we told patients and families. They would advise us if we asked it of them. At one meeting between Management and Clinical staff, clinicians asked for advice on how to answer if a parent asked whether the ward was safe. We were advised to stick to facts: that we were concerned about the safety of the ward, that investigations were ongoing but conclusions could not be drawn yet and that it was absolutely vital that their child should continue to attend the hospital for their cancer treatment or to deal with any complication such as a high temperature. Some parents had the impression that it would be safer for children to be at home than in hospital, which was challenging.
63. I do not remember being told that I could not relay information to patients or parents until receiving the written statement but it was much more helpful to do it that way rather than to give out information which later proved to be inaccurate and require to backtrack. I was not involved in the production of the written communications or statements. Although they took time to be

prepared they were helpful once they arrived. I am aware that at IMTs it was made clear that the responsibility to communicate to the patients and parents should not fall on the Ward nurses who did not attend the IMT meetings or indeed the consultants who were not experts in IC. It was unfortunate that in the absence of a written statement it was often the nurses who took the brunt of the frustrations and anxiety exhibited by the parents from time to time.

64. In terms of the specific issues, I do not remember particular communication being made to parents about the cladding being replaced, but at that time they were being asked to use a different exit and entrance. I have a recollection of seeing letters that went out to inpatients and outpatients and I have been provided with these by the Inquiry (**A38845769 – Cladding Briefing for Inpatients dated 7 September 2018 – Bundle 5 – Page 101**) and (**A38845789 – Cladding Briefing for Outpatients dated 7 September 2018 – Bundle 5 – Page 103**). The issue of the change to entrance/exit to the hospital was not a decision made by clinicians. We did not assess the risk the cladding works posed to our immuno-compromised patients in isolation, we would always take advice from IC.

Formal Communications to Patients and Parents

65. I have been shown some examples of communications provided to patients and parents by the Inquiry as follows:
- a. **A39123885 – Update for parents on ward dated 6 June 18 – Bundle 5 – Page 142.** I do not remember seeing this communication, but I remember the measures documented in the communication being instigated. I remember the Ward was being cleaned and the discussions around the use of prophylactic antibiotics. We also asked parents to use the handwashing sinks for handwashing only and not to pour anything into the sinks.

This communication would have been handed to parents by the nurses. If parents had further questions then these would be directed either at the nursing staff looking after them or the doctors who reviewed them. These measures related directly to the Ward and therefore only affected in-patients so it was appropriately addressed to those on the Ward. For example, HPV cleaning was done on a particular date, so would only directly affect the parents and patients that were in-patients at that time.

I do not remember the line, *“If your child has received antibiotic prophylaxis this will be discontinued after cleaning has completed”* It may relate to Ciprofloxacin prophylaxis. The decision to use the prophylaxis was between IC and the Consultants. The reason given for using Ciprofloxacin was to minimise gram-negative CVL infections.

- b. A39123918 – CWH8 Poster – Bundle 5 – Page 143.** This was a sign installed in Ward 2A above the sinks to deter people from pouring things down the sink. This stemmed from the discovery of waste material having been found in the drains, including toys and syringes. It led to the removal of a trough sink in the treatment room.
- c. A38662234 – Update for parents on cleaning dated 13 June 2018 – Bundle 5 – Page 144.** This was a communication to families advising them that HPV cleaning was going to take place on the Ward. When providing a reason for HPV cleaning, we would be direct with patients and families. They would still ask questions to gain more information and often IC would speak to parents directly because some of the questions were not ones that the clinicians could answer.
- d. A39123933 – Parent poster dated 6 September 2018 and A38662122 – Briefing for parents for Ward 2A and 2B patients dated 18 September 2018 – Bundle 105 – Page 147.** These communications are examples of statements written for parents following an IMT. At the IMT we would discuss the need for effective communication to the parents and the

statement would be prepared by the Communications Team. Similarly, the IMT would comment if a media statement was required.

Staff Communication

66. During the period before the decant, a lot happened in a relatively short space of time and it is difficult to recall the timeline of communications to ward staff. I do remember that there was communication from Management to staff about the water supply, updates on investigations and the effectiveness of remedial actions. When there were frequent IMTs, representatives from Senior Management attended, at least at the level of General Manager. The issues on the Ward were escalated up to the Chief Executive, Jane Grant, and the Medical Director, Jennifer Armstrong. They were aware of an unusual cluster of infections in the Unit and that the consultant body were concerned that the source of the infections was unidentified but possibly due to the building. They did not attend IMTs but did send Management representatives. They also met with the clinical team at a standalone meeting.
67. Management shared the clinicians' concerns about the infections. They had to balance investigating and fixing issues with the Ward against the disruption those remedial actions would inevitably have on patient care and delivery of treatment. The duty to cascade any information from the IMT meetings to the consultants was on the consultant representative at that particular IMT meeting and similarly, the duty to cascade any information to nursing staff was on the nursing representation at that meeting. Management held infrequent meetings to communicate discussions which had taken place at IMTs to the ward staff.

Closure of Ward 2A and 2B and the move to Ward 6A and 4B

68. In 2018, it was decided that in order to fully investigate the suspected water problem, Ward 2A/2B would be closed and decanted. We moved to the new ward/s in September 2018. I recall that in preparation for the decant, there were several IMTs and a lot of remedial measures put in place.

69. I was not involved in the decision to decant the ward. That decision came from Management. Day-to-day, I did not have much contact with Management, although they were present and reasonably accessible. I would only approach my General Manager or Service Manager (at the time, Jamie Redfern and Melanie Hutton, respectively) if an issue arose that could have an impact on service delivery. Likewise, the Clinical Director (Philip Davies) would only be approached if a situation arose that would impact operations clinically.
70. I was not involved in organising the decant. The logistics of it were considered and organised by others. The Schiehallion Unit had already moved from Yorkhill Hospital to RHC and many of the staff had been involved in that move. As such, they had experience in moving patients from one site to another and were better placed to lead on this. In the lead up to the move, equipment etc. was relocated to the new ward. The order in which patients were to be moved to the new ward was then agreed. Decisions around the order that patients were transferred was discussed at consultant level and were based on the vulnerability of the patient (for example, whether they were in strict isolation or not). Based on our experience in caring for patients with haematological and oncological diseases we are able to assess the stability of each patient's clinical condition fairly easily.
71. The patients were decanted over the course of one morning. The first patients were escorted by medical and nursing staff, some of whom then stayed in the new ward. As more patients transferred with medical and nursing escorts, some medical and nursing staff stayed in the new ward and some returned to 2A to escort the remaining patients. Slowly, both patients and staff moved to the new wards, ensuring that there was enough medical and nursing staff to guarantee that the patients were safe in transit, and in both wards. There were logistics in terms of the planning and how many staff were required. We tried to make sure nobody was on annual leave on the day because we knew we had to temporarily staff two sites.

72. My understanding of why we needed to decant was to allow a full investigation of Ward 2A/2B. Despite remedial actions having taken place, new cases of unusual bacteria were still emerging, and IC had reached the limit of the investigations that could be performed with patients still on the ward. Decanting the wards was a last resort; a decision to move a vulnerable group of patients from one ward to another is not taken lightly. IC must have felt they could not get to the bottom of what the environmental cause of the infections was without moving patients off the ward.

Communication regarding the decant

73. I have been shown a letter to parents from Professor Gibson regarding the decant (**A38662228 – ward relocation letter to parents dated 25 September 2018 – Bundle 5 – Page 154**) but I do not remember this from the time of the decant.
74. I was first made aware of the decision to decant by email from Professor Gibson to consultant staff in September 2018 which communicated the intention to move wards. I was not involved in the preparation of any risk assessments completed before the move but have no doubt these were prepared to facilitate the move.
75. When we discussed the reason for decanting the Ward with patients and families, we explained it was to investigate whether there was an environmental link to the infections. We could not be as direct as to say that the environment was the cause as we had no proof to that effect. We were very careful not to over-interpret or mix opinion with facts on the cause of the infections. We, as the consultant team, did ask IC and Management for advice on what to say if families asked certain questions, to ensure we were providing consistent information.
76. The parents recognised that decisions about the Ward and investigations being carried out were being made by Management and not by clinical staff on the wards. Parents preferred to hear about management decisions directly

from Management rather than indirectly from the staff on the ward and appreciated it when Management did speak with them directly.

77. I think most parents, once we spoke to them, understood the need to decant, but they were not happy about the move itself. However, the parents themselves were worried about Ward 2A, so many of them welcomed the idea that the ward would be intensively investigated. They were leaving a ward they had lost faith in and I do not remember parents raising concerns about the ward we were moving to, just about the move itself.

The move to Ward 6A/4B – September 2018

Suitability of Ward 6A/4B

78. We moved to two wards in the adult hospital. Ward 4B is the adult HSCT Unit and it met the required standards (e.g. HEPA filtration) required for a transplant unit. The most vulnerable paediatric patients who decanted were those receiving a HSCT. They were all nursed in Ward 4B. Ward 4B was also suitable for patients receiving intensive chemotherapy or with severe immunocompromise such as severe aplastic anaemia.
79. Ward 6A was a general adult ward, and was not designed to house immunocompromised patients. From what I recall, the ventilation system was not optimal, and as such portable HEPA filters were installed on Ward 6A. All the rooms were single rooms and point of use filters were installed on the taps. A ward for patients going through chemotherapy does not require the same specialist specifications as a HSCT unit. Ward 6A was therefore a reasonable ward to nurse patients going through chemotherapy on a temporary basis. It would not have been suitable for our HSCT patients at the time of transplant.

80. I did have some concerns about the decant to two separate wards which were on different floors (the fourth floor the sixth floor). We needed to staff two separate wards. They were not children's wards so there were no pictures on the walls and no playroom, albeit this was later rectified. We had fewer beds on both wards.
81. In Ward 4B we only had access to up to 4 beds and were limited by how many beds the adult service required as well as our ability to provide adequate nursing numbers.
82. Ward 6A was used for both in-patients and day care patients so compared to Ward 2A/2B, there were fewer in-patient and day care beds.
83. Wards 6A and 4B were also some distance from the RHC, so that put an extra strain on the workload of staff. For other paediatric specialities, it took longer to get to Ward 6A and 4B than to Ward 2A/2B and it took longer for our patients to transfer to paediatric departments in the RHC. This was due to both the increased distance and the fact that the lifts were more heavily used (they served 11 floors of wards compared to 2 in the RHC).

Concerns about infection on Ward 6A

84. On the face of it, Ward 6A seemed a reasonable alternative ward to 2A. Ward 6A had exclusively single rooms, all of which had a handwashing sink and an en-suite shower room, so it was easy to isolate patients (which is an important infection control measure). Point of use filters were installed on all taps. Ward 6A did have a different ventilation and temperature system to Ward 2A. Ward 6A had chilled beams, which is not something I had heard of before. Portable HEPA filters were brought into the ward to mitigate this. From memory, they were there from the beginning of the decant to Ward 6A. The infection control implications were not at the forefront of my mind, firstly because it was the role of IC to assess the suitability of the ward from an infection control perspective, and secondly because the presence of single rooms and multiple

handwashing sinks reassured me that we would be able to implement adequate infection control measures. As a clinician, my concerns with 6A surrounded the loss of beds, and our distance from the main RHC site, in particular, the Paediatric Intensive Care Unit (PICU).

85. I recall that there were issues with the environment on Ward 6A. It was not unusual to see work being carried out. In particular, I recall there was a problem with the staff kitchen on Ward 6A. There was leaking from the chilled beam ventilation. From memory, the leak occurred after a heavy storm.
86. On Ward 4B, there was an issue with the sewage coming from the drains but I think that was isolated and rectified very quickly. I did not see it but heard about it from other members of staff. It is natural for issues such as these (e.g. plumbing and estates issues) to arise in a hospital from time to time. It did feel like there were a lot of estates issues when we first moved, but then we were also hyper aware of issues because of what we had just experienced on Ward 2A; we had a year of issue after issue. We were not unbiased observers on the wards.
87. At the time of moving to Ward 6A, we were informed that the water supply to the QEUH was separate to the water supply to RHC. I believe that was why a ward in the adult hospital was identified as a suitable ward to decant to. Point of use filters, which had already been installed in RHC, were installed on all the taps in Ward 6A as a precaution in any event. We were already monitoring our infection rates closely and this continued after the move to 6A. I cannot recall the timeline, but my recollection is that Dr Teresa Inkster raised concerns with Management about Ward 6A, given she was monitoring infection rates very closely, resulting in Ward 6A closing to patients receiving in-patient chemotherapy. Patients who required in-patient chemotherapy either received it on Ward 4B or were transferred to other hospitals. I remember counselling a patient's family and then transferring them to a different hospital for treatment because there were no available beds on 4B.

88. Unusual infections also occurred in 6A and the ward closed for a period of time. Patients were still admitted for supportive care, such as management of neutropenic sepsis and bloods transfusion, but patients did not receive intensive chemotherapy. I remember that the clinicians were very resistant to opening Ward 6A again until we had certainty that the ward environment was safe. There were frequent IMTs to discuss the problems on Ward 6A and I understand that the IMTs could not get to the root of the problem. At some point during the closure of Ward 6A there was a change to the chair of the IMTs. Dr Emilia Crighton took over this role from Dr Inkster. There were lots of high-level investigations going on. This included reviews by Health Protection Scotland (HPS) and whole genome sequencing of bacteria isolated in blood cultures. Meetings out-with the IMT were held for the consultant group to justify opening the Ward. As clinicians, we wanted to be absolutely sure that the Ward was safe to open because of the previous disruption and difficulties caused by the decant from wards 2A/2B.
89. Root Cause Analysis (RCA) was introduced in this period. I think having a formal investigation of each infection was beneficial. Gram-negative infections are always going to be seen in our patient group but at this time, RCA helped ascertain the likely source of the infection, in particular, whether the hospital environment was a potential source.

Incident Management Team Meetings (IMTS): Ward 6A 2019

90. I would attend IMTs in my role as a consultant in order to provide guidance from a clinical and patient-anxiety perspective. I would also cascade information back to my medical colleagues who had not attended the IMT. There were usually the following attendees: a chair either from IC or Public Health (PH), representatives from Management, Estates, IC/Microbiology, Domestic, HPS, sometimes Craig White of the Scottish Government, a ward consultant (usually the on-call consultant) and a senior nurse.
91. When I attended IMTs I did not always feel I had all the information, as people referred to discussions held at previous meetings, or they would refer to

documents that I had not seen before or that had not been circulated to me. I do not think information was purposely withheld, but rather we did not always know in advance of the meeting which consultant would attend so the meeting organiser did not know which consultant to circulate the documents to. Often we just did not have time to review the documents received prior to the meeting. When you are on call the priority is completing the ward round, and seeing sick patients so there is often very little time to review documents before an IMT. Sometimes material was only handed out at the meeting itself. Often clinical need meant that the consultant could not attend the whole meeting. In addition, the same consultant did not attend every meeting. That made things difficult and I never felt fully prepared for these meetings. When we did attend, we would have to catch up on what had been discussed previously.

92. As clinicians, we wanted proof that Ward 6A was safe. We did not want to make that decision ourselves because we all recognised that we were not Microbiologists or members of IC and that assessing whether a ward posed an unacceptable infection risk was out-with our expertise. Our duty of care was to the patients and we saw directly how patients were being affected by the ward closures and the anxiety they were feeling as a result of the uncertainty around the safety of the ward. If we told patients and their families we were re-opening the ward, we had to be absolutely sure it was the right thing to do, and we could not do that when we had doubts. We raised concerns at the IMTs when we had them. I was not discouraged from raising concerns and I felt able to do so. I do not think anyone expected the clinical staff to make the final decision to re-open the Ward but there were certainly meetings where I said, "I'm not going to make that decision", or I said that I could not agree something without discussing with my consultant colleagues. I did feel I was taken seriously. I do recognise that I did not have much experience with IMTs nor in using the HIIAT score.
93. The main difference I observed between the medical and nursing staff and the rest of the IMT was in the assessment of risk. The clinicians and the nurses tended to "up score" the HIIAT and consider the risk red or amber, when the

rest of the group would sometimes consider it amber or green. I think that is because we were on the frontline. The HIIAT score is a tool to assess the impact of the current situation and we could feel that impact keenly, because we were living it every day on the wards.

94. It was good to attend the meetings, ask questions, and hear the answers directly from Management, the Chair or the various departments conducting investigations.
95. Usually, the Head of Department would attend the IMT as the consultant representative. However, by 2019 all of the Consultants were invited to attend the IMTs so we all had some involvement. We agreed amongst ourselves who would attend each meeting. This was usually the consultant on call.
96. Overall, I take the view that IMTs are effective. However, because I was not involved in them consistently and do not have expertise in Estates and IC, I sometimes found it difficult to fully contribute on a technical level. I did express the clinical concern, the nursing concern and the patient concern. I am sure all of the clinicians who attended the IMTs raised the point that there needed to be better and timelier communication with the parents. We also reiterated time and time again that the medical and nursing staff and families needed absolute clarity that the environment was safe.

(A36591625 – Incident Management Meeting Minute, dated 19 June 2019 relating to Gram Negative Bacteraemia (GNB) – Bundle 1 – Page 320)

97. The first IMT I attended was on 19 June 2019.
98. At this meeting five gram-negative infections and two cases of Mycobacterium were discussed. I had admitted one of the patients in whom Mycobacteria had been cultured. The source of the Mycobacteria was discussed at this meeting. One of the hypotheses was that it had come from the water supply in the Hospital, and this was under investigation. No conclusions were made at this meeting; it was one of the earlier meetings and investigations were on going.

99. As investigations were ongoing, the purpose of the meeting was primarily to provide an update around the progress of the investigations being carried out by various groups such as IC and PH. We also discussed continuing the use of point of filters, and water testing pre and post filter.
100. After the IMT, I was tasked to summarise the main points of the meeting to my consultant colleagues. This was an informal meeting with the consultants. Dr Teresa Inkster, a Microbiologist/IC doctor, who was chairing the IMTs at the time, accompanied me. This was to ensure that the information relayed was accurate and to field any IC queries my colleagues had. The hypotheses, investigations and interpretation of results required specialist IC knowledge, so it was very helpful that Dr Inkster accompanied me.

(A36591622 – Incident Management Meeting Minute, dated 25 June 2019, relating to Mycobacterium chelonae in Ward 6A – Bundle 1 – Page 325)

101. I attended an IMT meeting on 25 June 2019. This meeting followed the one on 19 June 2019. It was at the time cases of Mycobacteria were being investigated. This was the first time I was informed that there was evidence of a possible link between Mycobacteria and the hospital environment. This meeting focused on speaking to the patients and their families. Everyone at the meeting knew we had a duty of candour to the patients and families, and that the patients and families were anxious about an environmental link to the infections. I said that I was happy to speak to the [REDACTED] patient and their family, but recognised that they may value their named consultant discussing this with them. It was agreed that the patient's named consultant and Dr Inkster would speak to the patient and their family, with support from Jamie Redfern, General Manager.
102. Whilst general updates regarding the Ward were communicated to patients and families via Communications statements and press releases, difficult information or news that affected an individual patient was always communicated face to face, usually with their named consultant. We

acknowledged that these were difficult conversations for the families to have but they deserved to hear this kind of news face to face and have an opportunity to ask questions. It is not appropriate to relay that sort of information in written form. All the clinicians are experienced in having difficult conversations and breaking bad news and we feel a duty to deliver that sort of news in person.

(A36591629 – Incident Management Meeting Minute, dated 18 September 2019 relating to Gram Negative Bacteraemia (GNB) in Ward 6A – Bundle 1 – Page 365)

103. I attended a meeting on 18 September 2019. I was not given much notice prior to the meeting being scheduled. At this point, we were still decanted off Ward 2A/2B and Ward 6A was closed to intensive chemotherapy. The main point I remember being discussed was that none of the investigations into the environment on Ward 6A had identified a problem that linked it with gram-negative infections and that the Ward was safe to re-open. I recognise that I had not attended all the IMTs leading up to this one but I was surprised that the IMT had come to the conclusion that the Ward was safe. My colleagues and I had observed what we perceived to be a higher-than-normal rate of gram-negative infections, sometimes with very unusual organisms, which we had assumed was not a chance occurrence. Extensive investigations into the cause had been ongoing for months. My understanding of what was being said at the IMT was that as the extensive investigations could not identify an environmental cause for these infections, it could be concluded that the infections were a random occurrence, and not linked to the hospital environment. I was not satisfied that this had been proved.

104. The IMT scored the HIIAT green. I had never used the HIIAT tool before and the scoring criteria had to be explained to me. I would have kept it as amber. I recall that I felt public anxiety was higher than moderate, based on the fact that I was dealing with families all the time, many of whom expressed to me how anxious they felt about the situation. I was informed that 'public anxiety' related to the general public, hence why the score was only moderate.

Ultimately, I was informed that the Chair decides the HIIAT score. Based on the green HIIAT score, it was concluded the Ward could re-open. I certainly did not feel that I was in a position to agree that the Ward was safe to re-open on behalf of my consultant colleagues. I felt that such a major decision needed to be discussed with all the consultants and would require 100% agreement.

105. One of the concerns we (the consultants) had, was that we were identifying new bacteria that we had never previously seen infecting our patients. Some consultants had noted that they had never experienced these bacteria in the old Yorkhill Hospital, thus raising concerns about the new hospital environment. There were two arguments refuting that these bacteria were new strains. Firstly, at this IMT data was presented that showed some of these bacterial species had been isolated in patients who had been treated at the old Yorkhill Hospital, thus concluding they were not new or unusual. Secondly, that terminology and classification for some bacterial species had evolved, so while the bacteria sounded new, they were bacteria that had been isolated in patients in Yorkhill. The nomenclature was simply different. The second point is not minuted, but is from my recollection and may well have been discussed at a different IMT. Another concern we (the consultants) had was that we were seeing a disproportionate number of gram-negative line infections. Central Line Associated Bloodstream Infection (CLABSI) data was presented at the IMT. The IMT commented that CLABSI rates were very low, and in fact the lowest they had ever been on our unit. This was used as further evidence that we did not have a problem with infection rates.

106. It was noted at the IMT that the concern was that gram-negative infection rates had increased. I recall someone commenting that the low CLABSI rates were attributable to a decrease in gram-positive CVL infections due to enhanced aseptic technique. Thus, overall CLABSI rates could not be used to as a surrogate marker of reduced gram-negative infections. I was not clear if, when CLABSI rates were being discussed, the IMT were talking about CLABSI rates as a whole, or if they were separating gram-positive and gram-negative infections. I was not confident the data had been separated, nor was I confident that everyone at the IMT was aware that the concern was with the

rate of gram-negative infections rather than overall infection rates. I felt it was crucial that we had proved that gram-negative infections had not increased, not that overall infections had reduced. We (the consultants) already knew that overall infection rates had improved because gram-positive infection rates had greatly reduced, following the excellent work undertaken by the CLABSI groups to enhance line care measures. At the IMT gram-negative data was quickly reviewed and I was told it still proved the Ward was safe.

107. This IMT was very long and I felt I was in a difficult position. I was presented with a lot of information that I did not have much time to process. I felt I was the only one who had reservations about re-opening the Ward and the majority of the IMT were satisfied it was safe. I knew my consultant colleagues would share my concerns, but as I was the only consultant present I felt outnumbered. Based on the outcome of the IMT, the Ward would have re-opened the following day. However, it was recognised that the IMT needed to justify this decision to the whole consultant body and respected my request to meet with us (the consultant group) before a decision to re-open the Ward was finalised. I now do not remember the details of that meeting but I do remember that the consultants voiced concerns around the Ward re-opening. The Ward remained closed due to those concerns from clinical staff.

108. I do not recall what was communicated to patients and families from this meeting.

109. I note from the meeting minute that page 15 references an SBAR. The SBAR was not discussed at this meeting.

(A36591709 – Incident Management Meeting Minute, dated 5 November 2019 relating to Enterobacter sequencing – Bundle 1 – Page 392)

110. I attended part of an IMT meeting on 5 November 2019. The minute from this IMT suggests that data from whole genome sequencing of Enterobacter

isolated from patient blood cultures was presented although I am not sure whether I was present at this point. The analysis showed the Enterobacter were sporadic with no genetic commonality between patients or Enterobacter in GGC. The conclusion was these were not derived from the hospital environment. At that time Ward 6A had not re-opened due to concern from the clinical team. There was still a high clinician concern that new gram-negative infections may re-occur on opening the Ward. If they did, the clinicians wanted a strategy to work out if the new infective cases signified new concerns about the environment, or simply the usual infections seen in immunocompromised patients. Adoption of RCA on every single infection was recommended by IC to help identify any environmental concerns early.

Move back to ward 2A: March/April 2022

111. We were decanted to Wards 6A/4B for over three years. During the decant there were several meetings in which the progress of the work being carried out on Ward 2A/2B was relayed to the clinical team. These meetings were with Building and Estates, as well as with Microbiology. Updates were given on the progress of refurbishment, including the refurbishment of the ventilation system.
112. At a meeting with Microbiology I attended, data on water testing on Ward 2A/2B was presented. Serial graphs of total viable counts (TVC), which is a measure of the number of bacterial organisms in water, were shown, and they were very low which was reassuring. My recollection is that this meeting took place just prior to us moving back to Schiehallion. We did have trust that the Ward was safe at that point.
113. We moved back to the new Ward 2A in March/April 2022 although I was absent at the time of the move. I returned to work to the newly refurbished ward.
114. I am sure a lot of work went into improving the ward, making it state of the art and as safe as it could possibly be. We have been assured that the water is

safe. I have observed that all the sinks still have point of use filters that are regularly changed so they do not fail and some sinks have been removed. Overall, I think we (the consultants) were satisfied that we could return to Ward 2A/2B.

115. Since returning to Ward 2A/2B, patients still get infections manifesting as a high temperature. Some patients have positive blood cultures. However, we are not seeing the environmental-type bacterial infections very often. I think there has been the odd one or two, which can be normal phenomenon, but there does not seem to have been a cluster. There is not the same level of concerns about infections; the problem seems to have been resolved. We have been given assurances by the experts that the ward environment, the water and ventilation are safe. We continue to be vigilant about our infection rates and still perform an RCA for any gram-negative infections.
116. In terms of the current risk of infection today I do believe that the Hospital have done what they can to reduce the risk. It is difficult to know what the normal bacterial concentration in water should be. For example, the water coming from our taps at home is not sterile. It is not a problem if you do not have a line and you are not immunocompromised. A lot of work has gone into making it as safe as it can be.
117. For completeness the refurbishment was not just to the water supply. Rooms were changed or repurposed, a new playroom was made and the ventilation system was upgraded.

Infection Control

118. There are subtle differences between “hospital acquired” infections and “healthcare associated” infections. Both attempts to capture infections contracted from a healthcare setting. Hospital acquired infections are defined as infections occurring at least 48 hours after admission to hospital. The 48-hour cut off is used to exclude infections that were present or incubating at the time of admission to hospital. Healthcare associated infections are defined as infections that occur directly from a medical intervention or from contact with

any healthcare setting, be it an in-patient, outpatient or community setting. Healthcare associated infections are defined as occurring within 28 days of contact with a healthcare setting. Both hospital acquired and healthcare associated infections establish a temporal link between an infection and contact with a healthcare setting but they do not prove causality. The definitions for hospital acquired and healthcare associated infections were used to identify all cases of gram-negative infection that were temporally linked to contact with the Hospital and so potentially could have been contracted from the hospital environment. Investigation into whether the hospital environment caused the infection followed.

119. Proving that an infection has been caused by contact with the healthcare setting is more difficult than establishing it is linked in time to a healthcare encounter.
120. All patients treated in the Schiehallion Unit are at risk of developing infections. Factors contributing to that risk include the severity of a patient's immunocompromise (either due to their disease or the treatment they receive) and the presence of foreign bodies, such as indwelling catheters like central lines. There are several ways that the risk of contracting infections is minimised. General measures include hand hygiene, ensuring the environment is clean and avoiding contact with people who are symptomatic of infection. Patients are asked to limit contact with people to avoid catching an infection. Depending on the risk this may be the avoidance of crowds, staying off school or, for the most high-risk patients, admission to the ward and being nursed under strict isolation with contact limited to a few people. Another measure to reduce the risk of infection is the use of prophylactic antimicrobials. This may be antibiotics (against bacterial infections) antifungal (against fungal infections) or antivirals (against viruses). The specific prophylactic agents used are tailored to the patient's risk. Patients receiving an allogenic HSCT have the highest risk of developing infection on our unit.
121. Patients receiving treatment for leukaemia very commonly develop infections. Infections usually present as a high temperature and are treated with broad

spectrum antibiotics. Often a causative organism is not found. In my experience, all patients going through leukaemia treatment have at least one episode of a high temperature requiring antibiotics.

Isolation of Patients

122. There are two reasons why a patient requires isolation. There is strict isolation and source isolation.
123. Strict isolation is when the patient is isolated for their own protection. Our most vulnerable patients, such as those receiving a HSCT, are put into strict isolation until they have some immune recovery.
124. Source isolation is when the patient has a potentially contagious infection and they are isolated to prevent transmission of that infection to others. This is usually due to a respiratory virus, or if they have gastroenteritis and have symptoms of vomiting or diarrhoea. The main impact of being in source isolation is that the patient cannot leave the room so these children cannot go to the playroom. Some indications for source isolation also prohibit parents using the family room.
125. Another indication for isolation is if a patient is radioactive due to their treatment.
126. All patients are nursed in single rooms so are isolated from other patients to a degree.
127. A line-associated infection and possible waterborne infections are not contagious and would not be an indication for a patient to go into isolation. The indication for source isolation was not impacted by the water issues.

Central Lines

128. Many patients who are treated on the Schiehallion Unit require central venous access and so have a central venous line (CVL) inserted. The most common indication for a CVL is to administer IV chemotherapy. Administration of chemotherapy into a large central vessel removes the risk of chemotherapy leaking into the skin, which is called extravasation. Extravasation can cause severe skin reactions. Extravasation is a risk of delivering chemotherapy via a peripheral cannula, which are small tubes inserted into vessels in the hand or arm. Some chemotherapy can only be given via a CVL. CVLs also allow regular blood sampling and administration of supportive treatments such as IV fluids, blood products and IV medication. CVLs are extremely useful and we would not be able to manage patient treatments effectively without them. However, they are associated with a risk of infection.
129. Most children with a malignant condition will get a CVL for delivery of chemotherapy, supportive measures and blood sampling. Some children with non-malignant conditions will also require a CVL. In bone marrow failure, a non-malignant condition in which the bone marrow fails to make blood cells, children will require very frequent blood sampling and administration of blood products which would not be manageable with peripheral cannulas. Patients with haemoglobinopathies on regular transfusions, or severe Haemophilia on regular IV factor replacement, may also require CVLs if their peripheral access is poor.
130. CVLs can be temporary, semi-permanent or permanent. Temporary CVLs last about a week and are not usually used in our unit as our patients require central access for longer than a week. We use Hickman lines or Port-a-caths both of which are permanent CVLs. Both of these are inserted into a vein in the neck and the tip sits at the right atrium. The other end is tunnelled under the skin of the chest which anchors the line in place and reduces infection. With a Hickman line, the distal end of the line will come out of the chest and the child will always have part of the line exposed outside the chest. With a Port-a-cath, the distal part of the line is also tunnelled under the skin of the chest but a reservoir is created at the end of the line, just under the skin of the chest. The reservoir can be accessed using a gripper needle and once

accessed blood samples can be taken and IV medication can be administered. When the Port-a-cath is not in use the gripper needle is removed. The reservoir can still be felt just under the skin but none of the line is exposed out-with the skin.

131. There are pros and cons to the different lines we use and we take this into account when choosing which line to use for a patient. Compared to Port-a-caths, Hickman lines are easier to insert and remove and can have multiple lumens. However, they are more likely to become infected. Port-a-caths are more technically difficult to insert and remove and generally only have one lumen. However, they are associated with a lower rate of infection and are less restrictive. If we anticipate a patient will require central access for a few months and is likely to need multiple lumens, we would generally favour a Hickman line. If we anticipate the patient will require central access for many months to years we would favour a Port-a-cath.
132. All children with suspected CVL infections are treated with antibiotics. The best way to treat a confirmed bacterial infection of a CVL is removal of the line, as this removes the source of infection. However, CVL removal involves a surgical procedure under general anaesthetic (GA), and a new line will usually need to be inserted under GA before on-going treatment can re-commence. For some children, insertion of a new line may be difficult, for example if they have had multiple CVLs in the past. Therefore, line salvage may be a reasonable and appropriate strategy in some situations. Line salvage is when a course of antibiotics is used to clear the CVL of infection. Certain bacterial line infections are less amenable to line salvage. Some gram-negative line infections rarely respond to line salvage. These gram-negative bacteria create a biofilm that coats the inside of the line which antibiotics cannot penetrate. Most biofilm producing gram-negative line infections are treated with immediate line removal and salvage is not attempted.
133. In general, the risks of and preventative measures for CVL associated infections are:

- (a) Period of neutropenia, there is little one can do to prevent this.
- (b) Translocation of bacteria from the patient to the line such as gram-positive organisms from the skin and mouth, or gram-negative organisms from the gastrointestinal tract. This is related in part to the degree of neutropenia. Prophylactic drugs can be used to prevent this, but there is little evidence to support it.
- (c) Risk of infection from accessing the CVL. All those who access CVLs are trained in aseptic line care techniques to prevent CVL infections.
- (d) Risk of infections from the exit site. Hickman line sites are cleaned and dressed once a week to prevent this. Port-a-caths that are in use have the gripper needle changed once a week to prevent infection.
- (e) Potential transfer of environmental organisms to the line. Parents are shown how to protect lines when their child is bathing, for example.

134. When accessing CVLs, it is important that correct aseptic line technique is used. All staff who access lines are trained in correct line care. It involves hand hygiene and use of sterile equipment to prevent lines becoming infected, usually with gram-positive bacteria that reside on the skin. A lot of work has gone into improving the technique around line access. As a result, the gram-positive line infection rates on our unit are very low.

135. I am not trained to perform line care and so do not carry that out.

Monitoring and surveillance of infection

136. A lot of infection monitoring and investigation occurs in the background. Infection surveillance happens both at a ward level and a hospital wide level. Ward level surveillance is presented at the Unit meetings. This is conducted by IC. My experience of infection surveillance relates to infections usually transmitted by contact, such as rotavirus or MRSA. IC will inform the ward if a patient develops such an infection, so that infection control measures can be

immediately adopted. The investigation and management of outbreaks of such infections is led by IC.

137. The cleanliness and hygiene in the Hospital is very good. We have a Domestic service who ensure common areas and patient rooms and bathrooms are cleaned regularly. Everyone on the Ward practises good hand hygiene. I believe our ward has one of the best adherences to hospital hand hygiene policy. As with everything in the NHS we could always have more Domestic staff and resources.

138. I have not been involved in conducting infection surveillance. When RCA was introduced I would take part in RCA for my named patients. RCA was always done with IC and we would discuss potential sources for the infection.

Impacts of Infection

139. Contracting a gram-negative CVL infection (i.e. those investigated during the water incident) would impact the patient in a number of ways. Firstly, the child would require a course of antibiotics. Secondly, it is likely the child's CVL would need to be removed and potentially another CVL inserted once the infection cleared. Both are surgical procedures performed under GA. Thirdly, the child's chemotherapy may be delayed while the infection is being treated and CVLs are removed/replaced. The duration of treatment for infection differs on a case-by-case basis, but is usually about 1 or 2 weeks. If the infection occurred several weeks before the patient's next chemotherapy was due, the infection could be treated and chemotherapy continued without a delay. For example, some chemotherapy regimens cause bone marrow suppression for 4 - 6 weeks and subsequent cycles cannot commence until the bone marrow has recovered. Patients developing CVL infections during the period of bone marrow recovery may still recover their bone marrow and start subsequent cycles in the expected time frame. Mycobacterium infection is different in that it requires prolonged antibiotic treatment and so chemotherapy may be delayed beyond 2 weeks in Mycobacterium infections. Some of my named

patients had delays in chemotherapy due to infection but no one had to stop chemotherapy completely due to infection.

140. Most seriously, gram-negative CVL infections can cause severe sepsis, circulatory collapse and organ failure that require intensive support and can result in death.
141. It is difficult to quantify the overall impact the unusual infections had on patient outcomes. The organisms causing these infections were unusual but contracting an infection during cancer treatment is very common. Patients have delays in therapy for many reasons; infections are one but other causes include delays in bone marrow recovery and organ toxicities. Unfortunately, some patients will die from treatment related complications and infections, and all chemotherapy protocols have a mortality risk. The unusual infections in themselves probably impacted a patient to the same extent as any other infection or toxicity would. The difference is whether they were preventable infections.

Prophylactic Medication

142. Many of the patients that I treat will be prescribed prophylaxis during the course of their treatment. My knowledge on using prophylactic medication comes from my education and my experience.
143. The indications for prophylaxis and the drugs used are determined by the risk of infection associated with the chemotherapy protocol used, the disease associated risk of infection and patient specific factors. The decision to use prophylactic antimicrobials, the choice of prophylactic agent and cessation of prophylaxis is made by clinicians. Sometimes patient specific factors are also considered. In non-standard or unusual situations we take advice from Infectious Diseases or Microbiology.
144. In making decisions about prophylaxis we are guided by chemotherapy protocols, national and international guidelines and local policy.

Chemotherapy protocols usually stipulate when prophylaxis is needed. It is understood that different regions will have different infection risks, much of which is determined by the microbiological landscape of the local area. Different hospitals may have access to different drugs. Therefore, a protocol cannot be too prescriptive in their prophylactic guidance. For example, many haematological protocols I use will say to give Pneumocystis Pneumonia (PCP) prophylaxis, or to consider fungal prophylaxis dependent on the background risk in the local area. Prophylaxis may change over the course of a patient's treatment. Some cycles of chemotherapy may be more intensive than others and prophylaxis will change depending on the intensity of each cycle. We use international guidelines such as those which stratify patients into very low, low, high and very high risk of invasive fungal infection, based on patient factors (disease, treatment etc) and environmental factors. This risk stratification helps in deciding which patients receive fungal prophylaxis. Sometimes a patient may only have a low personal risk, but a high environmental risk (e.g. if they are exposed to building works) which may justify the use of fungal prophylaxis.

145. There is not usually any controversy or disagreement in the indication to give prophylactic antibiotics. The choice of which prophylactic agent to use is sometimes debated. How patients tolerate a medication, the method of administration (IV vs. oral) and interaction with other drugs are some of the considerations when choosing a prophylactic agent. We have local policies to guide prophylactic antibiotic use. On rare occasions I have deviated from standard local practice when it is in the best interests for my patient.
146. Prophylaxis is used to prevent infection in people who have a significant risk of developing infection. Usually the risk (for example, immunocompromise due to chemotherapy) is temporary and prophylaxis can be discontinued once the risk is gone (for example, once the immune system has recovered). In some situations people require lifelong prophylaxis. The most common indication for lifelong prophylactic antibiotics is hyposplenism (lack of a functioning spleen).

147. As with any medication, prophylactic antimicrobials can cause side effects and toxicities. General risks are rashes, allergic reactions, intolerances (such as vomiting and diarrhoea) and interactions with other drugs. Each drug will also have its own toxicity profile. Prophylactic antimicrobials can result in the emergence of resistant organisms i.e. the patient can contract infections from bacteria which are resistant to prophylactic agents/drugs (e.g. a patient receiving the drug Nitrofurantoin to prevent urinary tract infections may develop infections resistant to Nitrofurantoin). Despite the risks attached to them, we use prophylactic antimicrobials as they are effective in preventing severe infection.
148. Side effects of medication are documented in the British National Formulary and the Electronic Medicines Compendium. Most of the prophylactic drugs we use have been around for many years so there is a lot of information on their side effect profile and interactions with other medication. Our pharmacy colleagues are also very useful in highlighting potential problems in using these medications.
149. At present in our Unit, prophylactic medication beyond standard indications are not in use.
150. There were situations when we deviated from our standard practice of prophylactic antimicrobial usage.
151. There is not a lot of evidence surrounding the use of prophylaxis in preventing gram-negative infections. There have not been many trials looking at this issue. There is some evidence supporting the use of Ciprofloxacin to prevent gram-negative infections (usually arising from the patient's GI tract) in the context of allogenic HSCT, for patients with severe aplastic anaemia and children with Down's Syndrome receiving induction chemotherapy for Acute Lymphoblastic Leukaemia.

Prophylactic drugs used beyond Standard Protocols

152. From my memory, the first time there was a change to our normal practice of prescribing prophylaxis was when cladding works took place. There was an increased risk that patients entering RHC were being exposed to fungal spores in the environment as a result of the work being carried out. Antifungal prophylaxis is usually given to the most immunocompromised patients in our Unit (those categorised as having a high or very high risk of fungal infections). During the cladding works antifungal prophylaxis was extended to children who had a low risk of fungal infection (based on disease/treatment criteria) who would not ordinarily have received antifungal prophylaxis.
153. The second change to normal practice I recall was the widespread use of Ciprofloxacin prophylaxis to prevent gram-negative CVL infections. One reason Ciprofloxacin was chosen to prevent against gram-negative CVL infections was because there was a precedent for using it to prevent gram-negative infections in certain circumstances. Ciprofloxacin was given to every child who had a CVL even if they were immunocompetent or had non-malignant conditions (such as Haemophilia). This was in response to the cluster of unusual gram-negative infections we were observing. There is no evidence in the literature to support Ciprofloxacin use for this indication. This is unsurprising as it was not a situation we had encountered before. It was done in good faith to try and prevent further cases of infection. Ciprofloxacin was chosen as there is some evidence for its use in preventing gram-negative infections in specific patient groups (see above).
154. Ciprofloxacin prophylaxis for CVL gram-negative infections was adopted in good faith in response to the increasing number of unusual gram-negative infection cases. However, as time went on, we (the clinical staff), questioned the efficacy of Ciprofloxacin in preventing CVL infections and whether the benefits outweighed the risks to patients. A group consisting of clinicians, of which I was one, Microbiology and Infectious Diseases was set up to look at the evidence and make recommendations. We looked for literature to support the use of Ciprofloxacin in prevention of CVLs and there was very little. There was literature describing the side effects of Ciprofloxacin. We also looked for alternative strategies to minimise CVL infections due to gram-negative

organism infections, and CVL infections from other organisms. Ultimately, we recommended a change in policy. Ciprofloxacin prophylaxis was stopped and TauroLock line locks, which has an antiseptic effect, for CVLs was introduced.

155. The third change to normal practice I recall was in response to patients developing Cryptococcus, resulting in a change to the choice of antifungal prophylaxis agents. The first line IV antifungal agent is IV AmBisome. If a patient is allergic to AmBisome then the second line agent is Caspofungin. Caspofungin is also given IV but, unlike AmBisome, it is not active against Cryptococcus. Children who were unable to receive AmBisome would either receive Caspofungin plus a second anti-fungal agent within the Azole family (which are active against Cryptococcus) or they would receive single agent oral Posaconazole (which is active against Cryptococcus). The difficulty with Posaconazole and other Azoles is that they can interact with some chemotherapy agents, which is why they are not always our first choice.

Communication around Prophylaxis medication

156. It is my duty to speak to patients and families about the medication we give the patients and is something I have always done. During the time on ward 2A/2B when we were investigating the increased infection rate there was an increased use of prophylaxis as I have set out above.
157. I continued to be responsible for advising my patients and families about the medication but Jamie Redfern and Jennifer Rodgers from Management as well as Dr Inkster from IC also discussed the use of non-standard prophylaxis with patients and families when required. In particular they came with clinicians to speak with families about the rationale behind using treatment like Ciprofloxacin which did have some side-effects. They were there to provide reassurance about the changes to our prophylaxis policy. I generally told individual patients when I reviewed them in clinic or Day Ward. Sometimes parents would request a follow up discussion.

Communication with Patients and Families on clinical matters

158. There are key aspects of effective communication with patients and families. It is of paramount importance is to be truthful, to give accurate information within the remit of your expertise and not go beyond that thus running the risk of giving misinformation. Communication should be delivered within an appropriate time period and at an appropriate level. We have to tailor the information communicated to the person's needs, so they will take in what I tell them and absorb it, rather than be overwhelmed. If a negative event has occurred, such as an error, a deterioration in a patient's clinical condition or, in these cases, identification of a potentially environmental related infection, we have a duty to make the parent or patient aware of the event. Sometimes a short delay in communication is appropriate, for example when waiting for the most appropriate person to relay the information, or waiting for more data to become available.
159. As I have gained experience I have modified my approach to communicating with families about infections. I have always informed families of any positive blood culture in their child, if an infection was thought to be CVL related and the rationale of line removal/salvage. I would document the conversation in the notes. Previously I would not necessarily have named the organism unless specifically asked. I would call it a 'bug' or a 'bacteria'. One of the criticisms raised by some of the parents in relation to the issues in Ward 2A/2B is that they were not informed of the organism behind the infection. I have since changed my practice and I now tell parents the name of the organism and ensure I document this in the notes.
160. Different clinicians approach communication surrounding cancer diagnosis and treatment differently. I do a lot of face-to-face consultations at the point of diagnosis and at the beginning of treatment. I then give updates either in person or by telephone/video consultation at key stages of treatment depending on what is most appropriate for that particular patient or family.

Duty of Candour

161. The principles of Duty of Candour are adopted to ensure doctors are open and honest with a patient or parent, specifically when something goes wrong in their treatment or care which may lead to harm to the patient. The situation must be explained fully without hiding anything. Sometimes people feel it is a kindness to withhold distressing information and that doing so may protect a patient or parent from stress. However, it can damage the doctor/patient relationship if something untoward happens and the patient or parent finds out later that information was withheld. From my experience of the communication surrounding the water incident, we were all as open and as honest as we could be with the information that was available at the time.

162. We had a duty to inform the parents if and when there was a potential risk of infections. I do think we tried to do that, initially at a ward level, then later at a Board level. When major and visible changes to practice were adopted, such as enhanced ward cleaning, starting non-standard prophylaxis or decanting the Ward, we had to explain the rationale of these measures to parents.

Communication with staff

Core Briefs

163. The means of communication the Board uses to distribute information to staff across NHSGGC is through the Core Brief. This is an email communication that is sent regularly. The Core Brief encompasses all GGC sites.

164. I was not involved in the NHSGGC Corporate Communications team. I was not involved in any of the content put out in the Core Brief.

165. My knowledge about issues related to the building and built environment within the Hospital, has always come through the Core Brief in addition to the Communication statements issued for patients. If it affected our department or ward directly then the information would come down via the unit meetings in

the Ward, or the clinical governance meetings. We would expect Jennifer Rodgers or Jamie Redfern from Management to speak to us at these meetings but sometimes we would hear from a senior consultant or senior nursing colleague. When outbreaks occur within the Hospital, unless they affected us directly then the communication would be through the Core Brief. An example of a Core Brief about an environmental matter, i.e. the cladding, is - **A38845623 – Core Brief dated 12 July 2017 – Bundle 5 – Page 67** - although I did not personally see this brief as it was released before I took up my consultant post at RHC. At that time I was working in Edinburgh as a ST7.

166. I understand the Core Brief is distributed to every staff member at GGC, clinical and non-clinical, on site and off site. It is received by email. I have access to emails, but I do not always have time to read the Core Brief immediately as I can receive upwards of 50 emails a day and must prioritise which I deal with first. At the bottom of the Core Brief there is a message to pass on the Core Brief to staff who do not have access to a computer. The onus is on us to read the Core Brief and to pass it on. For me the main challenge with the Core Brief is getting time to read it.

Other Communication

167. Other than the Core Brief, we can speak to Management directly. When there were ongoing issues with the Ward Jamie Redfern set up weekly meetings with the consultants to give updates and hear our concerns.

168. The RHC Huddle is something that only the nurses attend. I do not attend them. It is to highlight bed availability, staffing concerns and 'watchers' who are unwell patients on the Ward that need to be highlighted to PICU.

169. Each ward and department will run meetings differently. In our department the consultants have weekly meetings. This is about the running of the department. There are morning, lunchtime and night-time ward handover meetings. The primary aim of the handover meetings is to relay clinical patient information to the team that are taking over the care of the patients on the

Ward. I will attend the handover meetings if I am on-call or the ward consultant. Senior members of the department, including myself, attend monthly Unit meetings and clinical governance meetings which focus on the strategic running of the department.

170. In terms of the issues around the built environment, it is difficult to recall the details of communication we received and whether it was adequate at the time. I think at the time we would have appreciated more communication and visibility from Senior Management although I believe they were trying to be supportive and reflecting with the benefit of time, perhaps the information we received was enough. I would say that our direct managers (Jamie Redfern for example) were very present and approachable and I think the Board/Management tried to communicate to us in a timely fashion. Much of the dissatisfaction surrounding communications from Management was that we were not being provided answers to sometimes simple questions such as, "Is our ward safe?". I suspect that was not due to an unwillingness to communicate, but due to lack of concrete answer.

Raising concerns

171. I am well aware I have a duty to raise any concerns I may have about the facilities we work in and the resources we have. If I wished to report failure or inadequacy within the Hospital I know where to find information about the process to be followed.

Communication from External Bodies

172. During this period of concerns around the built environment, I also received communication from external bodies. Craig White, who was from the Scottish Government rather than the NHS, was often present at the IMTs. I believe his role was to communicate and support parents and act as their liaison. I believe his appointment was as a result of criticisms from parents surrounding the lack

of communication and recognition that the clinical staff could not continue bearing the brunt of answering questions regarding the environmental concerns. Firstly, we did not have the answers, as we are not Microbiologists, IC doctors or building experts. Secondly, the time taken in fielding questions was impacting our ability to deliver clinical care. That was what I understood Craig White's role to be. I do not know whether he was involved in the closed Facebook page set up for parents, which I will go on to address below.

173. I also recall that the Chief Medical Officer came to visit the Ward once and met with the clinical team. I think the Health Secretary may have visited the ward but I never saw her. I know a Labour MSP met with families but to my knowledge he never spoke to the clinical team.

Media Communication

174. I am aware that there were press statements being issued by the Hospital on several occasions in relation to various issues and that they were similar to **A38662239 – Press Statement from NHS GGC – 13 June 2018 – Bundle 5 – Page 145.** I do not know how the media obtained information over and above what was in these press statements.

175. Overall, I had the impression that the media were given more information than patients and staff and that they got it more quickly. For example, I think the decision to decant was reported in the media before I knew about it. I can understand why patients and their families feel the media got more information more quickly because that is how it appeared to me.

176. I am also aware of the BBC documentary aired during this period. Management or one of my colleagues must have made me aware of it because I knew when it was being broadcast. We were not given any pre-broadcast advice in relation to this.

Facebook Groups

177. There is a closed hospital Facebook group run by the Hospital and an unofficial Schiehallion Facebook group that is not run by the Hospital. I am not a member of either. I am not involved in maintaining the Hospital Facebook group nor do I write the information that is posted on it. I might be shown information to be posted if it is being distributed on our behalf. Many of the parents were looking to the unofficial Facebook group for information but as there was no input from the Hospital into the content, I believe there was a lot of opinion and speculation on it, rather than fact. The Hospital Facebook group was set up so that official and accurate information could be easily accessed, in particular by families who were out-patients and did not have regular contact with the Day Care Unit or Ward.
178. I am unable to comment on how the patients and families felt about the Hospital Facebook group but I hope that it was another resource that they could use to get accurate and up to date information from the Department and Board that was free from speculation.

Impact of Communication Issues

179. One of the worst things was hearing about the issues on the Ward in the media. It was awful to continually read or see negative media stories about my place of work. I felt very demoralised as a result of it. I became anxious that the media reports were going to have a negative impact on my patients and their families. The media coverage had a significant impact on me and my consultant and nursing colleagues. Any communication we gave to families was measured and we took great pains to only relay facts and not opinion or speculation. The reports in the media could contain speculation, personal opinions and partial or alleged information. We were put on the back foot and that could come across as deceiving to the patients and their parents. I think some families felt information was being withheld from them which caused some strain in our relationships with families. These parents trust us to treat their children for cancer and other serious conditions and it is essential we can maintain their trust. I believe most families would say that their issue was never with the medical or the nursing staff.

180. Sometimes the media would report information that had not been communicated to families. Using the decant as an example, this decision should have come to the clinicians, doctors and nurses first. That information should have then been quickly communicated to all the parents, and then a press statement released. In my opinion, it should have been ensured that the patients and families, especially the in-patients who were going to be moved, had been informed about the decant before it was reported in the media. Hearing about it in the press understandably caused families a huge amount of anxiety and it was the medical and nursing team that had to manage that anxiety. This was another important but time-consuming task taking us away from clinical work. The media do not appear to realise the detrimental effect their reporting had on patient/parents' anxiety, the relationship between the families and clinical staff and the morale of the Unit as a whole.

Oversight Board / Independent Review / Case Note Review / Public Inquiry

181. I am aware of the Oversight Board Review, the Case Note Review and the Public Inquiry. I have only contributed to the Public Inquiry. My consultant colleagues and I met with the Case Note Review Team towards the end of 2019 and they informed us of the terms of reference and gave us progress updates. None of the consultants were interviewed or involved in conducting the review.

182. I have observed some positive changes as a result of these reviews. The main one is that we (the consultants) are all now very diligent in communicating to parents the presence and nature of any infection, and in documenting the communication in the patient's medical notes. We now tell parents not just that their child has a positive culture, but the name of the bacteria and it is always documented in the medical notes. Previously, my personal practice would always be to inform a parent of a positive blood culture but I may not always have named the bacteria. The Case Note Review recommended that we should tell parents the name of a cultured bacteria. I agree it is better practice and parents appreciate it.

183. Another positive change is that the number of new line infections is presented at the weekly Friday handover meeting. The Quality Manager presents the number of new infections arising in the current week and previous week. The cases are not discussed but we are notified how many gram-positive and gram-negative line infections occurred. The Quality Manager also specifically asks and documents if the parents have been informed and if that discussion is documented in the notes to ensure that best practice is followed.

Personal Impact

184. The Public Inquiry statement process has been a very stressful thing to go through. It has taken a significant chunk of time out of my normal working time, as well as that of many of my colleagues. As well as the many hours in interview with the Inquiry, the volume of documentation to be reviewed, the consideration of the themes provided in advance of the interview and the preparation of this statement has taken many days. I have either had to take time off from my normal clinical duties or work in my own time to accommodate it. Some of my consultant colleagues have also been asked to provide statements to the Inquiry, which has impacted staffing arrangements. It has been a very stressful process and morale in the Department has been low as a result. I feel the work required for these statements has had a direct impact on the level of care delivered to patients.

185. Having said that, with everything the Department, staff and patients and their families have gone through, I welcome an independent Inquiry taking place, even if it is disruptive and anxiety provoking.

Closing Statement

186. I think the time that we have had out of Wards 2A and 2B has shown that these wards were not built for purpose. I do not believe that was done intentionally but it is evident that mistakes have been made.

187. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Dr Jairam Sastry

PERSONAL DETAILS

1. My name is Jairam Sastry. I am a Consultant Paediatric Oncologist at the Royal Hospital for Children (“RHC”) at the Queen Elizabeth University Hospital (“QEUH”) in Glasgow. I am employed by Greater Glasgow and Clyde (“GGC”) Health Board within the National Health Service (“NHS”). My line managers are Professor Brenda Gibson, who is the Clinical Lead, and Dr. Phil Davies, who is the Clinical Director for Women and Child Health.
2. I am responsible for the diagnosis, management and aftercare follow up of children and young adults with solid and Central Nervous System (“CNS”) tumours who are referred to our unit. I also care for those children and young adults who unfortunately do not survive cancer and require palliative and terminal care.

PROFESSIONAL HISTORY

3. I am a medical graduate from India. I completed my MBBS (Bachelor of Medicine and Bachelor of Surgery) at Bangalore Medical College. I then went on to study for the MD (Doctor of Medicine) in Paediatrics at Sir Sunderlal Hospital, Institute of Medical Science, Banaras Hindu University, Varanasi, which I completed in 1993. Thereafter I spent three years in different Paediatric posts as faculty at St. John’s Medical College Hospital, Bangalore, before arriving in the UK in July 1996.
4. In the UK I completed a number of training posts in Paediatrics and neonatology between 1996 and 1998. I completed by MRCP and MRCPCH in Paediatrics in 1998. I joined the Specialist Registrar (“SPR”) training

programme under the Wales Deanery in February 1998. I chose Paediatric Oncology for subspecialty training.

5. I moved in February 2002 to Sydney, Australia, to work in Westmead Children's Hospital as a Clinical Fellow in Paediatric Oncology for two years. I completed my Fellowship in Paediatric Oncology and Bone Marrow Transplantation and returned to the UK in 2004. This was part of my specialist training programme for overseas experience allowed by the Wales Deanery.
6. I returned to the UK in 2004 to finish my SPR training.
7. In 2004, I obtained my Certificate of Completion of Specialist Training (CCST) in Paediatrics, with a separate accreditation in Paediatric Oncology. This allows me to practice in that particular specialty.
8. I have been working as a Consultant Paediatric Oncologist in the UK since 2004, initially in locum posts and since 2006, in a substantive post in Glasgow.
9. When I first came to Glasgow, I worked in the Royal Hospital for Sick Children at Yorkhill which has now become the RHC at the QEUH site.
10. As I have an interest in teaching and academics, I took up a position as Honorary Clinical Senior Lecturer at Glasgow University in 2011. Later I became an Associate Professor in Paediatrics there.
11. I am interested in research connected with my clinical work. I am a principal investigator and co-investigator for many national and international trials for children with cancer. I am also part of several national groups such as the Children's Cancer Leukaemia Group. I am a member of the International Society of Paediatric Oncology Group and several working groups within this organisation. I contribute to guidelines and the development of clinical trials for children's cancer.

CLINICAL GOVERNANCE AND THE DATIX SYSTEM

12. I chair the clinical governance meetings for the Schiehallion Unit. These meetings cover not just Wards 2A or 2B, but also any other place within the hospital our patients have been through. The meetings are attended by medical and nursing teams, AHS (Allied Health Specialties), management, the Infection Control Team (“IPC”) and the blood transfusion team. The meetings take place on Friday mornings every two months.
13. At the clinical governance meeting we discuss as a department all the issues that we need to monitor in terms of governance. This includes any complaints, the outcomes of investigations into complaints, any adverse events, and all the DATIX reports put through since the previous meeting. We also review SOPs (Standard Operating Procedures) or guidelines, making sure they are all up to date.
14. The clinical governance meeting also looks at staffing levels, risk factors (clinical or administration), with a risk register being maintained by the nurse in charge of the day care and the ward (Wards 2A/B), which will be fed back to us. The minutes from the meeting are fed into the Clinical Directorate’s clinical governance meeting. We circulate the minutes to the department, management and the Clinical Directorate.
15. The scope for the clinical governance meeting I chair is for the Schiehallion Unit, however if any incident involves our patients out with the unit, it gets reported on the DATIX system. If the incident is something which happened in another ward and is not related to the unit at all, such as an incident involving anaesthetics, theatre recovery etc., it would be investigated by their own DATIX team and the results would get discussed at our clinical governance group for the Schiehallion Unit.

16. DATIX is a platform which the hospital staff use to record all the adverse events that happen in the hospital. The system is used throughout the GGC Health Board area.
17. The DATIX system can be used to report anything. For example, it could be a drug-related incident, a prescription error, an administration error, the wrong blood products being used or a device like an infusion pump malfunctioning. Even if a patient or staff member slips on the floor, there are any falls, aggressions, verbal aggressions or any action by patients' family or staff, it will be recorded. Anyone can report an incident using the system.
18. When a DATIX incident is reported and it requires further investigation, I am alerted by an automated email from the DATIX system to let me know an incident has been reported. If I am named as the investigator, I review and report back on what went wrong and any learning points to be gained from the incident.

DESCRIPTION OF THE FACILITIES WITHIN THE SCHIEHALLION UNIT

19. Our Unit has an in-patient ward (Ward 2A) in which there are individual rooms for children and a day care unit (Ward 2B) in which we provide care for those who do not need admission to the Ward but require review or supportive care.
20. The unit has a play room, a classroom, and a social space for teenagers and young adults. The unit also has space/rooms for doctors, nurses, and pharmacists. There are also storage rooms and treatment rooms.
21. Elsewhere in the children's hospital, there are rooms for the research team, Bone Marrow Transplant ("BMT") team, pharmacy and outreach nurses. Consultants have shared pods as office accommodation in a separate building away from the ward, but within the hospital area.
22. My clinical work is based in the Schiehallion Unit. Our patients may also go through the Accident and Emergency Unit ("A&E"), the Clinical Decision Unit

("CDU"), the Paediatric Intensive Care Unit ("PICU"), theatres, radiology, the day surgery unit and other medical and surgical wards during their cancer treatment. If any of my patients are admitted to another specialist area/ward, then I will attend those patients in those areas to provide and maintain continuity of care.

SPECIAL FEATURES OF WARDS 2A AND 2B

23. Our patients are unique in a way, as they are immunocompromised because of cancer and the consequent treatment. They are much more prone to infections than other children in the hospital. Any infection for these children can be life threatening or seriously damaging, so they need to be in a specialised unit with specialised wards, separate to the other wards, and have their own entry doors.
24. We offer two types of isolation in the care of our patients: one is protective isolation and the other is source isolation.
25. Protective isolation means that the patient is protected from infection; unit staff, other health care workers who visit the unit, other patients and indeed, from patients' extended family members.
26. Source isolation is for patients who have an infection such as gastro-enteritis or a respiratory infection that could be passed onto other patients, either directly or through staff unless great care is taken.
27. There are strict protocols to determine which rooms should be used for each group of patients. There are rooms with either positive or negative air pressure.
28. Our patients are immunocompromised and require to be cared for in a positive-pressure ward with airflow regulation in individual rooms. Some of the rooms are source isolation rooms with negative pressures in them.

29. Other rooms have positive pressure, where the airflow is regulated to minimise the risk of any infections reaching the children cared for in those rooms. Air particles in these rooms/corridors of the unit should be HEPA filtered at source because the particulate air should be as clean as possible.

PROTOCOLS AND SOPS FOR SPECIFIC PATIENT GROUPS

30. We have Standard Operating Procedures (“SOP”s) for infection control, such as patient hygiene and care, which is not restricted to but includes hand hygiene. It is most important that we have a SOP for that.
31. We have protocols for wearing aprons when seeing a patient in source isolation and protocols for using hand gels in addition to hand washing. We have regular training for these.
32. There are protocols for aseptic precautions for handling lines, line care, and, for example, how to take care of a nasogastric tube/gastrostomy tube. There are separate protocols which set out how to clean and care for those children with feeding tubes in their stomach.
33. Some SOPs such as hand washing are universal throughout the hospital. All staff require to follow good hygiene practices but because we are in a unit caring for immunocompromised patients, we require to take extra precautions and ensure we use hygiene measures before entering a patient’s room as well as upon leaving it. We use additional hand gels to clean our hands.
34. We do not take anything at all into the patient's room with us. Patients have individual stethoscopes in their rooms which we use for them only, and we leave it there. The stethoscopes and any other instruments are cleaned before and after use on that child. These extra precautions are taken to prevent our patients developing infections or passing their infections to others.

HOSPITAL ACQUIRED INFECTIONS AND HEALTHCARE ASSOCIATED INFECTIONS

35. Hospital acquired infections, also known as healthcare associated infections, are infections which a patient experiences as a result of their hospital treatment. These infections can come about due to the environment or the treatment and interventions which the patient requires.
36. Healthcare-Associated Infections (HAI) are nosocomially acquired infections which are typically not present or might possibly be incubating at the time of admission. These infections are usually acquired after hospitalisation, and manifest more than 48 hours after admission to the hospital.
37. Our Haematology and Oncology patients are vulnerable to serious and life threatening infection due to the nature of their illnesses and sometimes very radical treatment they require. Our patients experience profound neutropenia, lymphopenia and reduced immune reaction. They also experience the breakdown of physical barriers in their skin and of the mucous membranes of the mouth and gut. They often have plastic devices in place such as VP (Ventriculo Peritoneal) shunts or Central Venous Access Devices (“CVADs”) and gastronomy tubes etc.
38. Our patients need a safe environment and good hand hygiene and aseptic techniques for procedures to minimise the risk of infections. A clean environment, safe water, positive pressures of air within the rooms and the unit, adequate air exchanges in rooms and HEPA filtration of high risk rooms are all essentials for preventing infections in the first place, and preventing the spread of any infections which occur.
39. We commonly see two infections. One is caused by bacteria that may be present in or on the child themselves that then enter the bloodstream and cause infection. Usually the bacteria is in the nose, the mouth, the intestine, or the urinary system of the child. Those are “endogenous” infections.
40. The second is a “nosocomially acquired infection (“HCAI”)”. Nosocomially acquired infections are those which arise from the hospital environment, or as

a consequence of the treatment procedures and interventions done by the staff. Our patients often have breaches to their own systems, such as mucous membranes breaking down and plastic accesses through their skin. Any contact with the environment which is unclean may harbour a germ and as a result, may cause infection.

41. We may also see community acquired infections from time to time. These infections are acquired from the community/their home environment.
42. The infections which arise from the hospital environment or the patient's treatment related procedures would inevitably increase in the face of poor hygiene techniques or a problem with the built environment.
43. Despite all of our efforts, it is not uncommon for us to see infections in our patients, most of whom are severely immunocompromised, just by the nature of their illnesses and the treatment required.

CENTRAL LINES AND PATIENT ACCESS POINTS

44. Our patients often need to have intravenous drugs, such as antibiotics or chemotherapy. To administer such intravenous drugs, we require to apply a CVAD. In addition, CVAD guarantees quick and easy access to intravenous treatment for patients in case of acute deterioration requiring interventions such as fluids, drugs etc.
45. CVL (Central Venous Line) is a long, flexible plastic tube which goes under the skin from the chest area, all the way to the neck and then into the vein and stays there. The plastic tube can be seen coming out from the side of the chest and hanging by their side. It is usually kept strapped to the chest to prevent seeping out. This type of line is called the central line or the Hickman line.
46. The central line is in the chest area which is covered, so the central line will not become contaminated unless it is handled or exposed. The patient will be

wearing a vest and a top so the central line will always be covered. It is not exposed to the environment unless there is something that contaminates that, for example, showering in contaminated water. The patients would not touch their central lines as they are covered. The only people who handle the lines directly are trained nurses or phlebotomists. As doctors and clinicians, we don't go touching the central lines.

47. Another access point we use is a Port-a-cath, which is also a device with a disc under the skin connected by a long, flexible, plastic cannula which goes under the skin into the neck vein. The metallic or plastic disc sits under the skin in the chest. Nothing is seen from the outside, so we need to access that by a needle introduced into the disc. We use that line when required and then the needle can be taken out before the child goes home. The device and line are entirely under the skin.
48. We also use PICC lines. This is a long, flexible, plastic cannula which is again inserted through the skin. It is usually put in the arms or sometimes the legs. It goes into the vein and travels a long way into the chest. We prefer not to use that method because it does not last too long, it can get blocked quickly and is not that useful. All these methods are prone to infection.
49. The least preferred option is the PICC line because it does not last for too long. In two or three weeks it usually needs to be replaced again, which is a shame for children to have to go through that. We prefer Port-a-cath, which is entirely under the skin, because then only people who are trained to use it will use it in the hospital. Nobody else can use it.
50. The Port-a-cath needs to be flushed once a month. This is only done by our trained nurses who know how to clean the skin around it, access it, flush it, make sure that it is working and then remove the needle. That is the most preferred method, but it does require a bigger surgical operation.
51. When the Port-a-cath is removed it leaves a slightly bigger scar than a central line. Sometimes we only need access for a short duration, so we don't need to

use a Port-a-cath. Also for some protocols, we can't give treatment through the Port-a-cath, it has to be given through a central access line. There are various reasons for choosing one or the other.

52. We give the choice to the parent as some children are extremely needle-phobic, so we cannot use a Port-a-cath for them because then we have to introduce a needle into the disc to access that, and some children can get panicked at the sight of the needle. That can be psychologically quite traumatic. We have to look into all those factors before we decide which kind of CVAD we are going to use for each child.
53. There are some children who do not have a choice, they have to have a central line as opposed to a port. There is also an issue of how many people are able to look after a port in terms of staff handling.
54. Accessing a Port-a-cath is something that requires more people to be trained in; you need surgeons who are trained and happy to put in a Port-a-cath as opposed to a central line.
55. When I started in Scotland in 2006, we hardly had any children who had Port-a-caths, probably because surgeons were not comfortable putting them in, or maybe it was the case that the number of staff trained to handle a Port-a-cath were limited.
56. However, since I started in Scotland, we have had more Port-a-caths put in. This has probably been due to increasing education about their benefits.
57. It is a bigger surgical procedure to insert a Port-a-cath. It leaves more of a scar, although it's not actually a cosmetically disfiguring scar or anything like that. A central line goes in through a small hole and the hole closes leaving a small scar, but if we put in a Port-a-cath, there will be a slightly bigger linear scar on the chest, which some patients do not want.

58. Certainly of late, since the incidents of infections happened, more Port-a-caths are now being put in as opposed to central lines. We do this wherever we can. The infection rate does reduce as we use more Port-a-caths. That's generally seen in the literature and there's evidence for that. It is not suitable for everybody, but it does reduce the infections rate.
59. There are specific things we can do in terms of trying to prevent infection with CVADs. There is a CVAD care pack and guidelines and policies for how it is done. It is cleaned by people who know how to clean it, and after cleaning, it is covered completely by dressings so that nobody goes near it.
60. Parents are taught how to dress it and how to clean it when they are at home. Some parents do it themselves, some parents prefer our staff to do it. When parents are happy to do it, they need to be signed off as competent by the nurses on the unit.

OUR PATIENTS' SPECIALIST REQUIREMENTS

61. Children with cancers are vulnerable to infection due to multiple factors. They need specialised care in a safe environment to provide optimum care, minimising the risks to them wherever possible. I am part of a team of specialists who provide care to these vulnerable patients 24 hours per day, 7 days a week.
62. On the occasions when patients are admitted to other wards in other areas of the hospital, we insist that they should be in single rooms, not mixed with other patients, and that all visitors to their rooms adhere to the same principles of hand hygiene and care before and after they have any patient contact. The main difference is the environment on the general wards. The general wards are not HEPA-filtered or do not have positive pressure ventilation.
63. We use the same SOPs and protocols to prevent and/or treat infections while patients are in other wards both during normal working hours and out of

hours. A patient might be on a ward out with our unit, for example, there is no bed availability within the Schiehallion Unit, or where it was a post-surgery or source infection patient. It is our unit's clinicians that attend to patients in these areas. We don't rely upon other unit doctors. Nursing care is provided by the general ward nurses, but junior and senior doctors and AHS staff are all from our unit.

64. Whilst we are as vigilant as possible, from time to time these children do develop infections, which, unfortunately, is part of their journey. Many of these infections arise from germs they may already have on their skin, their mucous membranes or in the gut, which is something they harbour themselves. That is difficult to control because it can happen at any time.
65. We do our best to ensure we do not give the patient an infection either from environmental factors or from the healthcare professionals involved in their care. We need to minimise this risk to zero, if possible.
66. The out of hours team also follow the same strict procedures that we do and receive regular training.
67. Doctors from our unit cover the patients in the unit until 10pm. After 10pm. the hospital at night team looks after all patients in the hospital.
68. The hospital at night team report to us directly after 10 pm. The consultant on call for our unit takes the calls from the hospital at night team to advise them or to go in if we need to see a patient.
69. When the hospital at night team are called to review a patient, they will be directed to the appropriate room. If there is a patient in source or protective isolation, nursing staff instruct the hospital at night team what is required of them in terms of the stringent protocols we use.

HOW INFECTION IS MONITORED, INVESTIGATED AND TREATED

70. When a child in our care becomes unwell with an infection, we have a responsibility to discover what that infection is, what the root cause of the infection is and what treatment is required. The patient is treated promptly to remove the infection.
71. Once the virus, bacteria or fungus that is causing the infection is isolated, there is interaction between the clinicians and the clinical microbiologists to discuss the best treatment.
72. We may accept that the infection is endogenous and could have happened anyway, and we treat that appropriately. If it is thought that the infection is unusual, or that the infection is a rare organism not often seen, this will be highlighted to the IPC. Any such rare infection is likely to lead to the formation of a Problem Assessment Group (“PAG”).
73. Ideally, every gram-negative infection we see should lead to a PAG. On assessment, if it is agreed the infection is not an endogenous organism, it will lead to an Incident Management Team (“IMT”) meeting. An IMT meeting involves management, Estates, clinicians, the IPC team and clinical microbiologists. The purpose of that is to identify a reason for that infection to be present in that child. Clinical interventions are informed by the discussions at the IMT.
74. If the incident is related to an ongoing issue, then obviously the management has a responsibility to report the incident to the wider GGC management. If we are not happy with the IMT outcome or the assessment or interventions, then clinicians have a responsibility to write directly to the Medical Director to tell them this. There have been occasions in the past where we have done this, but I cannot remember the specifics of this.

THE BUILT HOSPITAL ENVIRONMENT AT RHC – THE PLANS

75. I was not involved in the design, build, or specification for the QEUH. As a group of consultants, we were shown a blue print of our ward before we moved in and we identified a few issues which we noted.
76. We considered the allocated space too small for our unit and felt it would not be possible to accommodate all the facilities we needed and which we had at the Yorkhill site.
77. At Yorkhill, the ward space was rectangular, with the staff base (both medical and nursing) in the middle of the ward. This provided an easy view of the whole ward. The consultant offices were adjacent to the ward. There was space and rooms for other members of the MDT such as social workers, Paediatric Oncology outreach nurses, the clinical trial team and clinical nurse specialists.
78. When we were shown the plans for the new hospital, it was apparent that the area of the second floor allocated to us was oval shaped. The curving shape of the new proposed unit with the very small staff base area was not helpful. There were not enough spaces and rooms for the multi-disciplinary staff in the ward. Consultant offices were replaced with pods in the office block in a different and distant building.
79. We felt this was impractical and inefficient. We had a large team which needed to be accommodated, and we were clear that the space was too small for all of us. These issues were highlighted to the management team, but we were told that we had to work with the space already allocated and that no changes were possible.
80. As a consultant body, we refused to sign off on the proposed plan given our reservations. We refused to sign off the plan after meeting as a consultant group to discuss our concerns. My recollection is that Professor Gibson was asked to sign off on the plan but emailed to set out our concerns formally. Despite this, management went ahead with the plans as shown to us without any modifications being made in light of our comments and concerns.

81. Once we moved, after a lot of negotiation with the management, the research team, BMT team and Pharmacy got some space close to the ward but, again, the spaces were quite small.
82. My own office is currently located in a building which is distant from the wards which makes me concerned about the possible impact or compromise this may have on my ability to provide immediate care and treatment for my patients.
83. We were all very concerned about the office accommodation being distant from the wards because in Yorkhill, we were very closely located to the patients. We were within the unit, so it took a matter of seconds to reach a patient if we needed to. Now I am in a separate building behind the teaching and learning centre, adjacent to the Queen Elizabeth main adult hospital. It is on the other side of the road from the RHC and takes about eight minutes of brisk walking from the office block to the ward.
84. Other issues we raised for example were, we said we wanted an interview room to talk to parents about confidential things, breaking bad news and that kind of stuff. There was no interview room before, so we had to compromise one area for that, which meant that office space available to staff was taken out and converted to an interview room. There was no playroom or schoolroom for children on the ward either, so another staff area was therefore converted for that too.

THE PROXIMITY TO THE SEWAGE WORKS

85. Another concern we raised in advance of the building work starting was the place in which the RHC was located. We were concerned that the unit was being built near a sewage treatment plant. We were concerned that when sewage treatment was being carried out the whole area may smell of faeces. We had a concern that the sewage treatment would contaminate the air with bacteria and/or fungi.

86. These concerns were voiced but I do not recall any effort being made to address them. We, as clinicians, raised these concerns to our general manager, Jamie Redfern, and with the team in charge of developing the hospital. That team was made up of GGC employees who met with us to go over the plans. We did ask whether the proximity to the sewage treatment works ought to be of concern and whether there was an increased risk of infection.
87. We were told our concerns would be investigated but as far as I recall, we received no response.

THE BUILT HOSPITAL ENVIRONMENT – AFTER THE MOVE TO WARDS 2A/2B

CONTINUED ISSUES WITH THE SMELL OF SEWAGE

88. We moved from Yorkhill Hospital to RHC in June 2015. It became apparent quite soon after the move that there were a number of problems with the new Unit.
89. Prior to the move, we had flagged the proximity to the Sewage treatment works as a potential issue. Once we were in Wards 2A/2B, any time when the sewage treatment processes were taking place, our wards smelled of faeces. Patients and parents used to complain about this, it was intrusive and unpleasant. I do remember some patients being so unhappy that they wanted to leave the ward and be discharged as they did not want to spend one more night there. We had to talk them into staying, telling them it was not safe to go home at that point in their treatment and to stay where they were.
90. The impact was wider than just our wards, the smell was throughout the hospital and the outside area. Our patients needed to walk through the hospital to get to the ward. Some of our patients and parents were located in Marion House (a charity accommodation) at close proximity to the hospital, so they had to walk through the smell from the hospital to get there.

91. We talked to clinical microbiology and the IPC's nurse about the air quality concerns. Whilst they appeared to listen to our concerns, we felt as if nothing was done about it as nothing changed. I'm not clear if anything could have been done, but some reaction or information would have been helpful.
92. The most we had by way of feedback was being told that the air in Ward 2A was filtered which meant the air was pure, and that there was no bacteria getting in, just a smell. That was not helpful in terms of dealing with our patients.

ISSUES WITH WIFI AND PHONE SIGNALS

93. When we moved into Wards 2A/2B I became aware of a number of peripheral issues. Wi-Fi and telephone signals caused us problems. The hospital had provided us with mobile phones to use for on-call purposes. We are on call for lengthy periods. We had a small area in the ward where there was a hot desk for senior consultants to work, but unfortunately, there was no signal for the mobile/dect phones in that room (our internal hands-free phone system). We highlighted this issue many times to management. Jamie Redfern did pass it on to the telecommunications department and we were told that they would put a signal booster in. This was reported to have been done but the issue in these areas was never resolved.
94. Patients and parents also had an issue with the Wi-Fi and mobile phone signal. In addition, there were some rooms where children were staying for lengthy periods of time without working televisions. This resulted in complaints, as did the lack of power points for them to use.
95. These issues were addressed through the DATIX system to make sure that the issues were reported, making management aware that parents were raising these concerns to the ward staff. The DATIX reports ensured the issues were escalated to the Nursing Chief, the medical managers and Estates. Ward nurses in charge are very good in reporting these issues.

WARD ENTRY SYSTEMS

96. Originally the ward entry system consisted of two sets of double doors that could open simultaneously which was not ideal. Each set of doors ought to have opened when the other had closed. There were many times when they were broken. This issue was resolved after we moved back to 2A from 6A after refurbishment. Now as someone enters the ward, one door opens then it closes before the second door opens. However, within a few months the system had gone faulty and both doors now open simultaneously. This has been reported but remains unresolved.

CLADDING WORK

97. At some point after we had moved to the new unit, work was taking place to replace the cladding on the outside of the hospital. At these times, our Haematology and Oncology patients were asked to come through the adult discharge lounge entrance by the IPC team, to reduce the risk of fungal infection which could be caused by the dust and other impurities sent into the air due to the cladding works.
98. This work impacted on our patients and families. The adult discharge lounge entrance was a distance from our ward. It was a busy area and there was a lot of traffic in that area due to the collection of adult patients being discharged by the carers/family members.
99. Although the hospital is a non-smoking zone, many people used to smoke in that area too. There is signage there prohibiting smoking but still people ignore that. Children had to come through that entrance with the high flow of traffic and smoke. We were concerned about whether it would increase the risk of them being exposed to more infections or bacteria in the air.
100. During the cladding works, IPC told us that the children should have anti-fungal prophylaxis because there was likely to be mold and fungus in the air.

The microbiology team and IPC discussed the issue and advised on what anti-fungal prophylaxis should be prescribed. As clinicians, we were responsible for prescribing that. Communication regarding the prophylaxis was provided by IPC in conjunction with the management team.

ISSUES RELATING TO THE WATER SYSTEMS

101. I was not aware of any specific problems with the water system in 2A/B. As clinicians, we noticed an increase in the number of gram-negative infections in our patients in 2017 and 2018, which we felt was unusual and high in numbers. We alerted the microbiology team and IPC as we were concerned about both the number and type of infections. The type of microbial germs that were grown were rare ones that we were not used to seeing. There were a number of hypotheses about the source of these infections. IPC tested the water and found bacterial contamination which caused them to take a number of measures. There was a higher number of *Stenotrophomonas* than we would have expected. We had occasionally seen *Stenotrophomonas* in Yorkhill, perhaps once or maybe twice in a year. There was an increasing number of patients who were in-patients, or had gone through the in-patient ward system, who were developing these infections.
102. Prior to moving to the RHC, the clinical microbiologists used to attend our daily handover meetings at midday, which was very valuable to us. The clinical microbiologists were located adjacent to the Children's Hospital in the lab building, a few minutes' walk away. They also called us several times during the day, as soon as they had information on blood cultures, to give us valuable advice.
103. These meetings ceased after we moved to the RHC. My recollection is that when we asked our microbiology colleagues why, we were told they had been asked by management to re-organise their working. I felt that we had benefited from having dedicated Paediatric microbiologists who knew our patients and protocols very well. Once we arrived at the RHC, the

microbiologists did not necessarily know all of our patients as well as they used to.

104. Following the increasing number of infections seen in our patients in 2017, we requested that our clinical microbiology team resume meeting with us regularly, either physically or virtually, during the daily handover meeting at midday to review infections seen in our patients. They agreed to do so.
105. We then began to meet physically once a week and discuss matters by phone the other days. We continue to discuss matters with the clinical microbiology team in a similar fashion, except the once a week physical meeting has now changed to a Microsoft Teams meeting due to Covid restrictions.
106. It was during these meetings with clinical microbiologists that we began to raise our concerns. IPC were involved and this led to the PAG (Problem Assessment Group) and the establishment of IMT meetings to address the issues. The IMT meetings that I attended were the conduit to any information we received.
107. Although the IMT suggested a number of actions to address the issues, it did not make any impact on the number of unusual infections we were seeing in patients.
108. In 2017, the main hypotheses were that the standard of hygiene practice in the ward had gone down, and that doctors and nurses were not washing their hands properly, or perhaps not prepping the patients correctly. There were also suggestions that we may not be handling the central line correctly.
109. The focus was all about enhanced hand hygiene, enhanced hand washing, a care package for central lines starting from the surgeon and how to put a central line in. I think it was very stressful for the whole staff and the morale was low. The staff hadn't done anything different from what they were doing before. They were all trained very well for what they were supposed to do. It was a lot of pressure on staff and quite demoralising for them. We were

puzzled why we were seeing these kind of infections because it was a new build and a new hospital. We were never thinking, "Oh, there may be something wrong with the water or the drainage." It never occurred to us in 2017.

110. It was only during the IMT meetings in 2018 that we were told, for example, to limit the source of water and not to use wash basins. We were given temporary wash basins to use with the distilled water.
111. It is difficult to say whether these measures impacted upon the clinical or day to day care of the patients. I do think it was the right thing to do; to carry out more enhanced hygiene, enhanced handwashing and other hygiene measures, although we are always vigilant about these things anyway. However, it did introduce a further step and made it more difficult in terms of accessing a patient urgently. I had to go through these extra steps to get into the room which would cause delay attending to the patient. I do not think I can quantify any effect on the clinical care from that, there was probably none, but it was just frustrating at times.
112. I think it was very frustrating and difficult for parents and patients. They knew we were doing the correct thing when we were seeing the patients, but even then, there was concern of infection. I do not think it was an issue of trust between the patients/parents and the clinicians because we had built very good trust and rapport with the patients/parents throughout. They knew we were doing everything we could to keep them safe and treat them to the standard they expected. It was more about communication from IPC and management to the patients and carers as to what was actually happening in the ward environment. They were quite unhappy that they were not given the information and felt it was withheld from them. Certainly, communication could have been better with regards to that from the IPC and management team. The communication that went to the patients and parents didn't say exactly what was decided at the IMT meetings. We felt that to some extent, the environmental situation was underplayed to the patients and parents.

ISSUES RELATING TO VENTILATION

113. I was not aware of any problems with the ventilation system in 2A or 2B. We have to have a separate unit controlled by double doors, which open one by one rather than two together to keep positive pressure within the ward, even in the corridors and in the room. Some rooms have to be in negative pressure for source isolation because nothing should escape from the room, but the air still has to be filtered. We need to have HEPA filtered air with regular air changes maintained within the ward. There should be no draughts from the corridor doors, the lifts or from the outside. I do not know the exact standards for ventilation and HEPA filtration, but there are guidelines for the Haematology units. In terms of spores, they should be reduced to a minimum or zero so that there is no risk of fungal infection for patients. Those air circulations are really important for us to maintain.
114. When the Schiehallion Unit opened in 2015, there were double doors, but whether they were operating in the correct way, I can't remember now. The Ward 2B day care entrance did not have a double door, but the Ward 2A in-patient facility had double doors. I am not aware of any occasions when air sampling showed poor results for Wards 2A and 2B. In Ward 6A, there were occasions in early 2019 when some poor air sampling was reported to us.
115. I'm not an expert but I was told that because of the sewage treatment plant adjacent to the hospital, they wanted to avoid any possible contamination or smell by having a closed system of sealed windows, so they could control the air in the hospital. It is difficult to control the air that way, I believe IPC told us at IMT meetings that it is the least preferred system for hospitals to work with.

AWARENESS AND UNDERSTANDING OF OTHER ISSUES

116. When we moved into Ward 2A/B in the new Children's Hospital in 2015, it looked new and clean. However, in 2018, after some remedial work on the water system, we were made aware of problems with the water, drains and internal walls. I became aware that drainage was a problem in several rooms

on the ward. Problems reported included dampness and mold on the internal walls, blockages, leakages and the pooling of dirty water in toilets and shower rooms, sometimes flowing into adjacent bed areas. Leakage from the roof was also noticed from time to time.

117. A number of interventions were suggested and carried out by the IMT/IPC to address these problems. These included limiting the source of water, temporary wash basin use, hand disinfectants, chlorine treatment of water works, hydrogen peroxide treatment for the internal environment and enhanced cleaning. These made little or no change to the number of unusual organisms we were seeing in our patients' blood stream.
118. I do not have exact dates and times for these issues although the Estates department might have them. These issues were noted in 2018 on Ward 2A/B and on Ward 6A in 2019. Nursing staff used to report these issues to Estates and highlight these at the IMT meetings. I am aware that Estates used to send their team to clean and repair the involved rooms or areas, only to find new areas or rooms with the same problems.
119. This was hugely frustrating for staff as well as patients. The patients had single rooms with attached bathrooms. After patients had showered, instead of seeing the water draining through the shower tray into the drain, they saw it building up and coming out into the shower room. I have seen this in some of the rooms. The shower rooms are like wet rooms so there are no trays under the showers, meaning water can rise up and flow outside the room into the bedding area.
120. Sometimes the excess water was black in colour, which was really worrying and frustrating. At some of the IMT meetings in 2018 and 2019, they told us the water from the showerheads or the swabs from the showerheads were growing all the organisms we were seeing in our children.

121. I also saw the mould in some of the rooms; the black-coloured dampness. Sometimes patients came to offer to show me the mould. Estates and IPC might have pictures but I don't have any.
122. These issues went beyond recording them on DATIX. There were regular IMT meetings going on and Estates and nursing staff were raising the issues at these meetings. IMT were picking things up directly from there. Nurses directly reported to Estates as and when they noticed these issues for action. That would usually be done by the nurse in charge of the ward or the day care.
123. Rooms had to be emptied and closed until remedial work was done in them by Estates. Staff were moving the patients out of one room and into another, closing off that room for Estates to come and address the issues. Until the issues were fixed, the room was closed. When Estates said the room was open and okay to use again, they would be released.
124. Again, the closure of rooms was frustrating for the patients in terms of moving from one room to another, only to find that two days later, that new room was leaking or had mold, and then be moved from that room to another again. Some children were moved rooms two or three times a day and then suddenly, another leak would be found. We did not know at that time if the issues were due to the chilled beams, condensation, leaks or something else.

CLOSURE AND MOVEMENT OF WARDS

125. I recall two times when we moved out of Ward 2A to another area/ward.
126. Haematology and Oncology patients were moved to Ward 6A in the adult hospital on 26 September 2018. Bone marrow transplant patients were moved to Ward 4B in the adult hospital on the same date. Our patients from Ward 6A were moved again in January 2019 to CDU in order for portable HEPA filters to be placed in Ward 6A due to cryptococcal concerns.

127. Ward admissions were also restricted at times, though I can't remember the exact dates. For a while, new patients were being directed to other Scottish centres like Edinburgh or Aberdeen. Some elective chemotherapy patients were also sent to other centres in Scotland and Newcastle. Some patients were directed to other district general hospitals local to the patients for supportive care for febrile episodes etc.
128. Decisions to move wards, close wards and direct patients away from our unit to other hospitals were made by the IMT and IPC along with management. Our role was limited to expressing severe concerns about caring for patients in Ward 2A and Ward 2B due to rising infections caused by unusual organisms. These concerns were mainly expressed by the consultant group through departmental meetings. We were discussing it in that group with a combined voice to say, "We are not happy to continue treatment here in Ward 2A and Ward 2B." Despite all the changes they had made, nothing was getting better, so we couldn't expose our children to that environment again. Those concerns were then taken to the IMT and management by consultants who were representing the unit. For example, in some IMTs that I attended, I expressed our opinion. Professor Gibson and Dermot Murphy, who were the main contacts from within the unit, would go to the IMT and say, "We need to have a meeting with management now. We don't want to treat here. The whole consultant body agrees that we can't continue to treat here."
129. It was our decision, as clinicians, that we shouldn't continue treating in this ward, but we were not the best people to say where these patients should be treated. That responsibility was for management. We wanted to be provided with a safe environment for our patients where we could treat them. It was at this time (August 2018) that management finally agreed that the ward was not a safe place to treat our patients. Until that time, management were telling us that things were fine, that they were addressing the issues based on the hypotheses through actions like hydrogen peroxide treatment, water drainage, chlorine treatment and the provision of temporary wash hand basins. That is when the clinicians got fed up.

130. I am aware of some the options considered by the IMT and IPC alongside management with regard to closing Wards 2A and 2B and moving patients as they came and discussed these with the clinical leads in the unit. I understand the following options were considered:
- a. Moving to another ward in RHC
 - b. Moving to a ward in the adult hospital, QEUH
 - c. Moving to a ward in the Beatson Oncology unit facility at the Gartnavel site
 - d. Building a temporary portable type hospital adjacent to RHC.
131. The IMT, IPC and management discussed these options and afterwards, we were told we were moving to Wards 6A and 4B at the QEUH. We were not happy with moving to another ward in the RHC, because if the water system in the whole Children's Hospital was contaminated then it did not matter which ward we were moved to, the issue would be the same. According to the IMT and IPC, the drainage system was contaminated, so going to another ward in the Children's Hospital was probably not a good option, and we agreed with that.
132. We were concerned that Ward 6A was not built for treating immunocompromised patients, but we were told that was the best option and that we had to move. The Ward didn't have things such as HEPA filtration or positive pressure ventilation. It was quite small for us as well as we had to run the day care unit and the in-patient unit in Ward 6A. There were not enough facilities for the staff. For example, there were not enough rooms for clinicians to work, such as the junior doctors, the consultant body, and the nursing staff. It was less than ideal to move there because it wasn't built for our needs and the space was too small. That's why we were concerned. We said to management, "If it is the best option, we will move, but this is what the concerns are." Ward 4B was okay. Ward 4B was built for immunocompromised patients but Ward 6A was not. We were not aware of any water problems in the Adults' Hospital at this point but we unhappy that it

was not a positive pressure ventilated, HEPA-filtered unit. We were told, "It's a clean unit. It's the best they can offer."

133. At the time of the move some new patients were directed to other Scottish centres on a case by case basis, weighing the risks and benefits. This was because we, as clinicians, were not comfortable bringing in new patients to a unit which potentially had issues with infection. The management made the decision regarding this but left the clinicians to decide on a case by case basis who would be sent elsewhere.
134. Moving to the Beatson was not a good option either because the children would be moved away into an adult hospital with no intensive care facility and away from other medical specialties/facilities.
135. In my view, completely closing down the unit and moving all the patients to another centre would have been the best option, but that meant the whole of western Scotland's children would have to go to another centre for treatment. Issues with capacity and resource at other Scottish centres were considered. It would also mean patients travelling several hundreds of miles for all treatments, putting them at higher risk, so that was really not a practical solution and, from a service point of view, and for management and GGC, it was the least preferred option.
136. We accepted that this was a difficult decision. As a consultant group we said what we would like to have was a portable style hospital adjacent to the RHC in the same ground, completely built with HEPA filtration etc. And if possible, with a link corridor to the Children's Hospital for using the theatres and all the other facilities.
137. However, building a portable style hospital would have taken about three to six months. It would require the military to build it and we were told we were only being moved for 12 weeks, so there was no point in doing this. Ultimately we were told to move to Ward 6A. We were not happy with this, but we had to

move because we were thinking that staying in Ward 2A was more dangerous than moving out.

138. I believe Professor Gibson and Dermot Murphy were more heavily involved in the move but I did not have any involvement in the decision to move. This was supposed to be a temporary move for 12 weeks. Those were the words that were used, "This is a temporary move for 12 weeks. Within 12 weeks, we will address the issues on 2A and 2B, and we will move you back."
139. One of the main impacts the move to Ward 6A had on patients, families and staff, was that it was very small. In Ward 6A, we had to move the day care and Ward together into a single unit. We did not have any playroom, school for the children or even places for the staff. We had even less space than what we had in Ward 2A. We were very limited to what we could do.
140. I think for parents, but especially for patients, to go into those rooms and have no playroom was not good. It was emotionally and physically draining for children to stay in the one room all the time.
141. Ward 6A was probably about half the size of Wards 2A and 2B together and we had to move everything into the Ward. We needed to reorganise the way we worked and use all the district general hospitals for supportive care, even though many of them were not recognised as shared car hospitals.
142. There was no physical space to accommodate everything and everybody, so we were told that we should move some patients away to other centres. We had to go and speak to the clinical directors and managers in those hospitals to tell them that our patients would be going to them for treatment.
143. We had to move some patients out of the unit for chemotherapy and other treatments because it was not safe to go at times. It was a compromise we had to make for not closing the unit completely and keeping the service going for our west of Scotland's patients.

144. In January 2019 we had to move out temporarily to CDU due to concerns with cryptococcus infection on the Ward, they had to get portable HEPA filters for all the room and corridors.

INFECTION WITHIN THE HOSPITAL WARDS

145. We moved from Yorkhill Hospital to the RHC in June 2015. The first Cupriavidus was identified in the blood stream of a patient with a fever in February 2016. We were then told by the IMT that an aseptic unit tap in the pharmacy had grown this organism. We were also told by the IMT that the typing of the strains revealed that they were the same organisms. IMT told us that a second case in a patient was identified in September 2017, which was linked to a hand hygiene sink.
146. A third case of Cupriavidus was identified in January 2018. Testing the water revealed this environmental gram-negative bacteria, which was very rarely identified in patients. I don't think they had identified any source in the third case.
147. A number of blood stream infections with different gram-negative and gram-positive organisms were identified in 2017. IPC assumed this to be due to a poor standard of hygiene and care by the staff. A quality improvement project ("QIP") was instituted to alleviate this problem. The project included enhanced hand hygiene, CVAD care packages and staff training for handling CVAD etc.
148. A number of blood stream infections with different gram-negative organisms were noted in the blood stream of patients with a fever in 2018. Eleven different organisms were identified. This information was provided to us at IMTs. Several of these organisms had been identified in the water in the drains. The names of the organisms (numbers of which are shown in brackets) were:
- a. Cupriavidus pauculus (1)
 - b. Pseudomonas fluorescens (1)

- c. *Pseudomonas aeruginosa* (3)
- d. *Stenotrophomonas maltophilia* (12)
- e. *Acinetobacter ursingii* (2)
- f. *Enterobacter cloacae* (7)
- g. *Klebsiella oxytoca* (1)
- h. *Serratia marcescens* (1)
- i. *Pseudomonas putida* (1)
- j. *Pantoea* sp (1)
- k. *Klebsiella pneumonia* (1)
- l. *Chryseomonas indologenes* (1)

149. The clinicians felt this was very unusual and high in number despite the QIP in place. Clinical microbiology and IPC were made aware of this by the clinicians as the issues began and evolved.

150. A PAG and IMT were then established by IPC.

151. After an initial period of a decrease in the infections in our patients in Wards 6A and 4B, a rise in the number of gram-negative infections were noted again in the blood stream of children, with fever on Wards 6A and 4B in 2019. Again, clinicians felt this was unusual and high in numbers and these were discussed with clinical microbiologists, IPC and IMC.

152. Over a period of time in 2018 and 2019 there were a large number of hypotheses made by the IMT and they were carrying out interventions: limiting source of water, portable washbasins, hydrogen peroxide vapours, drain cleaning, water chlorination and other actions.

153. Despite these actions, every week we would see two or three more patients getting the new infections. We had heard of all these particular organisms before, but we never used to see them this often in our patients.

154. In the last 25 years of my practice, I would have seen at the most one or two of these organisms in a year.

155. We did appreciate that Estates were doing everything they could and that the IMT and IPC were countering whatever was in their hypotheses, but we were still seeing patients with the infections, which was not right. That is when we asked the IMT to arrange for an external body to come in and investigate, to see if there was something fundamental that we were missing.
156. It was around this time that we started asking ourselves whether the building was fit for purpose, whether the unit was fit for purpose for treating patients and whether the water systems and drains were okay. We wanted that reassurance.
157. IMT said they did not want to go external, they wanted to use someone internal to Scotland. They told us that HPS was an independent body and that they were going to ask them to investigate this.
158. I think we should have asked Health Protection England, as an external body outside of Scotland, to come and inspect the facility and the unit, because they may have had a completely different vision of hospital design and function and they may have been able to identify what was wrong. I don't think that the report done by HPS in 2019 was particularly helpful in addressing the problems or rectifying the problem. It was more like a summary of events and what was done, as opposed to coming up with more hypotheses or suggestions about what we should be doing.
159. We gave some names to management that they could approach. I can't remember the names now, but somebody from Newcastle, Bristol or London from Public Health and Health Protection England to see whether they could approach and invite them to come and investigate.

INFECTION CONTROL MANAGEMENT WITHIN THE HOSPITAL WARD

160. Clinicians, the clinical microbiology team, Estates team, IPC and management were all working together to address the concerns of increasing blood stream

infections in our patients with unusual environmental gram-negative bacteria problems.

161. PAG, Root Cause Analysis and IMT meetings were held regularly to address and initiate measures to mitigate the problem. Root Cause Analysis was something the IPC suggested in the IMT meetings; every case of an infection should be investigated more thoroughly as an individual case. It is basically to find out in an individual case how the patient moved between different wards; which ward were they staying in, where their line was accessed, and to find out whether the infection could have been introduced to the patient in the hospital environment. This was to find out if there was a common link. There were probably one or two cases where environment in the patient journey might have contributed to the infection, but most of the time, it didn't contribute to anything.
162. Clinical microbiologists were very concerned, like clinicians, about the rise of infections with unusual environmental organisms. I think clinical microbiologists were in complete agreement with us that it should not be happening and that it was just not right.
163. IPC were slightly different. There was a difference of opinion between IPC and microbiology in terms of what constitutes an environmental bacteria or an endogenous bacteria. The IPC were always trying to say that there is no such distinction between the two.
164. IPC's main intention seemed to be to tell us that the infections were nothing to do with the environment and that we were just seeing a change in pattern of gram-negative infections. The numbers were not high, they were not unusual, they were the same and that we were just seeing them more. The clinical microbiologists agreed with us that these were unusual infections in children, and we should not be seeing this many.

INVOLVEMENT IN THE INVESTIGATIVE PROCESS

165. In terms of developing a hypothesis, the clinicians had no input. The hypothesis was done by the IPC with the clinical microbiologists based on what they had seen and what organisms they had grown. They would suggest a remedy based on the hypothesis. We were not actually experienced or qualified enough to comment on whether it would work or not.
166. There was always a lag behind finding something and taking action to rectify it.
167. I was not aware of any views from the IPC that there may have been a link between infections and the hospital environment, which was frustrating to us as clinicians. We were very clear to them that we did not see these types or number of infections in patients. In general, clinicians' feeling in 2018 and 2019 during the IMT meetings was that they were telling us, "There's absolutely no link between the environment and the infection that you are seeing in the patients." That was frustrating because nothing else had changed. The patient population and the treating team were the same. The protocols were actually more enhanced, there were more safety nets and vigilance, but still we were seeing these infections. We were told that the environment had changed from Yorkhill to RHC with time.
168. There was a change in the Chair of the IMT in 2019. Teresa Inkster had been the previous Chair, she was a clinical microbiologist and was also leading infection control. The last few IMTs were chaired by Emilia Crighton from Public Health.
169. Teresa Inkster was very good in terms of listening to clinicians and trying to see what she could do to help with hypotheses. Although it really did not make much change in the number of infections we were seeing, I do think she was listening to us.
170. During the last few meetings that were chaired by Emilia Crighton, clinicians felt that they were not listened to.

171. It seemed as though the main purpose of the meetings was to disprove any link between the hospital environment and the infections and reassure us so that we should get back to business and work in the same ward. These were really disheartening and difficult times for us as clinicians.
172. I cannot speak on behalf of the other clinicians, but at times I felt that my expert view and clinical input was not fully taken into consideration and was disregarded.
173. It was frustrating to go and sit in a meeting, and at the end of the meeting to feel that whatever was said, was disregarded or not listened to. It impacted on the patient care. It resulted in more antibiotics, hospital stays, extra procedures, removal of lines or putting in new lines. It was demoralising and frustrating for clinicians to go and say at every meeting that there is a problem and to be told there is "No problem." If they had listened to us and acknowledged that there were increased infections and unusual organisms, even if they were not able to make the hypothesis or prove it, perhaps they would have sought external opinions earlier.
174. Professor Gibson was at some of these meetings and as far as I am aware, she was of the same view as the other clinicians. We called a meeting with the Medical Director, Dr Jennifer Armstrong, and also Catherine Calderwood, Chief Medical Officer for Scotland, to express our dissatisfaction at the IMT meetings. The Cabinet Secretary sent somebody to the IMT meeting to represent them. There was a psychologist and a person from the Cabinet Secretary's office present to sit in the last two IMTs, just to witness what happened. There was an uncomfortable atmosphere in meetings and they felt IMT were intimidating to clinicians
175. Towards the end of the last two meetings, the IMT Chair was saying, "There's nothing wrong with the environment, you're all doing a grand job, get on with it, back to business."

176. What I understood was that the Cabinet Secretary's team and the Department of Health had been made aware that there was an intimidating atmosphere at the IMT meetings; that clinicians were not able to express themselves properly and that communications between IPC and clinical microbiology were not good.
177. Professor Gibson actually met with Jeanne Freeman, the Health Secretary, at that time to express our dissatisfaction with the IMT. I think Dermot Murphy, Jamie Redfern and Jen Rodgers (Nursing Chief) were at that meeting too.
178. When the IMT were trying to re-open Ward 2A, they had some meetings with us to discuss what work had been done on 2A. They had arranged a tour for us when the building work was still going on, to show the amount of work that they had done with the ventilation etc. An enhanced ventilation system was put in to meet a higher standard than what is currently recommended. We saw that and we were reassured that they had done everything that needed to be done. We were as happy as we could be that they had done all the work there. We then had to take a decision, weighing the risks and benefits, of staying in Ward 6A, away from the Paediatric environment, having known that they had done all the work, or moving back to Ward 2A close to the Paediatric environment. We were reasonably happy that they had done extensive work on Ward 2A so as to move back. We were cautious that we needed to monitor things when we moved back and that we had to have some kind of enhanced vigilance for this. We all agreed to move back in March/April 2020.
179. Often we felt that the IMT was reactive rather than proactive in identifying or addressing issues. By this I mean problems used to crop up on the ward, every week or day, and we, as clinicians, used to highlight that to the IPC. They would try and fix that, but then something else would crop up the next day in the wards. We thought that they should have systematically approached the issue looking through everything, to assess and fix the environment.

IMPACT OF INFECTION WITHIN THE WARDS

180. The risk of infections in our patient population is well recognised. Sometimes these can be severe and life threatening. These infections can result in hospitalisation, prolongation of in-patient stays, delays in chemotherapy, extra procedures and interventions, and admission to ICU.
181. Clinicians were concerned with the increasing number of infections with unusual gram-negative bacteria on the ward. Patients with infection needed admission to the ward, intravenous antibiotics and sometimes admission to ICU. Many of these patients had to get their CVAD removed to clear the infection. A new CVAD needed to be put back after clearing the infection to continue cancer treatment.
182. It is difficult to measure the impact on the outcomes of cancer due to the delays in treatment of cancer induced by interruptions as a result of infections. However, it did have an enormous impact on the physical, emotional, and psychological wellbeing of patients and carers.

USE OF PROPHYLACTIC MEDICATION

183. Antibiotics and antifungal prophylaxis use is a standard practice in our patient population to prevent life threatening infections. Examples are Cotrimoxazole for PCP (Pneumocystic Carini Pneumonia) prevention and antifungal prophylaxis for high risk patients at risk of developing fungal infections. These are followed as per national and international guidelines. The medications are explained to patients and carers when they are given to the patient.
184. The national and international guidelines specify where a patient is at risk of specific bacterial or fungal infections and if this is the case then we use antibiotic or antifungal prophylaxis as per the guidelines. Some of these drugs have to be stopped temporarily for 48 hours or 72 hours before the chemotherapy is given as they may interact with chemotherapy.

185. If someone develops a fungal infection, then we have to clear the fungal infection before actually giving continuing chemotherapy. That is because we would be making them more immunosuppressed, and we would be increasing the severity of infection if we continued the chemo.
186. We need to be careful with prophylactic antibiotic/anti-fungal medications as they have complications and side effects themselves, so we don't use them unless we have to.
187. If it is an international or national guideline or policy, then we have to use that because there is a risk of severe infection. However, if it is because of environmental safety concerns that we have to use antibiotics and antifungals, then that is not a good environment to be treating patients in. We need to improve the environment in that case. That was our view; that we should not be giving antifungal/antibiotic prophylaxis just because we have to continue to treat patients in an environment that is not suitable.
188. Chemotherapy would always take priority over prophylaxis unless there was a known infection being treated, in which case the antibiotic would take priority.

COMMUNICATION BETWEEN THE GGC, CLINICAL STAFF AND PATIENTS ON THE USE OF PROPHYLACTIC MEDICATION

189. At times, the IMT and IPC team advised the clinicians to use additional prophylactic antibiotics or antifungal medicines on children. Information about the need for prophylaxis was communicated to patients and carers by members of the IMT/IPC.
190. Those patients and parents who were not on the ward were not necessarily captured. As clinicians, our responsibility was to prescribe these medications and explain to the patients and carers when we did it.
191. Prescriptions are given by the clinicians but the communication surrounding that was decided by the IMT.

192. When we see the patient, we explain to them that the IMT have told us to prescribe antibiotic prophylaxis or antifungal prophylaxis to some children who are at risk of developing infections. We tell them what we have been advised, what the side effects are and how we should be monitoring this. After that we would put them on that medication. We tell them verbally, like any other prescription – written consent is only taken for chemotherapy as per the national and international standards. In day-to-day practice of prescribing individual drugs, we do not take written consent from patients. For example, if we were going to start someone on antibiotics/omeprazole, we would not take written consent from them. We explain at the ward round or after the ward round what we are prescribing and why. That forms part of our duty of candour.

COMMUNICATION BETWEEN GGC HEALTH BOARD, CLINICAL STAFF AND PATIENTS ON INFECTIONS IN THE WARDS

193. As clinicians, we recognise the importance of the duty of candour. We were communicating directly with the patients under our care with whatever information we understood from the IMT.

194. Members of the IPC and management were making efforts to go around the wards after the IMT meetings from time to time to communicate with the in-patients. Most of the time it was Jamie Redfern and Jen Rodgers who met the parents on the ward. Sometimes Pamela Joannidis, Infection Control Nurse, was also present. However, those patients who were not in the hospital at the time may not have received the same levels of communication from the IPC and management. I think management were trying to establish a Facebook page, but I don't have access to those pages. I'm not sure what the patients and families were told through the Facebook page.

195. I was not aware of or involved in any meetings with families in relation to water concerns in 2017. Also in the beginning of 2018, there was not much direct interaction between management or IPC and the patients. It started sometime in the middle of 2018, I don't remember exactly when.

196. I did accompany some members of the management team to meet with families in 2019. I was there with Jamie Redfern, Jen Rodgers and sometimes Pamela Joannidis.
197. When one of my patients was specifically found to have an infection, after the IMT meeting, we would go to the ward and find those patients/parents. We would then speak to them to tell them the infection is being treated, and that we were still continuing to try to find out the reason for this infection. Management would explain to them that they couldn't identify a direct link from the water or the environment, but that they were taking some remedial action.
198. Sometimes as clinicians we felt that the patients were more aware of the issues with the build and the environment than ourselves.
199. I wasn't directly involved in creating any communication or information which was to go out to families, either relating to the water concerns or the moving between wards.
200. Following the IMT meeting, somebody from the Communications Team would compose a statement, a very basic statement, and that would be communicated to the parents. They would decide at the IMT meetings what they would tell parents.
201. Many of the IMT members probably still believe that there is no connection between the environment and the infections, which we clinicians do not agree with.

CONTEXT OF IMT MEETINGS

202. IMT meetings were held regularly to discuss the infections identified, assess the cause of the infection, impact on the patient, control/remedial measures

implemented and the effect of these measures on further incidence of infection.

203. IMT meetings were mainly attended by Professor Gibson and Dr Murphy. I attended some of the meetings that I was invited to, especially if one of my patients was being discussed. At the meetings, we were given information about the hypothesis they were putting forward and what measures they were taking to mitigate the issue.
204. My role was just to tell the IMT how the patient was, what they were being treated with, whether they were unwell, if any extra procedures had been carried out with that patient and what the clinical severity of the impact was on the patient.

MINUTES OF SPECIFIC IMT MEETINGS

IMT MEETING 25 JUNE 2019

(A36591622 -IMT Gram Negative Blood Ward 6A – Bundle 1 – Page 325)

205. One of my patients had developed a mycobacterium chelonae infection in the blood in 2018. It was the first time I had actually seen this organism in a blood culture, it was very unusual. I had not seen any mycobacterium chelonae infection at all in a patient in 25 years, although GGC might have seen some patients with this infection before.

206. [REDACTED]

207. I firmly believed that this infection must have come from the environment in the hospital rather than from their house. I asked if we could check the water in the hospital.

208. *Mycobacterium chelonae* is a very difficult organism to clear and it can affect any organ in the body – the skin, mucous membranes, internal organs, anything. In immunocompromised children especially, it requires multiple treatments, multiple drugs and antibiotics. Given it is so difficult to clear, I was very concerned about this patient's outcome.
209. At that time, the IPC in the IMT meeting told me it was not standard practice to check for that organism in the water, which I found hard to believe. I told them we had an infection in a child and asked them why they could not test the water. They told me it wasn't standard practice and that they never checked for *mycobacterium chelonae*.
210. I suggested that if they thought the infection had come from water at home, we should go and get the water from the house, and the water coming into the hospital from the mains source from Scottish Water and test both samples.
211. They said they would check to see whether they could do that and get back to me, but they never acknowledged or agreed that this could potentially be coming from the hospital water and they never tested it.
212. I treated this patient which was difficult because nobody knew how to treat the *mycobacterium* infection as it was so rare. There are very few reports of clinical infections. There is a reference laboratory in Edinburgh with a Clinical Director, so we got his suggestion on how to treat it. The clinical microbiologists and myself then treated this patient based on their advice.
213. I had to interrupt chemotherapy for that patient because this was a life-threatening infection. I gave ■■■ the advised treatment until I was told by the clinical microbiology consultants that the course of treatment I had given was adequate, and I could restart the chemotherapy. I then restarted the chemotherapy but unfortunately, in October 2018, ■■■ had the same infection again. It was very clear that we had not cleared the infection and it was still there.

214. I asked again for the water to be tested and I was told that it was not standard practice. This time, my patient needed prolonged treatment. After a brief interruption I had to continue the chemotherapy with the antibiotics [REDACTED]
[REDACTED]
[REDACTED]
215. The above incident occurred in 2018. Around 14 May 2019 they identified this same infection, mycobacterium chelonae, in another patient. In the last 25 years of my practice I had not seen a patient with this infection, then within a year, I had seen the same organism three times in two individual patients. That is why it became important to me to understand where the source of the infection was.
216. Whilst the water was not tested for mycobacterium chelonae in May 2018, in 2019, the water tested positive for this organism in some of the showers. I was told that the biofilm must have developed in the water system allowing growth of this organism in the system and that patients were having showers with unfiltered water. I was told by the IMT that the incubation period varies for this organism from between 15 days to 8 weeks.
217. The same organism had also been identified in a different child. Professor Gibson and Teresa Inkster were going to meet the parents of this child after the IMT meeting to tell them about this. However, I urged the IMT and the management lead, Jamie Redfern, to phone and let the parents of the first child (who grew this organism in May 2018) know about this. They agreed to do so.
218. However, they did not phone the patient or the parents of the first child. I met the first patient and [REDACTED] parents on the same day and told them that the hospital water had grown mycobacterium chelonae. They had been asking the IMT and management about the possibility of their child having caught the infection from hospital water ever since it was first detected in their child. I was disappointed that the IMT and management lead had not phoned the

parents as agreed at the IMT. The parents were very upset, understandably, that they had not been given this information by the IMT nor management.

219. On page four of these minutes it says, "This case has been classed as a HCAI as not an in-patient at the time of the sample." I think that must be a typo (not classified as HCAI) as that is not what they were saying in the meeting. The patient was an in-patient at the time so that is the opposite of what they were saying. It must have been a HCAI.
220. Initially, they were not agreeing that it was a healthcare-associated infection. They always held that this patient got it from outside the hospital but then they agreed at the IMT that this must be from the hospital i.e. a healthcare-associated infection.
221. In the minutes somewhere, it says they had actually grown mycobacterium chelonae from the water from the shower heads (multiple shower heads). So this comes back to the fact that we were asking if these patients were showering with the contaminated shower heads.
222. I think one of the things they were saying was that the water from the taps in the washbasins, if they were opened up too much, flowed too quickly and it rebounded, splashed back, and then affected the surrounding environment.
223. They were also saying that we were touching the taps while we were washing our hands. We actually wash our hands and use our elbows to close the water tap. This technique is part of our clinical training. We never use our hands for turning the tap off.
224. We did not agree with that, it was probably more likely to be due to the fact that the patients were showering with the same shower head or maybe using the same water to wash their hands or brush their teeth and rinse the mouth.

225. It was also difficult to make sure that the people visiting the patient (like relatives or friends) used the same hand hygiene technique that we as clinicians used.

IMT 14 AUGUST 2019

(A36591626 – IMT Gram Negative Blood Ward 6A – Bundle 1 – Page 343)

LEAKS FROM CHILLED BEAMS

226. In the IMT Minute dated 4 August 2019, it is mentioned that one member of staff is recorded as having witnessed leaks from the chilled beams. I did not see that myself, but I know the patients were moved from room to room because of the leaks from the chilled beams.

227. When I went in in the mornings to do the ward rounds, I saw that some rooms were already cordoned or closed off with plastic curtains. We were told that in that room the chilled beam was leaking, and that was why they had closed it off. They were cleaning and they were monitoring.

228. Reports from Estates in the IMT along with the clinical microbiologists and IPC were that there was water condensation on the chilled beams, leaking from the chilled beams onto the floor.

229. I have never worked in a unit where chilled beams were in use in the hospital. Chilled beam technology was all new to us. We couldn't understand what the technology was in the first place. Estates did explain to us how it all worked but it was very technical.

230. It was said in IMT meetings that there should not be any chilled beams in the Haemato-oncology unit because they are not a safe system to have for controlling the air quality. I am not expert on this though. I believe they were used because they wanted to control the temperature within the wards as they couldn't open the windows due to the hospital being designed with a closed, sealed-window.

IMT 6 SEPTEMBER 2019

(A36591637 – IMT Gram Negative Blood Ward A – Bundle 1 – Page 354)

231. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

232. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

233. [REDACTED]
[REDACTED].

234. [REDACTED]
[REDACTED]

235. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

236. On page 17, it is recorded I had agreed to do a briefing paper to be given to the families. I don't know exactly what context this was in. I had asked the IMT to give adequate and correct information to parents and patients. I thought that information which patients and parents were giving us was sometimes more than what we were given at the IMT.

237. The press actually used to put up stories about these things and it was not necessarily what the IMT was telling us. I said at the IMT, "Instead of the press telling the patients and parents what the problem is, we should actually be proactive and tell the story from our side, that we recognise that there is an increased incidence of infection here and we're trying to do something about it, that we're trying to find a hypothesis and deal with it." I think that was taken okay, and they were going to compose something to share with the patients and parents to say whatever was agreed in the IMT that they wanted to share.
238. I recall Jen Rodgers agreed we should do that rather than the press telling the patients directly. I was not involved in preparing the paper around what they should say to the parents. We agreed that we should do a briefing paper to the press to update them on the current situation and be honest with the public and the parents. If we did not know what the reason for the infections was, we should tell them that and also tell them what we are going to do about it rather than denying that there were any problems at all in the hospital.
239. For them to agree to this felt like an acknowledgement. I was asking them to accept that there was a problem and to get on with it. My feeling is that this was when Teresa Inkster was still the Chair of the IMT meetings. I think when Teresa Inkster was the Chair of the meeting communication was better with the clinicians.
240. I think there was a feeling from the clinicians that patients/parents were not aware of exactly what was happening, and that they were getting information from the press rather than from management. I wanted that to change. I wanted us to give the information to the parents and the public, rather than have them hearing things from elsewhere which might not have been correct.

IMT 8 OCTOBER 2019**(A36591643 – IMT Gram Negative Blood Ward 6A – Bundle 1 – Page 373)****DELFTIA ACIDOVORANS**

241. On page 21 of the IMT document, it describes a patient's condition and that delftia acidovorans had been identified. [REDACTED]
[REDACTED]
242. According to the IMT, this did not fit the criteria they used for the definition of a case. They said it 'possibly' could be a case. [REDACTED]
[REDACTED] Again, delftia acidovorans was something we would not see before. I had never heard of delftia acidovorans before. We learnt of a lot of new organisms from these infection episodes. I could not understand why they were discarding that case as a possible case because this was an environmental organism that we do not see.
243. The hospital could not be ruled out as a source. If there is an organism sitting in a line for a week, for example, just proliferating in the line but not going into the bloodstream, it will only go into the bloodstream when the line is used. If we use a syringe and the organism is then pushed into the line, that is when the patient becomes unwell. A patient might have been released from the hospital one week ago after having been in for some time as an in-patient, and then come back in and get their CVL flushed, so the germ gets released into their system at that point. The IMT were not acknowledging that.

HEPA FILTERS

244. On page 23 of the IMT document, it is recorded that I asked about high counts in air samples taken around the nurses' stations. This was in January 2019 when we moved back to CDU, temporarily, so that they could put HEPA filters in Ward 6A.
245. They put HEPA filters on the corridors of the Ward and inside the patient rooms. These were portable ones, not as effective as the central ones, but there were none in the patient bathrooms at that time. At this time, they were sometimes carrying out air sampling.

246. Of course, with the way the HEPA filters are, if samples are taken around that area where the filters are, you might actually get a better sample. I think when the air sampling results were shown to us from around the nurses' stations where people were sitting, those samples had a higher spore content than the rest of the corridors. Also, the patient bathrooms had more air spores than the rest of the Ward, because there was no HEPA filtration in them.
247. This was more interesting to me because the noise produced by the portable HEPA filter was very high. If sitting near the nurses' stations where there is supposed to be a portable HEPA filter, and the HEPA filter is switched on, the noise is so high that you can't actually hear anything. You can't hear a phone conversation so often you would find when you got here that they had switched it off because they couldn't work with the amount of noise it was emitting. That might be the reason that the air sampling showed higher content near that area.
248. They agreed to put HEPA filters in the bathrooms after this meeting.
249. I honestly don't remember what communication went to the families during this time. I hadn't seen written communication myself in terms of what was said to parents. We were definitely asked to prescribe antifungal prophylaxis for high-risk patients at that time, and I do remember Jen Rogers and Jamie Redfern sometimes going around with either Dermot Murphy or Brenda Gibson. When one of my patients was involved, they had gone with me to explain what was happening, and explained that, as a precaution, we were prescribing antifungal prophylaxis as advised by the IMT and IPC.

LEAKING TAPS IN THE PARENTS' KITCHEN

250. On page 24 of the IMT minute, there is a long list of risk management and control measures and it is recorded that I mentioned there had been numerous incidents every week since moving to Ward 6A. The first particular incident was in the kitchen. There was water on the floor in the kitchen I think, and they moved the kitchen fridge out to see where it was leaking from only to

find mold at the back of the fridge. Angela Howat, our Day Care Nurse, reported the stain appearing on the floor of the kitchen. Nurses used to notice more issues than the Estates people going around the wards because they were more vigilant. I think they were more worried about this infection, which made them more vigilant.

251. That was the kitchen the parents used, children usually don't go into that kitchen. There was a leak there and they had to close the kitchen after that to carry out repairs. Leading up to that, every few days they would say there was mold found in the bathroom or internal wall of this particular patient's room or of mold at the chilled beam area where it leaked, so there were numerous times that we were told about these things.
252. It was hard to actually have confidence in the rooms with these things happening one after the other, and it was as if everything was reactive rather than proactive.
253. I felt sorry for the patients; [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
254. I do not have the details of the time or dates of the incidents, but the Estates team will have that and there may also be photos.

VIEWS ON IMPACT UPON PATIENTS AND FAMILIES

255. This has had a huge impact on the patients and families. Parents were scared, worried and anxious about bringing their children to the ward for treatment. Parents were concerned about whether their child would be the next one to be infected and what impact it would have on the child. Some families have expressed anger, distrust, and lack of faith in the hospital.

256. It has also had a huge impact on the physical, psychological and emotional wellbeing of patients and carers. I would like to express my deepest sympathy to the patients and carers who had to undergo this enormous stress and pain in addition to the suffering they were already undergoing because of cancer diagnosis and treatment.

VIEWS ON THE IMPACT UPON CLINICAL STAFF

257. It has been a very difficult few years for myself and the whole team. I think trust in the hospital had been lost by the patients and carers. Although we were communicating what we knew to the patient and carers, I think they felt the truth was possibly being hidden from them.

258. Personally, I think it has put a lot of pressure on the physical and psychological wellbeing of staff. Staff morale was very low despite them trying their best to care for the patients.

IMPACT OF MEDIA REPORTS

259. Obviously there were press and media articles about the hospital infections, water contamination and fungal infections. I cannot talk on behalf of the other clinicians but I used to feel that parents and patients were sometimes more aware of issues with the building and environment than we were.

260. Some of the parents were asking, "Do you know that the drainage system is inadequate? The size of the pipes are too small." I think some parents were possibly involved in the construction of the hospital, providing the drainage services, for example.

VIEWS ON THE IMPACTS OF THE INVESTIGATIONS

261. These have been emotionally draining and tiring. I have had the feeling of not being listened to properly or taken seriously. Even whilst taking part in the investigations we still have to continue to care for patients and families with

the emotional burden. These investigations have also affected morale. It was physically tiring and demoralising too. As the issues went on for years, we had to continue treating patients in the environment which we felt was concerning. It was a fight to keep up the strength and emotional wellbeing each day seeing no improvement in the situation.

SUPPORT FROM MANAGEMENT

262. Immediate management staff were in good communication with the clinical staff. We were able to request meetings with higher officials of the GGC health board at times to address our concerns.
263. Specifically, Jamie Redfern and Jen Rodgers were good at trying to talk to us and find out what our concerns were, and in facilitating meetings with them. In that respect, I think we felt that the immediate management was supporting us.
264. Whether this was necessarily addressing the problems at hand is an entirely different question. Being proactive in addressing the problems and identifying the issues would have helped but I do not think at any time that Jen Rodgers or Jamie Redfern made us feel that they didn't want to listen to us. Whenever we asked for meetings, they used to come and sit down with us. They were trying their best to be helpful.
265. I think we have felt that, at times, when difficult decisions had to be taken, management used to leave it on us. For example, when the IMT decided to partially close down the unit at times, we, as clinicians, were left to make the decisions as to which patient would go and which patients would stay in the ward.
266. The responsibility of decision-making to relocate patients was hard because we were telling some patients they had to go to Edinburgh/Aberdeen for chemotherapy and telling some others that they could have chemotherapy in Glasgow. I thought to myself, "How can I actually tell parents this? How can I

decide? How do I decide which patient is at more risk and which patient is at less risk?" Because it is the same environment, it is not necessarily a wise/rational decision at any time to keep some patients and send others away.

267. We were not given any criteria. They left the decision-making to us, as clinicians. We did not want to treat anybody in the unit because it was difficult to substantiate or support anybody coming into the unit when there were infection concerns present.

268. Patients or families would say, "You're just saying that because the management and IMTs told you to say that." These were difficult times for clinicians to make decisions on a case-by-case basis about where to send them. I think we would have been better off with management providing us with guidance, and with criteria for making these decisions for relocating patients.

VIEWS ON THE QEUH IN GENERAL

269. I think the problem with the design of the hospital is the oval shape with curving corridors. I don't think that's clinically helpful at all. Lack of space and lay out of the unit were problematic too.

270. However, maybe the concept of the new children's hospital, located at the SGH site near the sewage works, and closing down the children's ward in the Paisley Hospital, were all actually difficult decisions for the management.

271. The clinicians were never involved in deciding to close the children's ward at Paisley Hospital. The Royal Alexandra Hospital in Paisley had a children's ward and the children's A&E, so the children and adolescents used to go there for treatment. Paisley is only six or seven miles from there. There was no point in having another children's A&E in there so, for whatever reason, they decided to close the Paisley Children's Hospital and move everything to the RHC. That meant there was an increasing number of patients who were

going to come to the children's A&E, and to us. They also raised the age limit from 13 to 16, so those patients who were above 13 years of age who were previously going to the adult hospital A&E, now come to the Children's Hospital. It poses capacity issues for us.

272. I am not qualified to comment on the design of the building, but I think we felt that the whole shape of the building and the amount of space allocated to us was not clinically adequate. Locating our offices outside the ward into an area eight minutes away by walk wasn't helpful either.

REFURBISHMENT IN WARDS 2A AND 2B

273. It is probably too early to comment on how effective the refurbishment has been, but management showed us what they intended to do and took us through a lot of technical details of what they were changing on the Ward, which is all fascinating. Hopefully it will work.

WHAT COULD STILL BE DONE TO BENEFIT THE QEUH OR ABILITY TO PROVIDE CARE TO PATIENT GROUP

274. We do not like the curving corridor of the wards at all. You may wonder why that makes a difference, but it is impractical. If we stand in any position on the ward, we cannot see the rest of the ward. It is difficult to seek help immediately when needed as the whole ward is not in vision. We have to walk around to get help.

275. The alerts we have are all reliant upon technology and on a red light going off somewhere, but these things can falter at times.

276. Nurses have also had to reorganise themselves into teams, to suit the curving corridor, which only gives access to limited rooms at any given point on the corridor.

277. We still do not like the whole design concept, but we have to work in that environment. We have to get used to that now because it is not going to change
278. I think we would have preferred a rectangular kind of design. Ward 6A was better in that respect because there were two parallel corridors in rectangular shape. It was easy to walk around and have a good view and control of the Ward, but it was too small for us to work properly.
279. I think that what we have to work in at the moment is not perfect, but I do not think it is going to change hugely in terms of physical space or design. I think it is unlikely we could ever get office accommodation nearer to the wards in the Children's Hospital.
280. I believe that the facts stated in this witness statement are true, that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Angela Howat

PERSONAL DETAILS

1. My name is Angela Howat. I was previously the Senior Charge Nurse in ward 2B, paediatric haematology/oncology day care unit in the Royal Hospital for Children (RHC) in Glasgow, situated on the Queen Elizabeth University Hospital (QEUH) campus. Since September 2022 I have new role as a Neuro-Oncology Clinical Nurse Specialist for children with central nervous system tumours. I still work in the Schiehallion Unit, but am no longer based in ward 2B.

PROFESSIONAL BACKGROUND

2. I began my training as a nurse in May 1984 and qualified as a Registered General Nurse (RGN) July 1987 and worked in the care of the elderly ward in Mearns Kirk Hospital in Glasgow.
3. In December 1989 I qualified as a Registered Sick Children's Nurse (RSCN) and began working in ward 7A, the paediatric haematology/oncology unit, in the Royal Hospital for Sick Children (RHSC) at Yorkhill. In 1996 the ward moved to a new unit on the first floor where the in-patient ward and day care were separate units, and the unit was called the Schiehallion Unit. At that time I moved to the day care unit.
4. From then I have held various roles in the day care unit. I became a Grade F Staff Nurse in 2002, the temporary ward manager in 2006, the permanent day care ward manager in 2008, and was the Senior Charge Nurse in ward 2B during the move to the new hospital in 2015.

5. Other qualifications that I have undertaken are: Online chemotherapy course from Robert Gordon University in 2006; Post Graduate Diploma in cancer nursing from Glasgow University in 2002; and I am a qualified Specialist Practitioner in Adult Cancer Nursing (which had some paediatric aspects as part of the training).

AWARENESS OF PATIENTS AND FAMILIES EVIDENCE

6. I have read some of the evidence from the patients and families involved and am aware of how stressful and worrying a time it was for them. The patients and parents were upset and critical of the hospital environment, but were complimentary to the consultants and staff that treated and supported them.

OVERVIEW

7. Ward 2B, the day care unit, treats children and young people with malignant and non-malignant haematology/oncology conditions. Ward 2A and ward 2B form the Schiehallion Unit. My witness statement relates to my role as the SCN in ward 2B from the move to the Royal Hospital for Children in June 2015 to September 2022.

CURRENT ROLE AND AREA WORKED IN

8. My new role is as the Neuro-Oncology Clinical Nurse Specialist for children and young people with tumours of the Central Nervous System. This is a new post to set up and deliver quality care, give support, advice and information to improve outcomes to patients with brain tumours and to continue to be their key worker into their aftercare. I support the patient and family from the start of their admission in the neuro-surgical ward and to the next stage in their treatment, radiotherapy and or Systemic Anti-Cancer Therapy (SACT).

ROLE AS WARD 2B SCN

9. My role and duties as the ward 2B SCN is set out below. This is split into Management and Clinical duties.
10. Management duties included: check and update the weekly roster in relation to staff sickness/absence, bank shifts, excess hours etc.; complete and check incident (Datix) reports; carry out weekly cleaning assurance checks and escalate to Estates (via FM First) or Infection Preventions and Control (IPC) if there are any issues; check that Health and Safety risk assessments are up to date; attend Multi-Disciplinary Team clinical meetings for haematology and oncology patients; attend monthly Unit meetings and 2 monthly Clinical Governance meetings, and monthly Infection Prevention and Control meetings. On a weekly basis I plan the treatments for incoming patients in relation to co-ordinating chemotherapy, blood products, arrange and book investigations. In terms of audits, there are a number of monthly audits that are carried out. These audits are carried out by a link nurse and I would check these and display the data on the board in the ward. These audits include central venous catheter (CVC), peripheral venous catheter (PVC), hand hygiene (HH), and Paediatric Early Warning Scoring System, (PEWS). The audits are uploaded onto the Care Assurance Improvement Resource, CAIR system so that the results can be viewed by our Lead Nurse, IPC Nurse and management. There is also a six monthly Standard Infection Control Precautions audit which is carried out by the linked IPC Nurse. I also provide support and information to staff on treatment protocols.
11. Clinical duties included the following. A daily briefing to the nursing staff on the patients attending that day using the Situation, Background, Assessment and Recommendations (SBAR) format. This involves organising staff and patient placement to manage flow of patients through the unit to ensure separation for haemopoietic stem cell transplant (HSCT) patients and patients requiring source isolation, managing the workload for the day. I also lead the Safety Brief, where staff are updated on any new information from IPC, any medication updates, and updates from the Lead Nurse on patient safety, and any miscellaneous matters. I co-ordinate emergency admissions via the Triage phone and organise / liaise with the ward the patient will be transferred

to. I co-ordinate elective admissions for administration of SACT, new diagnosis and investigations, and insertion of CVCs. I co-ordinate the day stay patient admissions for blood transfusions, intravenous immunoglobulin, administration of SACT via bolus or infusion, post HSCT patients attending for anti-viral infusions. I also assist with procedures such as lumbar punctures, administration of radioactive isotope (DTPA, Tc99M) for measuring glomerular filtration rate (GFR), and caring for patient pre- and post- diagnostic Meta- Iodo- Benzyl-Guanidine (MIBG) which is a radioactive iodine for diagnosis or for treatment therapy for patients with a malignant tumour called neuroblastoma. I also take blood samples and carry out CVC care, venepuncture and insertion of peripheral venous catheters. I also give advice to parents on specifics and general side effects of chemotherapy.

12. In summary, as the Senior Charge Nurse of the unit I am responsible for management of staff, staff recruitment, health and safety, duties as stated above, and to educate and provide support and information for all patients and their families attending ward 2B. I speak with parents about their child's treatment and protocol, answering any queries or complaints that they have.
13. Ward 2B is situated on the second floor of the RHC, adjacent to Ward 2A. 2B is a Monday-Friday ward and opening hours are 08:30-19:00. Any patients remaining after these hours may be transferred to ward 2A to complete their treatment.
14. Ward 2B is a smaller unit compared to ward 2A. It consisted of: reception area; 1 SCN office; 1 hot desk office for all staff; 1 office for the non-malignant haematology team; a total of 11-13 patient spaces consisting of 5 consulting rooms, 2 bays with en-suite toilets one of which can accommodate 4 reclining chairs for patients pre- and post-HSCT or 2 beds, and a larger 4 bed bay area; a clean utility room for preparing patients medication; a dirty utility room; two waiting rooms (one specifically for HSCT); an interview room; a baby changing toilet, and a staff toilet.

15. Ward 2A is the in-patient ward of the Schiehallion Unit. During the day, nursing staff in ward 2B carry out the admission process for elective and emergency admissions and commence the SACT as per protocol. Patients can be transferred to ward 2A from 2B for: in-patient admission for administration of SACT, and SACT for HSCT; if they are unwell or require intravenous antibiotics to treat febrile/neutropenia; if they are a new diagnosis; or for palliative care.
16. We have our own medical staff and Advance Nurse Practitioner in ward 2B and a small nursing team. Ward 2A have their own staff, but provide nursing cover during staff sickness or high acuity to ward 2B.

PROTOCOLS ON WARD 2B – DAY CARE

17. The Schiehallion Unit has Standard Operating Procedures (SOPs) which are relevant to haematology/oncology patients that can be accessed by all Schiehallion staff via a system called Q-pulse, by controlled hard copies kept in the ward, and certain SOPs can be accessed by all hospital staff on the Clinical Guidelines Platform. In addition to Schiehallion Unit SOPs there are specific SOPs for HSCT and SACT. Policies include: the management of neutropenia and fever - antibiotic policy, and the anti-fungal policy. The IPC team have an IPC manual and SOPs which can be accessed via the NHS GGC desk top. There are 10 Standard Infection Control Precautions (SICPs) which are followed to prevent the spread of infection and cross transmission. This includes, for example: patient placement, as patients are assessed for known or suspected infections and placed in an appropriate place; safe management of the care environment and equipment; Personal Protective Equipment (PPE) to prevent spread of infection and to protect staff; and hand hygiene. In addition there are transmission based precautions (TBPs) to be used if a patient is nursed in source isolation. The SICPs did not change when we moved to ward 6A. Some of the SOPs were amended to reflect the change in location for example, in terms of where HSCT patients being nursed (in ward 4B) and where SACT was being administered (in ward 6A).

18. The Schiehallion unit is accredited by the Joint Accreditation Committee ISCT-EBMT (JACIE). JACIE is a European body that assesses and accredits centres that carry out HSCT.
19. If ward 2A is full, patients except post-HSCT patients and patients receiving SACT, can be nursed in other wards, usually the 3rd floor in the RHC. All our 'outlier' patients are examined by the same team of medical staff they would have if they were an in-patient in ward 2A, and the same policies or SOPs are followed. New staff nurses would receive this information as part of their induction programme. Patient placement in other wards should not cause any difficulties.
20. In relation to the patient pathway for emergency admissions, a parent will call if their child is unwell or has fever. There is now a dedicated Triage phone, which is operated 24 hours a day. During the day patients are admitted directly to ward 2B (08:30-18:00) or ward 2A (until 21:00). Overnight patients would initially be admitted to the Clinical Decisions Unit (CDU) and then transferred to the ward. This changed during COVID-19 outbreak, when all pyrexial patients or patients with coryzal symptoms would be advised to attend CDU for initial assessment before being transferred to the appropriate ward regardless of time of day.
21. Patients would be placed in either source isolation, if they may be infective, or in a positive pressure ventilated lobby (PPVL) room, in another ward in RHC if they were neutropenic or in ward 2A. Ward 2B did not have any PPVL rooms as it is a day care ward, and patients do not stay there overnight.
22. TBPs would be followed for a patient in source isolation, where SICPs may be insufficient to prevent cross contamination. In relation to cleaning, rooms and near patient equipment are cleaned per the SOP, which will include twice daily cleans with Actichlor plus solution. This is the policy for all wards in the hospital, so would not change if the patient is elsewhere.

23. The parents' feedback is that they prefer to be in ward 2A as they are familiar with the surroundings and staff. Ward 2A had a parent's suite, teenage cancer trust (TCT) patient rooms and social space for teenagers. Other wards in the RHC may not have had parent facilities.
24. In relation to ward-level risk assessments, these are contained in the ward's Health and Safety Management Manual. Ward 2A and ward 2B share their manual as we have similar patient group and risk assessments. Emma Somerville, the ward 2A SCN, and I update the manual, complete the risk assessments (including and Control of Substances Hazardous to Health (COSHH) risk assessments), and input into the departmental risk register. The risk register is emailed to Dr Sastry, and is discussed at our 2 monthly clinical governance meeting that is attended by consultants and senior staff.
25. A patient may present to the ward pyrexial, or they may become pyrexial after having their line flushed. The process for haematology/oncology patients or non-malignant haematology patients with a CVAD who have a fever is to follow the neutropenia and fever policy. They will be reviewed by medical staff or an Advanced Nurse Practitioner (ANP) as soon as possible. Blood samples from their CVAD, including blood cultures and a C-Reactive Protein (CRP) test, which is an inflammatory marker that can be raised if you have an infection. First line antibiotics will be given as per the policy and paracetamol to reduce their fever, and any emergency care that is needed, and they will be admitted to ward 2A or an appropriate ward. The blood culture results are communicated by phone to the medical staff in ward 2A by the microbiology team as soon as results are known. The microbiologist also attends a regular meeting on a Friday at lunchtime and discusses the results with the medical staff and consultants.

THE OLD YORKHILL HOSPITAL

26. The old haematology/oncology ward was situated in ward 7A in the RHSC, Yorkhill. In 1996 the ward moved to the first floor of the hospital and was renamed the Schiehallion Unit. The Schiehallion unit in the RHSC had separate in-patient and day care wards separated by double doors with an air

lock. The office space in the day care unit was bigger than ward 2B in RHC, but the clinical spaces, consulting rooms and bed bays, were of a similar size. The consultant offices, social work office and outreach nurses office were part of day care at Yorkhill, but these were moved to the office block in the QEUH campus. There was an extra playroom in day care in Yorkhill. There was no special ventilation in day care in Yorkhill, as the patients did not need a controlled environment as they were in their own home environment, and were not in-patients.

27. In 2015 when I moved from Yorkhill to the new RHC, I had the same patient group. One difference from Yorkhill to RHC was that at first a longer wait for blood samples to be processed and for blood products to be matched. The laboratories in RHC have a large in-patient and out-patient population of blood samples to process which resulted in longer waiting times for patients in day care. The vast majority of patients attending day care need a full blood count to determine whether they need any blood product support or can receive their SACT. This was resolved after meeting with the manager of the haematology lab, and a change in process. A blood analyser has since been purchased by charity money, and is managed by the haematology lab in the out-patient department. The blood result can be processed through the analyser in 10-15 minutes or less.
28. The age range for children attending the Emergency Department (ED) at RHSC was up to age 13. This was increased to 16 years old for the new ED at RHC. With the closure of the local ED departments, this meant that the new RHC ED has a bigger population and workload.

CHRONOLOGY OF EVENTS

PRE 2015 – PLANNING STAGE

29. The SCNs, senior staff and consultants of each ward attended the planning meeting with the planning team for their own ward specification. I cannot remember the details of what was discussed at all of the meetings.

30. The new day care unit in RHC was to be the same size as RHSC in relation to the clinical areas. The planning, measuring each room and area and the layout and design of the day care unit were already carried out prior to our planning meetings by the Project team. There was not any scope for improving the size of the any of the rooms as I was told this was 'like for like', although we did not quite get 'like for like' as for example, we previously had a kitchen in the day care unit which we did not have in RHC. We did not have input into the building specification or total available space, but did have input into the allocation of space.
31. There were meetings chaired by the Clinical Service Manager, Lynne Robertson, where matters such as equipment, procurement, IT, health and safety, staff inductions were discussed. All patient and staff equipment was ordered for each area and was in place for the hospital opening e.g., new medical devices, resuscitation equipment, IT etc.
32. On my first visit to see ward 2A and ward 2B in the new children's hospital the building was still under construction. The SCN from ward 2A at the time, Professor Gibson and I visited the site first. We arranged the walk round tours for wards 2A and 2B and the site of the new hospital for other staff. I arranged the induction, and hospital passes for staff and equipment in my area. All staff had an induction for health and safety, lifts, how to check in the out-patient department, receipt of blood products, and 'all access' hospital passes for door entry systems. I visited the new children's hospital site on a few occasions to get my bearings and for staff inductions.

General views on the opening of RHC, QEUH and Schiehallion Unit

33. The new children's hospital was a bright, modern, child friendly environment, with interactive toys for the children to play with, a fun new playroom and teenage cancer trust social space, and an area in the ward for parents to meet and have a coffee. In the atrium there were shops and a variety of food places to choose from. There were child friendly décor with beautiful murals of

Scottish scenery, hands free phones, and clean uncluttered cubicles and clinical spaces with brand new easy to clean equipment, beds, reclining chairs, and examination trollies. It had TVs at all patient's beds, improved patient Wi-Fi, paper light case notes, a clean and improved environment for our vulnerable group of immunocompromised patients. A new 'home from home' for our families to stay in near the hospital, funded by charity Clic Sargent (now Young Lives Vs Cancer), and a sanctuary area for quiet reflection. Ward 2B is situated near to ward 2A, and continued to treat our patient group in the new environment.

34. Staff were worried about: toilet availability, car parking, limited office space, consultant office based in the office block 10 minutes away, a longer distance to the canteen, limited changing facilities and lockers. Some of these issues were resolved or staff accepted the new changes. Staff were encouraged to use public transport and reduce their carbon footprint. The public transport links to the hospital were improved and stopped outside both the RHC and QEUH. Staff were informed of the bus routes and the frequency of the public transport for several weeks prior to the new children's hospital opening, and encouraged to use them. Car parking spaces were limited at first but an extension was made to the adult multi-storey car park and designated spaces and permits for staff were given. The parents, and outreach nurses struggled to find parking spaces prior to the changes mentioned above, and this remains an issue for parents at times, although much improved.
35. Patients liked the new entrance to the hospital although there is quite a long walk from the car park, the TVs at all beds, bright new cubicles with new décor and equipment.
36. The RHC covers the same population as the RHSC at Yorkhill covered, which is the West of Scotland. The staff were attached to RHSC, Yorkhill hospital and were sad to leave it. There were many memories of patients previously treated in Yorkhill, some good, and lots of fun and some very sad.
37. I think you could say the RHC was a state-of-the-art facility.

Common Issues (Exterior of building)

38. There were issues with both cladding and a glazing panel had fallen out in the QEUH. I did not witness this but the access to the main atrium in the QEUH was restricted until remedial work was carried out.
39. The cladding was replaced on the outside of the QEUH and the RHC. Dr Inkster, Consultant microbiologist, advised the clinicians that during the work on the cladding that our immunocompromised patient group should enter and exit the hospital via the QEUH discharge lounge, and the higher risk patients (decided by consultants) were to receive anti-fungal prophylaxis to reduce the risk of Aspergillus, a fungal infection. In terms of how this was communicated to the patients and families, I handed out the written statement given to me by the Lead Nurse, Chief Nurse or General Manager to parents attending day care regarding the upgrade of the cladding. If the patient was unable to receive oral anti-fungal prophylaxis, they would be given this intravenously but this would require them to attend three times a week for it to be administered. Some patients had allergic reactions to the anti-fungal prophylaxis.
40. The impact on the haematology/oncology, and post-HSCT patients during the upgrade of the cladding was that: The families were asked not use the RHC entrance during the removal of the cladding at the side of the QEUH and to use the discharge lounge entrance at the side. Although the whole campus is designated as a non-smoking area, adult patients congregated to smoke at this side entrance as it is covered. Parents were very upset that their children were exposed to second hand smoke. Facilities, Estates, the Infection Control team, and the General Manager Jamie Redfern tried to address the problem. There were notices asking people not to smoke and from wardens asking people to move away from the side entrance. This was not successful.
41. The smell of the sewage works was more noticeable at different times of the day. I do not remember if the smell of the sewage works was discussed at the planning and design stage of the new Children's Hospital. Parents and staff

expressed concerns about this, but my understanding is that this does not pose a risk and I note that the old Southern General Hospital was on this site.

42. The subject of the cladding was in a Core Brief issued to staff in July 2017 and August 2017. The information in the Core Brief outlined that the cladding was of a similar type to the cladding used in the Grenfell flats, but not the same, and as a precautionary measure the panels would be removed and upgraded.

Communication about external issues

43. Staff had access to the Core Brief with information about the ongoing cladding works that commenced in September 2018. Letters and a map about where to park and where to enter and exit the hospital were given to parents attending ward 2B. The content of the letter explained that haematology/oncology patients were to enter and exit the RHC via the side entrance of the QEUH, where to park, and how the building material could pose a risk of infection and the consultants would advise on which patients were at risk and should be commenced on medication as a precaution.
44. I do not remember if there was information for me to give to families about the smell of the sewage works.

Common Issues (Interior of building)

45. I am aware of issues that arose early on in ward 2A. The in-patient televisions did not always work, the integrated blinds needed replaced, and ward 2A was very hot and humid particularly in the middle area of the ward. In 2B we also had the issues with the televisions, but as our patients were there for a short time this did not have the same impact. On ward 2B, we did not have the integrated blinds or have an issue with the temperature / humidity.
46. After a few years in 2B, we noticed that the chilled beams and vents had dust evident on them, and some cupboard doors nearly fell off and needed their hinges replaced.

47. Ward 2B did not have a door entry system or nurse call alarms in the consulting rooms. We had emergency buzzers so help could be summoned in an emergency. Processes were changed so that children were not left unattended in a room. This was added to the departmental risk register. The nurse call alarms and a doorbell were installed during our decant to ward 6A. Prior to this we kept the entrance door to ward 2B open during the day.

WATER SUPPLY

ISSUES IN WARD 2A/2B: MARCH 2018 TO SEPTEMBER 2018

48. At this IMT (**A36690457 – Incident Management Meeting, dated 12 March 2018, relating to Water Contamination on Ward 2A – Bundle 1 – Page 63**), the microbiology results came back showing *Cupriavidus* and *Stenotrophomonas*. I cannot remember the meeting, but carried out the actions set out by the IMT. Most of the actions related to 2A rather than 2B. Whilst I am aware of how this impacted 2A from attending these meetings, it did not have the same impact on 2B. Staff in ward 2B could continue to use the tap water to carry out hand hygiene but as a safety measure alcohol hand gel was to be used as final handwashing step. Patients in ward 2B should not drink the tap water, or drink from the water fountain. This meant that patients attending ward 2B were to drink bottled water or sterile water for HSCT patients, but not tap water, and were to use wipes during nappy changing. There were no showers on ward 2B.
49. Parents were concerned for their child's safety, they were scared because they could not drink the water during this time. Staff were worried and concerned for their patients and the safety of the environment. Communication was provided for staff from a Core Brief and parents were given a written statement with information on environmental bacteria found in the water, although I do not know exactly when this information was given to me. The information outlined the actions and control measures that the hospital was taking during this time.

50. The impact that this had on staff was that they were worried, anxious, and stressed. Hand hygiene audits were carried out and there was extra presence from the IPC nurses for education. Staff were upset for their patients and parents, and worried about patient safety. Communication for parents and staff came from the General Manager, Jamie Redfern, Chief Nurse, Jennifer Rodgers, and or the Director, Kevin Hill in the format of a written statement via email or hard copy, and from the Core Brief. The Lead IPC nurse Susie Dodds and Lead nurse supported and advised me during this time.
51. Emma Somerville the SCN from ward 2A and I waited for the communication from the Chief Nurse and General Manager before updating staff and parents. Once the communication, a written statement explaining the need for the control measures was available, we would share with staff and parents. This would usually happen at the end of the day or on a Friday. If this was on a Friday, staff and patients in day care would not receive the communication until the Monday morning and had sometimes found out already from social media. Control measures would be shared with staff at the following morning's Safety Brief. I do not remember when the written updates for parents and staff were first available.
52. I have been provided with a copy of the minutes (**A36690477 – Incident Management Meeting dates, 16 March 2018, relating to water Contamination in Ward 2A – Bundle 1 – Page 66**). The IMT minutes state “Dr Inkster has requested support from Health Facilities Scotland and Health Protection Scotland as the original Hypothesis of the incident is different due to positive water results in other ward areas and not the transmission of the organisms from sink to showers by staff only on 2A. The outlets appear to be the problem Dr Inkster has also requested that HPS & HPS contact Public Health in England to see if they have experienced anything similar to this situation.” Health Protection Scotland liaised with the Scottish Government, as at the meetings they would ask questions they were given by Scottish Government and would feedback to Scottish Government following the meetings. HPS carried out audits and gave their knowledge on the types of

bacteria to the IMTs. Health Facilities Scotland's (HFS) offered epidemiological advice and support for the ICD.

53. As noted above Ward 2B staff and patients did not have the same control measures as ward 2A. Oral prophylaxis, Ciprofloxacin, were given to patients as part of the control measures. The consultants advised which patients should receive prophylaxis. Water samples were taken from the taps in ward 2B as well as other areas in the hospital. The oral antibiotic prophylaxis was stopped when control measures were put in place and there were no new cases as defined by the IMT, and then restarted when cases started to rise. General communication was given to parents and staff as outlined above, via Core Brief or written statement. Medical staff would also have communicated to their patients about changes to medication.
54. Point of use filters were installed in ward 2A and ward 2B as a control measure, and initially all areas and wards that our patient group may have been nursed in. The Chair of the IMT said that the point of use filters should be changed weekly in the rooms used for HSCT patients and monthly for all other patients. The filters were fitted in ward 2B out of hours. I do not recall the exact communication to parents and staff regarding the installation of the point of use filters, but communication was circulated to staff and parents. The point of use filters are still in use.
55. I attended an IMT held on 19 March 2018, **(A36690507 – Incident Management Meeting, dated 19 March 2018, relating to Water Contamination in ward 2A – Bundle 1 – Page 70)**. I have been asked if the minutes are an accurate reflection of the meeting. As the meeting was several years ago I am not able to recall in that detail.
56. The minutes state, "A positive stenotrophomonas in PICU, but this case is not linked to ward 2A", "a couple of patients with increased pyrexia in 2A and some patients in Ward 3C with possible fungal growth." I cannot comment on these as they were not in my ward.

57. The minutes also state, “Staff in Ward 3C have some confusion as not all patients are immunocompromised so unsure as to why some patients can have showers and some cannot.” Not all patients that get admitted will be immunocompromised. Our non-malignant haematology patients may not have been immunocompromised, so they could use the showers.
58. I have been provided with minutes from an IMT, **(A36690544 – Incidence Management Meeting, dated 23 March 2018, relating to Water Contamination in Ward 2A – Bundle 1 – Page 81)**. The minutes state “Lot of questions from adult Renal and adult ITU. Lots of anxiety out there from staff trying to attribute a lot of Gram-negative pathogen results to the water.” As far as I can recall from the IMTs, in the adult patient population there were not the same issues with Gram-negative infections in the wards. Samples from the water were taken over a wide variety of areas, different wards in the RHC and in adult wards in the QEUH. The microbiology staff contact the medical staff to inform them of the blood culture results.
59. I have been provided with minutes from a Problem Assessment Group that was held in May 2018 **(A36706505 – Problem Assessment Group (PAG) Meeting, dated 18 May 2018 relating to Stenotrophomas Gram Negative Bacteria in Ward 2A – Bundle 2 – Page 97)**. Hand hygiene monitoring, and audits were ongoing. A section of the minutes states, “IPCNs continued to find issues with the domestic cleaning provisions on ward 2A. These include high and low dust (inc underside of patient beds), dusty parent beds (long standing issue with accessing the plinth under the parent bed which carries high levels of dust). It was noted that the domestic hours on the ward have been increased since the Astrovirus outbreak on ward 2A in April. SCN reports that the additional hours continue, although the regular domestic is absent from work and has been replaced by another domestic not familiar with the ward.” This was regarding cleaning in ward 2A. The SCN or nurse in charge carry out the weekly cleaning assurance checklist and the daily cleaning of near patient equipment checklist and escalate any concerns to the Infection Prevention Control Team (“IPCT”), Estates, or Facilities.

60. Emma Somerville, Susie Dodds (the Lead IPC Nurse) and I had an action to review central lines and possible solutions to them trailing on the floor. Haematology/oncology patients receiving SACT have a CVAD which is a silicon catheter that is inserted into a large vein. Blood sampling, medication, intravenous fluids, blood products and SACT, and any medication that requires to be administered in an emergency are administered through the CVAD. There are three types of lines they can have, which can either be single or double lumen: a CVC or Hickman line; a Port-a-cath, which is an implanted tunnelled line that is situated just under the skin and is accessed by a non-coring needle called a Gripper needle which is removed prior to the patient's discharge; or a peripherally inserted central catheter (PICC), which is usually inserted into a vein on the patient's arm. The patient has to go to theatre and have a general anaesthetic for the insertion and removal of a CVAD. Medication etc are administered through the line via a giving set. The giving set was a certain length and in order to ensure that the giving set did not 'pull' and to give the patient more freedom an extension line was attached which increased the length of the line. The extension line could fall onto the floor. Emma Somerville and I looked at all practices related to CVAD care, and we implemented the change to remove the extension sets, and patients, parents and staff became used to the change.
61. I have been shown a copy of the IMT minutes on 4 June 2018. **(A36690448 – Incident Management Meeting, dated 4 June 2018, relating to Water Contamination in Ward 2A – Bundle 1 – Page 94)**. I found some black grime in the drains of the handwashing sinks. I escalated this to Estates and the Lead IPC Nurse, Susie Dodds, who investigated this. It was discussed at this IMT meeting that "black grime had been noted in the drains some weeks ago". I had seen it in the hand washing sink in the HSCT bed bay in ward 2B. I do not remember how many drains in the hand washing sinks it had been found in. Facilities, Estates and IPCT worked together to remove the black grime from the drains. Hysan, a chlorine dioxide solution, was poured down the drains to try to remove the black grime and this became a weekly action carried out by the domestics. The black grime was not removed by the weekly Hysan and there was an action to remove it manually. This action could not be

carried out with patients in the rooms. Ward 2B could get the manual clean of the drains when we were closed at the weekend. Swabs were taken for culture and it was discussed at an IMT that they grew, *Stenotrophomonas* and *Cupriavidus*. The cultures were sent to Collindale for typing. The action for staff as a result of the finding of black grime in the handwashing sink was that we were instructed by Dr Teresa Inkster to ensure that nothing was emptied into the handwashing sink drains. It was thought that Chemotherapy was put down the drains but this was disposed of in the appropriate sharps box. Staff thought they were being 'blamed' for the black grime. Both staff and parents received education from the IPC Nurses on this. A poster was put up at every hand washing sink as a reminder.

62. Other control measures included: staff hand hygiene audits carried out by IPCT, hand hygiene co-ordinator.
63. These control measures were continued after our decant to ward 6A.
64. I do not remember if there was a greater use of source isolation rooms.
65. I have been provided minutes from an IMT meeting held in June 2018, **(A36690461 – Incident Management Meeting, dated 6 June 2018, relating to Water Contamination in Ward 2A – Bundle 1 – Page 99)**. The clinicians from Shciehallion Unit met to discuss the safety of the unit for new admissions and felt it was not safe to continue to admit new patients to ward 2A as environmental Gram-negative bacteraemias had started to increase, and this may be due to bio film build up found in the drains.
66. Some patients' treatment was delayed due to the closure of ward 2A to new admissions. I was advised from the IMT that, until the drains were cleaned, patients should not receive chemotherapy in ward 2B. Once the hydrogen peroxide vapour (HPV) decontamination and the drains were cleaned, over a weekend, ward 2B could continue to administer chemotherapy. HPS were going to carry out an audit on the environment.

67. The details of the chemotherapy delays and the patients sent to other centres to receive their chemotherapy was captured and escalated to the General Manager and Chief Nurse on a weekly basis. Some patients were sent to the Beatson TCT unit for their chemotherapy, but the TCT unit only treats patients aged 16 to 25. It was agreed by the relevant haematology/oncology consultant which patient could have their chemotherapy deferred and which patients could go to another centre for administration of SACT. Edinburgh was the nearest children's haematology/oncology ward and providing that they had capacity, patients were sent there. This involved added travel for parents to go to Edinburgh and some parents did not want to stay there. This was extremely stressful for parents to take their children to another centre to receive their chemotherapy, and added to consultants', data managers' and my workload to organise.
68. I have been provided with the IMT minutes for 5 September 2018 (**A36629284 – Incident Management Meeting, dated 5 September 2018, relating to X3 Gram Negative Bacteria in ward 2A – Bundle 1 – Page 149**). During weekly cleaning assurance checklist I noticed that the walls, the chilled beams and the vents in the consulting rooms appeared to have some dust on them. The chilled beam dripped water from a straw located on underside of the beam. I think this was the first time that had happened in ward 2B. I escalated this to Lead Nurse Kathleen Thomson. I do not know what the Estates' maintenance schedule was for the cleaning of chilled beams at that time. The IPC Lead Nurse and Estates manager arranged a 6 weekly rolling maintenance cleaning schedule for the chilled beams.
69. The additional control measures impacted staff, in 2A much more than 2B, as there was a lot of extra work to do. I had my duties as SCN to carry out and attend IMT meetings and carry out the actions recommended at the IMT. We were worried and concerned about the possible contamination from the drains. Staff were under close scrutiny with the peer audits relating to the care of CVADs, hand hygiene, cleaning of the environment, and cleaning of near patient equipment, carrying out line care. Staff received reassurance from IPCN, and chief nurse that the audit scores were good, and so was staff

practice. For example, the score for the Infection Prevention and Control Audit Tools (IPCAT) audit carried out in 22nd August was 98%.

70. **(A36629302 – Incident Management Meeting, dated 14 September 2018, relating to Ward 2A, RHC – Bundle 1 – Page 164).** This meeting was prior to the decant to ward 6A. The minutes state that there were ■■■ patients in the current cluster, and discussed an external drain expert using a scope to survey the drains. Discussions at the IMT around phase 2 decant of ward 2A and ward 2B took place. My understanding was that the reason for the decant was to enable the examination of the drains using a scope as this would be easier to access if there were no patients in the wards, and with less continual disruption to in-patients. The IMT made recommendations of where the wards could decant to, and this was escalated to the executive management team. I would have followed the process of giving Core Brief statements to staff and written statements to parents as they attended ward 2B.
71. At this meeting, **(A36629315 – Incident Management Meeting, dated 17 September 2018, relating to Stenotrophomonas in Ward 2A, RHC – Bundle 1- Page 169),** a statement was read out by Professor Brenda Gibson which acknowledges “that the IMT's recommendations from Friday were not approved at the meeting with Board members” and she expresses her worry on the situation and asks for assurance that advice taken on how to proceed will be taken from experts in their field. I do not remember how these comments from Professor Gibson were received by the group. My understanding was that there was discussion around the decant and the IMT still recommended that ward 2A and ward 2B should decant to carry out a detailed survey of the drains. The clinicians were worried about the environment. Staff anxiety was high as they were aware of the new cases of infections, and the possible link to the bacteria found in the drains. Parents anxiety was high as they knew from their social media about the cases in the ward and that the ward was closing to new admissions.
72. There was an IMT held, **(A36629310 – Incident Management Meeting, dated 18 September, relating to Drain Cleaning Regime in Ward 2A, 2B**

and 4B RHC – Bundle 1 – Page 175), where the decision to decant had been agreed. BMT patients would go to ward 4B, the adult transplant unit in the QEUH. For non BMT patients, the location they were to be decanted and when was still to be determined. Clinicians, parents and staff were anxious about patients being treated in ward 2A and ward 2B, and were relieved to be moving to allow the work to be done. The move was very stressful for both clinicians and all members of staff, and everyone worked extremely hard to allow the decant to ward 6A and 4B to take place. There was increased media attention, and a media statement from the hospital.

73. I have been provided with minutes from an IMT held just before we decanted, **(A36629316 – Incident Management Meeting, dated 19 September 2018, relating to Ward 2A, RHC – Bundle 1- Page 180)**. The in-patient families would have been told about the current situation, and then it was already on the news. I do not remember the exact scenario of what came first, but as soon as one parent was given the information, other parents would find out. Anybody that was an out-patient or came into day care may not have found out that quickly. They were very upset and annoyed that they had not been communicated to. All families were sent letters in September 2018, but obviously you cannot get a letter quicker than you can see it on Facebook and as soon as parents found out about something they may have put it on social media. Later a closed Facebook group for patients was set up by NHSGGC.
74. The process would be that I would speak to all of the patients and families on ward 2B and provide them with written statements to inform them that they would be attending ward 6A, instead of 2B. However, due to the nature of attendance on the ward, they would often have already found out from the media. It was initially thought that we would be in ward 6A for 3-4 weeks.
75. There were designated cubicles with certain criteria in wards in RHC that our patients could be admitted to. They must have a point of use filter on the new tap, drains cleaned with Hysan, shower heads replaced, enhanced cleaning. The MRI, CT, and X-ray department also had point of use filters fitted and drains cleaned with Hysan.

76. Once the point of use filters were fitted on all the taps in ward 2A and 2B, a process to fit point of use filters on all taps in the other wards in the RHC commenced. The Estates team worked extremely hard to achieve this.
77. Once the actions for the water issues were completed, the number of children with Gram-negative blood cultures attributed to the water did come down. So the actions that were carried out from IMT were working. The IMT closed as there were no new cases.

CLOSURE OF WARD 2A AND 2B AND THE MOVE TOWARD 6A AND 4B: 26 SEPTEMBER 2018

78. I was not involved in making the decision to move. I was involved in the options process in deciding where and how to move.
79. I attended a meeting with Kevin Hill, Jamie Redfern, Emma Somerville, and clinicians from the Schiehallion Unit, to discuss options of where we could decant to. Some of the options were a field type hospital in the grounds of RHC, a ward in QEUH, ward 4B for HSCT patients, and a ward in RHC but this may not have been suitable if the issues with the drains were similar to our wards. It was decided that ward 2A and ward 2B should move to the same ward together, as this would be easier logistically for patients receiving their chemotherapy.
80. The risk assessment was part of the options and considered for the move, in terms of where would be safest for the patients. There was a Health and Safety audit of our management manual not long after we moved to ward 6A.
81. The reason for moving was to survey the drains and to replace the sinks without disrupting the in-patients in ward 2A. The IMT reported patients with Gram-negative organisms that were a possible link to the bacteria found in the

drains. Decontamination of ward 2A and ward 2B had been carried out using HPV in June and was going to be carried out again.

82. The parents were anxious about the ward being closed to admissions, and having to go to Edinburgh for in-patient chemotherapy. Some parents had spoken to their MSP.
83. Grant Archibald, Operations Manager, had identified what ward could be used. Dr Inkster had said the BMT patients had to go to ward 4B as this was the adult transplant ward and had the correct specification for a transplant patient in relation to ventilation. There was the option of having a mobile pop-up hospital outside but that was not going to be ready quickly enough. It was thought that we could not use other wards in the RHC because the same sinks are across the RHC so will have the same issue with the drain. The QEUH did not have the same issues. Ward 6A was identified as a ward that could be decanted to.
84. The move was co-ordinated by Lynne Robertson, Clinical Service Manager, in the absence of Melanie Hutton. Ward 6A needed some remedial work carried out, e.g. replace sealant in the skirting in the en-suite bathrooms, repair flooring, painting, repair blinds, fit point of use filters to the taps, change shower heads, cleaning etc. Facilities, Estates and IPCN, all worked extremely hard to carry out all the remedial work in a short amount of time to have ward 6A ready and safe for our patients. As 2A and 2B would now be in the one ward, I was concerned if there be enough space for day patients and in-patients. Also we would have to go back and forth from the RHC to collect chemotherapy and paediatric radiology services were still in the RHC. There were child protection concerns with having paediatric patients in an adult hospital, but these were addressed by having the doors secured with an entry system. There were concerns about the time it would take for the resuscitation team to attend in a clinical emergency, but these were addressed by having equipment and medication on site in the ward. The pharmacy staff were provide with office space near to 6A. Administration staff and data managers stayed in RHC. The lifts to the wards on the QEUH site were very busy, so we

had a lift pass for patients to use the core lift. The non-malignant haematology staff and clinics were moved to RHC out-patient department, but if the patients were unwell they would come to 6A.

85. There was a media statement created regarding the remedial works, **(A38662124 – Press Statement from NHS GGC on decision to move patients dated 17 September 2018 – Bundle 5 – Page 148)**. Emma Somerville and I waited for the written statement and gave the information to the parents and patients in ward 2A. A written statement was provided to parents attending ward 2B with their child on the next day. There was a media statement on the BBC news.
86. The decision to move was quick and there was a lot of work involved in moving in a short space of time. Estates did a great job in trying to get 6A ready over the weekend.
87. The management team, the General Manager, Jamie Redfern, and Chief Nurse, Jennifer Rodgers, arranged a meeting in ward 2A to answer any questions from staff regarding the purpose of the decant and to reassure staff. Staff were able to voice their opinions and ask questions regarding the decant and the environmental issues. Some staff were angry that this had happened and it was hard to understand. Staff were worried about what to tell families, and about patient safety. Jamie Redfern and Jen Rodgers had a meeting with staff most weeks when we moved to ward 6A to update, answer their questions and reassure them. Jamie Redfern and Jen Rodgers were available and would go round with Emma Somerville to meet with parents and patients every time there was a written statement. This was often later in the day, and if any day care patients were there they would have spoken to them.

WARD 6A QEUH: AUTUMN 2018

88. I have been asked about the concerns I raised at the IMT meeting on 5 October 2018 **(A36629290 – Incident Management Meeting, dated 05 October 2018, relating to Ward 2A, RHC – Bundle 1 – Page 199)**. Whilst

we were decanted to ward 6A I was asked about any remedial work that needed to be carried out in 2B. I asked for the nurse call buttons to be installed, door bell entry, ward to be made brighter with LED lighting as they were no outside windows, as well as painting, fixing any tears in the floors or general repairs required.

89. The number of cubicles that I had for day care patients in ward 6A was less than in 2B and to keep to our appointment times the cubicles required to be cleaned promptly in between patients. This was discussed with Karen Connolly from Facilities, and domestic cover was organised to carry this out in ward 6A.
90. I have been asked about a statement in the IMT minutes of 19 October 2018 **(A36629317 – Incident Management Meeting, dated 19 October 2018, relating to Ward 2A, RHC – Bundle 1 – Page 208)**. Under the heading control measures it refers to “a review of all water sources and routes of transmission with an opportunity for intervention before patients move back into ward 2A/2B.” This related to the bathroom in ward 2A. The bath was not in regular use and Emma Somerville wanted to change the use of the bathroom to a treatment room for patients attending the ward out of hours. We were to review the literature regarding the removal of the trough sinks in the ante rooms to remove a potential source of water contamination. The sink would be replaced with a work top and hand hygiene was to be carried out prior to entering the room and again on entering the ante-room.
91. I have been provided with another set of minutes from IMT meetings **(A36629326 – Incident Management Meeting, dated 30 November 2018, relating to Ward 2A, RHC – Bundle 1 – Page 241)**. The minute records a discussion, and a difference of opinion between Prof Gibson and Dr Inkster relating to the removal of trough sinks. Dr Inkster had literature to support this. I did not have much involvement in that discussion.
92. Audits were carried out in ward 6A for hand hygiene, peer audits for central venous line care, insertion of peripheral access catheters and enhanced

supervision. IPCN, Facilities, Estates, Lead Nurse, and SCN would carry out an enhanced supervision audit to assess the cleanliness of the environment, near patient equipment, beds, lockers, light fittings, mattresses, and SICPs. Any remedial work would be carried out as soon as possible. Independent auditors assessed hand hygiene and carried out an inspection in the patient cubicles.

93. The departmental SOPs were the same as in 2A/2B. Addendums were added to change the name of the ward and if any of the process was changed. The HSCT patients protocols were amended as the patients were now being nursed in ward 4B. The pathway for patients with a fever or were unwell who lived in GGC was to attend 6A day care during the day, and to be admitted to 6A providing there were available beds. If they lived outside GGC, patients were to attend their local District General Hospital. This was because the ward 6A capacity was reduced compared to 2A/2B. Overall, a similar number of patients still attended day care, with some patients now attending non-malignant haematology clinic in out-patients.

COMMUNICATION ABOUT THE WATER ISSUES AND INFECTIONS

94. I have already described the communications process above. In summary, the communication came from the hospital management team including the General Manager, Jamie Redfern and Director, Kevin Hill, and the Chief Executive, Jane Grant. The Communications team attended the IMTs and provided the Core Brief statements or media statements to be given and read to parents. The IMTs were confidential and the process was that I waited for the written statements from the management team and I would distribute them to staff, patients and their families attending day care that day. This was time consuming as there could be 20 patients each day.
95. The Consultant Microbiologist, usually Dr Inkster and the patient's consultant informed the parents if their child had a Gram-negative bacteraemia which may have been linked to environment. I was present at some of the meetings but cannot remember which patients.

96. Not all patients attended ward 2B every week so they may not have received the most recent written communication. It could be challenging to ensure that all day care, out-patients received the written communication until the closed Facebook page was started.
97. As part of the IMT and communication process, information was shared with staff in the Core Brief. The management team, Jamie Redfern, Jen Rodgers, Kevin Hill and the Lead Nurses did their best to manage the communications for parents and staff. They had meetings with parents and Jen Rodgers came round the ward.

VENTILATION: EXPERIENCE IN THE NEW HOSPITAL

98. My understanding is that ventilation is important for patients undergoing a HSCT. Ward 2B did not need to have HEPA filters and positive pressure ventilation.
99. A Healthcare Associated Infection Systems for Controlling Risk in the Built Environment (HAI-SCRIBE) is a risk assessment that Infection Control and Estates develop before carrying out work that involves creation of dust, or disruption of water. For example, drilling a hole in the wall to put up a hook, taking an IPS panel off behind the toilet, removing roof tiles, fixing a burst pipe in the ceiling or en-suite. The HAI-SCRIBE has different levels relating to the risk to the patient, and the type of work to be carried out, and how to mitigate the risk from the work to be carried out to the patient. Estates, the IPC Lead Nurse and occasionally a SCN would sign off the HAI-SCRIBE.
100. In general terms, the process for Estates to carry out any repairs or jobs required in ward 2A and 2B was: the nurse would enter a brief description of the job needing carried out via the FM First system. A member of the Estates team would come to the ward and speak to the nurse in charge or SCN, and discuss the repair or what needed to be fixed and what would be involved in carrying that out. If required Estates and/or the nurse would discuss with the

IPC Team, and if required an HAI-SCRIBE would be used to reduce the risk of any contamination to patients.

101. The first I heard of any concern related to ventilation prior to the move to the new hospital. I was not the SCN of ward 2A, but I was told there were no HEPA filters in the transplant rooms, and they had to be sourced and were fitted prior to ward 2A opening. My ward, 2B did not need to have HEPA filters or positive pressure ventilation.
102. My understanding of positive pressure ventilation is when the air pressure is higher in the patient's room than in the adjacent room or corridor and this helps to prevent airborne bacteria from entering the room.
103. The patients undergoing a HSCT would be nursed in a transplant cubicle in ward 2A. I would not need to know the specification for the ventilation for this group of patients.
104. As part of the accreditation for JACIE staff would undertake training.

CRYPTOCOCCUS – DECEMBER 2019 TO JANUARY 2019

105. There was an IMT held in December 2018, where Cryptococcus had been mentioned. I have been provided with the minutes for this meeting, **(A36605180 – Incident Management Meeting, dated 27 December 2018, relating to Cryptococcus in Ward 2A, RHC – Bundle 1 – Page 250)**. This meeting started off saying that [REDACTED] HAI cases of Cryptococcus neoformans had been identified, [REDACTED]
[REDACTED] There was a discussion of pigeons, and pigeon droppings in the plant room. There were pigeons on the hospital roof. I did not have experience of Cryptococcus before this IMT.
106. I have been provided with minutes from an IMT held in January 2019. **(A36690595 – Incident Management Meeting, dated 18 January 2019, relating to Cryptococcus in Ward 2A, RHC – BUNDLE 1 – Page 274)**. The minute refers to a Core Brief to be sent out to all staff outlining the press

statement. Staff from Ward 6A had requested some more information about Cryptococcus to allow them to answer any queries patients or parents have and also relieve staff anxiety as to whether this would cause a skin rash.

107. Dr Inkster noted the fungal counts were found to be higher than expected in ward 6A with the portable HEPA filters in place. During my weekly assurance checklist I noticed there were gaps evident in the sealant of the skirting in some of the ensuite bathrooms and I submitted an FM first request to Estates to look at the issue and raised this with the IPC Nurse when they did their weekly walk round. On inspection by estates mould was found and as a result of this we temporarily decanted from 6A to CDU/1A to allow repairs to the ensuite bathroom walls and floors. The decant to ward 1A was challenging as the day care area was small and when we moved at first there was no office space for medical staff to discuss confidential information. This was addressed by Melanie Hutton and space was found.
108. In addition to the portable HEPA filters, fixed HEPA filters were later installed in the bathroom ceilings in ward 6A.

GRAM NEGATIVE BACTERAEMIA – SUMMER 2019

109. I have been provided with minutes from IMTs that were held when we were on Ward 6A. **(A36591622 – Incident Management Meeting, dated 3 July 2019, relating to Gram Negative Bacteraemia in Ward 2A, RHC – Bundle 1 – Page 325)**. The minutes refer to ward 2A undergoing a major refit with respect to ventilation, and no chilled beams in the ward. My understanding was that they were going to upgrade the ventilation system.
110. The minutes also refer to communications in relation to a Facebook page. I do not remember this.
111. There was another IMT on 14 August, **(A36591626 - Incident Management Meeting, dated 14 August 2019, Relating to Gram Negative Bacteraemia in Ward 2A, RHC- Bundle 1 – Page 343)**. The minutes refer to an issue

regarding a staff member not using the appropriate mopping system which was addressed. This would be a Facilities issue. I do not remember this.

112. I have been provided with minutes from an IMT held in October 2019, **(A36591643 – Incident Management Meeting, dated 8 October 2019, relating to Gram Negative Bacteraemia in Ward 2A, RHC – Bundle 1 – Page 373)**. The minutes state “Angela Howat informed the group that one of their domestics had left and not been replaced. Angela Howat also informed the group that their domestic was having trouble in obtaining a T3 floor cleaning machine.” We would have been asked if there were any issues, and so I have highlighted this and it was addressed by the Facilities Manager.

HOSPITAL ACQUIRED INFECTIONS AND A HEALTHCARE ASSOCIATED INFECTIONS

113. Haematology patients can be more at risk of infections, if they are immunocompromised which means they have a weaker immune system.
114. Haematology/Oncology patients tend to have lines and this will also mean they are at a higher risk of infection. One of the risks with line infections, Gram-negative bacteraemias in immunocompromised children is if it is not treated promptly it can be life threatening.
115. In some cases, the infection may not be able to be cleared from the line and the best practice would be to remove the device. The Consultant Microbiologist would advise the medical staff of the type of bacteria and if the line was not salvageable and should be removed.
116. Infection could impact chemotherapy treatment. If any child had a temperature and was unwell, treatment could be delayed until the child’s blood cultures were negative and they remained afebrile for a specified period of time. If the central line was removed, the patient would go to theatre for a new central line once the required amount of days of antibiotic cover had been given.

117. The IPC team monitor infections in the hospital, and will investigate, report and take action as required. I do not know how often they meet, but they meet to discuss types of infections.
118. The Central Line Associated Blood Stream Infection (CLABSI) Quality Improvement group was set up by surgeon, Mr Tim Bradnock, and Chief Nurse Jen Rodgers, and involved consultants, nursing staff and nurse educators from the Schiehallion Unit in May 2017 in response to increased line infections. The group met to discuss how to reduce the line infections. Actions were: standardise practise for the insertion of CVADs with the same surgeons doing this and a dedicated line list for our patient group; in August 2017, aseptic non-touch technique (ANTT) was introduced; in September 2017 the Curocap, a cap that is impregnated with 70% alcohol to keep the end of the line clean, was introduced; and in February 2019, introduction of Taurolok, an anti-microbial lock.
119. When the hospital first opened in 2015, I did not have any concerns about infection risk within the hospital. When the patients got ill around March 2018, that was the first time I was aware of concerns. I became aware of this as I attended the IMTs .

Infection Control

120. As a SCN, my responsibility in relation to infection control in my area, is to follow the SICPs and any TBPs in place, and to report any issues per my duties described above. I have given examples above in relation to the audits we carry out that relate to this.
121. Health Improvement Scotland (HIS), a separate body, carry out audits of all the hospitals in Scotland. Their audit reports are publically available.
122. I am responsible for the equipment and any furnishings in my area. With our group of patients, if there is a tear or anything, I would remove the item to get it repaired. Regarding the cleaning of our actual ward area, this is done by

- the domestics team. If there are any issues in relation to cleaning then I would phone the Domestic Supervisor and they would remedy this.
123. My involvement with investigations or infection risk, was only in attending the IMT meetings, and adhering to SICPs.
124. I have been asked what my awareness of whether the infections were linked to the built hospital environment in 2018 was. From the IMTs, the hypothesis was that there was a possible link to the environment because of the water samples. I do not know if this was proven to be the case. I am aware that the samples from the water were sent for typing to see if they were the same bacteraemia. I cannot comment on that as it is not my area.
125. I feel the communication given to us from management about the infections or infection risk was good on the whole, but parents found out about infections from other families so thought that the communication was not good enough. It is possibly because I was attending the IMTs that I had a better understanding.
126. I have been aware of a few cases where patients have suffered an infection where the patient or myself understands there to be a possible link between the pathogen and the hospital environment. If that was the case, the Consultant and Infection Control Doctor would speak to the parents and explain it to them. The Infection Control Nurse and Lead Nurse may also have come to discuss it with the parents as well.
127. There is also a meeting on the ward every day, which is sometimes attended by the Microbiologist, where all the in-patients are discussed, what is wrong with them and any positive blood cultures. So there were numerous ways staff would be made aware of the infection and situation. For day care, we were made aware of infections either by medical staff on the ward or from the IPC team.

Prophylactic Medication

128. I do not prescribe medication and am not involved in decision making on prophylaxis. But I make sure that any patient in day care who needs prophylaxis receives it. I would have given any written communication regarding the prophylaxis to the parents, and medical staff would have discussed any changes in medication with the parents/patients.

INCIDENT MANAGEMENT TEAM MEETINGS

129. My role and involvement in the IMTs was to provide an update on the patient's condition, give an update on parents and staff anxiety, and carry out any relevant actions and hand out any communications when they were ready after the IMT.

130. I do not remember the reason that I did not attend an IMT prior to, 9 March 2018. I do not know the protocol around who attends an IMT.

131. In my experience all staff attending the IMTs were given an opportunity to speak and voice their concerns and opinions. Although there were disagreements and differences of opinions, I felt that everybody felt able to share their professional opinions or points of view.

132. In general, the relationships between team members in the IMT process were good with everybody. Maybe more senior people did not always agree on everything that was said.

133. The Healthcare Infection Incident Assessment Tool (HIIAT) scoring, at the end of the IMT, was led by experts that were round the table.

134. I do not recall whether the IMTs between 2018 and 2019 became more difficult or not. There was a new chair, Dr Emilia Crighton and ICD, Professor Al Leonard from August/September 2019.

COMMUNICATION

135. I think communication was probably as good as it could have been at the time, as in it was an evolving situation. Even at the IMTs they did not always have the answers to give to the parents and staff but the parents felt we were not fast enough. Hopefully with the introduction of the closed Facebook page the parents now feel that they are listened to and receive information promptly.
136. There is a duty to communicate when something goes wrong during care or treatment. I am sure not all the families were satisfied with the communication. We are all bound by a duty of candour so once you knew something, you are going to tell the family what has happened. But maybe the families felt it did not happen fast enough. It was evolving, it was something I am sure none of us had ever experienced before.
137. At the beginning every time we put control measures and it got better, we thought that we had resolved the issue. Then it felt like maybe something else happened. There was a huge amount of work and very stressful for our families. Some of them lost confidence in us; they had already been to the new unit and knew the facilities that they were missing out on when in 6A. Parents did not have their parents' kitchen to make a cup of tea and to chat so that was then made for them where the bathroom had been. I think that was a great idea. Also the loss of the Teenage Care Trust (TCT) unit which has a big social space. Ward 6A logistically did not have enough space to give them that area. The teenagers were given a small room that we called the playroom. The ward did not have a staff kitchen, but this was put in. We moved in September 2018 and it took a few months to get some of these things put in place for parents and teenagers. Ward 6A was very cramped for everybody, it was challenging in there, but we did all manage it. Then when COVID happened, everything changed a bit, and nobody could move out of rooms.

Whistleblowing

138. If I had any concerns about wrongdoing, failure or inadequacy within the hospital, there are procedures to facilitate disclosure of that either within GGC or to individuals external to GGC. I would speak to my Lead Nurse. I would

refer to the whistleblowing policy, which would outline what to do if you felt that you were concerned about something. I would hope that my staff could come to me before they felt the need to be a whistle-blower, but I tried to be as open and honest as I could with my staff and to listen to them, but there is a procedure if you were concerned.

139. I do not think anyone fully appreciated whistleblowing until during or after the events of the IMTs. If I had concerns, I could certainly go to my Lead Nurse. I have never had to do that. The policies were sent to us and you can easily get them on our internal HR website. I am aware of the policy. All members of staff have access to the Core Brief and details of the whistleblowing policy were highlighted there.
140. Staff could also go to the Lead Nurse (or other nursing line managers), or to their Trade Union if they did not want to speak to me. I think my staff certainly knew that they could do that and in chats with them since then they have felt that they were supported and that they could talk to somebody.
141. Psychology sessions were also arranged to support staff.
142. It was helpful when Jen Rogers and Jamie Redfern came and talked to staff. As soon as staff had concerns, you highlighted it to them, and they would come up and speak to them.
143. I was not part of communication between the hospital management and external bodies. However, in the IMT, Health Facilities Scotland (HFS) and Health Protection Scotland (HPS) came to the meetings. They would feed back to the Scottish Government.

OTHER PROCESSES: CASE NOTE REVIEW/OVERSIGHT BOARD/INDEPENDENT REVIEW/PUBLIC INQUIRY

144. I have not had any involvement in the Case Note Review or the Oversight Board.

145. Currently, if a patient has a Gram-negative bacteraemia then there will be immediate in-depth root cause analysis carried out. For example, did they have their line flushed, where have they been, and did they have any gut colonisation as some organisms can originate from the patient as well as the environment.
146. I have not attended any IMTs recently. I have attended some PAGs, but only if it impacted a patient that had come through Ward 2B, otherwise it have been the Senior Charge Nurses in Ward 2A that would have attended.
147. Staff are encouraged to speak out if they have any concerns. Awareness has been increased as it is brought up periodically in the Core Brief.
148. I am aware that there were some changes to IPC procedures following recommendations by the Oversight Board and Case Note Review. I am not able to comment on these in any detail. From a nursing perspective we have continued with enhanced supervision (in 2A) and increased frequency of audits.
149. I do not know if the process within Estates has changed. The process for reporting an issue via the FM First system remains the same. If you raise an issue with Estates have always dealt with it quickly.
150. I have been informed that witnesses at the previous evidential hearing have said: "Nurses asked patients and families to report issues to the media for fear of risking their jobs if they spoke out"; that "they were not being told anything official by the hospital, they were only being told by myself" in respect of the decant to ward 6A; and "It was poor Angela in day care who was on the front line of all of this because she was the one that was threatening to take the flak from all of us, and they got to the point where the parents were saying it wasn't fair to send her".
151. In relation to the first part I have never heard of this before. Staff were worried and concerned when they could not drink the water or wash the children with the water. Staff raised their concerns at meetings with management team - Jamie Redfern, Jen Rodgers and the Lead Nurses.

152. It was part of my role as SCN to communicate to families about this. It was stressful at times because the information about the IMT hypothesis that there was a possible link to the water, and the drains was evolving and complicated. I give advice and information on a daily basis to families on what to do if their child has a fever or is unwell. I explain their child's treatment plan, side effects of their chemotherapy, importance of central line care, and the communication of the information from the IMTs would need to be part of that overall advice to families. The consultants were also communicating to the families, as they also attended the IMTs. This was extremely stressful for the consultants and for all staff.
153. Communication was updated regularly. Jamie Redfern and Jen Rodgers offered me support and offered support to staff and to parents. There was support from clerical staff occasionally to answer calls from concerned and worried parents when we were in ward 6A. This was very helpful, particularly when there was media reporting which was not always accurate which contributed to a lot of the stress and uncertainty for staff, and parents.
154. At certain points formal letters were sent out by the Chief Executive Jane Grant to the patients' home address. I would hand out the written statements following the IMTs to the families attending day care. Jamie Redfern, Jen Rodgers, my Lead Nurses Kathleen Thomson and Gael Rolls, and the consultants were available if I wanted to contact them. By the next day the parents would already know the content of the written statement from other families on social media or on the news. As parents' confidence was low, Professor Craig White was appointed by the Cabinet Secretary to meet with the parents to offer support and to feedback their concerns.
155. I did communicate to families both in day care and by phone to families that were due to come in over the next week that we would be moving. I do not feel like I was ever sent out to be in the front line. I never felt like that. I wanted to make sure that the patients in ward 2B received the communication as it was given to me. The communication for the decant to ward 6A was on the news at about the same time that I received it, and unfortunately the parents

of children who were not currently in-patients at that time heard about it on the news and not from the hospital. In relation to day care patients, due to the opening hours of the day care unit it may be that I communicated with them the day after. The Chair of the IMT, Dr Inkster came to talk with many families, as did all the consultants, and the Chief Nurse Jen Rodgers, and the General Manager Jamie Redfern.

RETURN TO THE SCHIEHALLION UNIT: MOVE BACK TO WARDS 2A AND 2B IN 2022

156. I was pleased to return to ward 2B with more space for the patients attending day care. Most of the patients had never been in ward 2B before. Communication was given to the parents regarding the 2 bed bays, as patients would need to share. The patients had become used to the single ensuite rooms, but are now used to the environment. A video was made to show patients ward 2A and the facilities. Through 'how are we doing' questionnaires we know that patients and families are happy with the unit and regularly praise the staff.
157. The staff were very pleased to have moved back and to have more space. We had a new staff room and office spaces were reconfigured.
158. Ward 2B did not need the same amount of work as Ward 2A. HEPA filters were fitted to upgrade ward 2B's ventilation system, new clinical hand wash sinks were installed, new taps fitted, the lighting was improved with LED lights and the whole unit was painted. Point of use filters remained, as does the weekly drain cleaning with Hysan, and chlorine dioxide dosing of the water system. Toilet seat lids were fitted to decrease the effect of the plume, as was done in 6A. The nurse call alarms and the a bell for the door entry system were installed. From fundraising by two former patients, new reclining chairs for the patients as well as comfortable chairs and a coffee machine for the staff were purchased.

159. Communication has improved for families due to the closed Facebook page. Families can join the closed Facebook page and receive information at the same time, even if their child is at home and is well.
160. There is a Core Brief for staff, which is on the NHSGGC website and families can receive the Core Brief too. The Chief Executive Jane Grant has always issued a regular brief with information for staff, positive stories about staff with new initiatives and praise for staff that have been thanked by patients. This can help to boost staff morale.

CONCLUDING COMMENTS

161. The experience was very stressful. The IMTs and the actions for the control measures took up a huge amount of time, and there was still my role as the SCN for ward 2B to be carried out. The IMTs and actions carried out were so that we could ensure the safety of our patients. I relied on my team to help and I thank them for their hard work, and patience.
162. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Dr Anna Maria Ewins

WITNESS DETAILS

1. My name is Anna Maria Ewins.
2. I am an Associate Specialist in Paediatric Oncology at the Royal Hospital for Children (RHC) on the Queen Elizabeth University Hospital (QEUH) Campus in Glasgow.

PROFESSIONAL BACKGROUND

3. When I first qualified as a medical doctor, I did two pre-registration jobs. My first six months were in surgery at Hairmyres Hospital, East Kilbride and then the next six months in medicine at the Glasgow Royal Infirmary. I then did a period of training in pathology at the Royal Infirmary. I applied for a job in paediatrics in 1994 and prepared for the membership exam during training posts.
4. In 1997, my current post arose at Yorkhill Hospital in Glasgow. As a speciality doctor post, it gave me the option of being able to stay in the one place. At that time, I had three small children, so the stability the post offered was very attractive to me. I gained my MRCP (UK) in 1997 and became a full member of the Royal College of Paediatrics and Child Health in 2004. In 2021 I sat the first ever EBMT (European Bone Marrow Transplant) exam to gain a Diploma and 5 year certification.
5. Research is an important part of the work of the department. I am a Principal Investigator in 2 Clinical Trials and Sub-Investigator on several other

departmental trials. I am co-author in a number of transplant-related research papers.

6. In the early days, I worked across all the areas of the unit, both benign and malignant haematology and oncology. I was an appointed Associate Specialist in 2006 with a focus mainly on stem cell transplantation. I am currently the only doctor in the unit whose remit is just transplant. There are several other doctors who also work in transplant; however, they have other additional responsibilities within paediatric haematology and oncology.
7. In addition to my specialist clinical work, I also perform one session a week as a sub-dean for undergraduate students who have a clinical attachment to Queen Elizabeth University Hospital. In my clinical role, I work very closely with Professor Brenda Gibson. Since 2014, we have had more doctors who have been appointed to spend time in transplant, so the team has grown quite a bit. As one of the more established doctors there, I am involved right across the spectrum of the job. For example, when we receive referrals in for transplants, I am involved in selecting donors and choosing what stem cell source we use. My involvement continues in every stage of the process from the planning of the transplant right through to follow up of patients who have been transplanted. I would also be involved in the day-to-day medical care of patients when they are having their transplant.
8. Although I am a senior doctor, my line manager in terms of leave and such practicalities would be Professor Brenda Gibson, who is the Clinical Lead in our department.

TYPES OF PATIENT TREATED

9. I am based in Wards 2A and 2B, known as the 'Schiehallion Unit', in the Royal Hospital for Children (RHC). We treat children from birth to the age of eighteen. The paediatric haemato-oncology unit within the RHC is the largest in Scotland. Although there are other haemato-oncology units such as Edinburgh, Dundee and Aberdeen, we provide a national paediatric stem cell

transplant service for all of Scotland. We also look after patients jointly with paediatric colleagues in Inverness and Dumfries.

10. We occasionally take children from elsewhere in the UK, because we are part of the UK wide paediatric stem cell transplant group. If a transplant bed cannot be found for a paediatric patient in Bristol or Nottingham for example, and if we have the capacity, then we would carry out that transplant. We are the only unit in Scotland which, on occasion, takes children from elsewhere in the UK such as Belfast, Sheffield, Bristol and Cambridge. We see ourselves as part of a wider UK and Republic of Ireland group who regularly meet virtually to discuss difficult cases. We also meet in person at least two times a year to audit our performances, to talk about difficult cases and develop themes if we recognise trends in diseases. We share a lot of information. Although we are, in some respects, a standalone unit in Scotland, we do feel well supported by a virtual network with whom we are constantly in contact.

TYPES OF TREATMENT NEEDED BY BMT PATIENTS

11. The RHC is a national centre for bone marrow transplantation. The two types of transplant you can have are autologous, when it's your own stem cells, and allogeneic, when it's from another individual. If a child needs an allogeneic bone marrow transplant in Scotland, they will come to us. Also, we are a centre for a treatment called MIBG (Meta Iodo Benzyl Guanidine). This process involves giving a radioactive drug to patients with a condition called neuroblastoma. MIBG is molecular radiotherapy. When a patient is given radiotherapy, the entire body is radiated, however with MIBG, a tracer is given to the patient which seeks out the parts of the body affected by the condition, and it delivers localised radiotherapy.
12. Ward 2A is the inpatient ward for paediatric haemato-oncology. There we treat children with blood disorders, malignant or benign. Ward 2B is the Day Care Unit. When we send patients home, we often bring them back to 2B for follow up infusions. Or, if the patient comes in unwell, they will come in

through 2B where they will be assessed and triaged and then transferred to the ward.

13. Benign diseases would be children with haemoglobinopathies such as sickle cell disease, thalassemia, which is a red cell disorder, clotting disorders, and anything which primarily affects the blood system. If a child is unwell enough to be in hospital with one of these conditions, they will likely come to Ward 2A. These children may require transplant. We also treat children with bone marrow failure; they don't have leukaemia, but their bone marrow isn't working properly. Another group of patients we treat are immune deficiency patients who may have inherited conditions which make them very susceptible to infection. We can provide a protective environment for those children too.
14. In the old days, my workload was mainly leukaemia but in the last 20 years or so it has expanded to include children with many other conditions. Malignant diseases would be disorders like leukaemia or lymphoma. In the unit we also treat children with solid cancers, such as bone tumours, brain tumours, neuroblastomas, kidney tumours, any sort of malignant disease or any disorders which may require treatment with cytotoxic drugs. Cytotoxic drugs are anti-cancer drugs that target and kill certain types of cells and stop or interrupt the cell reproduction. They are used in cancer chemotherapy to shrink and kill tumours. Children requiring anti-cancer drugs would be treated in our unit because it has specialist facilities for looking after children who become very immunocompromised by the treatment.
15. As a Bone Marrow Transplant (BMT) Specialist, I treat a broad category of patients. I treat patients with leukaemia and patients with inherited conditions who need a blood stem cell transplant. They may have a benign condition, but it could be life threatening or significantly impair quality of life to the point that it is worth risking a transplant.
16. In terms of the work I do on the transplant side, a patient will come to transplant if they're referred in from another centre, or if we recognise a

patient in our own service who needs a transplant. The rationale for transplant must come under a list of clinical indications. That is set out by British Society of Blood and Marrow Transplantation (BSBMT). They are the body who draw up agreed criteria, or “clinical indications” for transplant.

17. There are other conditions where transplant is a clinical option; maybe there are reasons why a patient may consider continuing with their current treatment or go to transplant. There are some conditions for which transplant is not recommended. It has to be a justifiable clinical indication, and we don't do it lightly. If the patient has a malignant disease, they must be in remission, because you cannot cure leukaemia with transplant if you still have leukaemia present when you go to transplant. We must complete a series of chemotherapy and we must have evidence the disease has responded adequately to benefit from transplant.
18. If a patient has a benign condition like an immune deficiency, their disease has to fall under the “clinical indication” category. We would discuss all our immune deficiency patients in a regional Network clinic with immunologists from Scotland and Newcastle. A decision would be made about whether the patient should be transplanted in Glasgow or in Newcastle. If it's suitable for our programme, the patient must be infection free. Everybody has to have a central venous line. They also have to have a baseline battery of tests which shows they are likely to stand up to the challenge of a transplant. We do a lot of heart, kidney and lung function tests just to see if we can pick out people who would not tolerate what we're proposing, or if we have to propose something less toxic.
19. We will try to find the best well-matched donor, and that involves working with colleagues at the tissue typing lab. If the donor is going to be a brother or a sister who is a child, we have to go through the HTA (Human Tissue Authority) for approval. The HTA needs to be satisfied that the child has not been coerced or in any way treated inappropriately in order to obtain their

stem cells. We then perform the bone marrow harvest from that child, in order to obtain stem cells for the patient.

20. To get to transplant, you need to give patients treatment that will render them incapable of rejecting the transplant. If you were to identify a well-matched donor and try and do a transplant on somebody who has not received conditioning treatment, they would reject it. Their body would recognise it as non-self. Even though it's matched at a reasonably good tissue level, the immune system is set up to recognise all proteins which are not part of you. Your immune system will react as if 'that's not my protein, let's attack it.'
21. In order for a patient to accept cells from another individual, you have to wipe out the patient's immune system. Then, once you've put those cells in, you need to suppress the immune system that has come from the donor to stop it from attacking the patient's tissues. The donor immune system is healthy, so it could get into the recipient's body and react as if it is in the wrong body. That is called graft versus host disease.
22. We immune suppress the patient to accept the graft. We also immune suppress the graft, the donor cells, to suppress graft-versus-host disease. There is a prolonged period of immune suppression to allow the transplant to take and for the transplant not to attack the patient.
23. Over the period when we immune suppress the patient, they have no white blood cells; they will be dependent on blood and platelet transfusions. They'll be exquisitely sensitive in the first month to bacterial infections and then after that first month, most of the infections we'll see will be viral or fungal. Transplant patients need to be nursed in a protective environment until we start to see neutrophils coming through.
24. Once we start to see neutrophils, we can allow the patient to go home, but they are still immune suppressed, and they could still get a bad viral infection that could make them very ill. If they've been transplanted for leukaemia, we keep monitoring to see if there's any signs of leukaemia re-occurrence and

that's most likely to happen in the first year post-transplant. Once you've got past that first year, we would be hoping that we have dealt with the leukaemia, as most relapses occur in the first 12-18 months after transplant. It's an anxious first year for leukaemia patients. For non-malignant patients, you can see complications like graft-versus-host disease and viral reactivations. They can lose their graft, and we need to monitor for that.

25. It's an intensive follow up programme for all our transplants. They can get very sick when they're in having the transplants because the conditioning treatment which makes the patient incapable of rejecting the stem cells causes havoc in their body.
26. To wipe out the immune system or wipe out the patient's own bone marrow, there are lots of what we call "off-target" effects; the conditioning treatment can be really toxic on the gut, especially for leukaemia patients who receive the toughest types of conditioning treatments. They often have troublesome tummy pain, vomiting and diarrhoea, no appetite. Patients will often be incapable of eating or drinking, so they'll need a tube in their nose to feed them. They might need to be fed intravenously, so a Hickman line is essential.
27. It's often a real challenge to get enough nutrition into sickly transplant patients. This often delays their discharge from hospital, because nutritionally they're not in good shape if they have been unable to absorb enough calories or nutrients for a period of weeks. Lots of complications can occur because of the treatments. For example, patients can get high blood pressure or renal impairment where their kidneys don't work as well as they did before transplant. You can get toxicities from all of the drugs we use singly and in combinations. Working in transplant, we have to be very alert to these complications.
28. This means we need the physical environment to be as safe as possible. That means keeping environmental pathogens to an absolute minimum. We must educate families and parents to behave in a way that reduces risk. We must

have staff who know the risks and recognise the potential exposure of patients to infection. It is an absolute minimum requirement that we have those safeguards in place.

29. You also need proximity to services which help you diagnose and treat the many complications of transplant: facilities like radiology, for when patients get fevers, and you need to obtain x-rays and scans. You need proximity to an ICU (Intensive Care Unit). This patient group uses ICU a lot, so you need to be co-located in a building with a Paediatric ICU. You need to have a relationship with colleagues on that unit which allows easy access for your patients, because when they get sick, you need to intervene early. The patients have complex needs, so you need quick access to specialists in the hospital who can deal with patients with this degree of complexity.
30. We are now located on the floor above PICU. We were in the adult hospital transplant unit for several years and that made me anxious, especially when we were transplanting babies, because we were physically quite a long way away from PICU. Thankfully that didn't adversely impact our patients, but it is the sort of thing you worry about. It's one of these things you have to factor into an already complex situation.
31. There are differences between paediatric intensive care and adult Intensive care. In paediatrics, everything is size and weight based. When you are in adults ITU there are a lot of standard doses for medications. Adults come in all shapes and sizes, but children have a much greater size and weight range, and they are physiologically more diverse at the extremes of age. We could be treating an 18-year-old who is 90 kilos and a two-month-old who is four kilos. We have to think about diverse physiological normal ranges which affects the basics like how we dose drugs and fluids, as well as nutritional needs. Children under ten kilos may have chemotherapy doses based on their weight in kilos, whilst for the same drug, children over ten kilos may receive a dose based on their surface area. Babies and children have relatively large heads and small airways, so if you have to intubate a patient, you need

specialists who are experienced at intubating small children. You need that range of expertise.

32. If I'm preparing a patient for a transplant, it takes, on average, eight days to give the conditioning treatment. It then takes two to three weeks for the patient to engraft once you've given the donor cells, so the conditioning treatment is given on day minus eight, the cells are given on day zero and engraftment occurs at between day 14 and day 21. The earliest your patient might go home would be about day plus 28, so if you add the eight days at the start on to that, it takes you to day 36, or a minimum 5–6-week admission.
33. The shortest time a patient would be in for from the beginning of transplant to discharge would be six weeks. That depends on whether there are any infections, whether the patient is able to take all the medicines required to keep them well, and whether they need any intravenous support. The quickest we would get a patient out from transplant would be six weeks, and that would be with a lot of day care support in place. A lot of patients will be in for longer than that because of all the potential complications.
34. Transplant is difficult. We are often dealing with the sickest patients outside of intensive care. We make patients very sick on the road to making them better. Transplant is often done as a salvage procedure, when there is little chance that continuing on chemotherapy will result in cure. The patient's only chance of cure might be a transplant, so the stakes are very high and that makes it a stressful area of working. You have to have a good team ethos. You have to feel as if the team is pulling in the same direction and, for that, you need physical space to build a team. You need to have a constant and ongoing education programme to keep your team functioning well, and to keep patients safe.
35. We also need to reflect on things that don't go well in addition to learning from things that do go well. We are keen to learn from, and adopt good practice from other centres, so we have to constantly share experiences and be open

to listening to the experiences of our colleagues in other paediatric transplant centres.

36. Sadly, in transplant, if you transplant a child for leukaemia, there is still around a 30 per cent chance the disease will return. This means that a lot of our patients go through a very difficult journey and then ultimately, they do not survive, because despite the treatment, we haven't cured the disease. Sometimes patients die because of complications of the transplant, despite all our efforts to treat complications early and aggressively. These events are hard to deal with because the patient has been through the transplant procedure with all the side effects, and the wider impact it has had on the last weeks and months for the child and the family. It causes you to reflect on why we haven't succeeded for that family. We need to be able to talk things through with colleagues when these tragic events happen. It is necessary to reflect on these events as professionals in our local and national meetings.
37. It's a difficult journey for staff and patients. We get to know families well because we often meet them at a time of crisis. The clinical team and the family must work as a team with a common purpose to help the child through a very difficult course of treatment. We cannot succeed without parents being in partnership with us. You learn to try to remain very professional with families because you might have to have a really difficult conversation in a few weeks' time. While you show a lot of empathy and humanity, sometimes you're going to be having conversations about stopping care or telling them the treatment hasn't worked. That is really difficult, but you have to be able to live with yourself after that. I suppose our approach is to offer a very professional service that is backed up with kindness as well as science and experience. We need to know the pitfalls, where and when they can occur, and be alert to them when they do occur.
38. I think we always proceed on the basis that the treatment is going to work but know that it might not. Even after doing this for 25 years, I find there are patients who, at the outset, we may not expect to tolerate treatment well, but who come through transplant and are cured, and others who suffer

unexpectedly from rare complications. I think one of the difficulties of moving site, away from Yorkhill to the new children's hospital, is that we remember all those patients: those who survived, and those who sadly didn't. I felt guilty about leaving them behind because physical places are markers that bring to mind patients; you remember their family and remember that day of happiness or sadness. That's only human. When you move to a fresh canvas, it lacks those reference points.

39. We deal with unknowns and uncertainty. I suppose when things are not going according to plan, it's difficult to deal with all that in addition to the routine work that you're doing. I think in the old building there were lots of informal spaces where you could go and have a moment. We lacked that after the move: the feeling that you could go and find a space to think.
40. I feel as if there was little regard given to how staff deal with this aspect of the job. The people who designed the spaces didn't think about those issues. If we can't deal with these issues, we end up snapping at somebody or not being able to function properly. I think acknowledging that need, and finding an outlet, is a healthier way to work.

THE RHC SCHIEHALLION WARD

41. In the new hospital we felt homeless to start with. It felt like lots of things that were challenging before were now huge challenges. Hot-desking on the ward did not work. If you wanted to dictate a letter, you couldn't take the notes out of the ward and the office block was in another building. It felt as if everything was more difficult than it needed to be. A lot of things became difficult purely because of logistics. You would get over to your desk and think, 'Oh no, I've left something over in the ward, I now have to walk back.' It's quite a distance away, so you could spend a lot of time walking back and forth, especially when we started, because you weren't familiar with the layout. Phone coverage was also poor, making it difficult to reach colleagues who were off site.

42. In Ward 2A we did have 26 beds. We lost some beds because there was repurposing of rooms. One has become a 'Tweenies' room, created to provide facilities for 8–12-year-olds where previously there was a gap, and another became a pharmacy room, so there are now 24 beds.
43. In terms of staff, in oncology we have three full-time consultants and one who is half oncology and half palliative care. There are 4 haematology consultants. There is a fifth haematology consultant who is responsible for the teenage leukaemia and lymphoma patients. His job is split between 2 sites: half of his time is looking after teenage patients at the Children's Hospital and the other half is looking after teenage and young adult patients at the Beatson. My own role is mainly part of the haematology team. I mainly cover transplant now.
44. We have another three speciality doctors who work across day care and the ward and also contribute to the middle grade on-call. In addition to me, there is also one other doctor who is retired but comes back for some sessions.
45. There are many nurses who work between the wards, I don't exactly know how many there are from day to day. A lot of recruitment goes on in nursing areas which leads to high turnover of staff.
46. In terms of junior medical staff, every six months we get adult haematology trainees who come in to do paediatrics. We also get paediatric trainees; they change around every six months or so. Every four months we get recently qualified junior doctors who rotate through the unit.
47. Structurally, we come under the Women and Children Directorate which was managed by Jamie Redfern. He has now been replaced by Melanie Hutton. If I ever have an issue that I feel is not something Prof Gibson can help sort out, I would speak to Dr Phil Davies. Phil is the clinical director, a consultant paediatrician who also has a managerial role, and he is our line manager for things like job plans or problems in the department. In view of his role as a respiratory paediatrician, we would often involve him in clinical situations too.

Phil would also be the interface between us and Alan Mathers, who is the Medical Director of Women and Children' Services

VULNERABILITIES OF IMMUNOCOMPROMISED PATIENTS

48. Many of the patients we treat are immunocompromised. This means their immune systems do not adequately protect them from infection. Our patients are vulnerable because they are lacking important components of the immune response, so they tend to become more unwell with infection and illnesses are more prolonged.
49. Everyone is prone to infection from organisms their immune systems haven't dealt with before, even if you have a top immune system. Immunocompromised patients are more at risk of becoming severely unwell from things that would not normally make people unwell. That is because they lack the type of cells that can form an immune memory, make antibodies, or be a first line of defence when they meet an infecting organism.
50. There are complex reasons why people become immunocompromised, but most of the patients we deal with are immunocompromised because we've given them chemotherapy. They lack the first line of defence type cells called neutrophils. Neutrophils help you fight bacterial and fungal infections, so if you have no neutrophils and you get a bacterial infection, that bacteria can multiply quite rapidly in your bloodstream, and you can become very unwell.
51. Some other patients may have neutrophils but won't have any lymphocytes. Neutrophils are a group of cells which are produced in the bone marrow. They circulate around your blood stream. If you were to cut yourself and bacteria were to get at that breach in your skin, neutrophils would go there and essentially eat the bacteria.

52. Lymphocytes are the white blood cells that are important in making antibodies and fighting viruses. They are important in coordinating a response to viral infections.
53. Some of our patients can also be anaemic. In your blood you have red cells which contain haemoglobin and carry oxygen. You have platelets that stick; if you bleed, then these go to the site of a cut and they stick, so these are cells that stop you bleeding.
54. Also, when neutrophils congregate at the site of tissue injury, where there might be infection, they send a chemical signal to tell the rest of the immune system to come along because there is trouble. They can be responsible for releasing chemicals that alert the immune system by signalling, 'There's a problem, she's cut her finger, come and deal with this.' If bacteria are there, your immune system and your clotting system will heal that tear and, in the process, you might notice a collection of pus at the site of an injury. That is the result of neutrophils performing the function of destroying the invading bacteria. If it's dealt with properly, the pus will serve the function of destroying that bug. If the infection is overwhelming, you might get a big abscess which is an extension of a small pustule or spot. If the bacteria are still not being controlled, you could get septicaemia, which is when bacterial infection is not localised in your skin, your throat, or the lining of your gut, but has multiplied and has spread into your bloodstream.
55. Neutrophils are like the foot soldiers of the immune system. They get there, they deal with the problem, alert the rest of the immune system to a problem and they deal with bacteria. They also deal with fungus, because these are bugs that tend to land on surfaces, and neutrophils are good at dealing with these surface invaders. If you don't have neutrophils, you're susceptible to bacterial infections. Neutropenia can be a result of treatment or a primary illness.
56. In our unit there's a culture of thinking about neutrophils and lymphocytes. If you move outside of a haematology unit and you see a child with an infection,

you know that the expectation is that the child will get better. The doctors will look at the child and say, 'Well they've got a temperature, they're feeling a bit unwell but tell them to take paracetamol, and it is safe to send them home.' However, in our unit, we would think, 'Oh the child's got a temperature, but they've got no neutrophils, so we better look for the infection and while we're looking, before we know can confirm that they have an infection, we treat it.' We treat first, ask questions later - that's our approach to a fever or an unwell child. We assume infection is the problem because of the immunocompromised status of our patients.

57. That is a shift in thinking which is learned by our trainees. They must stop thinking in terms of a well child with a temperature and start thinking, 'This is a child who can't cope with infection.' This principle is to the forefront of our work. Even a very junior nurse in our unit would know that a fever in one of our patients is significant and must be reported up the chain and dealt with quickly.
58. That leads to a different culture as far as hygiene is concerned. We limit the number of people that can come in and see our patients. We give parents advice about hand hygiene and, in the case of transplants, we are very strict about who can come into the room and what can be brought into the room . We are also strict about what diet these children have because if you are neutropenic, you need to avoid certain foodstuffs.
59. We assume that every patient on the ward is immunocompromised to some extent. Transplants are the top of the immunocompromised tree and the patients with non-malignant conditions would be further down, but they'll still be compromised to some extent if they have lots of transfusions.

IMPACTS OF INFECTION

60. If a patient gets a line infection, we have to pause the chemotherapy to address the line infection. If they're not too unwell, we may resume it while

they're still on antibiotics, but we'll usually resume once we've proved that the blood culture is negative, and all the inflammatory markers are low. If the line has had to come out, then we must observe a period of time post-line removal before we put a line back in because we don't want to put it back in while there are bacteria circulating. That might delay chemotherapy by a week or so. If a patient is very unwell with an infection, then the delay might be longer than that. If a patient has ended up in ICU, they may be delayed by a week, or several weeks in the case of a fungal infection. Infections can delay the introduction or the reintroduction of chemotherapy. Infections can also delay transplant because we only go to transplant when the patient is clear of signs of active infection.

61. Infections can also result in two surgeries with two general anaesthetics. A surgery is needed to remove the line and a further surgery is needed to insert another line.
62. Infections can also mean a patient is exposed to antibiotics that can affect their kidneys or liver function. There are many potential toxicities of having line infections or any infection.

COMMUNICATION IN RESPECT OF HAEMATO-ONCOLOGY

63. In terms of communication to patients and families, we tell patients what medications the patient will be on and for what duration, for example, that they will be on certain medications for the next year. We make sure they have a supply and we're always checking to make sure they're taking them.
64. From a haemato-oncology perspective, we have a rigid code that we communicate through. We have SOPs (Standard Operating Procedures) that we follow, and transplant is heavily regulated and inspected by JACIE, the accreditation body that insists that you have a policy or a procedure for everything you do. That goes from the decision to do a transplant, how you choose a donor, how you condition the donor, and it covers every aspect of

the process. An important aspect of the process is that you meet with families to have a discussion about the appropriateness, otherwise, of transplant.

65. We also send the family a letter explaining the rationale for the transplant and the potential complications. It's based on a standard format, from a library of templates, to ensure that the necessary points are covered. However, the letter is tailored to the patient's individual circumstances. For example, if you have a patient who has had a lot of treatment and is coming into transplant with a fungal chest infection, that may alter the balance of risks, and the nature of the discussion around risks of treatment, and the letter will reflect the increased vulnerability to transplant related toxicity.
66. Another thing that that letter often reflects is the fact that patients may have been discussed at national, Scottish and UK-wide Multi-Disciplinary Team meeting (MDT). This will be included in the letter where appropriate. MDT meetings are where we will bring difficult cases, or when want agreement that a proposed course of action is an appropriate thing to do.
67. We also tell the families what the mortality risk of the procedure is, and you then justify that mortality risk. We will often say that there's a 5 to 10 per cent mortality risk just from the transplant procedure. It's quite a hard letter for a parent or patient to read. We list a lot of potential side effects. We sign that letter, we send it to the family, and then we invite the family back to go through a proforma consent form that ensures we obtain a signature to confirm that we've covered all the major issues in that letter, like infection, risk of infertility, risk of organ failure, risk of death, etc. Completion of the transplant consent paperwork is mandatory.

MITIGATING VULNERABILITIES AND RISKS BY USE OF DRUGS AND PROPHYLACTICS

68. As well as the cytotoxic drugs that I described earlier, we also use prophylactic medications to help manage the risk of infection. All leukaemia

patients get Septrin or Cotrimoxazole (the long name for Septrin) prophylaxis, to protect them against a particular type of pneumonia that you get when you have a very low white cell count.

69. When transplant patients are at the neutropenic stage, they are prescribed Ciprofloxacin. The purpose of Ciprofloxacin is to keep gram-negative bugs at a minimum. It is a prophylactic measure to prevent, or at least to try and minimise, translocation or movement of healthy gut flora into the blood stream. Ciprofloxacin is standard neutropenic cover for transplant patients; you are trying to prevent a predictable, but serious thing from happening.
70. They also receive Septrin, which is used in patients who have no white cells, to prevent opportunistic chest infections. It is given twice a day in the run-up to transplant and then you pause it, and you restart it once they've got a neutrophil count. Again, that would be standard practice and the patient could be on that for up to two years.
71. Usually when you give the Ciprofloxacin, the patient is not on Septrin, because we don't restart the Septrin until there is a neutrophil count. This is because it can drop the neutrophil count. There will therefore be a window when the patient is just on the Ciprofloxacin, but still in a HEPA-filtered positive pressure room, so the risk of opportunistic infection is low because of the protected environment. We don't usually restart Septrin until the patient is being discharged, because the type of bugs that Septrin protects you from are in ambient air.
72. Transplant patients also receive Acyclovir, an antiviral, until they are ready to be revaccinated. They are also prescribed an antifungal drug called Posaconazole. Posaconazole might be prescribed for any period of time from about three months to maybe 18 months. Transplant patients all have prolonged exposure to antimicrobials of various classes for various reasons.
73. Leukaemia patients receive antifungals during induction and Septrin all the way through treatment. A lot of the solid tumour patients will receive Septrin

during chemotherapy and they'll get antifungals during intensive bouts of chemotherapy. All the patients with hemoglobinopathy will get penicillin by mouth. They normally have no functioning spleen. Hemoglobinopathy describes sickle cell disease or thalassemia. It's not a malignant disease, but it's a genetic disorder of red blood cells that make you transfusion dependent, and all those patients will be on penicillin prophylaxis, taking it twice a day for the rest of their lives.

74. With leukaemia treatment, the induction phase is basically when you're trying to get rid of circulating leukaemia cells. That's the purpose of your first four or five weeks of treatment, and then you do an assessment at the end of that period, and you assess whether or not you've got your patient into an adequate remission. Their response to that phase will determine whether or not the patient is going to stay on chemotherapy and stay on the protocol they're currently on, or whether or not the treatment is going to be escalated to more chemotherapy or a transplant. Induction is that early phase of treatment. You start it with a disease burden and you end it, usually, with a low blood count, so the patient is quite vulnerable during that phase of treatment.
75. The phases that follow are called consolidation, intensification and maintenance. To summarise, you've got induction, when you aim to eradicate the disease, and consolidation of remission, followed by a period of treatment intensification, before a prolonged phase of less intensive maintenance when the patient would be an outpatient and attending nursery or school.
76. The prescription of particular prophylactics depends on the underlying disorder. The transplant patients get quadruple cover with Septrin, Acyclovir and Posaconazole and they'll get Ciprofloxacin or Penicillin depending on whether they have a neutrophil count. This is all to help prevent infection. In the case of transplants, you're doing it until the new immune system is fully up and running, so it's a protective thing and is standard practice.

77. We give Ciprofloxacin to cover the neutropenic phase of transplants. You've given the chemotherapy until the graft begins to make neutrophils. When we start seeing that the patient has a neutrophil count, we stop the Ciprofloxacin because usually, by this stage, their gut has also healed, so they're not at such a risk of gram-negative bugs getting into their bloodstream, so we start Penicillin. We don't have patients on Ciprofloxacin and Penicillin together, we replace one prophylactic with another in the form of penicillin.
78. As for side effects, Posaconazole is probably the most toxic of the drugs described. It can put your liver function off, and it can interfere with the metabolism of other drugs. It can interact with other drugs to give you abnormal heart rhythms. It's not very pleasant to take. You have to monitor the drug levels, so you have to get blood tests as you're upping and downing the dose.
79. Ciprofloxacin can also interact with other drugs. It can make you feel pretty poorly. Septrin is pretty well tolerated and is usually only taken three times a week. Acyclovir is well tolerated; it's a twice daily drug.

THE CENTRAL VENOUS LINE

80. In respect of administering chemotherapy, the preferred option is through a central venous line. This is a plastic line which is put in surgically through one of the big veins in the neck. The surgeons put them in. They make a very small incision usually above the clavicle to access one of the jugular veins. They then feed the line down through the jugular vein and it sits in the superior vena cava, which is the biggest vein in the body that comes into the right atrium, the low pressure chamber on the right side of the heart. If you kept feeding it down, it would eventually go into the right ventricle, but you don't want it in the ventricle, you want it either in the right atrium or the superior vena cava; it is in a big venous chamber.
81. The line has a tip, and that tip contains two channels. Inside the central venous line there are two lumens, which are the channels common to all

central lines, which allow blood or fluids to be delivered into the body. The surgeons tunnel it through the skin, and it comes out in the chest wall as a line, a single piece of plastic, that contains these two lumens. Then the line splits so you've got a red lumen and a white lumen. It's like two tubes within one single tube. It allows you take blood and give drugs without having to pierce the child, so it's great for painless access, but it is a foreign body that sits usually in the child's chest wall, and it is surgically inserted in theatre. After a child has completed their treatment, it's a tiny wee scar above the clavicle, so you might see a spot on the chest wall where it went through. The importance of tunnelling is that, if somebody pulls it, there's a bit of slack so that it doesn't dislodge too easily.

82. The benefits are administration of medication and drawing blood. It also has benefits in terms of resuscitation, as you can fill the patient up quickly if they look like they're collapsing as you've got access to the circulation right away.
83. Nearly all the patients with malignant diseases have these lines, and all the transplant patients will have them. It's essential to deliver the treatment they need. Children with cystic fibrosis might also have one for repeated antibiotic administration and children with kidney disease may also have a version of it for dialysis.
84. Sometimes patients talk about a 'wiggly'; with one of those you can see the line sitting outside the body.
85. A port-a-cath is just the same except it doesn't come through the skin, it sits under the skin instead, so the line doesn't divide in two. It has two lumens, so you can deliver two different drugs simultaneously. It coalesces under the skin as a metal box, with two chambers into which each lumen empties. What you would feel on the chest is a firm rectangular shape, and that's the metal box. You can stick a needle into it so it's almost like a needle of a badge. One lumen will empty in to one half of the box and the other lumen will empty into

the other half, a double lumen. A lot of ports are single lumen, so the line is just like that, and the port just empties into it.

86. A port is often used in younger children where you worry about them pulling the line out or maybe in children for whom you anticipate needing access for a more prolonged period because you only need to flush a port every four weeks, whereas a central line needs to be flushed every week or it will clot or get infected. There is less maintenance for a port, and access to it is slightly different: you need to put numbing cream on so that the child doesn't feel the needle going in.
87. Access to these ports is almost exclusively the preserve of the nursing staff. They access the lines all the time and they are the experts and know how to manage them. It's something I would stay well clear of and would only do as a last resort. It is the same for central lines; the nurses are taught all the techniques about how to access them without causing infection.
88. There are some risks associated with these lines, for example, the surgeon might inadvertently cause a lot of bleeding in a very vascular area of the body. There are risks associated with surgery, including anaesthetic, and the risk that the line ends up in the wrong vein. Placement in the right atrium, or too far into the right ventricle, can interfere with heart valve function so it might have to be pulled back. In general, putting lines in can increase the clot risk of the patient, especially for teenage girls. It can increase clot risks away from the line such as in the head and elsewhere in the body.
89. Having a central line can cause infection, as you are breaching the skin to put it in. Your skin is full of lots of bacteria, so bacteria that normally lives at peace with you can enter your bloodstream because you've created a portal, a pathway via the plastic, into the bloodstream. It can become colonised with bacteria that normally are not pathogenic, so normally wouldn't cause disease, but when they get into your bloodstream, they can stick in places and cause abscesses or bacteraemia in the bloodstream and that can make you unwell, especially if you're neutropenic. Lines can increase infection risk.

PROTOCOLS

90. Haematology and oncology practice is very protocol driven. That's because a lot of our patients are treated on clinical trials, and these will define the group who will benefit from the trial and will define the chemotherapy or the radiotherapy treatment.
91. They will also define the supportive care, recognising that these treatments are going to be very immunosuppressive. A lot of protocols, for example, drug trial protocols, will involve the patients being given Cotrimoxazole, the Septrin preventative antibiotic, and other antifungals, and will mandate sometimes to give antibodies also. There are clinical trial protocols that try to standardise the type of care that all patients receive across the country and so will mandate specific treatments.
92. On top of that, we have our own protocols. We have SOPs and clinical guidelines I mentioned earlier, which will cover things like a patient having a fever with neutropenia or a patient having a fever when they've got a central venous line in and will cover the type of unusual infections you often see in the immunocompromised patients.
93. We have protocols to deal with unusual viral infections, fungal infections and that sort of thing, including situations such as having been in contact with viruses like chicken pox or measles. We have written policies that deal with these, because they do happen.
94. In terms of Standard Operating Procedures, the transplant programme has a menu of SOPs, and these will be inspected by external bodies such as JACIE (Joint Accreditation Committee of ISCT (International Society for Cell and Gene Therapy) and EBMT (European Society for Blood and Marrow Transplantation)) and the Health Technology Assessment (HTA), and they would expect us to have these documents in place. An example of the JACIE

standards is the one shown to me at Page 80 of bundle. I can confirm that page 147 of that JACIE document includes, at CM2.2, the standard that "*The Marrow Collection Facility shall provide adequate lighting, ventilation, and access to sinks for handwashing and to toilets to prevent the introduction, transmission, or spread of communicable disease*". We often share those SOPs with the hospital, so some of our SOPs will appear also as RHC clinical guidance.

95. There are periodic JACIE inspections where inspectors come to the Unit and go through all your documentation, interview staff, inspect your facilities and make recommendations about anything they're not happy with. They give you periods of time to correct anything. We have had very good JACIE inspections with minimal findings.
96. We should have had a JACIE inspection after the move from Yorkhill, but it was delayed because we were going to join with the adult Stem Cell transplant programme. The inspections should take place every five years and you should have an interim inspection every three years. If you change a facility, if you move, you're supposed to have an inspection within a year of the move. These routine JACIE inspections were, however, delayed because of the plan for the paediatric and adult programmes to apply for joint accreditation. As we share a processing facility it made a lot of sense for us all to do it at the same time. In the end the joint application did not happen, because the adult unit did not move across to the QEUH as anticipated and then the paediatric unit moved out of Wards 2A and 2B.
97. I think that there would normally be a JACIE inspection with a move of ward too, such as the decant from 2A and 2B. That didn't happen but I think it was because we thought we'd be back there by Christmas. It was difficult to do any sort of planning around inspections, because it's a lot of work and we were already in a kind of contingency scenario, which was stressful enough without taking on the JACIE Inspection.

98. The SOPs within the unit are accessible in a folder called Q-pulse, which is an app or program on the computer desktop that anyone who is part of the transplant programme has access to. However, they are also printed off and held in folios on the ward and in certain designated sites around the unit. They are also stored in electronic form. We send them to our Shared Care Centres, so if they are looking after one of our patients, we can refer them to the SOP, and they can look it up and find it.
99. A Shared Care Centre is a place where our patients might be cared for, where there might not be a specialist haematology-oncology team. For example, we might treat a patient from Inverness in the Schiehallion unit but they might later return to Inverness, or we might have leukaemia patients who end up being admitted to a district general hospital such as Crosshouse or Forth Valley. If a child is neutropenic because they are on chemotherapy and they develop a fever of over 38 degrees, the parents will usually call us for advice and will be advised that the child needs to be seen. If they live locally, they'll come to us in the RCH, but if they are closer to a district general hospital, they will go there instead. The staff in those hospitals are able to access our SOPs, such as the febrile neutropenia policy.
100. We would expect the Shared Care Centre to take blood cultures, check the blood count and start antibiotics, so the Febrile Neutropenia SOP includes an empirical antibiotic policy. The patient may not be neutropenic, but we still expect them to be treated as if they could be, until we know more information.
101. It's a minimum of 48 hours from when the blood culture is taken, until you can get a negative result, but in reality, it takes longer than that because sometimes samples don't go straight to lab. The microbiologists have an incubator which incubates the bottles and once the samples are put in there, that's when the clock starts ticking, so the 48 hours does not necessarily start when you take the sample, rather from the time they start incubating. At 48 hours, if nothing has grown, they'll tell us there's no growth after 48 hours. We'll keep incubating for five days, but 48 hours covers the vast majority of

infections. If a patient has a temperature of 38 degrees or above, we will keep them for 48 hours until we get the negative cultures, provided their temperature settles. If the temperature is still ongoing, then we keep monitoring the patient.

102. Sometimes if a child has a temperature spike, and we have issues with bed availability, it may mean that they have to be admitted or allocated a space elsewhere in the hospital. We have a target, which is not always achievable, of getting antibiotics to the child presenting with febrile neutropenia within about 30 minutes.
103. That can be a challenge out-of-hours when there's fewer staff around and if they're dealing with emergencies elsewhere. Clearly, this can cause anxiety for families with the child who has a temperature. We now try and address that by making them go through the emergency admission route. What used to happen in the old Yorkhill and when I first started was that, if a child came in febrile, the overnight on call middle grade doctor would come and review the patient and start the necessary treatments, such as antibiotics. The patient might go directly to the ward and they would have to wait for the medics covering the hospital to come and see them, so that could cause delay. Now they go through Accident & Emergency, and they'll be triaged. They should be triaged quickly, and A&E will have it in hand to have blood cultures and antibiotics started as they may have to wait some time to get to a bed on a ward.
104. The destination of the patient may be delayed because of other things going on in the hospital, so I know that's a cause of anxiety and dismay for families who present out-of-hours but it's a challenge in every hospital.

CLEANLINESS AND HYGIENE ON THE WARD

105. There are cleaning regimes on the Schiehallion ward. I am not familiar with the details as this is within the nurses' remit. However, I know that there is a schedule of cleaning when a patient vacates a room. I know that we can't just

re-admit into that room straight away; the room has to be cleaned down.
Domestic staff follow instructions from the ward staff.

106. With regard to cleanliness and hygiene on the ward, I think the domestics do a great job. As somebody who worked as a domestic as a student, my view is that domestic staff are a crucial part of the clinical team. You can't run a service for immunocompromised people without having domestic staff helping on your team. You cannot open the ward if it's not clean. You can open a ward with minimal doctors, you could do it with reduced number of nurses, but you can't admit patients to beds if rooms are not clean, and if there is not a constant programme of cleaning. A criticism I have heard in the past is that the domestic staff are often moved around, so you don't get the same members of staff and that doesn't help build up a team ethos with medics and nursing staff.
107. I think the 2A and 2B ward domestic staff are not included enough. I don't think their voices are heard. I think they should have a voice in our unit meetings and should be identified as part of the unit.
108. Domestic staff interact a lot with families, they are in the rooms with families every day. They'll often come and tell you how families are coping with hospitalisation, and the families will often tell you about conversations they've had with the domestic staff, so they actually perform more than a cleaning role. They're often important to families because they don't talk about a child's leukaemia or illness, they introduce less threatening topics of conversation. I think they take a lot on and see a lot of stuff in our unit that they probably don't get a chance to discuss with clinical staff, which is a shame.
109. There are other processes we adhere to such as an ongoing rolling programme of hand hygiene awareness. It's part of your mandatory training that you watch the LearnPro module – GGC's online training system - on how to wash your hands and when to wash your hands. There are posters up everywhere about the five times when you need to think about washing your

hands, before and after you see a patient. With COVID, that's all been ramped up. There is also hand gel everywhere.

110. In the immunocompromised patient wards, we wear masks, an apron and gloves. I think that's also become standard with COVID in non-immunocompromised patients as well. It is pretty much standard practice now. We teach that to medical students who are not going to treat immunocompromised patients, to use PPE (Personal Protective Equipment).

SPECIALIST VENTILATION IN WARDS 2A AND 2B

111. In order for us to treat transplant patients effectively, there are structural differences in the rooms. To cover the neutropenic phase post-transplant, the rooms used are HEPA (High Efficiency Particulate Air) filtered. This means that the air going into the room passes through a mesh which would catch anything that's more than six microns, so the air is filtered. If you looked at them under a microscope, HEPA filters are basically quite a disorganised mesh, they're lots of interwoven fibres, and that's deliberate. The way that they're interwoven stops particles of greater than six microns getting through, so that will filter out a lot of bacteria and mould in the air. A lot of viruses are smaller than that so it's not quite so good at getting rid of viruses, however they will filter out any dust particles.
112. The rooms are also under positive pressure, which means the air has been pushed downward towards the floor and when you open the door on a positive pressure room, you feel the air pressure coming out. The idea is that if there's a positive pressure room, for the patient, the air they breathe is filtered. If someone walks into that room and sneezes, the positive pressure will tend to push the air downwards, not across onto the patient.
113. There are inbuilt safeguards in these rooms. In any standard room there will be ambient air with bacteria, fungus, and all sorts of particles, but most people have immune systems so it's not a problem. However, in an

immunocompromised patient's room, the air is filtered, and the positive pressure is designed to stop ambient bugs from infecting the patients.

114. In the Schiehallion Unit at RHC, my understanding is that the entire unit is now HEPA air filtered. We came from a ward in Yorkhill that was filtered and had double door entrances with filtered corridors, but when we moved to Schiehallion in 2015, the corridors were not filtered and only the transplant rooms were HEPA filtered with positive pressure.
115. However, what we have now is a unit that has HEPA filtration and positive pressure in the transplant rooms which is of a much higher specification than the non-transplant rooms. From a hygiene and risk point of view, the air quality in the new unit is of a standard that's probably not matched anywhere else in the world, as far as we can tell.
116. Again, there are standards recommended by JACIE, the overarching body that accredits transplant units, but they are recommendations rather than mandatory requirements. I believe the reason for that is that they don't want to prevent poorly resourced countries from doing lifesaving transplants.
117. The whole footprint of the ward is now filtered including the TCT (Teenage Cancer Trust) rooms. It's all double doored, and the five transplant rooms within the unit all have much higher positive pressure values and they also have anterooms, so there's a step down in pressure in the anteroom. And then the pressure in the corridors is less again, so you get this gradient in the air movement.
118. The way the anteroom works is, when you open the door from the corridor into the transplant room, you're first in the lobby, so you shut that first door behind you, then you open the door into the bedroom. If you're opening that door in the bedroom into the anteroom, it allows a step down in pressure. It's also an area where you can set things down, where you can put on your PPE and you can use hand gel.

119. When we transferred to the current hospital in 2015 all the transplant rooms had monitors on the outside of the rooms. They also had anterooms with big trough sinks in them. The corridor wasn't air filtered, so that took a bit of getting used to because when we moved in at first and they did air sampling, we needed to rely on the positive pressure and filtration in the room to keep those transplant rooms infection free or as infection free as possible, from any airborne bugs. We now have an entirely new ventilation system that covers the whole Schiehallion ward, so I think all the air that goes in is all HEPA filtered.

THE OLD YORKHILL HOSPITAL AND EXPECTATIONS OF RHC

120. I wasn't directly involved in planning the ward in the new hospital. There were meetings that went on at Yorkhill before the move and I recall going to one with people from GGC there. It was a meeting in a Board room with people sitting round the table and I was sitting round the edge of the room. I wasn't asked what we needed.

121. We were told we were getting like for like, so we were quite happy if that was the case because if it was going to be a new build, then things were not going to creak so much. Our expectation was therefore that we would have the same number of rooms and the same spec, only better.

122. Some time before the move, when we were still in Yorkhill, I sent an email suggesting that consideration needed to be given to the risk to our patients in terms of exposure to mould in the air as a result of moving to an environment where there might be ongoing building works or demolition of old buildings. This was because I remembered being in a previous role and hearing about the Cardiac Transplant Unit moving to the Royal Infirmary, which had building work going on. Cardiac transplant patients were immunocompromised, and they got a lot of fungal infections. The events were possibly 10 or 20 years ago and were well-publicised at the time. Based on this experience, I

questioned whether we might need to consider giving our patients anti-fungal prophylaxis.

123. I cannot find this email, and I cannot recall exactly when I sent it or to whom. It was someone who had expertise in this area. I recall being assured in response that anti-fungal prophylaxis would not be necessary. Although I did not entirely understand why this was not a risk, I accepted this response.
124. We did see some floor plans and I remember looking at them and thinking, 'There are no staff toilets there'. That was my first comment. I was then told to choose which patient rooms we were prepared to sacrifice to create staff toilets. It might seem a trivial thing to point out, but if you work in a unit with immunocompromised patients then there is a large number of staff who are working long shifts. We could be in the ward for in excess of 15 hours, so you do need to go to the toilet and you do want clean toilets. You tend to find that toilets out-with clinical areas, like in the canteen and elsewhere in the hospitals, are not so clean, so you want to feel reassured that your facilities are clean, that somebody's keeping an eye on them and that they're accessible. I don't think that that was taken particularly seriously because I was told there would be toilets in the corridors and that we could use those.
125. The good thing about the previous ward at Yorkhill was that there were toilets out-with the ward and out-with day care, so you weren't in a clinical area, but you were still within the unit. There were also two toilets on the ward, male and female toilets. When we raised the lack of toilets in the new plans, we were told that we were going to have a unisex toilet and that there would be one cubicle. We actually got two cubicles which, with such a massive staff, I thought was still poor. I didn't like the idea that the toilets were going to be very heavily used, but I felt that it fell on deaf ears. It was basically 'This is what you're getting.'
126. I can't remember exactly when that meeting was, but I do know that when we tried to ask for things we were told, 'No, the foundations are in,' so the

meeting took place before the building went up. That meeting was with people from GGC Health Board.

127. We were originally supposed to be on the first floor of the Children's Hospital, adjacent to ICU, theatres and radiology. Then we were told we were to be moved to the second floor. I don't know why, and we weren't consulted about that. We were a bit upset when we heard we were being moved because we liked the proximity to theatres, PICU and scanning departments. Transporting patients in lifts can be challenging and time consuming, so we had been pleased to have been originally placed on the same floor. Also, we were allocated very little space adjacent to the ward. The adjacent corridor had already been mostly allocated, and we were losing our seminar room which was where we held our ward meetings. We had multidisciplinary meetings there, we had teaching sessions, family days and it was always a room you could go into and speak to the families. It was a well-used facility, so we were a bit peeved that we lost that space to give it to people to use as offices.

OPENING OF SCHIEHALLION UNIT – FIRST IMPRESSIONS

128. On the day when we moved to the new hospital, we packed up the old Schiehallion and we had series of patients moving with staff. There were staff already on site to receive patients and there were staff staying behind to look after the existing patients.
129. We had stopped transplanting a couple of months previously because we didn't want patients to be severely immunocompromised and then having to get in a car or taxi or ambulance to move to the new hospital, so we had suspended the programme. However, there was one transplant patient who still required care who moved with us.
130. When we arrived at the new hospital, it was very different. We had been shown around it, I think about a month previously, but it's always difficult looking around an empty building. There had been no furniture and no beds in

it at that time. I was very enthusiastic about the move. I was not as apprehensive about changing location as some of my colleagues.

131. We did ask questions. Many months, or even a couple of years, before the move we asked whether we would be moving to a building site. The QEUH campus was still under construction when we moved. The car parks hadn't been put up and there were other things too. It certainly wasn't the finished article.
132. As transplanters, we were all aware of previous experience of new building issues, such as the time when the Cardiac Transplant Unit moved to the Royal Infirmary, which I described earlier.

THE SCHIEHALLION UNIT AT THE RHC

133. The new Schiehallion Unit runs along a curved corridor, with single bedrooms with en-suite wet rooms, a shower, a toilet and sinks adjacent to the patients' beds. There is also a parents' kitchen and a TCT room (which used to be a playroom for the smaller children), and a room for the 'Tweenies' as I described earlier.
134. The rooms on the outside of the curve have windows to the outside of the building and rooms on the inner part of the curve have windows looking into the atrium. That's the outpatient waiting area and it can be quite noisy at times due to the echoey nature of the atrium. There is also a 24-hour service area based in the atrium too, although that's more towards the main entrance.
135. If I'm being honest, I don't like the shape of the new unit. The curved corridors limit what you can see, whereas the ward at Yorkhill was one big, long, straight corridor where you could see everything. You could see where your colleagues were, and you could see stuff happening. If you were doing a long ward round, then you felt as if you were making progress, you weren't going up and down a curve, so I suppose from an organisational and operational

standpoint, the new unit took a bit of getting used to. When you're on this curve in the current Schiehallion Unit, you can't see who's around the bend. Also, if a buzzer or alarm goes off, it can be difficult to work out what room it is. I suppose the human brain likes to see the horizon and you feel like you don't know where the horizon is.

136. The design of the ward means that we have no idea what the climate is outside. It could be a blistering hot day in July or a cold day in December, you wouldn't know. You can see the daylight when you go into a patient's room, but you are not enjoying natural light when you are not in a patient's room.
137. That's a personal view and I realise that I'm very influenced by the previous environment I worked in. There's always the shock of the new and then you get used to it. I did find the new hospital very disorientating when we moved in because of the way it was laid out. Again, that was me just having to re-programme an old brain into thinking about where things were, as it was no longer in my head. I realised that in the corridors you could turn in any direction, you would always get to your destination eventually, but sometimes you ended up going the long way around the curve and that could get quite frustrating. I wasn't that enthusiastic about the curve because I think it makes ward rounds a bit more challenging.
138. The staff are mostly in quite a cramped, small room in the ward. There's an awful lot of us in there, so it often feels overcrowded. Plus, there's a big air conditioning unit on the wall, which was really noisy, so you couldn't speak on the phone when it was operating. I don't think they were thinking about the people that work in the hospital when they built it.
139. Another thing we noticed was that if you were standing outside a patient's room discussing a patient, you could be heard round the bend but wouldn't be able to see if anyone was within earshot, so you were losing an aspect of privacy. This problem arose partly because of the cramped accommodation that we had for staff. A lot of our conversations were conducted outside

patient rooms because in the staff room, with the air-conditioning, you couldn't hear the phone, and there were often so many people in it.

140. The medical staff had one other room on the ward which was against a back wall. It was windowless and, because it was adjacent to the MIGB room, which was lead lined as MIGB is a radioactive drug, you couldn't get phone signals in it, so it was really strange. You could be sitting in there and your phone would buzz and then you would run out into the corridor to have a confidential conversation. There was the risk that passing families could hear, but also that you could lose the call if you didn't answer it. In that aspect, it did feel as if nobody had really thought through the practicalities of working in there.
141. I think we all suffered from the fact that there wasn't much space for staff. This is a job where you often sadly have to take parents into rooms to explain things, to give bad news, to let really difficult conversations sink in. When we first took possession of the ward, I was in a meeting like that with a family and I didn't realise the light went out if you stopped moving. So, we were sitting there talking about a child's leukaemia, and the room was plunged into darkness, so we had to move our arms up and down to get them to come back on.
142. There was no purpose-built room for breaking bad news. We should have had something like that but we didn't. I don't think a great deal of thought went into the non-clinical parts of the wards. Overall, there are not a lot of confidential spaces, there aren't a lot of places for people like psychologists and social workers to come and speak to families. Space is at an absolute premium and that seemed a challenge all the time and made the job a bit harder for us.
143. As far as the temperature in the wards is concerned, I know that in the old Yorkhill it used to be tropical in the summer and very cold in the winter, so the new wards weren't as bad as that. We used to have patient rooms in Yorkhill that families would complain about as they would get too hot or cold, so the

climate in the patient rooms in the new hospital were better, but the staff spaces were cramped and difficult with the noisy air-conditioning units in place.

144. When we moved in, there wasn't a designated pharmacy space as far as I could tell. The pharmacy took over an internal room with no windows and which had a run of shelves where some pharmaceutical stock was kept. They had a bar stool-type of chair up against some worktops inside. They made the best of it, but pharmacy are integral to working in a unit like this. We use a lot of unlicensed drugs and drugs with what we would describe as a very narrow therapeutic index, so you have got to get it right. Often if you go too high or too low, you miss the target, so there are a lot of discussions with pharmacy. You can know what drug you want to use, but you need a pharmacist to tell you how you're going to deliver that and what you've got to watch out for, so our pharmacists are absolutely part of the team, and they need to be embedded in the team.
145. In Yorkhill, the pharmacists had a couple of rooms where they made up a lot of drugs and it was good, as you could just go there and shut the door. We had quite a close working relationship with the pharmacists in there because we interacted with them a lot. In the new hospital that became a cramped space, and you could see they got very frustrated at being in this cupboard, because they didn't have a door they could close. It wasn't ideal.
146. Following the refurbishment, they now have a better room, basically a patient room with a view of the atrium - it's much better.

ISSUES WITH THE BUILDING

147. The windows had internal blinds many of which stopped working. That was very frustrating because patients couldn't see the view. That sounds like a small thing, but when you're in a room for weeks on end it could play with your mental health. It's something I always say to families; you're going to be in

here for a number of weeks and things are going to get on your nerves, so talk to us early.

148. You can also get difficult dynamics on the ward. You've stuck an adult in a room, you've put them in the most stressful situation on earth and they're going to notice little ticks or things that people do. The situation can explode. You do see families who watch the nurses like hawks and get hypercritical. And it does occasionally explode, so that's why you need what I would call the soft stuff, to defuse situations.
149. Sometimes the TVs didn't work either. That's important if you're stuck in a room for weeks on end. That can be a tipping point. Also, the Wi-Fi was dreadful, though it has improved a bit.
150. I was also aware of toilets overflowing. That happened in a transplant room in Ward 4A when we were decanted and it was quite unpleasant.
151. I was also aware of issues with the cladding because of Grenfell. It had to be renewed. I remember we had to tell parents to take their children to another entrance because they couldn't use the usual entrance. Also, because the cladding was coming off, I think we extended the use of Posaconazole. We did something with antimicrobial prophylaxis, an anti-fungal preventative treatment to cover immunocompromised patients walking through an area where cladding was being removed. This was because our patients had to be in proximity to that work going on. In removing the cladding, you disturb the building, which will cause an increase in mould and a greater mould load in the ambient air. I think that was during the winter months of 2018.
152. We sometimes received communication about building issues in staff meetings. We then imparted some of that information to patients and families. That was sometimes done in clinics and sometimes by a pre-prepared letter. There was also a Facebook page, but I did not interact with that. In fact, none

of the medics did, because it was created by GGC. GGC used it to provide information to patients and families.

153. In addition, a lot of the senior nursing staff would have talked to patients. I know Prof Gibson spoke often to patients about things that were going on. There were so many instances where we had to pass information on, there were press releases, information updates and things circulating round the ward. It was an unprecedented situation.
154. There was also poor mobile reception too, so all these things just made life a bit more difficult. You had to walk about with your laptop because you couldn't always get on a computer on the ward, so I had to take my bag everywhere I went. That has improved and you just become more savvy about how to organise yourself because you have to find a way of making it work.
155. In terms of raising any of these issues as a problem, I think we brought it up at every staff meeting.
156. In general, it was just not a very well thought out environment for doing important work. I don't think there was enough recognition of the fact that for a lot of the work we do, for the difficult clinical work, you need a bit of headspace, some time and space and organisation.
157. We were forever complaining. I think to be fair to Jamie Redfern, he's got a listening ear and people bent his ear a lot, whether he could do anything about it or not. In my view, he acted in good faith to address our concerns, but there was a limit to what he could do, so we had to just get on with it.

ODOUR

158. There was always a thing about the smell. If you'd ever worked in the Southern General Hospital, you knew that the sewage could get a bit smelly. It's a historical thing though. I worked at the Southern General back in the early 1990s in the Neonatal Unit, and I loved working there, but the smell from

the water treatment works could be troublesome, especially in the warmer months. In the summer, you can open the windows somewhere, but there would be spells of the day where it would be particularly pungent. Although I wasn't looking forward to experiencing the smell again, I can't say that it was causing me any safety concerns.

ISSUES IDENTIFIED WITH THE VENTILATION SYSTEM IN 2015

159. My interaction with the RHC building started in June 2015 when I was involved in the first transplant we did. I was also involved in a lot of the things that we uncovered about Ward 2A as we started to use all the aspects of it. If you move into to a new house, you realise, this doesn't work, that doesn't work. Those snagging type things happened, but some of these issues were more than snagging.
160. I think we entered the building in the good faith that it was like for like and had been fully specified. We thought we would just move in and get started.
161. Before we moved in, we discovered that there were no HEPA filters in the transplant rooms, so they had to be installed retrospectively. I can't recall specifically if this was done just before or just after we moved across to the RHC but it was certainly done before our first transplant took place there, which was at the end of June 2015. I remember that the filters were flown over from Dublin over a weekend and installed very quickly.

DISCOVERY OF HIGH PARTICLE COUNTS IN 2015

162. Patients then moved in but before transplants started, we discovered a problem with high particle counts, so this would still have been around June 2015. The decision to do the particle counts was a legacy of our Yorkhill practices. Microbiology used to do a particle count of the corridor and the rooms in Yorkhill, but that was a HEPA filtered environment.

163. When we moved to the RHC, we were told that only the transplant rooms would be HEPA filtered and it wasn't a positive pressure environment. Having a high particle count in the corridor was not unexpected, therefore, because no measures were in place to reduce the particle count. Nevertheless, it was necessary to have an acceptable particle count in the rooms in which we were intending to treat immunocompromised patients, notwithstanding that JACIE does not mandate a specific particle count as a standard.
164. We discovered high particle counts on Ward 2A when we attempted to assess the quality of the environment. They discovered very high particle counts in the corridor of 2A and also the rooms, which was of greater concern. After the rooms were cleaned and disinfected, they still had high particle counts. That led to an inspection of the rooms which showed that a lot of things weren't as they should be.
165. There were lots of issues with the rooms. We discovered that some of the fixtures had not been properly sealed. We carried out smoke tests and they showed smoke around fixtures in the walls. If you're going to put positive pressure into the room and you've got sockets sunk into the wall, those sockets need to be sealed. Every fitment needs to be sealed otherwise particles will leak out of every breach in the plasterwork. Anything that goes through the plasterboard must be sealed. There were problems with seals around the light fittings in the ceilings and in fans and pipe chases. All these things have to be sealed or you're never going to eliminate high particle count. Those particles would not be coming through a HEPA filter, they were coming in from elsewhere, so that's air that's potentially laden with things that you wouldn't want to see in that environment.
166. Craig Williams was the Microbiology doctor whom I recall was heavily involved and he explained that the corridor was not filtered and was no different from a room in your house. The particle count was in fact even worse than a room in a house because of all the traffic passing through the ward corridor. There were people coming and going and moving furniture, which caused a lot of particle movement.

167. It took us a while to understand the implication of the corridor being full of particles. We had to keep the room doors shut because maintaining the positive pressure was important. This would be a concern in all the rooms but especially the positive pressure rooms and transplant rooms because of the nature of the patients being treated there. Other patients, like AML patients, are also very vulnerable to fungal infections.
168. The particle count issues were addressed quickly once Craig Williams was involved. There was a lot of reshuffling rooms while seals were made good but the particle levels reduced to an acceptable level before we admitted a transplant patient.
169. As far as I'm aware, particle counts are not conducted now. It's not my area of expertise. I know that they didn't happen during COVID, when we were in Ward 4B, because we did not want to have extraneous people on the unit. Somebody coming up from Microbiology to do a particle count could be a potential COVID contact for vulnerable patients.

DEVELOPMENT OF CONCERNS ABOUT THE ENVIRONMENT

170. In 2016, I remember we had a leukaemia patient who had very significant problems arising from gram-negative infections. In that case it was their response to infection that caused alarm bells to ring, rather than the infection itself. This seemed to be an exceptional case rather than indicative of a wider problem.
171. In 2017, I also recall an incident involving a *Stenotrophomonas* infection. A patient died as a result of contracting that infection. *Stenotrophomonas* is recognised as a potentially waterborne infection. It's an infection that we did see back in Yorkhill and I expect that most haematologists and oncologists will have met that infection before. It can contaminate water, and anything that happens to be sitting in water. However, it is also recognised that it can enter

the bloodstream via the patient's gut if the patient has *Stenotrophomonas* in their gut flora as a result of previous prolonged antibiotic use. There is more than one explanation when a patient contracts that infection. If you were to have a cluster of those infections occurring at the same time, you would question whether there was an environmental cause, but an individual case would not necessarily arouse suspicion. At this point in time, we were not aware of any evidence of a cluster. This was a year after the leukaemia patient described above. We were concerned about this particular case, but we did not suspect a wider problem at this time.

172. I recall that there was a transplant patient [REDACTED] who, before [REDACTED] came to transplant, had a huge number of infections. We had a transplant date for [REDACTED], and we had cells lined up and were good to go, but [REDACTED] got another gram-negative infection. We had to cancel [REDACTED] transplant twice to deal with those infections. This patient was a baby, [REDACTED], and the practice for babies was to bathe them in a plastic bath. They would obviously be naked in the bath and sometimes the ends of their central line would be in the water. I remember observing this baby during [REDACTED] bath and reflecting that this was likely why [REDACTED] was getting lots of central line gram-negative infections: there would have been gut bacteria on [REDACTED] bottom and this was getting into [REDACTED] line during [REDACTED] baths. There came a point in time where we started putting green caps on the end of lines, which allow you to immerse the central line ends in water, but this was before that was introduced. I stopped [REDACTED] from having baths, which was not a popular decision, but I felt that the infection risk was too important to ignore. [REDACTED] stopped getting central line gram-negative infections.
173. That was after the baby had [REDACTED] transplant and I accept that other things may have influenced the infections stopping. It may have been the fact that [REDACTED] now had a well-functioning immune system and there may have been other factors. However, gram-negative infections are more likely to come from bacteria you've got in your gut getting into your bloodstream, rather than something that somebody is giving to you or you're picking up from the environment. It's much more likely to be from yourself, especially if you've got

low blood count. My view at that time was that, as the decision to stop putting this baby in an immersive bath and do bed baths instead led to an end to ■■■■■ gram-negative infections, it wasn't the water that was the problem, it was how it was being used. I felt that there may be an explanation as to why that individual got so many infections.

INVESTIGATIONS ABOUT WATER SUPPLY AND POSSIBLE LINK TO THE ENVIRONMENT - 2018

174. In 2018, there was a cluster of three cases that caused me concern. We approached hospital management as a senior doctor body, the Schiehallion Consultants, to ask if we could have somebody from outside of the organisation come in to investigate it. We had a face-to-face meeting with Jonathan Best who came and spoke to us, and the hospital management agreed in principle that that would be a good idea. It would allay fear and answer questions, but that proved an impossible thing to achieve.
175. I think they did approach somebody in Northern Ireland, and they may have approached somebody in NHS England, but were unable to find a suitably qualified individual to conduct the investigation. What we anticipated was a microbiology investigation, intended to answer the question, 'Do we have an environmental infection problem, and can we identify a source?' We expected it to be conducted by a laboratory scientist with experience in investigating previous outbreaks. I believe there had been an outbreak in a neonatal unit in Belfast so I thought that someone with relevant experience could be found.
176. Though it was agreed in principle that external review would happen, I believe that in the end, an appropriate expert was not found.
177. Personally, I did not have any concerns about the water supply at that time. I was obviously listening to the concerns that my colleagues were expressing, but I was open minded about the cause of the infections.

178. The increasing concern about infections developed because of the variety of infections we were seeing. The displacement of the gram-positive infections by the gram-negative infections made us wonder whether we had a problem. This was coupled with the fact that we had moved, so people were thinking, 'What is happening here? Is there something different about the environment?'
179. There were lots of meetings, such as Incident Management Team Meetings (IMTs) where people put forward theories and theories were tested. I know they tested the water. We were shown a diagram of the water supply to QUEH, the Children's Hospital and Maternity Unit. I know water was sampled at the treatment works and at Govan Road and other places, and I'm pretty sure we were told that this water supply to the Children's Hospital was given a clean bill of health.
180. I also learned from those IMT meetings that there's no such thing as sterile water, that all water has bacteria in it, but there's a tolerability level and we were told that the water met that standard. It was also made known that no such scrutiny of the water supply of any other health institution had taken place, so we didn't have any benchmarking and there were no comparators. We did not have access to any test results and we did not have any sort of context, so we had to take the advice of the experts who told us the water quality was fine.
181. I attended one IMT meeting on 21 March 2018, which is described as the "water incident IMT". I think this was maybe in response to an incident where we had a transplant patient who came in unwell one weekend and needed resuscitation and her line taken out.
182. I think the purpose of the IMT meetings was to identify whether we had a problem, assess the scale of the problem and look into possible sources of infection. From a clinician point of view, I think our worry was always about our patients being at risk, because whilst these concerns were under

investigation and discussion, we were still trying to safely deliver a transplant programme.

183. We were bringing patients in from other hospitals to be transplanted while all of this was also going on. From our point of view, we were trying to get an idea of what the risk was and to see if we had any evidence that it was a systemic issue. We were trying to get a feel for what the scale of the problem was, to make sure we were adequately protecting our patients. That was always our overriding concern. Families were asking questions, 'Is this safe? Can we drink that?', so we needed to be able to give an honest account of what was happening in the organisation. If you're giving reassurance, you need to know where that reassurance is coming from.
184. I can recall tap and shower filters being fitted in all the rooms. Those were fitted with a view to filtering out any bugs that might have been in the water coming into the unit. They put filters on taps that weren't really designed for filters, so you were having to get your hands under a filter and your hands ended up closer to the drain as a result because the filters elongated the tap, so you were trying to keep your hands out of the drain.
185. There was definitely an impact on the staff, but we just rolled with the punches. I know a lot of our nursing staff were stressed and upset because they were having to explain the changes to families all the time, so they did a lot of the heavy lifting in that regard. They spend a lot of time in rooms with families, and this would often result in questions about water safety. They probably had to deal with a lot of the additional worries and concerns that the families had, on top of the families' obvious day-to-day anxieties for their child.
186. I'm assuming that the switch to using bottled water was also in response to the three cases of gram-negative infections that I mentioned. They were worried that the water was contaminated with gram-negative bacteria, so they supplied lots of bottled water and instructed us to wash our hands with it. It

was logistically difficult to wash your hands with bottled water. You still have to touch the bottle and unscrew it; it was a nightmare.

187. At that time, I remember parents being upset because they couldn't bath their children and the water wasn't warm. That was thankfully short lived.
188. I have been shown the Core Brief dated 22 February 2019 regarding an HPS report on water at the RHC and QEUH. [Reference (eRDM)] I recall a publication of an HPS water report. I wasn't involved in it, but it was something I was aware of.
189. I know they were sampling water from different water tanks and Scottish Water sampled the water supply before it got to tanks as well, and they published the results of that. From what I remember, the HPS investigation implied there wasn't a problem with what Scottish Water were supplying us with. All in all, I just remember thinking that there's not a problem with the water that's coming to us, and if there is a problem, it's happening somewhere else, maybe off where the main pipe comes in, but there wasn't a clear candidate location for something happening, from what I remember. I remember diagram boxes of where the water was stored before it came to us and there were no findings of high levels of contaminants in any source. I took some reassurance from the report. However, it seemed to rule stuff out without identifying what the problem actually was.

THE CLOSURE OF WARD 2A AND DECISION TO MOVE TO WARDS 6A/4B

190. The children and the ward were decanted around September 2018. There were ongoing concerns about gram-negative bacteria and it was felt that they were going to have to investigate the ward environment. I cannot recall the tipping point that led to the decision to move then, but I recall that the move was supported by the Infection Control doctor, Teresa Inkster. The priority was to move us to an environment that didn't contain the same risks that we were moving away from, to keep control measures going in the new environment and to have a look at the infrastructure of Ward 2A, to check all

the structural issues and things like the water and drains. It was intended to be a temporary measure, with the thought being that we would be back by Christmas, which turned out to be wrong.

191. I know that there were quite a lot of meetings where various options were considered. Those options included building a field hospital on the grounds of the hospital that was just for haemato-oncology patients and I know that management looked into getting temporary modular units that would sit in the car park or somewhere in the grounds and that would be our hospital. It got as far as working out what the logistics would be, how long it would take and what it would all cost. There was also talk of building a standalone haematology-oncology unit in the grounds of the hospital, attached by a link corridor. That was obviously going to be a more long-term solution.
192. Another option was a move to a site in the QEUH. I don't know if we ever considered moving to the Beatson but there were lots of options thrown around.
193. We would have been included in general discussion about the move but not in selecting a destination. I think that was hospital management, Infection Control and Estates. But the options were presented to us and in the end we moved to 6A.
194. I think Wards 6A and 4B were deemed suitable to receive the patients because Ward 4B is the adult transplant ward, and it already performed transplant for adults. I think that Ward 6A was a temporary holding ward for care of the elderly, so it seemed like they were a group which could be safely moved to an alternative location at Gartnavel Hospital. Ward 6A was also reasonably close to 4B.

EVENTS ON WARDS 6A/4B: LATE 2018 TO LATE 2109

195. When we moved into Wards 4A and 6B in September 2018, I understood we were only likely to be there up until that Christmas, but we ended up there for around two years and during that period there was a move to the CDU also. We moved to CDU in the New Year. I think that was probably because of fungal infection when, in December 2018, I think there were two instances of cryptococcus.
196. Everyone was involved in the move to CDU because it was a case of all hands-on deck, but primarily the senior nursing staff took the brunt of the work. They were organising it and physically doing everything, moving drugs and equipment, and telling you where to go. I can't say exactly how long we were in the CDU for, but it was a matter of weeks.
197. We would have had patients in Ward 4B at the same time and they would have remained there.
198. Wards 6A and 4B were not paediatric wards. I think we were always concerned about the move away from the paediatric specialisms and at night it was quite a long way from the on-call team who were available for sick patients. It was a distance to transfer patients from theatre or x-ray and immune-compromised patients were having to use the lifts in the busy concourse, beside other patients, families and general visitors. There were worries about our patients being in confined space with lots of other people.
199. In response to our concerns about access, a lift was decommissioned and set so that it was exclusively used by our patients. This happened reasonably quickly after the decant. However, the ward was obviously not adapted for paediatric use, and we had to put things in place to prevent people from walking through the ward. We had no day care facilities, which had to be co-located on the ward, which meant there were fewer inpatient rooms as we used the top end of the ward for day care. That meant that we lost five or six potential patient bedrooms.

200. We also lost a big day room at the end of the ward which had fabulous views over the city. That was used for day care. Day care didn't have office space, they were having to operate in the corridor, so they weren't the best facilities. There were games there and if somebody got sick in day care, there were already staff on site on the ward, so that was positive but, overall, it wasn't ideal.
201. With regard to the decants, it takes a lot of time and a lot of people to do a move, so there were risks but none that were insurmountable or deemed too risky. For our patients, it created a challenge because we were then operating over two wards. We had patients going through transplant down in 4B and patients both pre- and post-transplant up in 6A, so one team was looking after patients in two sites. We needed more nursing staff because we needed to have nursing staff down with transplant patients at all times with enough staff to cover breaks also. If we had a very sick transplant patient, then we needed a medic down there all the time as well, so we might have a medic sitting down there for one patient, whereas upstairs we had four or five patients, so it did stretch the staffing resources somewhat. I can't recall if we actually got more staff. Either way, we just mucked in and did what we needed to do.
202. When we moved up to 6A, there were no HEPA filters installed, so we had lots of mobile HEPA filter units throughout the ward. They were in place when we moved and they seemed to be everywhere. I'm sure I asked a question about how they worked. I'm not sure who I asked but I was assured that they were effective in making the air safe for transplant patients and I accepted that assurance.
203. I know there was investigation of the ventilation in 6A but I don't know any of the details as I wasn't involved in any of it. During 2019 - the period after we moved back into 6A and before we moved back to 2A - we were still uncertain as to whether or not we'd addressed any cause of infection. I think there was still a worry about whether or not our new environment was safe, possibly because we still didn't have clarity on whether or not we had a problem with

the water supply in 2A or what the cause was. We were still wondering if there was a problem and how widespread it might be. Emelia Crighton, who took over the IMTs from Dr Inkster, was trying to persuade us there wasn't a problem and that what we were seeing was a natural fluctuation in the pattern of infection, but I know that individuals in Infection Control and Microbiology were still of the view that there was a problem, so there was continued uncertainty about whether we had found a safer environment.

204. The staff accommodation was miniscule and there were limited operational areas. We ended up taking over a room that would have been a useful room to have difficult conversations in, but it wasn't purpose built and you could tell it wasn't purpose built. It wasn't particularly child friendly, so we had to make it so, for example, putting up suitable artwork. There weren't any purpose-built playrooms or communal areas for patients or families and there was no kitchen for the parents. A useful innovation was that they then allowed families to be fed off the trolley, so we started providing parents with food and drink, which I think was a great thing.
205. Where we were before, a lot of families would be a support for each other. They had children on the same journey so they would compare notes, but there was no longer the space for this to happen, for families to mix as they would have done previously.
206. I did actually prefer the shape of the ward though. There were two straight lines, so you could put your head round one side and see people. There was also a lot of natural daylight there.
207. Another additional challenge there included our anxiety about patients who were deteriorating, because PICU was much further away. There was the physical distance, but also the fact that we had to use service lifts. It took time having to get to the service lift and then to get in it. Someone timed it as taking at least five minutes, even when the lifts came on time. We did some transfers to PICU while we were there and you had to rely on people being able to access the service lifts and hold them for you.

208. When it came to us taking a patient to PICU, I don't recall a plan as such, we just knew what the route was and went. I recall for a while we had an additional advanced nurse practitioner on the ward, who was doing overnight shifts to address the fact that the "hospital at night" team might have a longer response time for our patients. For a while we were deploying people to do additional shifts just until things settled down and we got more of a feel for it.
209. On 6A, specialist reviews took place later in the day, and we saw less of some colleagues than we would have before on 2A. My feeling is that the geography contributed to this and that they were less inclined to pop by and discuss difficult cases face to face, or review patients, because we were six floors up in another building, rather than being next door.
210. With regard to inpatient admissions, the patient pathway would be that they would come in through A&E, be seen in CDU (Clinical Decision Unit), get their immediate care there and then be transferred up to 6A if there was a bed available there. That all got more complicated when COVID happened, because then you had to be COVID negative. A lot of families hated that they were in CDU or other medical wards in the children's hospital when we had no beds available, so that was a contentious time for families.
211. For facilities on 4B, we had two rooms. We did have access to three transplant rooms but sometimes it went down to two. In the corridor, there was a space where we had a desk on which we could put all our paperwork and other stuff. There were a couple of chairs round that desk and there was also a desktop computer, and that was all. Two members of the nursing staff were sitting essentially in the corridor. I know families used to complain that they could hear the nurses talking, because the nurses would be sitting so close to the patient's room.
212. There were obviously phones ringing quite a bit too, so that was hard on the staff, to be in a corridor when we were seeing patients or having discussions

with families about patients, with the phones ringing at the same time. The adult nursing staff on 4B were very welcoming and any time we asked for help, they gave it. We did always feel a bit isolated if there was an emergency though, you could be there on your own waiting a while for assistance.

213. The rooms on Ward 4B had positive pressure. They were single doored rooms which were HEPA filtered and there were portable HEPA filters in the corridor when we moved there. It was not a purpose-built transplant ward. The adult transplant ward didn't have anterooms or the room that we had available for transplant patients in the children's hospital.
214. I wasn't unduly concerned when we moved to 4B because it was delivering an effective transplant programme for adults and they didn't appear to have a gram-negative infection issue. I didn't have any concerns about the air quality or ventilation, although I did wonder how the HEPA filters in the corridor, being only waist high, were actually effective. Again, I can't recall who I asked but I was told they were fine and I had no cause to doubt that.
215. Some of the infection prevention and control (IPC) measures we were taking were carried over to Wards 6A and 4B. All the taps were filtered, and there was a programme of chilled beam cleaning. I've never asked anyone to explain to me what a chilled beam does. Periodically rooms would be shut off while there was HPV cleaning of the rooms or there would be people with equipment doing the chilled beam cleaning, so rooms would occasionally be out of bounds and patients would have to be moved rooms.
216. There were some concerns about 6A when we were first shown round, such as the urine smell in the wet rooms, and we were told there would be remediation before the move. We were told it would all be sorted and, in fairness, it was. When we moved in, there was one room that had a persistent smell in it, and I think they sorted this by replacing the floor.
217. In terms of storage and bed linen etc, those things didn't really affect me. The hospital did convert a large bathroom and toilet facility into a staff kitchen,

which was really nice because we were quite a long way from things. During COVID, they also made a patient bedroom into a staff room.

218. There was also a communal room off the ward that was a staff room and it was adapted for our department, so the nurses used to go there for breaks. They put keypads on the toilets and that made it a bit more restricted.

COMMUNICATION ABOUT THESE MATTERS

219. In terms of communication, it was often the case the Comms team would issue some kind of communication following an IMT. This was often a press release or some form of statement. I was not involved in drafting any statements. I cannot remember any specific details of any communications. There was usually a 6pm deadline for this, but often the deadline was missed, as I understand they sometimes struggled to find a suitable form of words. These statements influenced what we told families because it was important that what we said was consistent with these, and so it was difficult when there was a delay in the Comms team issuing the statement, because we had to leave the IMTs and go straight back to the wards.

220. Communication about these issues with families was very difficult because we did not have the answers. We always tried to be reassuring by proactively telling families about the measures that were being put in place, but understandably that led to an assumption that, if steps were being taken to address a problem, there must be proof of a problem. As that was not something we could confirm or deny, it resulted in a lot of uncertainty and speculation.

221. There was a Facebook group and families were told about it. I don't have a Facebook account and wasn't involved with it so I don't know how it was maintained or moderated. Occasionally we would be sent a screenshot of what was on Facebook, and I know Prof Gibson also contributed statements to the Facebook page to try to inform parents about what was happening.

222. I know that there was a parent Facebook page moderated by a parent of a patient. I understand that this was not open beyond the parents, so I am not aware of its contents. I think that the “official” GGC Facebook group for parents may have been created because there were concerns that the parents’ Facebook group might not always be accurate, but I couldn’t be sure of this.
223. There were also posters displayed in the hospital saying how people could keep up to date with what was happening regarding Wards 6A and 4B. Examples are those shown to me to me at pages 78 and 79 of the bundle (**A38097072 – Flyer about the Closed Facebook Page for Ward 6A and 4B dated 20 January 2021 – Bundle 5 – Page 445** and **A38097080 – Poster about the Closed Facebook page for Ward 6A and 4B dated 20 January 2021 – Bundle 5 - Page 446**).
224. It is possible that some families may not have heard about the closure of Wards 2A and 2B from the media we were using. There are families who would not be interacting with us regularly, who might only be seeing us as outpatients and might only need to come in very, very occasionally, and I would assume some people were missed off the list of communication.
225. In terms of communication about the move from 6A to CDU and back again, I know a lot of people were angry about the communication, but I don’t recall any details.
226. I have been shown the document at page 37 of the bundle which is a GGC Media Statement from 29 March 2018 about bacteria concerns (**A39123914 – Media Statement titled “NHS Greater Glasgow and Clyde Update on Bacteria Concerns” dated 29 March 2018 – Bundle 5 - Page 138**). I am sure I would have read the statement at the time but cannot recall it or comment on its contents.

227. I have been shown the document at page 38 of the bundle which is an Update Ward 2A/2B dated 7 June 2018 (**A39123885 – Update for Parents on Ward 2A/B regarding cleaning, Hydrogen Peroxide Vapour (HPV) and Antibiotics dated 7 June 2018 – Bundle 5 – Page 142**). I am not familiar with the document but it looks like the type of briefing aimed at parents. I cannot say how such materials were disseminated but the contents of that note would have been the subject of routine discussion with staff and families. The nurses in charge did a lot of the heavy lifting with that kind of communication. I would imagine that the antibiotic prophylaxis mentioned in that update is the Ciprofloxacin that was being used at the time.
228. I have been shown the document at page 39 of the bundle (**A39123918 – Poster for Wash Hand basins – Bundle 5 – Page 143**) which is a poster telling people not to pour anything down the basin. Those kind of posters were everywhere I think, including all the rooms. They wanted to prevent people from putting foodstuffs and down a cubicle sink because of the concern that it would interfere with the efficiency of the flow of water along that pipe. If you pour things like milk and sugary drinks in there, it potentially creates a favourable environment for bacteria to grow.
229. I have been shown the document at page 40 of the bundle (**A38662234 – Update for Parents regarding cleaning in Ward 2A dated 13 June 2018 – Bundle 5 – Page 144**) which is an information sheet for parents regarding cleaning in Ward 2A. This relates to the HPV cleaning I mentioned earlier. Parents' questions about this would have gone to the nursing staff so I cannot comment on the communication.
230. I have been shown the documents at pages 52, 53 and 54 of the bundle (**A39123907 – Briefing for Parents and Carers regarding the measures taken to enhance the Ward dated 16 August 2019 – Bundle 5 – page 338, A39123898 – Briefing for Parents and Carers regarding the Work that has Taken Place to the Ward dated 6 September 2019 – Bundle 5 – Page 345 and A39123912 – Letter to parents Regarding Ongoing Concerns**

about the Lack of Facilities in the Ward and the Creation of a Parents' Kitchen dated 23 October 2019 – Bundle 5 Page 381) which are further updates to parents in August and September 2018. Again, I was not involved with these but I would guess that the notes were intended to provide further reassurance and more information about the various precautions that were ongoing. With regard to the NHS England expert mentioned, I do not know who this was or what they did.

231. I have been shown the document at page 70 of the bundle (**A41519618 – Letter for parents dated 9 September 2019 – Bundle 5 – Page 365**) which is a Ward 6A Family Information Q&A. I can't recall seeing it or how it was communicated but the contents would have been helpful in supporting the staff's discussions with families. I guess that the document stemmed from an IMT and would have involved a number of people contributing to the content, but I cannot recall it.
232. I have been shown the document at page 55 of the bundle (**A39123903 on original AME Bundle – but listed as A41501454 Letter from Kevin Hill, Director, Women and Childrens Directorate to parents and carers of patients on Wards 6A and 4B regarding update on investigations and infections in Ward 6A dated 12 November 2019 – Bundle 5 – Page 382**) which is a letter from Kevin Hill to Ward 6A and 4B parents dated 12 November 2019. I am not aware of what prompted the letter but, again, it seems to be an update about the infections and measures that were being taken in the decant wards.
233. I have been shown the document at page 56 of the bundle (**A39123903 – Letter from Jane Grant, Chief Executive NHS Greater Glasgow and Clyde regarding meeting to discuss concerns about the situation in the paediatric oncology unit dated 14 November 2019 – Bundle 5 – Page 383**), which is Jane Grant's letter of 14 November 2019. I'm guessing that this letter went to parents who attended the town hall type meeting I described earlier. There was a lot of criticism of communications, and I mentioned the

challenge of competing with all the information and opinion on social media, so I would imagine that this is what prompted the Chief Executive's letter.

234. I have been shown the documents at pages 6 and 7 of the bundle (**A38845623 – Core Brief prepared by NHS Greater Glasgow and Clyde Health Board dated 11 July 2017 – Bundle 5 – Page 67** and **A38845660 – Core Brief prepared by NHS Glasgow and Clyde Health Board 10 August 2017 – Bundle 5 – Page 73**) which are Core Briefs. These are common methods of communication and look familiar, although how much time staff get to read them is possibly another matter. I am a recipient of these and not involved with contributing to them.
235. I have been shown the document at page 13 of the bundle (**A38845769 – Cladding briefing prepared by NHS Greater Glasgow and Clyde Health Board for Paediatric haemato-oncology inpatients dated 7 September 2018 – Bundle 5 – Page 103**), which is a note to parents dated September 2018 about alternative access to the QEUH while building work was going on. I know that there were concerns about fungal spores while cladding was removed, and this note gives related information. Again, I was not involved in its production, but I'd have thought that Infection Control colleagues and clinicians would have been consulted regarding the reference to antifungal drugs as a precaution. It didn't really apply to transplant patients as they would have been on antifungals anyway.
236. There was a lot of media coverage of the infections in the hospital in 2018. I found this very upsetting and demoralising. I recall being in a shop and seeing all the tabloid headlines and being upset by this. I don't remember all the details of the media coverage because, for a time, I stopped reading the newspapers and watching the news. This was because I had seen the word "murder" being used and I had to stop reading this in order to cope.

THE REFURBISHED SCHIEHALLION WARD

237. Since we returned to the new ward in 2022, some things have changed. There are the two repurposed rooms behind the nurses' station, which are the pharmacy and the so called 'Tweenies' room. There is a new treatment room and there is a new room for the nurses to make up and prepare drugs, so those are definite improvements.
238. There is also better accommodation for the junior medical staff on the ward, and that's definitely welcome. Since we've moved back, the patient or parent kitchen hasn't really been operational, but that's because of COVID and infection control reasons.
239. We can only have one child at a time in the playroom, which is a bit sad. I don't know if that's going to be a long-term thing. In terms of the building there's the double door rooms, double doored entrances and exits and the ventilation specs have increased and improved. The trough sinks have been removed. Everything is new and clean and painted and nice. Overall, I would say it's an improvement.
240. I understand the rationale for the removal of the trough sinks from the transplant anterooms was that the more drains you have in a unit, the more likelihood you have of build-up of water in drains, because you don't have a constant volume of water running through them. If you have a room lying idle for a couple of days, there is an increased risk of a build-up of bacteria in the pipes and drains.
241. Since our most recent move back into Ward 2A there have been one or two relatively minor problems, like blocked toilets, which made us wonder if there would be further issues, but these were rectified fairly quickly and were more of an inconvenience rather than anything that impacted patient safety. It just gave us that dreadful sense of déjà vu, but happily things have been fine since then. I am an optimist and I think the new environment is going to be good. I'm certainly hoping it will be.

242. You have to proceed on the basis that everything has been fixed because there's been a lot of time and money spent on improving facilities. I have to believe that it's top notch because I couldn't in all conscience take consent for a transplant if I had any suspicion that it wasn't safe for patients. I've been to other transplant units, and I know they're not perfect and I know that there are always going to be compromises but I believe that the new unit is an honest attempt at producing a very good environment.
243. I'd say that it's all in nice order at the moment, including the ventilation. While it can be noisy at times, and a bit cooler than I might personally want, the engineers have assured us that the ventilation is excellent. I understand that it would be way above the ventilation requirements for transplant, or the ventilation spec of any other unit in the country.

INFECTIONS

244. Our concern about infections was not about the absolute numbers of infections. We had fewer central line infections than we'd had at Yorkhill, so it wasn't the number that caused concern. It was more because central line infections are normally from gram-positive bacteria, that is, bacteria that live on the surface of the skin. These don't tend to make you as unwell as gram-negative bacteria. You might have to lose your central line because you can't get rid of the infection, but as a rule gram-positive infections don't cause you to get very sick. Without wishing to trivialise them, they're more annoying than dangerous, although they can become dangerous if they infect your heart valves.
245. Gram-negative bacteria on the other hand can produce endotoxins that can make you very, very sick. If you have an endotoxin producing gram-negative, you can drop your blood pressure catastrophically and have a cardiac arrest. Whilst this is thankfully uncommon, they tend to make you quite suddenly unwell, and much more severely unwell than infection with a gram-positive bug.

246. If gram-negative bacteria get into a central venous line, they can often be quite difficult to eradicate because some of them can produce slime that makes them very adherent to the line. Once they're stuck in that line, even though you're pushing antibiotics into it, the slime protects them from the antibiotic, so they're very good at occupying a space and building defences against antibiotics. The solution is often to remove the line, because that's where they're sticking. Intravenous antibiotics are good at circulating around the body, but they can be ineffective if the bacteria produce this protective slime or biofilm.
247. There are risks associated with continuing to use a line which has gram-negative bacteria in it. When you flush the line, you might be flushing bacteria through the patient's body.
248. We were seeing a much wider variety of gram-negatives. If you take the whole group of central line infections, gram-negatives were disproportionately dominant in a space usually occupied by gram-positives. Proportionately we were seeing more gram-negatives and we were seeing a greater variety of gram-negatives and organisms that we didn't recognise as having seen before.
249. We tell all the patients that there are upsides and downsides of having a central venous line. Sometimes, in the face of infection, we may have to take the line out. The Microbiologist will tell you what the bug is and they'll tell you if it's gram-positive or gram-negative and then they'll tell you if you're likely to be able to treat it with antibiotics. They'll give you a heads up that things may not be salvageable; then it would be advisable to remove the central line.
250. As a consequence of the concerns expressed about the gram-negative infections, we had quite a lot of meetings. I can't remember if it was 2016 or 2017, but we had a Health Improvement project running, looking at how to identify sick patients early, and also looking at how we responded to the various indicators of deterioration of patients. There were a number of

innovations which followed on from this, such as a new paediatric observation chart, with Paediatric Early Warning Scoring (PEWS) and SBAR (Situation Background Assessment Recommendation) documentation, identifying vulnerable patients for priority discussion at the twice daily handover meetings.

251. SBAR reporting is completed for a patient you have identified as at risk of deterioration. The SBAR report will be filed in the notes, and if somebody comes to review the patient, they can see the background, the expectation in terms of treatment escalation, and who to contact if escalation measures do not result in improvement.
252. We also introduced the term “watcher” to identify patients in the ward who are likely to be unstable for a variety of reasons. When you have identified a “watcher”, you alert the “hospital at night” team, and in the morning the senior nursing team prioritises discussion of these patients so that the daytime team can review those patients first.
253. I don't think this was introduced in response to gram-negative infections. The project was spearheaded by a senior nursing colleague who worked in the operating theatres. They set about identifying patient factors which could be predictive of the development of complications, to ensure timely intervention to prevent deterioration. They audited their activities and proved during the project that fewer patients suffered post-operative complications. We were very keen to adopt this approach of being proactive in spotting patients who might deteriorate, and institute early intervention.
254. We were aiming to identify patients early enough to be able to make an intervention that prevented them needing maximum support. This was a patient safety initiative in 2017 and we were pushing ahead with that. With the type of patients in our ward, gram-negative infections are always going to be a major cause of the patients deteriorating. Within the group of patients I look

after, gram-negative infections mostly come from the bowel flora. Your bowel is full of them and that's where they should stay.

255. Chemotherapy hits cells that have a high turnover rate, so the renewal of your gut lining is impacted by chemotherapy and that's why you get vomiting, diarrhoea and often feel terrible. In addition to this, you are also not renewing the lining efficiently, so you can get ulceration in the gut, and that can lead to sometimes bloody diarrhoea or loss of specialised cells in the gut because it's not had time to repair. Crucially, pathogenic or potentially pathogenic bacteria which have been living in your gut flora can get into your bloodstream because the protective lining has been breached.
256. You can see ulceration in the mouths of patients to whom we give chemotherapy; they'll be unable to swallow saliva because the back of their throat is ulcerated. If that's occurred all the way through the gut, our patients can get gram-negative bloodstream infections.
257. If you've got a bit of plastic sitting in your veins (by way of a central line), the bacteria can go there and stick together. That's the rationale for giving neutropenic patients Ciprofloxacin: you can maybe modify the pathogenic nature of the bacteria in the gut.
258. The thinking behind giving non-transplant patients Ciprofloxacin was to reduce the risk of environmentally acquired gram negative infections,
259. I was aware of ongoing investigations to find a source for the perceived increase in a variety of gram-negative infections. People were swabbing drains and my understanding of swabbing drains is that you would expect to see gram-negative bacteria in drains. I don't have enough knowledge of the microbiology of drains to comment further. I was willing to take the advice of those who knew better in that area. I think it was Estates who were carrying out the swabbing. I do not know whether any patients became infected from a germ in their room, from a shower or sink, for example. I am not qualified to

say whether this happened or not, but I understand that making a direct link is extremely difficult.

260. Fungal infections or mould infections can be environmental, but I don't know if it possible to create an environment where there is no risk of such infection. Even in HEPA filtered air, there are going to be pathogens. They could come off somebody who walks into the room.
261. During the period 2017/18 and at the point we were decanted, I don't recall if we were given any additional advice around management of infection or infection risk. However, when there were gram-negative infections, or when we saw positive blood cultures, we followed the febrile neutropenia policy initially, and discussed them with the Microbiology team at the then daily lunchtime meetings.
262. A number of new members of the Microbiology team came on board when we moved hospital, and there was a shift in practice from giving 7 days of antibiotics to giving 10 days, then to giving 14 days. Essentially, we follow their advice. It must have increased our bed occupancy. Sometimes the microbiologists would advise us to remove the line in response to us telling them of a patient with a specific bug.
263. However, you might have a patient like the one I mentioned earlier who had multiple infections. You can get to a stage with a patient, especially an infant or a child under two, where you have inserted and removed so many lines that you no longer have a venous access. If you keep going into the same vein it will develop clots, and not be usable.
264. You have two veins on each side of the neck that you can use for central venous access, and you can use a vein more than once, but not if it has a clot in it. We got to the stage with a child where if we took the line out, we wouldn't be able to perform the transplant because we would have no other central

venous access, and there's no way you would be able to transplant without central venous access.

265. Sometimes we need to make a clinical judgement. Microbiology might tell us to take a line out, but that might compromise future treatment to such a degree that we have to make a judgement to keep going with antibiotics and try to clear the infection. Removal of a line was always understood to be a clinical decision, taken in the context of how many lines that patient has had in the past and what future treatment we plan.
266. For certain patients, when removing the line risked not being able to deliver life-saving treatment, we did not follow advice to remove lines. We would sometimes give the antibiotic the bug was sensitive to, and then we would challenge the line. By 'challenging' a line I mean re-accessing a line that has previously been colonised with a bug and observing if it causes fever when it is flushed. If the challenge is unsuccessful, we would ask the surgeons to take the line out. Sometimes line challenges resulted in the line coming out and other times it resulted in the line being successfully salvaged, and the patient avoiding 2 anaesthetics.
267. After the Case Note Review, one of the recommendations was that if the microbiologist tells you take the line out, you should take the line out. That's quite a powerful recommendation to make when you could be facing a patient who has no other venous access.
268. Nobody would lightly override the advice to remove an infected central line, but there might be times where you might have to say to the family, 'There are no other options for placing a central line'. In that situation, if you were to give the information to the parent to make that decision, and they are fully informed based on all the information available to you, they could consent to the continuing use of the central line.
269. In response to the Case Note Review, we did a survey of the rest of the UK and asked what everyone else did in those circumstances. Some centres said

they don't re-challenge the line, but others said, 'Of course we do.' There isn't therefore a right or a wrong answer here, there's a judgement call to be made. This judgement was previously a clinical one but following the Case Note Review it is now directed by Microbiology colleagues who may never see the patient. They can make a recommendation for action that may jeopardise future treatment. In my opinion, the adoption of this particular Case Note Review recommendation, could be potentially harmful as it takes away a level of clinical discretion.

INFECTION MONITORING, REPORTING AND INFECTION PREVENTION CONTROL

270. My understanding of how infection is monitored in the hospital is that if we discover infection by swabbing or sending tissue for culture, that's reported by Microbiology. We interact every day with the microbiologists about positive cultures and often that's to do with getting advice about the best choice of antibiotics, the duration of antibiotics and whether or not the central line is likely to remain in-situ at the end of this episode.
271. The microbiology team is fully informed of infections that are in circulation amongst the hospital population and hence has good oversight. We discuss on a day-to-day basis with the microbiologists, but we also bring it up again at the Friday meeting where we go through the details of each patient on the ward and discuss any infections. The microbiology team are therefore aware of what's happening in our unit and have oversight of trends in infection. In my view, Microbiology and Infection Control are from the same department.
272. When dealing with infections, we report to or share information with Microbiology. If I phone them to discuss a particular patient who has an infection, then they look on their computer system, ask me the name and the date of birth of the patient, and then confirm which bug they have and which antibiotic it is sensitive to. If I say that the patient is continuing to have fevers or that I've added in this antibiotic but need advice on what to do next if the

fever doesn't settle, they might tell me to add this or that antibiotic and call them with an update in the morning. Microbiology will record that electronically on their lab system. It's not something I can necessarily see, but they always ask us the patient's name and date of birth and they will be able to call up the advice that was given the day before.

273. I know that that system of recording was very useful to the Case Note Review team. That's something a lot of the laboratory specialists would get access to, but it's not something that I would necessarily see day to day.
274. With regard to my interaction with the Infection Control team, I always felt well supported by Dr Teresa Inkster. I thought she spoke up very well and voiced her concerns when necessary. I thought she was persistent and logical and kept her concerns foremost at meetings. She followed through. I was more than happy with her representing our concerns.
275. The IMTs became a forum where infections and their causes were discussed. I was involved in some of the IMTs shortly after the decant, around the October/November 2018 period. The anxieties at those were related to the gram-negative infections. I know I was at the IMT where somebody described what was found when they explored the drains. They explained that the drains were set in the concrete floor and just replacing them was not going to be an easy job.
276. After the move to 6A the incidence of infection was definitely lower. After 2A, I'm sure every gram-negative infection was investigated. I think the trigger before then had been two gram-negatives but now awareness was heightened.
277. As regards gram negative infections, I was aware of the concerns that the infections had come from the environment, but I am not aware of any firm evidence that the environment was the source of the infections. People would talk about water or pigeons but to the best of my knowledge no links were proven. I do not believe that this has been established categorically even to

date. If somebody comes in from home with a gram-negative infection, I would not call it a hospital acquired infection necessarily unless they'd been up at the hospital that day and had the line accessed. In Wards 2A we do a root cause analysis of each candidate infection. We examine when certain patients got a fever, what organism they grew, and so on.

278. The root cause analysis is usually carried out by the Infection control nurse in conjunction with the treating clinician, going through all the notes and taking into account everything that happened in the time preceding the presentation with infection. I was never involved in a root cause analysis that concluded that an infection had been picked up because of the hospital environment.

279. Professor Gibson tended to go to the IMTs if she was available, but I sometimes went and I definitely spoke at more than one, but I don't seem to have been referenced. There were many people at the IMTs. A lot of time was spent with people introducing themselves and explaining their roles.

PROPHYLACTICS

280. There's always a debate to be had about the utility of prophylactic antibiotics and the potential damage they can do. Drugs have side effects; they can interact with other drugs and make management of the patient more complicated. You have to justify their use. It did reach a stage where there was such concern that the environment was a threat that we decided to prescribe many patients Ciprofloxacin and Posaconazole. Groups were set up to try and examine the situation, the timescales and what sort of exposure we were going to have.

281. Ciprofloxacin is an antibiotic routinely used in the adult haematology practice. It is given to reduce the risk of Gram-negative infections. We also use it in transplant routinely to cover periods of neutropenia. If you give somebody ciprofloxacin, you alter their bowel flora. Bowels are full of lots of bacteria so the drug will reduce the Gram-negative population of bacteria in your bowel.

However, as your bowel flora is in balance, if you wipe out one set of bacteria, you may be replacing it with something that's resistant to ciprofloxacin, so there's always a risk in doing that.

282. Ciprofloxacin is not routinely prescribed in children for leukaemia or in children treated for solid cancers. It is more routinely given to transplant patients. We extended its use to cover patients we wouldn't normally give it to. The rationale was that we were worried about gram-negative infections, and we thought this might be a way of reducing the burden of these infections. I suspect Microbiology colleagues recommended it but can't remember exactly.

283. Ciprofloxacin wouldn't be your "go to" antibiotic in very small children as it can interfere with bone development and can inflame tendons. It interacts with other drugs. If you give somebody an antibiotic, you alter their gut flora and you can cause other problems. There are good reasons why Ciprofloxacin is not routine outside of transplant. All our children are on a lot of other drugs and Ciprofloxacin is a drug that can cause complications, so for that reason we don't reach for it as a first option.

284. I can't recall how long the patients were prescribed these drugs for, but I think it was for a fairly prolonged period, probably months. I'm sure we were giving it at the time when we were in Ward 6A. There were a group of doctors who sat with Microbiology to work out how long this should be for and that was in light of evidence they were seeing. We did stop its use and only the transplants patients are on it now.

285. The parents were told about the additional drug. We were up front about concerns about the environment and we knew that it was all over Facebook and WhatsApp, so people knew anyway. Families interact on social media to a greater or lesser extent. Some families wanted more information than others or rightly challenged the advice, so it was useful to have a communique and an agreed line.

COMMUNICATION

286. After IMTs there was always somebody making sure Communications would put something out that night or the next day. Meanwhile social media was running ahead, with people asking what was happening and it was sometimes not great having to wait for the official version, the agreed version, which came from Comms and the Board.
287. There were certain parents who were convinced that their child had suffered because of the environment. I tried to reassure them. Some had had gram-positive infections which had most likely come from the skin or the mouth. I think some parents were convinced that we were covering something up.
288. This put us in an invidious situation, as if we had put them in harm's way and now we were covering up that they had suffered harm. All we could do was present them with the details and facts, as best we could. There were some parents who were convinced, even in the face of evidence, that their child had suffered and that we were not giving them the full story.
289. I'm not sure if anything more could have been done in terms of communication. Sometimes I felt communication just got people's hackles up. The Scottish Government appointed Professor Craig White, who we never met, to be an interface with families. I understand that he was appointed as a sort of 'contact me' person and I used to wonder what he was saying to families because he's not a microbiologist or a clinician, as far as I know.
290. We were hearing feedback that families were not happy. As a group of doctors and nurses, we felt that some families lost trust in us. I'm not sure what could have been done to rebuild that trust and confidence, but I know there was a lot of uncertainty for both families and staff. I did understand parent's concerns but often was not in a position to either confirm or refute whether the environment was to blame.

291. We talked to families in terms of risk of infection. We did not nuance it to discuss all the environmental issues, but it did come up with some families. One family from outside of Glasgow were very concerned that they might be putting their child in harm's way by coming to a unit that was now transplanting in an adult hospital and that family explored going elsewhere. That's a very sensible thing for somebody to suggest. To be fair, hospital management was very supportive of them taking that option. We talked it through and the family made the decision to be transplanted in our unit. However, you did sometimes worry that the discussion has shifted away from what transplant meant for this child and their family, to this whole other issue, maybe distracting people from the central issues that they were being asked to consider.
292. I went along to a town hall style meeting at one point, in the lab building. I can't remember exactly when it was, but it was an evening in the winter. Professor Gibson and, I think, Jamie Redfern were there. Prof Gibson was speaking to families whose children were receiving treatment as outpatients at the time. Inpatients had very frequent access to hospital management and senior nursing and medical staff. However, she was worried there was a constituency that maybe only come to clinic but could end up admitted and might find themselves in a strange environment. She explained the situation and the new approach with antimicrobials to try to reassure everyone.
293. The meeting got a bit difficult, but there were parents who sat in the front row and said, 'We're here to support you, we trust you.' I was relieved by that. They had come out on a winter's night to sit there whilst there were some other dissenting voices who felt that there was a cover up going on. These people who didn't have any complaints came along to say, 'No, that's not our experience, we don't feel that, we don't agree with that.' That was heartening to hear. It was a difficult night and not the exchange we were expecting.
294. It is a challenge to communicate effectively with staff because of the way people work. Many of the nursing staff will be on nightshift, there are days off and there's a continuous churn of junior medics, so reaching everybody at the

same time is impossible. I think there was a deluge of meetings and that's challenging because you've still got your clinical workload going on and you're trying to fit extra meetings in alongside your clinical workload.

295. There were a lot of meetings, and it's difficult for everybody to get to all the meetings. Information was often trickling or being filtered through certain people that were going to most of the meetings, and they were doing their level best to communicate but I'm not sure what the solution to that is.
296. In addition to those meetings, there were emails, although they tended to be over wordy, and things like the GGC newsletters, although I haven't retained any copies of these.
297. I'm full of admiration for Professor Gibson, Jamie Redfern and Jen Rodgers. They came in and they spoke to families, but I suppose that was only families that were present on the ward at the time. They were conscious that there was a constituency there who were relying on social media or were outpatients who were probably very anxious, whom they couldn't easily reach. It's a delicate balance as constant communication risks increasing anxieties, making stressful situations even more stressful.
298. I think it is important to highlight that during this period we were continuing to treat patients with leukaemia and continuing to do transplants. We had to explain to them that they had to have chemotherapy because their disease would be fatal without it, but that chemotherapy can lead to infection. These families were often aware of the concerns about the environment and the associated risk of infection, so this was a very difficult situation, and these were very difficult conversations. I felt very sorry for families who were asking very sensible questions about what the risk was.
299. It was difficult to reassure patients, when we ourselves carried so much uncertainty about what was happening. We did not know whether this could be a cluster of infections that might happen by chance or whether we had a

problem. If we had a problem, we did not know whether it was being addressed appropriately. We did not know whether our patients were at greater risk being treated at the RHC than they would be being treated elsewhere. We knew that these infections were occurring in other hospitals, because we went to meetings, and we heard about them. We didn't have any of the answers to these questions.

300. I think that when uncertainty is the overriding anxiety, no communication is going to make that any less anxious for people. Families did not like the uncertainty and the kind of stages we all had to go through to try and get to somewhere better. I think communication has improved and I think it's a bit slicker and that's probably appreciated by a lot of people, but I don't really think it changes the content of the information. I think it just changes the angst around it.
301. Communication is now quicker. There's less delay in getting information out there. We're a bit more agile in our ability to meet and discuss things that arise.
302. In terms of communications with staff, across GGC matters appear in the Core Brief, which is a document that appears in your GGC inbox fairly frequently. It's often printed off and posted on notice boards and the like. As regards information for QEUH and RHC, information from the Board might be disseminated from the General Manager (formerly Jamie Redfern), or it might come from the Medical Director or the Clinical Director, who would use email or might be present at a unit meeting to provide information that's relevant to our department. There are other hospital-wide situations where you might get a cascaded email providing information.
303. We have ward huddles every day, and senior nurses will disseminate information from the RHC huddle. I'm assuming there are clinicians there, but it tends to be senior nurses who let you know what's happening. There are lots of huddles round the hospitals. Basically, the key ingredient to them is that they're supposed to be safety-minded, so essential information that

needs to be known is discussed. For example, there's a surgical huddle every day where, if you have a patient on an emergency list, you go and speak to all the teams involved and you advocate for your patient. It's an opportunity for you to be seen and for you to listen and see the context of what you're expecting somebody else to do.

304. The Board have communicated through the common channels like Core Briefs, but we've also had visits from Chairmen, Chairmen's deputies and people in management positions who have come and spoken to our unit. This has happened on a couple of occasions when they have spoken to perhaps a dozen of us. They've also come and visited the ward and not spoken specifically to me, but maybe spoken to colleagues. Overall, it's been a combination of written communication and titles like the Core Brief.
305. People can become overwhelmed at the amount of information. There is a need to filter what's relevant. Sometimes you rely on colleagues to draw your attention to important stuff.

DUTY OF CANDOUR

306. With regard to our duty to communicate when something has gone wrong, we always have to tell families when something has happened. That is the case whether or not it's something that is predictable, such as a side effect of treatment, and whether or not it's ground we've covered before. Sometimes we're in a position of explaining to a family that something has happened but not being able to explain the reason why, due to the very complex nature of the conditions that we treat.
307. We do try to sit families down and explain situations to them, setting out why we think they've arisen, what we're going to investigate, and what we're going to do to treat it. Those are often quite difficult conversations. It's not possible to cover every conceivable side effect in every situation, so you're occasionally involved in discussions that are new territory. However, it is

absolutely our responsibility to tell families the facts. We have to provide explanations in understandable language because this is complicated. You have to provide the information, and also provide an explanation of what it means, as it would be easy for someone to make incorrect assumptions. That can cause distrust. You have to be mindful that you're often imparting technical information to somebody who maybe doesn't have background or technical knowledge.

308. I think we expect an awful lot of our families. We give them these complex diagnoses and possible treatment regimes, and we expect them to understand it and consent for treatment within 24 hours. If your child has leukaemia, then that treatment has to start tomorrow. We're using a whole new lexicon of words and concepts, whilst the family have just had devastating news, as far the diagnosis goes. Then you're saying, 'Apply your rational brain to reading this protocol and tell us whether or not you consent.' We're often in that situation of having to deconstruct very complicated issues and allow parents space and time to ask questions and to understand what you're requiring of them.
309. I think being able to do this comes with experience. At the start, you sit in on conversations and you learn yourself, you observe. You observe how families take in information. With time you learn to ask, 'Should we pause, have you heard enough, is there something you want me to go over?' It's often good to bring somebody with you and reflect on it afterwards and ask, 'How do you think that went?', 'Did you understand what I said?', and so on. We often bring a trainee so you can get a perspective. You get somebody in the room who can think critically about how the conversation went. You'll often be surprised that whereas you thought you laboured something, a family might say a couple of days later that you never told us about it. So you say, 'Okay'. What not to do is to say, 'Yes I did, you signed it.'
310. It can be very overwhelming. Sometimes I think we should record these conversations and say to families, 'Please listen again,' because this is a lot of information, this is really important information. I know that you can cover all

the details in a difficult consultation and later find that half of it has not filtered through to the family, because there's so much anxiety surrounding the discussion.

311. Duty of candour as far as I'm concerned is my duty to inform parents or patients of events that have occurred that have impacted them adversely or maybe even in a neutral sense if it's a significant event. There's a time limit on when you need to impart that information. That can be a challenge if you are not working on the ward immediately afterwards, but there is a duty to tell families information as soon as you reasonably can. I think one of the ways we try to facilitate that duty of candour is by encouraging families to come to us with any questions they might have. I think sometimes they're reluctant to, because they think we're so busy, but I always encourage them to ask.

INCIDENT MANAGEMENT TEAM MEETINGS

312. IMT meetings were called if there were concerns about the environment. They were multidisciplinary meetings, with attendees from Scottish Government, Estates, Public Health and Microbiology, as well as the clinicians.
313. The meetings were quite formally constituted and they were scheduled to last around an hour but it felt that you spent about 20 minutes with people introducing themselves and explaining their roles. At the meetings I attended, I think most of the talking was done by Estates and Public Health.
314. In terms of the effectiveness of the IMT process, I felt it was useful to see the structures and the personnel responsible for managing these issues. I'm not sure the process was sufficiently responsive to our anxieties as clinicians. There were very long and detailed discussions about matters in which I had little interests from a clinical point of view, e.g. drains. Discussions could get quite technical and very "Estates-focused". I wanted to bring the focus back to the patient and address the risk to the patient and what we were going to do.

315. To be fair to the Board, there were always actions and preventative measures taken forward. I suppose we were probing at possible causes, and we needed to get to the cause because if we could identify this, we might have been able to prevent the infections recurring.
316. Disentangling the cause and effect and impact of control measures is a very complex thing to decode. I don't know that the IMT was the best forum to do this, but it was the only forum we had, and I think it was convened in good faith to be open and to allow people to say their bit. Teresa Inkster was a very good advocate in it from the clinicians' point of view. I was reassured that Teresa was on the case.
317. There was an IMT meeting after we moved to Ward 6A where gram-negatives infections were discussed. There was a theory put forward that perhaps we didn't have a problem with more unusual gram-negatives; what we were seeing was a taxonomy (a classification of organisms) issue. Microbiologists sometimes change the names of bugs, so something we knew of as *pseudomonas aeruginosa* is now called something different. I remember it was suggested that we had seen the bugs before, they were just called something different. I think this theory was put forward by a representative from Public Health, but I don't think it was agreed.
318. We did get support from management. Jamie Redfern, Jen Rodgers and Susie Dodds were frequent visitors to the unit; they were very approachable and very available to speak to families.
319. I know there was doubt cast on, for example, people washing their hands properly. There was a big hand washing audit, and another to do with the way we were handling central lines. They started putting green caps on the lines, which had not been used previously. This was to protect central lines, so if they did get in contact with water, it would stop any bugs getting into them.
320. There were several control measures taken on the wards which were noted in the IMTs. We told families not to drink the tap water and this applied to the

staff too. I also think children had to bath with bottled water for a limited period.

321. I have been shown the document at pages 32 and 33 of the bundle, which is an email from Angela Johnson dated 28 March 2018 about control measures introduced around water use by immunocompromised patients. I can see that I was not on the distribution list, and I do not recall seeing the email before, but I recognise the kind of measures being described.
322. My understanding from that time was that there was a concern there was contamination of the water, because I know there were samples being taken from all the water tanks and there were diagrams showing where the water that goes into Children's Hospital comes from. It was thought the water coming out of the tap was potentially a source of infection. As time moved on and problems started to emerge with slime in the sink drains, a theory grew that the drains were the problem and what was happening was that water was splashing up from the drains when people were washing their hands in the sink, and their hands were becoming contaminated with organisms from the drains which were then being passed to patients.
323. Whilst we weren't entirely certain if there was a problem with the water and the drains, I recall that the drains were investigated, and they found that slime could be seen in the drains. I remember being told that when they'd been fitted, the pipes in the drains had been joined with tape and other temporising measures. The pipe joins were not smooth, and the disruption to the interior of the pipe made it more likely that bacteria would build up. I think it was discussed at IMTs and my impression was that Estates would be doing whatever needed to be done to address this.
324. I don't think there was increased use of source isolation. There are certain criteria you need to meet to source isolate patients, for example, patients with diarrhoea, with vomiting, or with obvious respiratory infections. Staff don't do that lightly. If a patient develops diarrhoea, even if you think it's mucositis and

it's the side effect of drugs, you isolate them until you've proven that the stool doesn't have norovirus or arbovirus or something infectious. They will only be in source isolation until it is proven that they don't need it.

325. There was a period in Ward 2A when rooms were closed for HPV, which was hydrogen peroxide treatment. I remember the smell of it. Rooms were closed when there were plumbing issues too. I know there were intermittently issues with sinks blocking and drains blocking and issues like that.
326. HPV is a sterilising, vapourised treatment that can treat whole external surfaces. I suppose it was a decontaminant measure, but they also put stuff in the water supply. I believe they conducted the HPV cleaning in cycles, doing perhaps two rooms at a time, so we didn't shut the full ward. This did impact on bed availability and reduced the number of patient beds available at times, so it might have led to patients being admitted to other wards.
327. Other remedial measures that were taken in Ward 2A included work on the drains. I recollect that we were told that when they started using chlorine in the water, it was corroding the chrome drain elements. The corrosion was then creating a sticky surface for bacteria to cling to, so they had to replace those.
328. I think they realised that these drains shouldn't actually have chrome in them, and the spec of the fitments wasn't appropriate because of the risk of corrosion. I believe that was rectified when we decanted. We haven't had any concerns regarding the water supply since we returned to Ward 2A.

OVERSIGHT BOARD / INDEPENDENT REVIEW / CNR / PUBLIC INQUIRY

329. I was not directly involved in the Case Note Review. I was part of the group that was consulted about its remit and progress. I made some suggestions and contributions along with colleagues. We did not anticipate that it would result in clinical recommendations. It seemed that the remit got wider as time went on. They didn't consult us about their conclusions. They gave the results

back to the families. They had confidential meetings with the families that didn't include us as the care providers, so it felt as if our care was being evaluated without us being offered an opportunity to contribute.

330. The CNR report said that it was not a response to criticism of clinical care and not a critique of clinical care, but it did actually make recommendations about clinical care. I think we also felt it used metrics that weren't validated or justifiable. It used a paediatric trigger tool which had not been validated for the purpose it was used for.

331. I think there was some context missing by not having our proper input. The Review team did not have local knowledge, and we could have provided helpful information about the processes in the RCH. It was also done virtually, relying on material scanned from case notes, which I think is very difficult because it's often not chronological or can sometimes be put in the wrong folder. If you don't know the patient, you don't know the story, and don't necessarily know where to look for the information. I think it is inevitable that there would have been a lot of gaps that clinicians might have been able to fill, had we been given the opportunity.

332. I'm not sure what the purpose of the CNR was. It only covered a specific patient group. I believe that some families refused to cooperate with the process, as they were grieving the death of their child. We only saw some parts of the summary and we did not see the individual responses from families. We were not given the opportunity to learn from this critique. I accept that everyone should be open to external scrutiny, but this seemed like a very unusual approach, and I feel that there should have been more opportunity for us to contribute to and learn from the Review. We were disappointed in the CNR. I am not sure who benefitted from it.

THE INDEPENDENT REVIEW

333. There was also the Independent Review. I wasn't involved.

THE OVERSIGHT BOARD

334. I know there was an Oversight Board and I know Professor Craig White was involved, but I don't know what they did.

IMPACT OF MEDIA COVERAGE

335. There has been coverage of these issues in the media and some families do bring it up. You have to tell them the truth. I think for me the truth is that I don't know if there's been a final finding here. Concerns were raised, investigations happened, control measures and remediation have taken place and we now have quite a low level of bloodstream infections amongst our patient group. We're very vigilant about it. I know there's been a lot of anxiety in the minds of families, and I think that's been really tough for them. I'm not surprised there's distrust of professionals because of that.

336. I do feel that because of this situation, clinicians have been put in a difficult position. That is because you can't discuss what's in the press, nor should you, but that's what families want to discuss. All you can do is give them the facts and give them time to make a decision.

PERSONAL IMPACTS

337. As a clinician working through the various decants and issues, there has been a professional impact on me. It's been very stressful, and it has created a new part of my job that's now all about this subject. Previously, you had inpatient ward rounds, outpatient clinics, administrative and planning work, educational work, and quality management, but in addition I had to deal with all the IMTs, all the meetings about the IMTs, and cooperating with and contributing to several different reviews and investigations, including all the preparation for the Public Inquiry. I think one of the real regrets I have is that we've been in

the hospital for seven years now and we haven't grown our service because we have not had the time to do this.

338. We should be moving forward, we should be innovating and adopting new treatments, but that has been impeded. Service development has absolutely stalled. Adding COVID into everything has also led to a lot of missed opportunities.
339. I think it'll take a lot of energy to get the initiative back to grow something good, which is a regret. It has felt like a bottomless pit of stress. We've been firefighting instead of trying to grow the service and that's been very harmful.
340. In terms of personal impact on me, there was a whole period where every Sunday there was a headline in the newspapers. We have stopped buying Sunday papers. People would ask me about it; I couldn't avoid it as a topic of conversation.
341. People say things off the back of a headline that can be quite hurtful, and you can't say anything in response, so it did impact. I would avoid telling people where I worked because they would then ask if that was the hospital with all the infections.
342. I see my work as a vocation. It's a hard job to do, but it's extremely worthwhile and that's the upside of it. You can make a very profound impact on somebody's life, in a good way, by doing your job well, and that's what we all aspire to do. There's a great team of people in Glasgow, Edinburgh, round the country and the rest of the UK that support that, and that's really good to be part of.
343. The perception that you would knowingly willingly put people in harm's way and cover it up or in any way assist other people in covering it up is very damaging, it is hard to take. I think that affects morale in the unit, which is a real shame, because there are lots of fantastic doctors and nurses there. I feel

that they have been beaten down with all the harsh scrutiny they have had to endure.

CONCLUDING COMMENTS

344. In conclusion, I think it is good that we are in a shared campus with the adult hospital because I think we should work in collaboration with our adult colleagues who are providing the same treatment. I think it's a great opportunity. I like the possibilities that exist from being part of a bigger centre. I think we can influence each other in positive ways from that point of view.
345. There are a lot of good things about the hospital now. There are some ongoing minor issues, but I think these are fixable and I am hopeful this will settle down and we'll move on from all the bad publicity. I suppose I would like some clarity about what has happened, as I still don't know, and I don't think anyone really knows.
346. It is difficult not having the answer to the question of whether or not we had an environmental cause of these infections. We do not know whether the cause has been addressed, and how best to eradicate the risks.
347. If the answer is that "this was a cluster that cannot be explained but the environment was not at fault", then that doesn't lessen the suffering of the patients who suffered from infections. However, it maybe shows us that we have to be in a state of preparedness for it happening sporadically in the future and accepting that it's a potential risk. Either way, in my view, we should strive the achieve the safest environment for patients by maintaining practices which have helped achieve and maintain our current very low rate of gram-negative infections.
348. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Mr James Redfern

WITNESS DETAILS

1. My name is James McDonald Redfern. I am known as Jamie.
2. I am the Director of Women and Children's Services within NHS Greater Glasgow and Clyde (NHS GGC). I was appointed to this post in 2021. I am based at the Royal Hospital for Children (RHC), which is situated within the Queen Elizabeth University Hospital (QEUH) campus in Glasgow.

PROFESSIONAL BACKGROUND

3. My qualifications are a degree in Economics and Quantitative Analysis, from Paisley College. I also hold a Postgraduate Diploma in Information Economics from the University of Strathclyde. Following my education, I commenced a management trainee role in 1992 working at Royal Hospital for Sick Children (RHSC), Yorkhill, working under Gerry Marr, the Director of Children's Services at that time. During my trainee period I worked in a rotation of departments, including periods of secondment to Care for Elderly, NHS Board Head Quarters, Estates and Facilities, Corporate Planning and Finance.
4. Following my rotation as management trainee, in 1994 I was successful in securing a position at the RHSC. This was as an Information Manager in Community Child Health Services. This new role involved working with databases, spreadsheets and other applications. I worked closely with senior clinicians from a range of specialities. It was through this work and the relationships that I built with the clinicians that I gained a broad clinical knowledge of Community Child Health. After about a year, I was promoted to Business Manager within the Community Child Health Directorate. This role being more of a direct support to clinical directors.

5. From 2000 to 2007, I held the post of General Manager for Medicine, Community and Child Health, and Children and Young People Psychiatry. Again this post was based at the RHSC. Following the introduction of the Community Health Partnerships there was a review of the organisation management structures.
6. I was part of that review. After participating in it, I was successful in retaining a General Manager post but with slight change in remit. The role changed to General Manager for Acute Hospital Paediatrics and Neonatology. In summary, I dropped community services and widened responsibility from medical acute specialties to that of surgery and anaesthetics as well as neonatology. Again, the post was based at the RHSC although I had extended responsibilities to paediatrics in Clyde.
7. The role of General Manager has a responsibility that covers clinical governance, staff governance, financial governance and performance. The position I held reported directly to the Director of Women and Children's Services (Mr Kevin Hill). The Director of Women and Children's services reports to the Acute Division Chief Operating Officer who in turn reports to the Board Chief Executive Officer.
8. In June 2015 and then again in June 2020, I was appointed to the role of Interim Director for the Women and Children's Directorate (W&CD) covering extended periods of absence for Mr Kevin Hill. In April 2021, I was appointed formally to the Director role when Mr Kevin Hill retired. Following this, Ms Melanie Hutton was appointed as General Manager.
9. The Director of Women and Children's covers Maternity, Obstetrics, and Gynaecology (MOG) as well as Hospital Paediatrics and Neonatology (HPN). The Directorate has a General Manager each for the aforementioned MOG and HPN. It also has a Chief of Medicine, Chief Nurse, Chief Midwife, Head of Finance, Head of People and Change, as well as Organisational Development and Planning managers. These individuals form the W&CD senior

management team. At time of my appointment as Director in 2021, I reported to the Chief Operating Officer (Mr Jonathan Best).

10. Functioning under General Managers are Clinical Service Managers. They in turn directly manage Lead Nurses/Midwives and Heads of Service (Audiology, Physiotherapy etc). The General Managers will also work closely with Clinical Directors and Lead Clinicians.

OVERVIEW

11. I am going to speak about my experience as a General Manager and also as Director of Women and Children's Services in NHS GGC from 2015 to the current date specifically in relation to infection control.
12. I have no responsibility for water provision to the hospital or the ventilation systems. Nor do I have direct responsibility for the maintenance of wider hospital environment. These are all matters that are the responsibility of the Estates and Facilities departments across the NHS Board. Similarly, I have no responsibility for domestic cleaning, catering and hotel services. Again, they are all part of the Facilities Directorate.
13. I have responsibility for the operational delivery of clinical services across all specialties formed under MOG (when becoming Director) and HPN (both as General Manager and then Director).
14. For example, I was directly involved in:
 - The decant from ward 2A/2B RHC to Ward 6A/4B QEUH in September 2018.
 - The decant from ward 6A to the Clinical Decisions Unit (CDU) in January 2019.
 - The decision to close ward 6A to new admissions in 2019, followed by reopening in November 2019.
 - Communications to patients and families, and staff over all these periods. I provide my reflections on this experience below.
 - The delivery of service under all these circumstances.

- The return of services from Ward 6A/4B to Ward 2A/2B in Spring 2022.

NHS GGC: Acute Division

15. I will now summarise the structure of the Acute Division of which Women and Children's Services is a part of.
16. There is, as I have mentioned, a Chief Operating Officer who is supported by a Deputy Medical and Nursing Director. The Acute Division also has its own Director of Finance and Director of People and Change.
17. The Division consists of three sector Directorates: North (GRI and other hospitals), South (QEUH and other hospitals) and Clyde (RAH and other hospitals). There is also a Regional Directorate (Beatson Oncology, Institute of Neurosciences) and Diagnostics Directorate (Laboratories and Radiology) as well as Women and Children's. Each Directorate is similar in structure.

MY ROLE: DIRECTOR OF WOMEN AND CHILDREN'S SERVICES

18. The difference between Director and General Manager in Women and Children can be described as follows:
 - Director role extends across MOG and HPN.
 - There is a more senior level of reporting – Chief Operating Officer.
 - There is less day-to-day operational management duties with greater focus on strategic aspects of service.
19. At an operational level I will still have oversight of the services I manage and this is primarily reported daily through the following:
 - Morning hand over report circa 6am.
 - Morning huddle report 8am.
 - 12:30 huddle report.
 - 3pm huddle report.
 - 7pm situational awareness report.
 - 12 midnight situational awareness report.

20. For each of these, a structured reporting format is used. Also a structured circulation list used with clear responsibilities around escalation. These reports will predominantly focus on staffing, hospital flow and any exceptional operational matters across Emergency Department, Wards, Intensive Care, Outpatients, Theatres and Departments. They cover both MOG and HPN. Technology is widely used to support the reporting described (Microsoft Teams and wider Office 365).
21. These reporting processes exist through to Chief Operating Officer and above.
22. The Directorate has a series of formal meetings weekly/monthly covering all areas of responsibility. Formal Directorate Management Team, Clinical Governance, Financial Governance, Staff Governance including Partnership and Performance. These meetings are sourced with standard reports and work to specific Key Performance Indicators (KPIs). Using these structures the Directorate has a standard Performance Review meeting with the Chief Operating Officer. Other mentioned Directorates function similarly.
23. The Directorate has embraced the use of technology to develop patient and staff engagement. A series of new websites are in place. A more structured approach to social media is growing across a range of platforms. A SharePoint site has been established with easy to navigate links to senior management team and who people are.
24. This is all supported by the senior management team doing regular walkabouts across the different hospitals. Beside this there is a strong focus on one to one discussions between employee and line manager, open door management, developed decision making, and focus on wellbeing and celebration of success/joy in the workplace.
25. Recent developments are Schwartz Rounds, Peer Support Networks and a Review of Estate linked to Well Being.

26. There is a developing culture of empathetic leadership and as a Director I am very clear about setting the organisations values and leadership traits.
27. Clinical Governance takes many forms and includes child protection, patient safety and quality improvement, staff engagement (including complaints), risk management, infection control, significant adverse event and clinical/non-clinical incident reporting).
28. Under Infection Control I receive various daily, weekly and monthly reports. The Directorate has an Infection Control Group which reports to the formal Directorate Management Team and also Clinical Governance Forum. Notification of any Problem Assessment Groups (PAGs)/Incident Management Team meetings (IMTs) are reported immediately and reviewed to conclusion through formal reporting structures used by the Directorate. As a General Manager I would expect to attend Incident Management Groups.

CHRONOLOGY OF EVENTS

THE NEW RHC – DESIGN, PLANNING AND TRANSFER OF HOSPITAL

29. The plans for the new Children Hospital were developed through the following:
 - Board Steering Group
 - Paediatric and Neonatal Steering Group (chaired by Director W&CD)
 - Paediatric redesign groups that were:
 - clinically led;
 - worked to standard terms of reference and reporting schedules; and
 - multidisciplinary in membership.
 - Supported by the New Children Hospital Planning Team
 - Cross cutting themes like estate, infection prevention control and communication were all managed centrally but with W&CD clinical/managerial involvement as necessary.

30. I was predominantly involved in the Paediatric and Neonatal Steering group and subgroups. In designing the hospital, the paediatric management team were interested in clinical functionality such as size (wards, beds/cots, theatres, outpatients, Emergency Department etc), adjacency/flow, use of technology, staffing arrangements and support services. We did not have input into technical specification of systems such as water and ventilation.
31. There was a strong focus on patient engagement with particular emphasis on the voices of young people. There was specific engagement expertise such as parent facilities in Ward 2A as one example.
32. As we moved closer to the final design, again clinical teams were engaged in signing off final drawings with the new children hospital capital planning team. Director and General Manager signed off the final papers.
33. Snagging sign off was the joint responsibility of the planning and clinical teams. This was very much based on the expected functionality described in the approved drawings.
34. At that time, my communications with the new children's hospital planning team would have been with Project Manager, Project Director, Morgan Jamieson Medical Director, Nursing Director and Patient Community Engagement lead.
35. I became a member of the "On the Move" steering group. This was the group which had key operational responsibility for:
 - a) the decant from old Royal Hospital for Sick Children; and
 - b) opening and use of the new Royal Hospital for Children.
36. This required close liaison with various clinical teams. The Scottish Ambulance Service (SAS) and other key stakeholders were also involved in the process.

37. In lead up to the transfer from old to new, the elective program was slowed down so a minimum number of children had to be moved. A schedule of moves was planned. The key stakeholders were paediatric anaesthesia, intensive care, neonatology and emergency department consultants and nurse staff working in these areas. The sequence of moves was clinically led. Timing of the move was scheduled for the summer to avoid winter pressures/respiratory illness in children.
38. Command centre teams were set up in the new children's hospital and in the existing RHSC. The sequence of moves were progressed as mentioned, ward by ward and department by department.
39. Close communication of leave/receive arrangements with SAS and command centres were as stated, in place. Various risk strategies were also in place underpinning all of this.
40. Command centres had responsibility for the start up of service delivery in the new hospital and closing down in the old hospital. A successful restart program was initiated with emergency department, theatres, wards, intensive care and outpatients starting immediately.
41. Across the design plans of the new children's hospital and the on the move plans, communication with staff and patient engagement were prioritised key performance indicators.
42. Prior to the move there was clinical concern raised primarily on office accommodation. Offices for staff working in the new children's hospital were located in a separate building. On call bases were provided for clinical staff in the hospital across all the different teams as were offices for anaesthesia and intensive care staff. Following the move there was a general consensus that the concerns around the office block were unfounded. The Haematology Oncology team however wish we had greater emergency on call space in the hospital. This has now been provided.

43. Prior to the move taking place, site visits were allowed for staff. There was strong health and safety arrangements in place to ensure these ran smoothly. This was for both clinical and managerial teams. These were very well received. This was part of the final sign off at clinical level.
44. Also ahead of the move there was various structured discussions about staff amenities (changing facilities for example), public transport and car parking (particularly again for on call teams).
45. My own perception overall was that the campus was of breath-taking scale and modernity when considering the hospitals, laboratory building, university facilities and administration/office block.
46. The hospital management team are now located on the ground floor of the Royal Hospital for Children. They use a hot desk approach with focus on flexibility, use of technology and mobile working. This became essential during COVID-19.
47. The design and move of the new children's hospital to my mind was considered a success. That is not withstanding the subsequent infections that followed which remain under review as to the cause and for which I am again very sorry for all those involved.

THE NEW QEUH – VENTILATION IN THE ADULT BMT UNIT: JUNE/JULY 2015

48. When RHC moved to the QEUH campus in June 2015 I did not have any real knowledge of what was happening in the QEUH hospital in relation to the adult bone marrow transplant (BMT) service/Ward 4B. This was not a service under my management responsibility and there was very little interface between it and the paediatric service.

THE NEW RHC – VENTILATION AND FILTERS IN WARDS 2A/2B - JUNE 2015

49. On taking ownership of the RHC it was identified there was an issue with filters. They had not been fitted. A supply of the required product was

immediately secured from a supplier based in Ireland and fitted successfully prior to the restart of the paediatric BMT program on the new site.

THE NEW RHC –THE PAEDIATRIC BMT UNIT WARD 2A RHC: SEPTEMBER 2015

50. There were various checks ongoing in the RHC Ward 2A when we moved into the hospital. These were carried out by Estates or third party vendors working with Estates. An issue was identified where there was a break in the sealing in one of the cubicles and affecting pressure/circulation.
51. There was a series of meetings arranged. For example, I attended a meeting on 7 September 2015 and a minute of that meeting (**A40364499 - Minutes of Meeting to discuss BMT Unit RHC dated 7 September 2015 – Bundle 6 – Page 20**) has been shown to me.
52. There were a number of senior members of staff present. The final agreements were for:
 - All rooms to be checked and resealed where appropriate.
 - An appropriate testing program would continue routinely to ensure performance of the rooms maintained.
 - 4 cubicles would have enhanced work carried out on them. This was based on benchmarking analysis from other units carried out by Estates colleagues. A program for taking this work forward would be developed/implemented.
53. My role was to measure the impact all of this had on service and in particular the restart of the paediatric BMT service. Close links with the senior medical team were in place and essential.
54. A risk assessment was completed by Dr Alan Mathers (Chief of Medicine) and Dr Teresa Inkster. It was signed off by Dr Armstrong and others. This allowed the paediatric BMT service to restart. (**A38694847- Email from Alan Mathers dated 15 September – SBAR re paediatric BMT unit – Bundle 4 – Page 13**). There was, from memory, one urgent patient who needed treated and

with the timings and what would be involved, it was considered very difficult to find an alternative provider and the patient received treatment on Ward 2A.

55. There was at least one meeting I attended where Prof Brian Jones (Microbiologist) and David Loudon (Director of Facilities) amongst others discussed the estates/ventilation in Ward 2A/2B. David Loudon was explicit that all installed equipment met the statutory building requirements of that time.

IMT MEETING - 5 AUGUST 2016

56. **(A37987226 - Incident Management Meeting Minute, dated 5 August 2016, relating to Aspergillus Infections in Schiehallion Unit – Bundle 1 – Page 22).**
57. I have been asked about my recollection of an IMT on 5 August 2016. I do not specifically recall this IMT. The minutes describe the trigger for this meeting.
58. As per all IMTs commissioned by NHS GGC:
- a) It normally follows a Problem Assessment Group (PAG).
 - b) Discusses recent infection of patients.
 - c) Seeks a working hypothesis for what the cause(s) might be for infection.
 - d) Identifies solutions for how to resolve any problems identified, commissions actions to implement solutions and tracks progress to completion.
 - e) All IMTs are normally chaired by a senior clinician from IPC, and involve a range of people from different clinical, professional and managerial backgrounds. There is instruction on this within the National Infection Prevention & Control Manual (NIPCM).
 - f) The incident is scored at the end of the meeting, utilising the Healthcare Infection Incident Assessment Tool (HIIAT) per the NIPCM, which depending on the result triggers series of actions the Board must follow.

- g) As a General Manager of service I would expect to attend IMTs or have a suitable depute if I was unable to attend.
 - h) The working hypothesis will determine whether there is or is not a concern the infection is linked to the hospital environment.
59. From looking at the minutes of that IMT meeting I can see that Ian Powrie from Estates had provided background information relating to the environment pertaining to BMT rooms with focus on condensation. There had been identified breaches in the ventilation ducts, which had needed to be re-sealed. A number of other potential environmental issues were raised by those in attendance and a number of investigations/actions agreed on. These included air sampling of the air handling unit, inspection of the unit for water damage, inspection of chilled beams, upgrading of filters to HEPA filtration and Diagnostics to expedite reporting for ongoing surveillance. Generally, this is my experience of an IMT. A range of potential causes are proposed/discussed and either confirmed as working hypothesis or ruled out.
60. The summary of current Infection Prevention Control (IPC) reporting from a W&CD perspective is and has been:
- a) Review of weekly report circulated by IPC. Normally this is between myself, the Chief Nurse and the Lead IPC Nurse.
 - b) As above, a monthly report by IPC. This is noted in Clinical Governance reports issued by the Directorate including the Directorate Infection Control Committee, Clinical Governance Forum, and Directorate Formal Management meeting.
 - c) Throughout the month, the escalation of any PAG/IMT is noted and tracked to completion.

INFECTIONS – SURVEILLANCE AND MONITORING – CLABSI PROJECT 2017

61. I have been asked to summarise my understanding of the above project, which was clinically led but sponsored by the Chief Nurse at this time, Jen Rodgers.

- a) RHC identified an increase in infections linked to haematology-oncology patient group.
- b) Working hypotheses through a multidisciplinary quality improvement (QI) group were identified and changes proposed/implemented.
- c) In working through the hypotheses, international research had been carried out by the QI group with focus on Cincinnati Children's Hospital (as identified best in class to learn from).
- d) Over time, infections were monitored through standard run charts and improvements were reported.
- e) Presently the RHC CLABSI run rate, I think, is on a par or better than that reported by Cincinnati. This QI work stream was demonstrated to be highly successful and to this day continues to show appropriate safety measures in place highlighted by such good results.
- f) Achieving this showed the culture of safety operating across W&CD which is important moving forward through 2017 – present day.

CLADDING – 2017/2018

62. In June/July 2017 investigations into the cladding of the new hospital building commenced as a result of what happened at the Grenfell tower.
63. A series of communications were issued by the Board, I cannot remember specific communications but I remember that there was communication on cladding. I have been shown some Core Briefs from June 2017 – August 2017 but I cannot recall these.
64. A cladding group was established and my role was to ensure across the RHC, when changes were being made, there was a clear understanding of how we maintained as near as possible business as usual. This required information on when work would start/finish, how it would be completed and what the impact on service would be including patients and families attending hospital. Noise and access points were two important aspects of this.

65. Specific focus was on the haematology – oncology patient group. This was significant estate work on site, with the risk of infection to this group when attending. Monitoring such estates work is managed through a standard HAI-SCRIBE process agreed by service, Estates, third party vendors and IPC/Microbiology.
66. Signage was placed around the children’s hospital to show the alternative entrances (**A38845827- Additional signage for the children’s hospital when cladding works ongoing – Bundle 5 – Page 89**). This followed concerns raised by Dr Inkster about skips located at the main hospital entrance.
67. An email chain from 16 August 2018 to 23 August 2018 was presented to me on this matter (**A38845806 - Email chain between nurses, management staff and microbiology subject “update for parents” dated 16 August 2018 to 23 August 2018 – Bundle 5 – Page 91**). On the 17 August 2018, I emailed Melanie Hutton and Kathleen Thomson to liaise with the ward 2A/2B clinical teams as to how we implement Teresa’s advice which was the alternative route, antifungal prophylaxis and surgical masks if required. On 20 August 2018, Melanie contacted Teresa to ask for information on prophylaxis cover, this was to give the team some background for a briefing for patients. Final communications would always follow authorisation from the Corporate team.
68. I have been shown a Media Statement dated 27 August 2018 (**A38845825- Media Statement titled “NHS GREATER GLASGOW AND CLYDE STATEMENT” by NHS Greater Glasgow and Clyde Health Board in dated 27 August 2018 – Bundle 5 – Page 100**) which addresses the response to the cladding works. Teresa Inkster is quoted as stating that “The most important measures are to offer high risk patients antifungal prophylaxis and to divert them away from the work”. On 4 September 2018 there is an email from me to Kevin Hill requesting an update on the communication for parents of 2A/2B (**A38845807 - Email chain between nurses, management staff, communications team and microbiology in**

response to a parent feedback form and subject “update for parents” dated 28 August 2018 to 5 September 2018 – Bundle 5 – Page 97). I have been shown a document dated 7 of September 2018 which looks like a communication about the mitigations for the cladding works addressed to the parent/carers of ward 2A patients **(A38845769 - Cladding briefing prepared by NHS Greater Glasgow and Clyde Health Board for paediatric haemato-oncology inpatients dated 7 September 2018 – Bundle 5 – Page 101).** This would have been standard briefing noting concerns previously raised for this patient group.

EVENTS RELATED TO THE WATER SUPPLY ON WARD 2A/2B RHC – 2018

69. I have tried to summarise the events around infections in the paediatric haematology-oncology patient group from 2018 onwards.
70. I have been provided with a copy of an email chain from Jennifer Armstrong **(A38662162 - Email chain including notes and actions from teleconference involving NHS GGC, HPS HFS & Public Health England and subject “18/03/18: midday call for updated on RHC water incident:” dated 18 March 2018 – Bundle 5 – Page 116).**
71. Regarding the IMTs underpinning this position I refer to my previous comments. I would add at this time Health Facilities Scotland (HFS) and Health Protection Scotland (HPS) were actively involved in these meetings and updating Scottish Government. Normal escalation processes through the Chair of the IMT and service via myself were in place ultimately to Chief Operating Officer/Executive Officer and Medical Director (Board Lead for Infection Control).

COMMUNICATIONS TO STAFF - 28 MARCH 2018

72. An example of communication to staff is an email dated 28 March 2018 to senior nurses titled “Water Incident Update 2018”. **(A39123924 - Email from Angela Johnson, Senior Infection Prevention and Control Nurse subject “RE: Water Incident update 28.3.18” dated 28 March 2018 - Bundle 5 –**

Page 132). The email provides an update and there are two attachments to this email. I am a copy addressee of that email. We were telling staff (a) what we were doing and (b) giving them a reassurance that we were dealing with this problem. The documents could be used as an aide memoire for staff. The different attachments are for patient groups with different clinical presentations.

73. Over time Jen Rodgers and I would routinely go round the Ward and with SCN and/or Consultant deliver the brief for parents and allow them the opportunity to ask us questions. This would be to all families on the ward.

MEDIA STATEMENT – 5 JUNE 2018

(A38662060 - NHS GREATER GLASGOW AND CLYDE STATEMENT” by NHS Greater Glasgow and Clyde Health Board in response to Evening Times enquiry dated 5 June 2018 – Bundle 5 – Page 140)

74. The standard process for delivering these briefs was a. sign off at Corporate management level, b. issue to Jen and I, c. we would visit the ward and hand out the brief to all parents, d. go through the content of the brief and e. try to answer any questions.
75. There is a quote from Dr Teresa Inkster within this statement. In such matters it would be normal for clinician to be quoted. Dr INKSTER at all times would be asked if she was happy with the quote.
76. In the paragraph second from the bottom of the statement, it states, “We’ve also taken the extra precaution of prescribing antibiotics to a few patients.” That was a clinical decision. There is a risk when providing prophylaxis and you balance the risk between giving or not giving it. The clinical decision to prescribe prophylaxis would be made by the child’s doctor but with advice from the microbiologist. The doctors and microbiologists would meet routinely to discuss such matters.

IMT MEETING – 6 JUNE 2018 (A36690461 - Incident Management Meeting Minute dated 6 June 2018, relating to Water System Incident – Bundle 1 – Page 99)

77. At the IMT meeting on 6 June 2018, there were further discussions about drains and sinks and I was seeking assurances from both Teresa Inkster and Estates that the filters were a functioning solution to the agreed hypothesis.
78. The solution was to refit taps and filters and then re treat the water supply. Note at this time, the NHS Board was seeking advice from a variety of UK experts.
79. HPV cleaning is mentioned in the minute. This is an additional level of deep cleaning by the external supplier. Standard Operating Procedures are in place for how this type of cleaning is to be administered.
80. There is a note under “Assurances moving forward, ” and there is reference to a group chaired by Kevin Hill. It was subsequently decided that this group was not needed. Noting it was just the same people talking about the same thing as in the IMT.
81. The minute includes that Professor Gibson notes the impact of Ciprofloxacin on certain patients. This was a prophylaxis.

IMT MEETING – 14 JUNE 2018 (A36690460 - Incident Management Meeting Minute, dated 14 June 2018, relating to Water System Incident – Bundle 1 – Page 123)

82. I attended and chaired an IMT on 14 June 2018 due to Dr Inkster’s unavailability. At this time we were keen to ensure the IMT was functioning appropriately. This included involvement from HPS colleagues, who at all times were actively involved in discussion and decision making, as well as the standard remit of feeding back to Scottish Government.

83. In the minute under the heading “Assurance moving forward,” I am noted as confirming that that the NHS Board were looking for the IMT to act as a key organisational governing structure for advising and overseeing implementation of the issues and actions.” This would be considered standard. It was important the NHS Board had confidence in the IMT processes.
84. More generally, for IMTs 2018 onward I would make the following observations:
- a) Infections were identified in Spring 2018.
 - b) There was involvement from an array of experts to try to identify hypothesis and solutions.
 - c) There was full escalation of the issue to senior Executive level.
 - d) The hypothesis was that these infections may have come from the taps and two solutions were implemented to resolve.
 - e) Filters added to the taps.
 - f) Water cleansed through technical agreed regime.
 - g) Continued testing of the water as well as standard checks on infections through IPC continued.
 - h) Throughout the IMT there was close liaison with the Water Technical Group.
 - i) I did ask what contingency plans were available to us if these solutions did not work. There was no other solutions but I did get a confidence from experts that the solutions would work.
 - j) The routine checks and maintenance of filters seemed robust. As did the process for what would happen if a problem with filter occurred.
 - k) The commercial company supplying the filters were very confident in the efficacy of their product and were regarded as international experts in this area.
 - l) Interim arrangements until solutions were identified and implemented had been very unsatisfactory for patients, parents and staff (using bottled water and temporary sinks) and for that, I am really sorry.
 - m) Standard communication at this time was opt-in. If a patient/parent wished to speak to senior management about anything relating to

infections or ward environment then they should seek arrangement via the ward team and normally Professor Gibson, Dr Inkster and I would attend. As part of standard IMT process any child with an infection and under review should have been updated via their named consultant.

- n) There were throughout this period a number of other actions taken by the IMT including ongoing review of staff IPC practice, domestic cleaning/extended HPV, Estate management and close links between clinical teams and microbiology (particular clinical review of Ciprofloxacin as a prophylaxis).
- o) Scottish Government as previously stated were getting updates on all infected patients under review by IMT.
- p) Throughout this period, myself and Dr Inkster would try to speak to staff and answer queries/provide reassurance and note concern. I do recall there being discussion about the case definition being used by the IMT.

WATER EVENT WARD 2A/2B RHC - SUMMER 2018

- 85. After a reduction in infections, for what I recall was a period of 6-8 weeks, new infections started to occur. Further IMTs were called to review matters and again understand potential hypothesis and solutions.
- 86. My apologies for the non-technical use of terminology others more specialist might use. The summary of events from my recollections around this were:
 - a) The filters were continuing to do their job and there was no problem with the water.
 - b) However, there was a close adjacency between the filter and the sink drain, which may be creating a splashing effect which was leading to contamination/risk of infection.
 - c) Noting that the filter product could not be changed there was a decision to remove all sinks and replace with a different version which would avoid this problem.
 - d) It was noted that such sinks which would avoid splashing were in location across the adult hospital.

- e) To implement the change in all sinks across wards it was agreed that the service had to relocate from Ward 2A/2B to another location.

CLOSURE OF WARDS 2A/2B (SCHIEHALLION) AND MOVE TO WARD 6A & 4B: SEPTEMBER 2018

87. In September 2018, we took the decision to close Ward 2A/2B (Schiehallion) and move patients to another location. This decision was taken at the IMT on 17 September 2018.

OPTIONS PAPER – 17 SEPTEMBER 2018

88. Working with the clinical team, Estates, infection control and HPS we agreed the following criteria needed to be achieved for any decant of service to work.
- a) Close proximity to RHC Theatres, Radiology, Paediatric Intensive Care and other support services in the children's hospital including Hospital at Night (HaN).
 - b) Appropriate bed numbers to accommodate all aspects of the service. All matters of child protection, and other associated services to be considered.
 - c) Appropriate clinical IPC conditions for patient safety and in particular for the Haematopoietic Stem Cell Transplant (HSCT) service.
 - d) An ability to scale up at the earliest opportunity.
 - e) Protection of specialist services, most importantly the national HSCT program.
89. Due to points 1, 2, and 4, the Beatson Oncology Unit was ruled out. Due to point 2, there was no scope to decant the full service to an alternative provider and a split across a range of services was considered inappropriate. Due to point 4, a new modular build was not possible. Due to points 2 and 3, the RHC was ruled out.
90. The preferred solution was agreed, across all involved, as a combination of space in the adult QEUH hospital for service including the HSCT service. This position was escalated to Kevin Hill and Jonathan Best who in liaison with

Jane Grant/Jennifer Armstrong reached decision for Ward 6A to be freed up as well as 4 specialist transplant beds in Ward 4B (where adult HSCT service was located).

91. Once this decision was reached staff were freed up to progress a full decant in a systematic way. This program was led by the Clinical Service Manager Lynne Robertson. A successful decant plan was fully implemented. There was regular communication across all stakeholders including staff and patients/families. Prior to the move some minor refurbishment was carried out in Ward 6A and a defined space was identified in Ward 4B.
92. The solution was not ideal for various reasons:
 - a) We were located in an adult hospital environment and in a general ward not specifically built for paediatric haematology oncology client group.
 - b) The clinical team were managing across two floors (diseconomies of scale were a challenge).
 - c) Proximity to key RHC facilities were further away.
 - d) Space was limited particularly in Ward 6A where acute inpatients (Ward 2A) had been merged with day care (Ward 2B).
93. An array of Standard Operating Procedures (SOPs)/working arrangements had to be formalised to try and implement as close to a business as usual model in place.

COMMUNICATION – DECANT TO WARD 6A/4B QEUH – 17 SEPTEMBER 2018

94. I have been shown a media statement from 17 September 2018 (**A38662124 - Media Statement titled “NHS GREATER GLASGOW AND CLYDE STATEMENT” by NHS Greater Glasgow and Clyde Health Board dated 17 September 2018 – Bundle 5 – Page 148**). The media statement describes the need for the temporary move and what would happen. A statement from Dr INKSTER is included. It was important parents were also

aware of why we were moving, how we would do it and what would happen once we had moved. I am not aware of any issues emerging during the move and personally viewed it as a smooth transition with strong operational governance around it.

95. There were various briefings for patients and carers. For example **(A38662122- Update for Parents in Wards 2A and 2B regarding cleaning and sink drains dated 18 September 2018 – Bundle 5 – Page 149)** Again this would have been a standard communication to inform parents of what was happening and why.
96. It was important parents were not only aware of what we were doing but had confidence in why and what would happen once implemented. Confidence in the water supply was important noting Ward 6a is sourced by same supply as Ward 2a.

WORK IN WARD 2A/2B RHC – AUTUMN 2018

97. At this time we were informed by the new Director of Facilities that, as the ward had been decanted, there was an opportunity for the replacement of a new ventilation system to be implemented in Ward 2A/2B and that this would be progressing while we were on decant.
98. The timeline would extend from weeks to months for us to work out of temporary relocation. However, we were advised that on completion we would have a state of the art ventilation system in situ. It would also allow for some further refurbishment work on the wards.
99. I was tasked in pulling together a capital planning group to oversee the project. This is part of the standard capital planning/finance instructions for projects of this scale and cost. We worked to standard terms of reference. We reported to the Acute Capital Planning parent group and also through own service/function report lines.

100. In essence the group was challenged with coming in budget and on time. If there was any variation to either aim then there was a clear audit trail for decision making and reason.
101. The group had representation from clinical team, capital planning design/finance, external project management, microbiology/IPC and Estates.
102. Prior to the group being set up a specification for the new ventilation system was agreed and costed with an appropriate procurement exercise completed. I was not formally involved in the technical aspects but kept aware of progress and outcome. Again, Estates, Capital Planning and HFS were the key stakeholders moving forward. Through the project duration thereafter, links with the main contractor and subcontractors were managed through Capital Planning and Estates. Our group was only updated on matters of progress/concern. As the project commenced we obviously ran into COVID which caused significant disruption to the timeline.

CRYPTOCOCCUS EVENT - DECEMBER 2018 TO JANUARY 2019

103. We were notified of two cases of Cryptococcus around the turn of the year 2018/19. This was suggested as very rare. [REDACTED]
[REDACTED] Relevant SAERs were conducted into both cases. Concurrent to this an IMT was set up which I was involved in.
104. On 4 January 2019 I attended a meeting [REDACTED]
[REDACTED] Brenda Gibson, Jen Rodgers and Teresa Inkster were also present. [REDACTED]. It was a really challenging time for the family. They were so upset in the meeting. There is a minute from the meeting. **(A41501445- Minutes of meeting between NHS Greater Glasgow and Clyde Health Board [REDACTED] on 4 January 2019 – Bundle 5 – Page 159).**
105. At the meeting [REDACTED] were informed that [REDACTED] had contracted Cryptococcus. They were told that there had been two cases in

the hospital and that it was a very rare infection. As mentioned, it was a very sad and challenging meeting. At this time there was no understanding of where the infection had been contracted. At the meeting we confirmed that there would be a Significant Clinical Incident Review (SCIR).

IMT – 7 JANUARY 2019 (A36690566 - Incident Management Meeting

Minute dated 7 January 2019, relating to *Cryptococcus neoformans* – Bundle 1

– Page 255)

106. I attended an IMT meeting on 7 January 2019. My recollection of that meeting is as follows.

- a) It was very busy and went on for a significant amount of time. Note there were colleagues from adults and paediatrics present as well as the standard IMT membership.
- b) There was significant discussion on the working hypothesis. Dr Inkster did think environment was a risk and both the plant room and helipad adjacencies to clinical areas/pathways were considered a risk.
- c) To my mind, we never agreed a working final hypothesis with changes that had significant difference in reducing the risk of this infection if indeed there was a risk. There were changes implemented however including a program for reduction of pigeons on site to be implemented.
- d) My understanding now is that Dr John Hood has a written document that indicates neither patient is likely to have contracted this infection from hospital environment. I am not aware of any further IMT being called similar to this one for this type of isolated infection.

MOVE FROM WARD 6A TO CDU – JANUARY 2019

107. In January 2019 I was informed of an estates problem in Ward 6A. Following inspection by Dr Inkster and colleagues from the clinical team a HAI-SCRIBE was put in place to manage remedial works. However during works it became evident the problem of mould was significantly more concerning than first envisaged. Dr Inkster was clear that there was a need for decant to be considered.

108. Ultimately a decision was taken to decant inpatients from Ward 6A to CDU with day care services being provided from Ward 1A. Both these locations in the RHC. Again, considerable work had to be carried out on the decant to these areas and again, after escalation/agreement to proceed through very detailed planning this was successfully completed.
109. A decision on displacement of services from CDU had to be considered and again this was managed internally at operational level within the Directorate.
110. At the early stages of this I do recall spending a full weekend on site and walking across the hospitals speaking to parents and families to inform them of these planned changes and why. There was also close discussion with staff at this time. This engagement continued routinely through the stay in CDU until moving back to Ward 6A. No changes during this time were made to plans we had in place for HSCT patients and use of Ward 4B.

COMMUNICATIONS – JANUARY 2019

111. I have been provided with an email, **(A39355087 - Email from Lorraine Dick, Senior Media Relations Officer regarding the Herald and Evening Times running articles, which includes a statement titled NHS GREATER GLASGOW AND CLYDE STATEMENT ON TAP WATER AT QEUH and subject “Herald Article” dated 28 January 2019 – Bundle 5 – Page 252).** Within the email it is stated, “Claims that children are not allowed to drink the tap water are totally untrue. We have not instructed staff or patients not to drink the tap water at the Royal Hospital for Children (RHC) or any other building on the QEUH campus.” Again, the message to parents following this article was assurance on the safety of the water supply.
112. I have seen another email chain **(A39123940 -Email chain between nurses, communications and facilities regarding ward 3C being under the impression that tap water was not appropriate for consumption and subject “RE: Herald Article” dated 28 January 2019 to 27 March 2019 –**

Bundle 5 – Page 261). It states, “I can confirm that the IMT have previously advised that the water is drinking water quality. This position has been notified to all wards and departments by the RHC management team.” Again, it was important that staff and patients were reassured on this matter.

STENOTROPHOMONAS INCIDENT IN 2017 AND SBAR - MARCH 2019

113. I cannot recall being involved in the Stenotrophomonas patient incident in 2017.
114. I became aware later on and retrospectively I became involved when Professor Gibson asked Dr Chaudhury to carry out an audit of patients and there was a concern around three particular cases identified. This work was taken through W&CD Clinical Governance via Dr Mathers, Chief of Medicine.
115. In March 2019 Dr Mathers produced an SBAR for Jennifer Armstrong. **(A39243760 Email chain dated 4 March 2019 containing an SBAR by Alan Mathers sent to Jennifer Armstrong dated 1 March 2019 – Bundle 4 – Page 151)**. I was not directly involved in this including ongoing communication.
116. I do recall being asked why there was not a Significant Adverse Event Review/Significant Clinical Incident commissioned. In speaking to Haematology Oncology, Cardiac and Extra Corporeal Life Support teams none thought there was a need for this although the case was reviewed through their local mortality and morbidity governance structures.

WARD 6A CLOSED TO NEW ADMISSIONS – APRIL 2019 TO OCTOBER 2019

117. From April 2019 to October 2019, we continued to hold more IMTs. These continued to be chaired by Dr Inkster.
118. My recollection from these IMTs is as follows.
- a) The concern was that we were experiencing a strange array of infections.

- b) The overall number of infections were not pushing us over the control lines however, given the variety Dr Inkster was concerned.
- c) It was very difficult through this program of meetings to agree a working hypothesis or identify solutions to resolve matters.
- d) Due to point 3, a decision was taken to close the ward (Ward 6A) to new admissions and specific types of inpatient elective chemotherapy work. I think this was at the beginning of August 2019.
- e) Aberdeen and Edinburgh clinical and managerial teams were notified of this again after escalation and approval.
- f) This arrangement remained in place until October 2019.
- g) To avoid overuse of the two other external sites, extra space was negotiated in Ward 4B for some patients to be managed. Again, remembering that Ward 4B was not part of the IMT review (restricted to infections in Ward 6A).
- h) We also used the Beatson Oncology Unit for age appropriate cases.
- i) Throughout this period, August to October 2019, we had regular multidisciplinary team meetings with clinical and managerial hospital teams.
- j) As matters progressed, it became clear patients and families did not want to be seen outwith Glasgow. We still had no hypothesis/solutions. Aberdeen/Edinburgh were struggling to cope with the demands being placed upon them. The pressure with use of Ward 4B beds was starting to grow.
- k) As we moved closer to October two things happened:
 - a. Dr Inkster was replaced as chair of the IMT with Dr Crighton; and
 - b. Dr Brian Jones (Microbiologist) became involved in reviewing our situation and feeding updates to the clinical team and ongoing IMT.
- l) Dr Jones general feedback, from memory, was conflicting with that applied by Dr Inkster. He indicated we did not have a problem. We were not out of control lines and the infections were not rare.
- m) Ultimately the IMT made a decision to lift the restrictions of access. Dr Crighton also decided to close the IMT down. This was completed

under strict condition that a Clinical Review Group (CRG) was established.

- n) This was also around same time when benchmarked data on infection rates between the main paediatric units in Scotland was shared and it was reported independently that Glasgow infections were comparable if not better than those of Lothian/Grampian.
- o) I set up the CRG and chaired it. This group met weekly and followed a set agenda with structured involvement from management, clinical, IPC/Microbiology, Estates and Domestic. Primarily the group reviewed infection/infection risk. It also monitored IPC practice and outcome, and reviewed any other situational awareness linked to infections and where necessary trigger escalation of concern. This extended to environmental test reviews by exception for example.
- p) The CRG was very successfully implemented and since its introduction there has been superb teamwork across the represented areas, building on what was already a very strong platform. There have also been no significant issues with repeat or new infections for the remaining period in Ward 6A and since the move to the refurbished Ward 2A.

119. In response to point 11 (a) above, I can confirm that I was called to a meeting at the Glasgow Royal Infirmary chaired by Linda de Caestecker, who was Director of Public Health. The meeting was held on 20 August 2019 and the minute is (**A36591680 - Meeting re functioning of IMT dated 20 August 2019 – Bundle 6 – Page 70**). Dr Teresa Inkster was not present at the meeting and her apologies are recorded. Following this meeting I have not worked with Dr Inkster on matters of infection.

120. I prepared an SBAR (**A38694861 - SBAR by Jamie Redfern dated 14 November 2019 – Bundle 4 – Page 202**) where the recommendation was that the restrictions on admissions be lifted with immediate effect. The ward did re-open and we have not had any issues since as previously stated.

WARD 2A/2B REOPENS – APRIL 2022

121. Following completion of the project to return to Ward 2A/2B, the wards re-opened in April 2022. This decision was taken after broad agreement with all key stakeholders that the works had been completed and signed off. All checks had been completed independently and organisationally. There had been full consultation with the clinical team. A successful decant plan for the move was implemented. I would say the decant was again very successfully managed, this time led by Melanie Hutton with strong engagement from all stakeholders. This work extended into a settling in period and again I would say this has been very successful with infection rates within control levels, and the HSCT restarted and the MIBG specialist service started.
122. Operationally at Directorate level we took the opportunity to undertake some service redesign. This included provision of an age 8-12 dedicated play area. Mirrored on the age-appropriate template of the Teenage Cancer Unit. The vision and funding for this led by two families and two former patients in particular (Molly and Sara). Working with these young women on the project was both humbling and inspirational. It is also a template for patient-user engagement/service redesign that I would seek to replicate and build on moving forward.
123. We also took the opportunity to develop office space adjacent to the ward and address some space issues for pharmacy. Other aesthetic improvements in the ward most importantly lighting is also impressive.
124. Staff feedback since returning to the ward has also been very positive.

THE NEW RHC – BUILT ENVIRONMENT/STANDALONE ISSUES

125. I have an awareness of room issues being raised by patients and families such as room temperature, blinds and televisions not working. The reporting process for issues on a ward or within a room is for the Senior Charge Nurse to report it to the relevant department, such as Facilities or Estates, who may invite a third-party contractor in to sort the matter, however it would depend on the issue and if it is time critical. For example, if there was a problem on a

ward that meant we could not take a burns patient, dialysis patient or it meant cancelling a bone marrow transplant then this would be escalated immediately.

126. With the issues on Ward 2A (Schiehallion) and Ward 6A (QEUH) the Estates reporting became daily with staff.

THE NEW HOSPITAL BUILDING – REFLECTIONS

127. Generally, from an operational perspective, the building serves its core purpose. It has got enough beds, it has got enough theatres, it has got enough outpatient space, it delivers day-to-day care very successfully. It is a successful hospital.

128. If I could go back in time and plan another hospital, of course there are certain things that you would wish you had done differently, that you probably did not know at the time. For example, I do think more could have been done around staff amenities such as creche, gym, changing rooms etc. We could also benefit from expanded meeting space. These are all areas we are looking at as part of ongoing modernisation program for the build including learning from other centres such as in Utrecht and Helsinki. An exciting piece of work we are developing is in paediatric theatres.

129. I am in conclusion truly sorry for the experiences and sad outcomes for some of the children and families attending RHC since it opened.

130. I was not aware of any issues faced as we moved into the hospital and started services. In particular, this relates to water supply and any other environmental challenge of the new build.

131. I worked very hard with our clinical team and management colleagues to manage the various situations we faced with trying to minimize disruption to service, gain positive experience/outcome for children, young people and families, and maintain staff morale as best we could. I walk through Ward

2A/2B as part of my routine visibility. On these walkabouts I talk to staff and parents and I am thankful to see generally smiling faces as they carry out their daily function often still in challenging circumstance. No one will ever forget the difficult and extremely harrowing experiences faced and nor should we. However, a successful platform has been built to move forward for a service and hospital we can be proud of.

COMMUNICATION

132. The general approach to communication with patients and families was an opt-in approach. Families were offered the opportunity to speak to senior management, infection control and clinicians if there were any concerns. This could be a general invitation based on concerns or queries they had on what was happening. This might be triggered by concerns at what was being experienced at ward/outpatient level or what they were reading in the media. Following an IMT any patient with an infection would again be offered a similar meeting.
133. Various families took this up with attendance regularly from myself, Dr Teresa Inkster and the child's consultant (often Professor Gibson). Over time, routine briefings were offered to all inpatient families with normally Jen Rodgers (Chief Nurse) and myself with the Senior Charge Nurse visiting to hand over a written brief and answer any questions. These included updates on the commission of a Public Inquiry and feedback on media stories circulating including TV programs such as the BBC Disclosure programme.
134. Separate communication and briefings were issued to staff as well as group Q&A sessions with again Jen Rodger's and I attending. The offer of individual one to one meetings was also made.
135. Through the work of the Communication groups set up under NHS Board escalation by Scottish Government there were various briefings circulated to all patients and families, to those who had used paediatric haematology

oncology services prior to the move to the new hospital and those who had used the service after the move.

136. I was not part of the communication groups set up under escalation although I am aware Jen Rodgers was. I did work very closely with key stakeholders involved in these groups to implement their recommendations/instructions.
137. The process for statements to patients, families and staff say triggered following an IMT meeting were drafted by the Corporate Communications team. Clinical staff including those in Infection Prevention Control would be involved in working with the Communications team. Final sign off in any statement was at Corporate level.
138. Often the draft to sign off for statements took up many iterations over a number of hours. This could be challenging when looking to issue thereafter to parents and staff. Very often, the final copy would have a quote from clinical staff such as Dr Inkster.
139. Generally parents accepted the briefings without question. However there would be questions for example on why we had filters when stating the water was safe. The same questions were asked around the provision of antibiotics/prophylaxis.
140. Specific times when staff and parent/family briefings were issued included:
- Update on infection control arrangements following IMTs.
 - Ward moves.
 - Closure to new admissions.
 - Media exposure.
 - Work of the Communications Group.
 - Public Inquiries.
 - Reinforcement of hospital safety – drinking and using water to wash etc.

141. The written briefs associated with infection control matters would try to explain the issue, update on what was happening to resolve incidents and how further communications would follow during incident. An example might be explanation of estates work to be carried out on a ward.
142. It was always particularly challenging when there was no working hypothesis as to what was causing infection or how they would be resolved. It was also challenging when you were answering questions on infection which were not water related but parents and families would revert to this as the issue/ cause.
143. Briefings would be predominantly for staff and patients, parents and families associated with the paediatric haematology oncology service. I am aware however that wider teams were updated through briefings and if necessary Q&A sessions held. Specific examples were on Ward 3C and renal team and theatres/ general surgery.
144. Generally, the rest of the hospital remained interested but unaffected by what was happening. Core Brief was the mechanism for corporate updates to wider staff groups. There is a standard approach to the production and issue of Core Brief. It is prepared by the Corporate Communications team, signed off by the Chief Executive and then sent out by email but with a hard copy provided. Topics for Core Brief could be general updates, positive news stories as well as updates on matters like the Public Inquiry and media speculation.
145. There would be an occasional parent who would indicate they did not want to attend for treatment (e.g. surgery). In these situations I or a colleague would speak to parent, explain situation and normally resolve it amicably.
146. I have been shown an email chain (**A39123941 - Email chain between nurses, communications and facilities regarding ward 3C being under the impression that tap water was not appropriate for consumption and subject "RE: Herald Article" dated 28 January 2019 to 30 January 2019 – Bundle 5 – Page 254**). I have been directed to one of the emails in this chain

where Prof Tom Steele states “Can you review beforehand? Less is more here with Ben.” I have been asked what Prof Tom Steele meant by this. I do not recall this communication. My view was the message needed to be concise and reinforce that the water was safe.

147. I have been provided with a briefing that was issued to parents, (**A39123907 - Briefing for parents and carers regarding the measures taken to enhance the ward and subject “150819 update briefing for Parents in” dated 16 August 2019 – Bundle 5 – Page 338**) and (**A39123898 - Briefing for parents and carers regarding the work that has taken place to the ward and subject “060919 Update Briefing for Parents” dated 6 September 2019 – Bundle 5 – Page 345**). It was important that again we fully communicated with parents and families, to ensure that they were aware of decisions taken and why. Equally that we were actively listening to challenges faced and trying to improve the temporary stay.
148. I have been provided with another media statement, (**A39123908 Media Statement titled “NHS GREATER GLASGOW AND CLYDE RESPONSE” by NHS Greater Glasgow and Clyde Health Board dated 9 September 2019 – Bundle 5 – Page 361**).
149. Effective communication is an important key performance indicator with staff and patients, families and parents. We have an active SharePoint site. We use technology to support local team briefs. We promote visibility with regular walkabouts and Q&A sessions as well as aforementioned technology use.
150. The quality of briefings is important – what we say, how we present it, how we encourage involvement. All are essential ingredients to success.
151. A number of new exciting opportunities are routinely presenting. Effective generation and handling of patient feedback is critical to what we do. Learning from experience is vital. Especially in use of Care Opinion, complaints etc.

152. Generally I was confident in what I was communicating and how I was doing it. I am not aware of any direct criticism aimed at me in this regard. I do recall one incident which was very emotionally challenging with a particular patient/parent. I often reflect on this.

LETTER FROM THE CHIEF NURSING OFFICER (CNO) TO CHIEF EXECUTIVES - FEBRUARY 2019

153. I have been shown a copy of a letter dated 11 February 2019, which was sent from the Chief Nursing Officer to Infection Control Managers, HAI Leads, Chief Executive Officers and NHS Scotland (**A32248275 – Chief Nursing Office letter – HAI Guidance – Bundle 6 – Page 44**).

154. Within this letter it states: “If you have a red HIIAT, or an amber HIIAT, score at your IMT, and if a proactive media statement is planned, then this has got to be undertaken in consultation with HPS and the Scottish Government.”

155. My understanding is this was standard practice anyway and followed by the NHS Board/ delegated to the IMT chair and the wider communications team. But the IPC team/ Communications team would be able to speak to this better.

SPECIFIC EVENT - COMMUNICATION - MEETING WITH JOHN CUDDIHY – AUGUST 2019

156. Professor Cuddihy’s daughter Molly had contracted Mycobacterium chelonae in 2018. She was considered a case of interest alongside the patients under incident review. Dr Inkster had explained this in an earlier meeting with Professor Cuddihy noting that it was based on national infection control standards.

157. In 2019 there was an IMT commissioned which included review of a potential second case of Mycobacterium Chelonae. I attended the IMT dated 25 June 2019 (**A36591622 - Incident Management Team Meeting minutes dated 25 June 2019 – Bundle 1 – Page 325**). The intention was to update Professor

Cuddihy of this development and this is reflected in the minutes of this meeting.

158. My understanding was that later it was confirmed the cases were not related.
- 159.** I have been shown an email dated 17 July 2019. **(A34364657 - Email from Professor Cuddihy to Jamie Redfern dated 17 July 2019 – Bundle 6 – Page 55).** This email clearly highlights the Professor's unhappiness about not being formally updated of this second case. The unhappiness is clearly directed to me.
- 160.** Following receipt of the email, I responded on 25 July 2019 and set up a meeting to speak to Professor Cuddihy. **(A34364663 - Email from Jamie Redfern to Professor Cuddihy dated 25 July 2019 – Bundle 6 – Page 58).**
161. I was instructed by Mr Hill not to speak to Professor Cuddihy as was Dr Inkster. My understanding was that communication with him was being managed through another route. I therefore took no further action and went on holiday. On return I received said email from Professor Cuddihy expressing concern and anger that I had not spoken to him about the second case. After discussions with various parties it was agreed that Dr Inkster and I should meet with Professor Cuddihy. At this meeting (8 August 2019) Dr Inkster informed Professor Cuddihy why no conversations/update had taken place. He was very unhappy and the meeting closed. Thereafter I had no further dialogue with Professor Cuddihy on the matter.
162. I do have a very good relationship with Professor Cuddihy since then. This has been built up through working with him, his daughter and his wife plus another family. This has focussed on fund raising and service redesign for an aged 8-12 appropriate room in Ward 2A, but now extended to other service areas including Ward 2B and paediatric intensive care.

163. I would refer again to parent questions on the use of prophylaxis. Again, concern that these drugs were being issued when the NHS Board were declaring the water as safe. Dr Conor Doherty (Immunology and Infectious Diseases doctor) reviewed our use of prophylaxis and made various changes. The agreed framework he established was used by the consultants moving forward.

THE CLOSED FACEBOOK GROUP – SEPTEMBER 2019

164. The Closed Facebook page was set up by NHS GGC.

165. Those joining had to answer two questions to be admitted to the group:

- Are you a parent of child associated with Ward 2a?
- Will you agree to accept the rules of the Group?

166. The intention of the group was to improve communication to families and patients, particularly those who were not attending the hospital regularly. Initially anything posted had to be approved by Professor Craig White/Scottish Government. This included posts relating to the BBC Disclosure Programme in June 2020. This would extend to briefings, but also good news stories associated with the service.

167. Administration was initially by Corporate Communications. However, it is now the responsibility of the W&CD.

168. As mentioned previously, the hospital now actively uses social media to promote positive news stories about staff and patients. This is across a number of platforms and has been and continues to be very successful.

CONCLUSIONS

169. I have been asked a number of questions about the challenges we faced and changes we have made to address them. There are I would say many of both. I will try to summarise these.

Challenges

170. Since the opening of the Royal Hospital for Children there have been many challenges we have had to manage with staff working in haematology oncology but also wider paediatric areas as well as patients and families attending the hospital.
171. These have been covered in this statement above and include:
- Impact of moving ward and infection prevention control measures.
 - Scrutiny on infection prevention control practice including hand hygiene.
 - Extended patient concerns on infections.
 - Media reporting especially around focus of the various case reviews.
 - Impact of the Public Inquiry.
172. As a local management team, we tried to manage all of this through close links, visibility and question and answer sessions with staff. This was and has been very challenging.
173. It is certainly very difficult to describe such a challenge in words of this kind.
174. In relation to staff communication, it was very important to us that staff understood what was happening. Whether this has been updates following IMTs, to what is happening with the Public Inquiry, to hospital moves they have had to experience. It was especially important they were confident that no one was blaming them. It was important they could at ward level answer patient and family questions or know where to seek answers from.
175. Visibility is important to us as a local management team. By that I mean all staff know who we are and what our values are. That as well as organised drop in sessions we have when walking through wards chatting to staff and patients, they know they can ask us questions at any time. An open door policy between staff and management is in place.

176. Empowerment of local nurses, allied health professionals and medical leadership was important and we have tried to ensure they are involved in all key decision making.
177. Protecting staff morale and well being will always remain very important to us. The experiences of hospital infections then COVID has tested this.
178. It has been a daily challenge for a significant period of time. I do think again reinforcing the point of openness and effective communication and visibility have been essential in us managing this.
179. At the same time, it was important we improved communication with families. There was recognition that the NHS Board had been criticised on its communication strategy/plan during the infection periods with parents and families. My experience through the infection periods is that the organisation has been constantly learning from its experience.
180. Again visibility and openness with good communication has been essential. Walkabouts with the local management team and speaking to parents has been a positive step forward. Encouraging Q&A on any issues parents and families were experiencing vital. We have worked very hard in encouraging patient feedback whether positive or negative. Using such feedback as a mechanism for reviewing and developing service delivery. Care Opinion is an excellent tool for this as is formal complaints management.
181. We have a close relationship with the Corporate Patient Engagement team and look to sample targeted views of the patients and parents/families we serve. This work is ongoing and we believe evolving because of our commitment to it and opportunities technology continues to present.
182. Not only to staff working in haematology oncology but the wider hospital, a number of media stories have been very challenging. The senior management team with clinical teams have worked very hard to create a powerful narrative of all the good things the hospital has and continues to do/achieve. Social

media has become a very powerful tool in progressing this strategy. As has wider technology.

183. The purposes of this not to forget the significant challenges the hospital and patients families have faced since opening, but to encourage and motivate the way forward and learning from them.

184. We strive for everyone to feel part of a successful hospital team. Sharing staff and patient stories is very emotive and powerful in achieving this. We feel a positive staff group is easily identified by patients and families. We believe this is reassuring to them, better partnership working and ultimately a lead to enhanced safety and better outcome. Through all this we have on occasion had to reassure families that it is safe to attend the hospital. Growing this culture makes that easier.

185. I mentioned joy in the workplace and positivity as crucial outcomes of empathetic leadership. Of course we have and continue to have day to day challenges. We do not get everything correct all the time. However, we are very much as I have also said before, very much a learning organisation.

186. This then leads to the third focus we seek to progress. That is the education and development of our staff but linked very closely to innovation and a developing culture of excellence. Whether that be improvement in the physical environment, or the use of technology to redesign of how we do things. We work had to continue building our reputation to make paediatrics and neonatology in Glasgow an attractive place to work and a safe place for patients to be treated.

187. There is nothing more positive than walking around our hospitals, speaking to staff, sharing our ideas, focussing on our successes and learning from experience. Also though hearing from them about the challenges they face. The concerns they have. The importance of listening is so important.

Infection Prevention Control

188. The high level of ongoing frequency of infection prevention control monitoring that continues to this day and the excellent results that the team achieves is consistently recognised.
189. I always remember when Gaynor Evans visited the ward. She was the senior nurse who was part of the Case Note Review Panel and was from the Department of Health, and was the leading nurse for Infection Control in NHS England. Gaynor Evans visited Ward 6A (QEUH) and on carrying out checks at Ward 6A she told us that the ward was spotless and immaculate. I believe the efforts of the team at that time were outstanding and this was also recognised when the Independent Review team visited.
190. Complementing this there are great relationships across Service, Estates, Facilities, Infection Prevention Control and Management. This is reflected in the escalation and reporting of any issue no matter how minor affecting practice on the ward and solutions sought/ implemented. It is clear to me these relationships were always in place but somehow enhanced through the collective experiences faced.
191. There are many visiting clinical teams to the haematology oncology wards. These teams are consistently reminded of the high performance levels for IPC expected when in the ward, with staff fully empowered to challenge wherever they see any degree of concern.
192. The pride shown in IPC performance is clear and encouraging for ongoing staff morale. Some staff query why inspections continue noting consistently high performing results. This is a reasonable question to ask.
193. My personal response is always for us/them to showcase the high levels of performance to themselves and others.
194. I think this is an important point on which to conclude my statement.

195. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Dr Alistair Hart

Personal Details

1. My name is Alistair James Hart. I am a Consultant Haematologist at the Queen Elizabeth University Hospital (“QEUH”) and I am employed by NHS Greater Glasgow and Clyde.

Education

2. In 1999, I graduated with a Bachelor of Medical Science, which is an intercalated degree at the University of Nottingham within Medicine. In 2001, I gained my Bachelor of Medicine and my Bachelor of Surgery. In 2005, I became a Member of the Royal College of Physicians (MRCP). In 2009 I became a Fellow of the Royal College of Pathologists (FRCPath).

Current Role and Specialism

3. In my role as Consultant Haematologist in South Glasgow, I work between the New Victoria Hospital and the QEUH.
4. A lot of my work is focused on malignant haematology, particularly lymphoma and other lymphopietic disorders. I also have an interest in thrombosis and diagnostic haematology, which involves laboratory haematology. My day-to-day work is a mixture of clinic work, attending ward rounds, laboratory sessions and liaison work, which is clinical work with patients around the hospital as requested by other specialities.
5. My clinical line manager is Dr Mike Leach. Dr Leach is a Consultant Haematologist and Clinical Director. His line manager is Dr David Dodds, Chief of Medicine for Regional Services.

6. A lot of my out-patient work is at the New Victoria Hospital. All of my in-patient work and the vast majority of my laboratory work is at the QEUH. My time split between the hospitals varies week by week but I would roughly estimate that my time is split evenly in each hospital.
7. My role involves looking after patients: making the diagnosis, developing the management plan and helping the patients through their management plan and then following up with the patients and dealing with complications or, in terms of the malignant disorders, relapses of their condition. I am my patients' diagnostician and I am the person who develops and implements, to a degree, the management plan for my patients. The management plan for each patient is based on the condition that we have diagnosed.

Patient Cohort

8. The patient group I treat are patients with haematology issues who are generally based in South Glasgow. Within that, I see and treat lymphoma patients.
9. There are lots of different types of white blood cells. There are neutrophils that fight infection; eosinophils which deal with allergy, and then there are lymphocytes. Lymphocytes fight off viruses and look after the functioning of the immune system. I specialise in conditions where the lymphocytes are behaving in a malignant manner, and that is either the lymphocytes are becoming lymphomas or chronic leukaemia. Lymphoproliferative disorders are the particular area of malignant haematology that I look after. If the lymphocyte disorder is acute leukaemia, then the patient is treated by a different team.
10. My patient group is always adults. In Glasgow, teenagers and young adults with a malignant haematological diagnosis will often be looked after by Dr Nick Heaney until they are 23 years old, but that is not absolute. I will see patients between the age of 14-18 years but this is infrequent, and they would not usually stay with us for chemotherapy. Up to the age of 23 years, the patients

have the option of whether they want to go to the teenage and young adult unit or whether they stay within the normal adult haematology team. Certainly, in terms of active chemotherapy, I do not – with the odd exception – treat patients under the age of 18 years old.

11. I will occasionally receive a request from a General Practitioner for advice in relation to an older teenager, around 15 to 17 years old. However, we do not provide inpatient care for this group.

Patient Considerations

12. In respect of whether there are any particular vulnerabilities that require to be managed in my patient group, it is difficult to answer because there is a broad range of haematology disorders. For many people there are no specific issues, but for those people with lymphomas, particularly requiring treatment, there are probably two aspects. One is the psychosocial aspect; everybody finds lymphoma quite a stressful thing to have to live and deal with. Second, relevant for the purposes of the Inquiry, is that I worry whether the patients are going to be at an increased risk of infection.
13. It is not necessarily that the patients are going to be at an increased risk of infections, but it is considered, particularly if working up towards treatment. For example, during the COVID pandemic, whether a patient requires to be on the shielding list.
14. In the past, generally until we were actually giving treatment, infection was not anything that we usually would focus on, but it has become more prominent from a COVID and a shielding point of view.
15. I have a lot of patients with lymphoma who are just monitored and there is no real significant increased risk of infections.

Area(s)/Unit(s)of Work

16. In the QEUH, I am based in two buildings. My office is based on the first floor of the new laboratory building. The laboratory building is a series of laboratory rooms and a series of office rooms on the first floor. I also work in the hospital, Ward 4C, where there is a series of ten en-suite patient rooms, a small reception area and a doctor's office through a set of double-doors, situated just outside the ward.
17. My patients are located in Ward 4C. Ward 4C is a shared ward with renal transplant. We have ten single rooms with beds adjacent to each other. After the haematology rooms, the renal transplant rooms are located round the top of the ward.

Key features within the patient ward(s)

18. Pre-COVID, we did not restrict visitors, other than the usual advice, "Make sure you are well if you are going to visit someone in hospital."
19. A significant change from the old Southern General Hospital (SGH) to the QEUH is that all patients are in single rooms. In the old SGH it could be difficult to ensure everyone you wanted to be in a single room was, but that is no longer an issue at the QEUH.
20. Beyond single rooms, the other day to day consideration from an infection control perspective was whether in addition to standard hand hygiene there was a need for aprons and gloves to be worn, or even masks, when seeing a particular patient. This was pre-COVID.
21. The other features, which I will comment on in more detail later in my statement, is around air quality and positive pressures in the single rooms. Currently we have portable HEPA filter units within the ward to assist with this.

Standard Operating Procedures and Protocols

22. There are a number of Standard Operating Procedures (SOPs) and protocols that we use across haematology, bone marrow transplants and for B7 at the Beatson West of Scotland Cancer Centre (“the Beatson”). B7 is a haematology ward at the Beatson. I am not responsible for writing any of the Standard Operating Procedures (SOPs) and protocols that we use.
23. The SOPs that we use are very similar to those I came across in my training in Edinburgh, Fife, Sheffield and Cornwall. From my point of view, there is nothing controversial in the SOPs and protocols.

Antimicrobial Prophylaxis Policy

24. I am aware that there was a haematology antimicrobial policy at the SGH. Wherever I have worked around the UK in training there is always a haematology antimicrobial policy in place. As I have stated above, I have worked from Sheffield to Cornwall and from Edinburgh to Glasgow, and the haematology antimicrobial policy is something that every haematology unit has in place.
25. The antimicrobial policies across the UK are largely the same. There is sometimes variation depending on the local bacterial resistance patterns. There are certain areas in the UK where certain bacteria have developed a resistance to a certain antibiotic and so the hospital's policy would reflect this. I am not aware that there is a specific issue in Glasgow. Generally, what we use is what is used where I have worked elsewhere in the country, so although the policies are not identical there is only minor variation.
26. Haematology units involved in stem cell transplantation are now JACIE accredited. The policies and protocols are part of a whole quality management system, which is required for JACIE accreditation.

27. The person who administers and runs the quality management system for the service, in terms of the running and keeping the policies up to date, is now Michelle Barratt. They do not take responsibility for what is actually in the policies. Each policy has an author and at least one reviewer.
28. The antimicrobial policies do not include policy relating to communication or duty of candour. The antimicrobial policies are practical: 'If patient has Y, try and use X' and 'If they have Z, give them F'. There is always a caveat to be aware for side effects, allergies and interactions. Rather than the term protocol, guideline is probably the correct term.

Prophylactic Medication

29. As far as environmental organisms are concerned, Antimicrobial prophylaxis is used to prevent either the organisms within us or the, usually low pathogenic risk organisms in the environment causing infection. There are three main areas: there is antiviral prophylaxis, antifungal prophylaxis and antibacterial prophylaxis (which includes PCP prophylaxis).
30. For example, antiviral prophylaxis is most commonly Acyclovir to try and prevent reactivation of herpes simplex (cold sores) and chicken pox which can reactivate when someone is immunocompromised. There is an infection called PCP or Pneumocystis Jirovecii, depending on type of chemotherapy or transplants, patients require PCP Prophylaxis. 1st line for this is an oral drug called Cotrimoxazole administered on Monday, Wednesday and Friday, there are alternatives if a patient does not tolerate it. Antibacterial prophylaxis can be less straightforward but if required we would use Ciprofloxacin most frequently. However, this drug can precipitate out Clostridium difficile infections. There is always the concern that you could actually precipitate out a problem by using antibacterial prophylaxis and it is a risk benefit balance based around a patients underlying disease, the treatment used and there individual history of infections.

31. We have an Antifungal Policy, an Antibiotic Prophylaxis Policy, an Antiviral Policy as well as the Disease and Chemotherapy specific guidelines for the West of Scotland. I have no responsibility for the anti-microbial policies. These policies and guidelines set out levels of immunosuppression due to disease and treatment and the nature of the prophylaxis you will use. This is especially relevant to antifungals. One of the infections we worry most about in haematology patients is Aspergillus infections. Aspergillus is around us all the time and we have probably all got some Aspergillus in our lungs as we speak but the immunocompetent body will deal with it.

32. When we reduce your immune system, you can become colonised and then a fungal infection, such as Aspergillus can develop. We use antifungal prophylaxis to try to prevent this. Some antifungals will just target yeast because yeast-causing oral thrush is quite common. In patients who are not severely immunocompromised by their disease and treatment, we might use Fluconazole. Whereas some patients require Posaconazole, which is the newest of the antifungal agents and is the most effective while being comparatively well tolerated.

33. There can, however, be side effects to any medication. As discussed above for Ciprofloxacin selecting out resistant organisms as an example. With antifungals, there is less of a concern around selection pressures, although that is possible. The bigger concern around the antifungal drugs are toxicity side-effects. Upset to people's livers is common, so we can have very abnormal liver function tests which would be caused by the antifungals. It is not uncommon that we have to stop the antifungals for this reason. If you have short intervals off the medication, that is fine, again as is often the case it is weighing up the risks and benefits. If we require a longer time off the antifungal prophylaxis or feel unable to retry a particular medication then we look at putting patients on an alternative drug. For example an alternative to Posaconazole is drug called Ambisome, however, as mentioned, all drugs come with their own side effects. Ambisome in particular can affect the kidneys and patients can end up losing a lot of their normal salts. Ending up with very low potassium and magnesium levels, requiring intravenous replacement. All

the drugs come with their own problems. Often patients are asymptomatic of the side effects, it is blood tests that tell us it is happening first, allowing us to make changes as required.

34. The policies are non-controversial. They are a very similar to ones that are used around the world. Unfortunately, there are always going to be infections in haematology patients receiving chemotherapy, no matter how many measures are put in place.
35. Within haematology, everyone is on prophylactic medication as appropriate to the protocol that we follow. There are some people whose chemotherapy means they will not require anything and will be managed as outpatients, then there will be people whose chemotherapy means they are on multiple agents for many months spending a lot of that time as an inpatient.

Communication: Prophylaxis

36. Medical staff communicate why prophylaxis is being prescribed to patients and families. We explain that the patient will go onto X, Y and Z drugs to try to prevent them from getting infections but even with that, they will most likely still get infections. It is also explained that being on these drugs does not mean that they will not get infections. Management did not provide us with any guidance on how to speak to patients and families, but this is not expected as this is standard good medical practice.
37. Information would be tailored for patients and families. This would be tailored around what they ask you and often how unwell the patient is. Often the more unwell a patient is, the less in-depth discussions will be with them because they are feeling dreadful and not wanting long discussions.

CHRONOLOGY OF EVENTS

Pre-opening of the RHC, QEUH and Schiehallion Unit

38. I came into post in 2011. The planning for the design of the hospital had long been sorted before I came into post. I did not contribute or input into the planning or design of the hospital.
39. I believe previously that Dr Sharp and Dr Hood inputted into the requirements for the haematology ward.

General views on the opening of RHC, QEUH and Schiehallion Unit

40. My initial general impression of the new hospital, because of where we had come from, was that it was amazing. We came from the old SGH and it was not fit for purpose at all. It had leaky windows that rattled and the hospital was generally dishevelled. The new hospital was transformational. The rooms for the patients were amazing because, although we did have some single rooms in the old SGH, they were small and, at times, you could hardly walk round the bed. Whereas now we had huge rooms, all of them en-suite, all of them with a nice big window.
41. One concern of moving was the fact that we were losing bays for patients, because sometimes patients really bond with each other in these bays, which was very lovely. However, having bays could also be difficult, especially if we wanted to keep people who were very immunocompromised away from other people, so at times it would become a balancing act of moving people around constantly. Whereas now, everyone has a single room and the patients quite like that privacy. Often the in-patients are feeling so poorly they are not necessarily wanting to interact with people that they do not know. Everyone thought the new hospital was nice, particularly the patients that moved across from the old ward.
42. My views now of the hospital are largely the same. I think the accommodation that the patients have, in terms of the large single rooms and en-suite with a big window is really nice for the patients. It is easier to look after the patients, particularly if they are unwell. There is space for a relative to stay over with them. Obviously COVID has made that slightly harder but it is not uncommon

that we have relatives able to stay over with patients, which is lovely. I think the accommodation for the patients in terms of the physical space is good.

43. For haematology patients, the single biggest infection control measure is single rooms which help to stop the spread of infection, which was an issue in shared bays.
44. The environment through the hospital, is very good and I think it is much better for haematology patients than we had previously. A recurring problem, I understand, with new build hospitals, which I know was the case at University College Hospital in London, is that there is not actually enough space for the staff to do their work. This is an issue because though people think that the work is just directly with patients, and this is the best bit of the job, but we also need space to be ordering the tests, writing notes etc. This is the same for doctors, nurses and pharmacists and often space feels limited for that. It would be nice to do more from an out-patient, ambulatory care perspective. Areas that I think could be improved, from a ward design point of view, would be more space for people to do their work. It would also be a positive change if we could have a relative's room where we could sit down and speak to relatives. We do have access to a room, but it is not directly in the ward.
45. One big issue arising from moving to the new hospital is the number of beds available to us. We dropped from fourteen to ten beds and it has been extremely challenging. We have such demand on those beds. We have patients throughout the hospital, who would be best placed on a haematology ward. It is very frustrating, but we are aware there is a UK shortage of beds.

Common Issues (Interior of building)

46. There were some issues within the building. For example, there are encased blinds, which were important from an infection control point of view, but they can be difficult to fix if they break as they are not easily accessible. This means that patients are sitting in a room with a closed blind, which is not the best. It should be fixed the same day it breaks, but I certainly know that there has been

rooms where it has been several days until it is fixed. I appreciate it is because the maintenance team are very busy.

47. I am not aware of there being any issues with the patient's TVs on the ward. A lot of patients seem to prefer using their laptops and iPads. Technology has really come a long way from a patient point of view. Our patients can be stuck in those rooms for six weeks, so IT has transformed things.
48. I think in general, most of the patients get on okay with the Wi-Fi and they seem content with it. I suspect that as more and more people are streaming movies and things like that, it might not be able to keep up, but at the moment it seems ok.
49. I am not aware of any issues with plug points or battery packs.
50. In regard to the ward entry system, there is the odd door that breaks but to be fair, the doors are usually fixed pretty quickly.
51. There has been the odd sink and shower that has not drained properly or become blocked, and I am aware of flooding from the showers, but not the specific details. I could not put a specific time or frequency on it. I am not aware of any sewage leaks.

Common Issues (Exterior of building)

52. I recall that there was a period of time that the cladding on the hospital was being fixed. There was a bit that they were going to have to replace because of concerns around fire safety following Grenfell. I only know what was in the Core Brief, which was similar to what was in the press. I cannot recall any specific communication between myself and staff with the patients about this. The Core Brief is a document that is issued to staff by email most days and you have to check it because sometimes there is something important in it.
53. I am not aware of any issues with the roof or play park.

Sewage Works and Odour

54. With regard to the smell, the main hospital does not seem to smell inside but the lab building smells terribly because it is right next to part of the sewage works. I am very good friends with someone who works for Scottish Water and apparently the lab building is right next to the smelliest bit of the whole sewage plant. It is particularly bad on a warm day with little wind. You can smell it outside, I do not smell it inside the main hospital.
55. I had concerns about the smell but I think it was a concern shared by lots of people. However, that is all from non-experts so none of us know the answer in terms of how concerned we should be from an infection perspective. Infection Control are the experts and would defer to them.
56. We do not smell it in Ward 4C. I would assume that Infection Control would flag if there was actually a genuine issue.

Issues with Built Hospital Environment

Water Supply

57. When I moved to the QEUH in 2015, I had no concerns in respect of the safety of the water. I had no concerns when the hospital first opened because one assumes that other people have checked and signed off on the water system.
58. I cannot remember specifically the date when the concerns with the water supply started, or precise timelines and how the issues were communicated
59. I think it was at the Incident Management Team meetings (IMTs) that more information was given about the issue. I did attend some of the IMTs. My lasting impression was that everything happened very quickly. I cannot recall many specific details reliably with the passage of time.

Infection Risk: water supply

60. There was a concern that the water supply posed an additional risk of infection. What is difficult with our population of patients is that they are so immunocompromised that they are frequently having infections. That is why they are in hospital. That is the nature of a haematology in-patient and has been the case wherever I have worked throughout the UK. Haematology patients often have infections, not infrequently with atypical organisms. That is the expected course of their condition and treatment effects.
61. My understanding was that an unusual organism, *Cupriavidus*, had been found in the water and that this organism could cause infections particularly in immunocompromised patients. When you hear of an unusual organism that is affecting a patient, you turn to Microbiology for further guidance.
62. I do not think we really knew what the risk was from the water supply. In terms of the response from an infection control perspective, I think the response seemed appropriate. I think it was quite difficult to be able to say to patients and families what the risk was because we did not know the risk ourselves. The risk was still being worked out. Filters were placed on taps whilst the risk was being worked out. The remedial actions were recommended from Infection Control. It was for Infection Control and Facilities to work out the risk and make it right.

Remedial Measures

63. One of the remedial measures to deal with this issue was to put filters on the taps. I cannot recall the timescale between the first IMT relating to the issue with the water and the filters being introduced into Ward 4C. I cannot recall when the meetings took place but I do recall people talking about the taps, how there had been a huge procurement exercise and very specialist taps bought in for the hospital. We had a very short period, though I know the children's ward had a longer period, where we could not use the taps and the showers in the rooms.

64. I was not involved in the decision-making for the implementation of filters on the taps. I would not expect to be part of the decision-making. I do not have any expertise in water-borne pathogens, infection control, water purification or engineering of plumbing systems
65. I believe the IMTs had the necessary experts present investigating the issue. I know Teresa Inkster quite well. I know Teresa also understands water-borne pathogens, which is always very reassuring. There were people from Facilities and other departments. In retrospect, I do wonder if there should also have been external experts. I am not necessarily saying that external people would have known better, but that they would have brought an independence to the investigation.

IMT – Water issues - 2018

66. My role at the IMT was largely to listen and to pass back the information to the rest of the clinical team i.e. what was happening and how far colleagues have got in working out the problem. I am also present at the meetings to answer any questions specifically about haematology patients. There was no written policy that outlined the remit of my role at the IMTs.
67. As I was the Clinical Lead for the South Sector, that usually meant I was present at these types of meetings, but I cannot recall how many IMTs I actually attended. If I was away, or elsewhere, it would have been one of my colleagues, who attended. I know Dr Ian Macdonald went to some of the meetings.
68. I did attend more than one IMT. I know I attended the first meeting for the water issue, and that was a very well-attended meeting. I recall attending a meeting where the attendance was so large that I was standing at the back of the room. I recall I knew Gary Jenkins, who was Director for Regional Services at the time attended.

69. I never have a concern about expressing myself at a meeting. I did not have any concerns with the culture at the meetings either. Teresa Inkster was a very good chair and it always felt like an open forum.

IMT - 21 March 2018 (A36690549 – Water Incident Ward 2A RHC IMT Minutes – Bundle 1 – Page 75)

70. I was present at this meeting which was in relation to the water incident. In terms of what I can remember, the meetings with the different incidents blur into one. What I can remember is there was a real driving desire to work out what was going on and work out how we make it better or stop it. I think the message I would take away from them, was that people were taking this seriously. There were a lot of people involved at senior level. I also took from it that the most significant potential issues were coming from the children's hospital.
71. I would relay the information from the meeting to other staff members. I would visit the ward and see the nurse in charge and explain what had been discussed at the meeting. I would also catch-up with medical colleagues and let them know, what had been discussed and what was being taken forward.

Current Position – Water Issues

72. I have been told that the water that comes out of the taps, with the filters and chlorine dioxide system, is safe. I do not know whether we could take the filters off the taps or not. I would rely on our infection control colleagues around this area.

Impact of water issues

73. I cannot remember if patients needed to use bottled water to wash. I do not remember it being a particularly long problem, it might have been just a couple of days. I know our situation was a lot better in the adult wards than the children's. I know the children's hospital had terrible problems.

74. I was aware there were deep clean sessions and something being done to taps and plumbing, I cannot remember specifics.

Communication: Water Supply

Patients

75. With communication, the water issue was quite straightforward because all of a sudden, the taps all had filters on them. The patients were told what was going on. It was the nurses, particularly the ward sister, who went round to tell patients that there is a concern about the water quality from the taps and people would be coming into their rooms to fit filters on the taps, which should hopefully keep the water safe.
76. One of the things I have reflected upon is that in some ways, it is reassuring that once people were aware there was a problem action to help was put in place. It all seemed to be happening quite quickly.
77. Patients were told that they could not use the taps as there were filters going to be fitted to them. This was because there were bugs in the water and people were trying to figure out why. It was an easy thing for us to communicate because we just shared what we knew. People very rarely asked any more details and we did not have any more details at the stage when the water concerns were raised. In terms of there being a question around candour, it was straightforward: workmen were appearing and putting things on the taps. It was one of those things where you could not help but discuss with patients.
78. At the time, I knew Cupriavidus had been found and that is what we told patients. We also told them that there were concerns as to how the organism was getting into the water supply and that the filters were there to help keep the water safe for them so that the taps could be used. I think that if patients asked, we responded that we did not know where the organism was coming from, but people were trying to work that out, which is what we knew at the time.

79. We recognised that obviously we were a high risk ward due to the nature of our patients, so we knew that we were a priority ward to get all the tap filters fitted. Due to the complexity of these hospitals, these buildings, there are always going to be issues. But the issues were acted on pretty quickly which probably provided a bit of reassurance to patients and staff.
80. I cannot remember any bad reactions from patients or families. We often know them very well, they will have been back and forward onto the ward over often long periods of time. We have a pretty good rapport with our patient population. You just go in tell them, yes this is a thing but this is what is being done about it, there will be someone coming into your room and fitting a filter on your tap. They would respond that they were glad something is being done about it.
81. With communication more generally, people always want more. There is a point where it becomes unrealistic and unnecessary. I think my position is that at a point in time, you always want people to come round, explain exactly what is going on, spend a load of time with everybody. But in reality, what I actually really want them to be doing is working out what the solution should be, getting that in place and letting us know that there is a solution and it has been put in place. There is a finite number of staff and I want those staff to actually be delivering the important bit, which is getting patients safe. Communication is always nice but, fundamentally, I want the patients safe and we can communicate afterwards.
82. I am not aware of any instructions or information that has come from anyone external to the NHS Glasgow Greater and Clyde (GGC), for example the Scottish Government sending any information.

Ventilation

83. When we moved over from the SGH to the new hospital, in terms of the quality of air within the ward, I had a very simplistic view of what we, meaning myself and other haematologist consultants, wanted for patients, which was HEPA

filtration and positive pressure ventilation for the patients to reduce the chances of infection, particularly fungal infections. My expectation came from being told through my training as a Senior House Officer onwards that HEPA filtration and positive pressure ventilation was what was needed. However, I had never had a ventilation engineer come to me and explain in detail the specific reasons for HEPA filtration and positive pressure ventilation compared to alternatives.

84. When we first moved hospitals in 2015, we were initially in ward 4B. I had no detailed knowledge of what the ventilation system was in Ward 4B, other than we thought it was safe for our patients and we were guided by Infection Control on this. When we were initially moving from Ward 4B to ward 4C we had some concerns around air pressures and air exchanges.
85. Around the time that we were moving from ward 4B to ward 4C, Professor Brian Jones, who was the Head of Microbiology, came and spoke to the haematology team advising that we should be prescribing Posaconazole to our patients. I think this was all part of the discussions about our move to 4C. It was because we did not have the levels of ventilation we should of ideally had, and this was a way of trying to address that. Posaconazole is a more effective fungal prophylaxis. We were delighted as this was a much better tolerated drug.
86. We were concerned about the ventilation, but were guided by expert microbiology advice and, if they felt it was acceptable that the most at risk patients could be there if they were taking Posaconazole, then we were accepting of this.
87. I am also aware that, in the background, there were also discussions between Infection Control and Estates, builders etc, as to whether the ventilation setup in ward 4B and 4C could be improved. We were not involved in those discussions. It was a question of risk and how safe the ward could be.

Events around the movement between wards 4B and ward 4C

88. As I have said, since 2015, adult haemato-oncology patients have been housed between ward 4B and 4C in single patient rooms with en-suites. When the hospital first opened, we were originally in ward 4B, but a few months later, we were moved to 4C to allow the Bone Marrow Transplant Unit (BMT) to move from the Beatson to the QEUH. I understand that this was because the Beatson was not an appropriate site for a Transplant Unit in terms of JACIE accreditation. However, very quickly after they moved in, there were issues with ward 4B for those BMT patients and they went back to the Beatson site, to wards B8 and B9. We stayed in 4C while work was carried out in ward 4B and then, at some point we moved into ward 4B for a period of time. I cannot recall whether that was to allow work to be done in ward 4C. Once all the work was carried out, in June 2018, the BMT Unit moved back from the Beatson into ward 4B and we went back to ward 4C.
89. There were a lot of questions being asked about what the ventilation setup was in 4B, we knew it was not what we had originally anticipated.
90. I am aware that there were things that needed to be fixed in ward 4B including the ventilation system, to see if it could be improved. That could not be done with transplant patients there, it creates risk for them as there would be dust etc. There was nowhere else to accommodate them in the QEUH so they moved back to the Beatson.
91. I think that the remedial works have improved the ventilation system.
92. The adult haemato-oncology patients are now housed in 4C and the BMT patients on 4B. I am happy with where they are now housed, although, as I have said, it would be better if we had more beds available and a room we could speak to relatives in.
93. In terms of the ventilation system, ward 4C is as filtered as it can be. The only increase in filtration that could occur is if HEPA filtration is installed and I have

been told that cannot be done. We have portable HEPA filters. We also have a higher degree of positive pressure in our rooms compared to standard rooms in the hospital.

94. As a result of all of the above, I have learned that ventilation is not straightforward. I have discovered that hospital ventilation systems is a very specialised field. There is an entire area of specialist ventilation and engineering knowledge that I had no appreciation of. Even within the specialist community of hospital ventilation engineers there is debate and there is not always a consensus as to what is the best way to provide safe ventilation for immunocompromised patients. There is debate around air exchanges and levels of positive pressure. This came to my attention from attending a meeting which involved ventilation experts, including Darryl Conner.
95. I would defer to experts in this field with regards how correct guidelines are and latest research and engineering developments in this area.

Ventilation Meeting

96. The most detailed meeting I can recall about ventilation was a meeting relating to the HSE enforcement notice for Ward 4C. I cannot recall the exact date of the meeting. I believe the meeting was called after the HSE had served its enforcement notice and the purpose was to discuss what the HSE were asking for; whether the request was possible and how quickly it could be delivered. I believe Scott Davidson chaired the meeting. I cannot recall who attended the meeting. I believe there were around 12 people in attendance. I recall in attendance that there were three medics; Scott Davidson, as Chair in his role as Associate Director; Mike Leach as Clinical Director; 2 managers from within haematology; representatives from Facilities and Estates, including engineering and ventilation representatives; and myself. I understood my role at the meeting was to provide clinical context on the immunocompromised, vulnerable patients situated within Ward 4C. The ventilation representative was Darryl Conner, who was employed by the NHS GGC. My perception of Darryl was that he was very clearly 'on the ball'. I had not met Darryl prior to the meeting and I would not have expected to have met him previously.

97. I recall that Darryl advised that he had been and looked at our old ward, Ward 24 in the old SGH, where I thought we had HEPA filtration and positive pressure. He informed that he investigated the roof space and looked at all the units for Ward 24, and he advised the old ward was not sealed and it did not have effective HEPA filtration and the positive pressure that we thought it had.
98. It was at this meeting, we started to get an insight into the fact that the ventilation requirements were not as simple as we thought. It was also at this meeting we discovered that there had been work done on ward 4C in respect of ventilation, in that air filtration to the ward had been improved and they had increased the pressures in the rooms. Prior to this meeting, I was not aware that this work had been done.
99. I think the meeting provided an opportunity for the representatives to explain their decision making regarding HEPA filters and pressure rates. The meeting made us aware of what the subtleties and complexities were.
100. I know at one point the Facilities/Estates department had to do remedial works to the chilled beams.
101. We were aware that the team were coming to seal the ceilings. I now appreciate that the work they were doing was increasing the positive pressures in the rooms, because if the room is sealed then the pressure in the room increases. The only way the air can get out is by pushing through and against the door so that then there is less ingress into the room from the corridors. I cannot recall when the ceilings were sealed.

Current Situation: Ventilation

102. We have been told by Infection Control that the ward is safe for our patients. We have not seen an increase in fungal infections, it is fungal infections we worry most about, so I am comfortable from that point of view.

103. Our patients have continued to get infections and occasionally with atypical organisms. This is usual in an immunocompromised haematology population of patients.
104. There were several points in time: when there was *Cryptococcus* found in the water; the *Cryptococcus*; and the HSE investigation, when there were concerns raised by staff and patients that patients could be at risk of infection because of the water supply and ventilation. We all had an increased concern at these times and had to consider how best to manage the situation. From a medical perspective we were double-checking that everyone is on as good a prophylaxis as they can be.
105. Generally speaking, we are trying to keep people in hospital less and less. There is international research showing that patients do better being at home than in hospital. In hospital you are going to be seen by many people, nurses, doctors, cleaners, caterers and therapists coming in. In your own home, you probably have your nearest and dearest and that is it. You eat better and sleep better, all things we know help people's immune systems.
106. Certainly, when I was training in Edinburgh, there was a move to managing more patients as out-patients, who you would have kept in hospital previously due to being immunocompromised. Interestingly, they did see fewer infections, the patients did not lose as much weight and psychologically they were coping much better. This is what we have moved to, but COVID has disrupted that. We had moved to what is called out-patient pancytopenia care. Usually, a patient would have chemotherapy that would lower their immune system significantly for three, four, five weeks and we keep them in hospital for those weeks. We have moved towards keeping them as out-patients with them coming up to the day unit three times a week. The literature and practice is now that these people should be at home. Actually, these patients do better at home with no HEPA filtration, where your water is the same as everybody else drinks and you no positive pressure or frequent air exchanges.

107. There was a concern that the patients have to be kept in the hospital to be kept safe, whereas that is probably not the case for the majority.
108. Because there is a risk of infection due to their condition, if we are considering whether a patient can go home, there are a number of considerations. The patient has to live with somebody, they have to have their own transport and be within 30/40 minute travel distance of the hospital as they have to be able to get into hospital and get their antibiotics quickly if they do spike a temperature.

Communication: Ventilation

Patients

109. There was point in time when we were given portable HEPA filters for ward 4C. This might have been after the Cryptococcus incident, or it might have been around the time of the HSE enforcement notice, I cannot say with certainty. At this time, we communicated with the patients and the staff on the ward. Like with the tap filters, it was fairly obvious that these mobile HEPA filter units, which are not small, were being wheeled in and put in all the patient rooms. We told patients that they were to, hopefully, improve the quality of the air in the rooms and reduce the risk of infection. Initially, when patients were being admitted, we would point out the HEPA filters and tell them why they were there. What is interesting is that we do not communicate that specifically to patients now, same with the tap filters, in the same way that previously we would not have communicated anything specifically about the environment of the room. Though we would always answer any questions raised about the water filters or HEPA filters.

Staff

110. When the HEPA filters were brought onto the ward, they would not have gone unnoticed by staff. Because they are HEPA filters, the staff would know that this was in relation to the airquality.

111. I would expect the responsibility for communications in relation to remedial or upgrade work from Facilities and Estates to fall within each department and not from a higher Board level: the organisation is too big for that and such responsibilities are delegated as it would not be practical otherwise.

Cryptococcus: December 2018/January 2019

112.

[REDACTED]

113. As I stated earlier, our patient population often get all sorts of atypical infections which in of themselves we do not tend to worry about too much. When our patient was found to have Cryptococcus, we appreciated that we had not seen such an infection for sometime, but we did not think a huge amount of it. It was not until it was then flagged that there was a second case, which was [REDACTED], that we actually thought there could be a problem with the environment. I did not know much about the [REDACTED] case as I was not involved with it.

114. Whenever you have got any infection, one of the things you want from the microbiology lab is for them to identify the organism, which they cannot always do, a lot of our cultures are negative. If they do identify an organism, we expect them to tell us what organism it is and then to tell us the sensitivities of the organisms to antimicrobials. That was one of the things that was done with the

Cryptococcus: the microbiologists identified it and then they did further test to work out its sensitivities to specific antifungal drugs.

Cryptococcus IMT

115. Infection Control became involved in the two Cryptococcus infections and there was an IMT convened. I recall attending at least one IMT. They were always very well attended. I found these meetings helpful from my perspective because it was where we found out what was happening and what the latest thinking was. I was then able to cascade that information back to colleagues on the ward.
116. There were concerns that the infections were linked to the hospital environment and, specifically, the ventilation system. There were discussions at the IMTs about whether the infection could have come from pigeon droppings because Cryptococcus is known to be in pigeon droppings. I think what became quite apparent was that there were more significant issues with the children's ward than there was with the adult wards. Cryptococcus is not an infection that is seen often, so the fact that there were two cases was a concern. Although there is the observation that you do not see a condition for seven years and then you see two of them in a week.
117. It was fascinating sitting in various meetings about Cryptococcus and listening to experts talk about it, but it turns out that we will never know whether it was the same type of Cryptococcus. If you look at a pigeon dropping there will not be just one type of Cryptococcus within that dropping, there will be hundreds of types, genetically speaking. So even if you genotype them, it would be extremely unlikely that they would be the same, but it does not mean that they are not from the same source.
118. At the time, I was concerned that there was a link between the Cryptococcus and the ventilation system. Now I do not know, after listening to experts discussing this in meetings. We have not had any further cases on Ward 4C which I think is of interest, in fact, it has been one solitary case in our adult haematology patients in seven years.

119. I am not convinced that there is a specific problem with regard to Cryptococcus in the hospital. That said, I am not saying that there is not, I think it is very difficult to know. I would defer to experts in infection control. I have listened to debate around this incident, but would not want to misquote anybody.

Communication: Cryptococcus

120. [REDACTED]
121. I did not receive advice from management in regards to what to say to patients and families about the infection risk at the time. It would be Infection Control who would give advice on this rather than management. There were uncertainties about whether there was an infection risk. I do recall that we were kept informed about what was happening at the Cryptococcus IMTs that I attended.
122. I do not think that issues were ever hidden. The issues were out there and were discussed with the family. Nothing was ever hidden because everyone wanted to find out what had happened. I never had the feeling that things were being brushed aside, I actually had the opposite view. I would say, quite positively, that people like Dr Teresa Inkster, were very focused on working out what was going on, but my impression was also that everyone really wanted to work out what was going on, whether there was a problem and what the solution would be. I never got the feeling that things were being swept under the carpet by other people sitting at the IMTs, everybody was wanting to do the best by the patients. There was never impression of anything less than that.

Cryptococcus Infection: Impact on Patients

123. Whether an infection impacts on patients treatment depends on the treatment intent. If you are treating someone with curative intent for something that is very aggressive, you will carry on, irrespective of infections. There is a risk to that but the risk is outweighed by the illness. Most of the infections occur post-chemotherapy. You have often given the chemotherapy and before the next cycle is due, that is when the infections occur. It does not necessarily interrupt the chemotherapy. This is different in more palliative situations or where the underlying disease is less aggressive.
124. If a person has an ongoing infection, then we will often postpone the chemotherapy, [REDACTED]
[REDACTED]
That is very much standard practice, particularly in a palliative situation.
125. We will want to get on top of the infection because that is what is making the patient feel unwell at that specific point in time. It is variable, but it is quite common that we often push a chemotherapy cycle back a week or we will miss a dose if someone is particularly unwell at that particular time. There can also be other side-effects from chemotherapy which might push back the chemotherapy cycle, such as significant vomiting or a significant rash.

Infections

126. Patients that I treat are often immunocompromised and are prone to infections. For haematology patients, we think a lot of infections come from within the patients. There are all the normal organisms that live within us and then when a patient's immune system is lowered, those organisms can cause problems. The classic example of this are mouth organisms. Another risk is the bowel. Organisms that are normally maintained within the bowel can cross over to the circulation because the chemotherapy drugs can cause inflammation in the bowel, and this causes problems because the immune system is suppressed.

127. Another potential source of infection are the central lines we use for patients. We use various different lines. There are cannulas, the little IV access lines which many people admitted to hospital have in. We tend not to use them very much in our patients because they are going to get so many cannulas we run out of veins. There are lines that we would use in an emergency situation, when we cannot easily insert a cannula, a central line, this is a line that goes into the neck, and is usually put in by our anaesthetist colleagues. Then there is a peripherally inserted central catheter (PICC) line, which is a long line usually going in somewhere on your arm and that is then fed in, usually the tip sits around your heart area and that can stay in for a long period of time. But it goes directly into the vein, there is no tunnel. The one that we like best is the Hickman line. That goes into one of the big blood vessels in the neck and then has a tunnel which comes out on the skin, so there is distance between it entering the blood stream and being in the outside world. There is also a port-a-cath, which is used by paediatrics. It is a tunnelled line but it is then left under the skin and you have to stick special needles in it from the outside.
128. All of the lines can get infected. The level of infection risk goes down as you go from the cannula through to the PICC line through to the Hickman line. It is very common that the lines will have to be removed at times because they have become infected and again, that is normal. That is what happens with Hickman lines and more so with PICC lines and even more with cannulas. One of the key things we tell patients about when they have the Hickman lines inserted is that they do carry a risk of infection and blood clots can form on them, but the alternative is endless cannulas and eventually they will run out of veins.
129. We can mitigate the risk of line infection. We only allow people who are line-trained to access the lines. I am not allowed to access the lines because I am not line-trained. There is a whole procedure that is done, in terms of sterile technique and cleaning the lines. If you are an out-patient and you are not needing a line on a daily basis, it needs to have line care performed on it each week, be that a PICC line or a Hickman line.

130. There are different risks in getting line infections. Some are asymptomatic. The patient is well and it is only because we have taken routine blood cultures from the line that show there is an organism. Other patients become extremely unwell and this can result in their death. We do our best to avoid this from happening, but occasionally that will be how a patient with a haematology malignancy will die. Thankfully that is very rare.
131. Patients can also catch infections from the environment which affect them because they do not have a functioning immune system. There are pathogens in the environment that would make anybody poorly. There are pathogens that would not normally make people poorly but would make significantly immunocompromised haematology patients poorly.
132. We advise patients, the majority of whom are at home on chemotherapy, that if someone is poorly, do not let them come and visit them. Equally we say, if you are going to visit someone, do not go and visit the person with the hacking cough. You stay away from known infected people. Within a hospital, in the past, we would have isolated people into single rooms, whereas in the QEUH you do not have to worry about that because it is all single rooms.

Infection Control

133. My understanding of the process of the Infection Control team is they have certain organisms that are flagged up to them, which then triggers an investigation. Clostridium difficile and Staphylococcus aureus line infections are organisms that trigger investigations and which are continually monitored. I am not involved in any Infection Control procedures other than following them, particularly hand hygiene procedure. Our main source of contact in relation to infections and organisms is through Microbiology, which then overlaps into Infection Control. We have a lot of involvement with Microbiology on a daily basis, sometimes multiple times a day.

Clinical Governance Group

134. I am part of the Clinical Governance Group for clinical haematology across the whole of GGC. In this group, we receive monitoring reports from Infection Control in relation to certain infections and if we start to have too many of those types of infections, then people, either from Infection Control or from Practice Development, will come in and investigate and look at the practice in an area to try and identify any specific issues. Haematology Practice Development Nurses cover clinical haematology within GGC.
135. The Clinical Governance Group is made up of charge nurses, senior pharmacy, clinical leads from the different sectors within GGC and from bone marrow transplants, the clinical director, lead nurse, clinical service manager, general manager, quality manager and practice development. The purpose of the group is to review incidents, review infection control data, look at training and sickness rates, and whether there are new policies/guidelines at a local, regional and national level and the impact of implementation and quality improvement projects. Infection Control feed into the Clinical Governance Group in the sense that if there are any concerns about infections, they would become involved.
136. When there were concerns about the water and then about the ventilation, the fact that these were happening were discussed at the Group. Infection Control were leading the investigations, including IMTs. The Clinical Governance Group meetings do not happen often enough to be able to respond to urgent outbreak situations. Members of the group would be involved closely with the IMT and infection control.

Cleanliness and hygiene

137. In regards to cleanliness and hygiene within the hospital, certainly since COVID there has been adequate resource and equipment. All the key bits of equipment on the ward for the minute to minute safety of the ward is there, but whether there is enough equipment behind the scenes, in terms of the ventilation systems, the water systems and whether they are properly resourced, staffed and maintained is another question and I cannot comment on that.

Cultural Issues

138. Although I had no concerns about the culture of the IMT meetings, I was concerned about Teresa Inkster from a well being perspective. I do not recall when this was. When the IMTs were ongoing, Teresa was clearly working extremely long stressful hours and she looked really strained. There was a few of us who noticed this and were concerned. I had a chat with her as a friend and asked if she was okay. She told me she was at the end of her tether and was close to just walking out. She felt that, due to the level of the potential problems, she was not getting the resource support from the hospital in terms of having enough staff to be fielding and dealing with all of the issues being raised at the IMTs. She felt her immediate non-medical managers were not being particularly supportive.
139. What she really was found difficult was in relation to one of the decisions about either moving or closing one of the paediatrics wards, I cannot remember which. That had been a decision taken at an IMT and then after that had all finished, which was early evening, Teresa was summoned to a meeting with extremely senior management and being told that she had to reverse that decision. I do not know who these people were. Teresa explained that the decision had been taken as an IMT and that she, as an individual, could not go against that. She felt she was having unreasonable pressure put on her, to the extent that she felt bullied. She told them she was governed by the GMC and could not go against what is viewed by her and her colleagues as the best course of action from an Infection Control point of view.
140. We then talked about what we could do so, with her knowledge, I rang up Jennifer Armstrong on her behalf and told her that Teresa felt she was being bullied by board-level management to reverse decisions taken by IMT. I also told her that Teresa did not have the resources she needed and she was not getting the support she needed. After that, I understand things got better for Teresa. I think Jennifer Armstrong had a word with her and she got more resource as well in terms of staffing to be able to cope. It did turn things around

for Teresa and I think people did listen to Jennifer Armstrong when she asked them to back off as she is the person who is the line manager for Infection Control. Within an organisation, it is the Medical Director that has that responsibility.

141. At the time I felt I had to do something to help Teresa. I was either going to drive her home and tell her not to come back into work or we were going to try and make it better. She wanted to make it better. Teresa wanted to keep people safe and she was wanting to do her job as Infection Control Lead. So I spoke to someone at the level that I thought was going to have the greatest impact. I had never met Jennifer Armstrong before this but she was very nice on the phone and very grateful for somebody flagging this up to her. Jennifer was very receptive and very supportive. I heard from another source that she was very impressed that I had been prepared to do that and very pleased that someone had done that. I was glad I called her, for Teresa.
142. It is a major undertaking to move a ward and you lose beds, and beds are precious resources and it creates a lot of distress for families and patients. It is a major thing to do and it is not unreasonable that concerns were raised by management about doing it.
143. I had never witnessed any inappropriate behaviour at the IMTs. I always felt the discussions at the IMT were very constructive and supportive.
144. I am not aware of a change in Chairperson for the IMTs.

Communication to Patients: Infection

145. There is a duty and desire to communicate with patients and families. However, we have to see that the patient is competent to receive information, which is not always the case. Often they are too unwell, or they are very sleepy, or sometimes delirious. If a patient is competent and they spike a temperature, we will tell them they have got an infection and we will explain we are going to start the antibiotics and tell them the name of the antibiotics. We explain the process; that we will take the cultures off them and see if we can find where the

infection is. We explain to them that often we cannot find out where the infection came from. As we wait for results from the lab, we will let the patient know each day if we have not got any culture results, or if we have some positive culture results. We will always tell the patients what organism has been grown from their cultures. We will also talk to them about whether it is an organism that we worry about or whether it is one that could just be a contaminant and may not really be the organism that is making them ill. Then we will monitor if they respond to the antibiotics and we will explain if their temperature has or has not settled. Often patients tell us that they are feeling better and we confirm the markers in their blood of infection are coming down and all is going well. Or it will be where they are still having temperatures and do not feel better. We then check if markers in their blood are improving or they are getting worse. If worse, we need to change the antibiotics as the infection is not being controlled.

146. The in-patients are seen on a daily basis and so they will be being communicated with every day.

Treatment

147. The communication through the stages of cancer is similar. We talk to the patient, explain to them what tests we will do to find out if it is cancer. If it is, we will explain whether they need treatment, what the treatment options are, and whether the treatment needs to be started immediately or not. Throughout the treatment we will keep the patient updated about whether it is working or not, explain what other options there are if it has not worked and explain to them if we are out of options. The patient is the key person, not the family, who are still important, but not as important as the patient in terms of who is communicated with. If a patient is unable to communicate with their family then we would always communicate with their next of kin, assuming the patient has previously consented to this. For key conversations around diagnosis and treatment plans the ideal is for the patient to be accompanied by family/friends as the patient desires.

Duty of Candour

148. Duty of candour is if something has gone wrong or we think something has gone wrong or even if there has been a near miss, then that needs to be conveyed to the people involved.
149. Communication is key when something goes wrong and we always take the very honest approach. It can be little things that go wrong. For example, at the moment, we have got a big problem with radiology reports coming through and we have got people coming up to see us and we actually do not have the results, even though we have been trying to chase it. That is a system going wrong and you apologise and you share the frustration because you know that radiology are frustrated that they cannot get the results out and we are frustrated because we have got a patient in front of us who desperately wants to know the results and we want to make a plan for them, so you apologise.
150. If it is something that you have individually done wrong, then you say sorry as soon as possible. It might not be immediately, but it should be at the next appropriate time you are seeing the patient. In my experience if you very quickly say sorry and explain, people are usually very accepting of that. They might be upset about it but they are usually grateful that you told them. That is now very much ingrained in medical practice and nursing practices. Experience teaches you that honesty is by far the best way to deal with anything that has gone wrong. It can sometimes be depending on how much you are seeing the person, it can be a week or two, in terms of out-patients or it can be the same day or within a couple of days for an in-patient.
151. I am not sure exactly where you need to start using the term “duty of candour” because there is what should be good care of an individual, which involves keeping them and who they choose to be kept informed, informed. You do not hide anything from a patient about their care.
152. One of the lovely things about my specialty is that we often really get to know the patients and their families, and that comes with the price that actually it is

always really sad when people die whom we have got to know. But that is part of the privilege of doing the job. And so, in respect of communication and duty of candour, we have relationships with my patients where we can just walk in tell them they have an infection.

153. For me, I think 'duty of candour' sounds a bit of a strange phrase. In reality, of course we are going to tell them they have got an infection, because that is what happens every week to our patients. Sometimes I will have a laugh with the patients about trying to pronounce some of the names of the organisms that are cultured from haematology patients. It would be almost strange to have a policy to tell them because, of course we are going to tell them.

154. I think there is a difference between an individual clinician's duty of candour and an organisational duty of candour. I think an individual's duty of candour is easier. I think that is straightforward. I suspect that at an organisational level, it becomes more difficult to work out at what point the duty of candour should kick in. Is it when there is a suspected problem, or is it once there is a known problem? If it is at the point where the problem is suspected and an investigation is being carried out, I am not so sure the duty of candour should kick in because all you are doing is creating doubt and problems in the system before the investigation finishes. If the outcome is that there is no issue, by that point you have probably caused a lot of distress/harm to people. It also breeds concerns that people are covering things up. I cannot tell you about the very top level, but I certainly know on the ward floor that there is no covering up of anything. I do not see how the Board could have been covering anything up either as all of the issue with the water and the Cryptococcus were public knowledge.

Raising concerns

155. If I had concerns in doing my job, about wrongdoing, failure or inadequacy in the hospital there are procedures in place. However, sometimes you do not want to because you know there is no solution. For example, recently we have had problems with A&E and patients being seen in a timely fashion. There is no

point in me raising that with A&E as it is a well-recognised situation that they are desperately trying to resolve. If it is something that you do not think people have an awareness of, then you raise it. I feel free to raise issues within the GGC framework.

The Media

156. Communication to staff by the GGC Management about the media was very rare. Sometimes at the IMTs, it would be said that 'something is coming out in the press this evening', but beyond that, very little.
157. I was annoyed with the organisation when my patient died and stories were in the press. One of the things my patient's family struggled with was that they never knew when something would appear in the press. There were times when they would turn on the TV and there would be something about their family member. The hospital's defence was that they often had very short notice themselves: they were told maybe with half an hour's notice that it was going to be on the six o'clock news. I appreciate that but I said to them, that, as soon as they heard something, someone from the press office should have been tasked with phoning the family straight away to let them know that there was going to be a story on the news that night. We should also have said that we would try and find out what the story was going to be about, if that is what the family wanted.
158. Even just that forewarning, that reaching out and making them feel that someone had their backs a little bit, would have made such a difference to them. I think it had been a year or after the death that I said this to Jonathan Best, the Chief Operating Officer who was at meeting with me and the family. He said it was something we could look into doing. This is something I feel we should have been doing it. It would have taken very little effort on our part but would have showed a bit of caring. We would not have been commenting on the story, just giving the family the heads up. Although it is not the hospital who is deciding what is going on the news, they were usually getting the heads up,

albeit with short notice, but they are probably the people that could best pass that on to the family.

159. I was not given any warning by GGC Management that the BBC documentary, was going out.

160. In general I was not aware of any communication between management and external bodies, such as Scottish Government.

Awareness of Patients and Families Evidence

161. I am aware that patients and families have given evidence to the Public Inquiry, but I have not read the patient and family evidence which was published in September 2021. [REDACTED]

[REDACTED]

[REDACTED]

Closing Statement

162. I have provided some information above in relation to my patient who died. My summary of what I think about the Inquiry in relation to that patient has two parts. There are absolutely valid and important questions about the build, construction, maintenance, and design of the hospital, which I think is extremely important. I am very supportive of that whole process. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

163. [REDACTED]

[REDACTED]

[REDACTED]

164. [REDACTED]

[REDACTED]

[REDACTED]. [REDACTED].
[REDACTED]. Questions investigating the building of the hospital and the commissioning of the hospital, which are important, are entirely separate from the treatment and outcome of my patient. I know the death of my patient was part of what flagged up the whole process, [REDACTED].
[REDACTED]. I feel the process has caused suffering for my patient's family. There has not been closure and they have not had a chance to properly grieve as there is continually a process, such as a review or an Inquiry, which comes along. [REDACTED].
[REDACTED]
[REDACTED] [REDACTED] [REDACTED]

165. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] what the infection has done has raised questions about how the hospital is built, maintained and all the other questions, which is very important.

166. My overall view of having now been part of all these various different discussions is that it has made me realise the complexity of building hospitals and the complexity of the engineering, the design and the plumbing and ventilation that you do not appreciate as a clinician. The overall engineering of these buildings is phenomenal and the complexity inherent in having so many people involved means that all you need is one person to not perform as expected and you have got a problem that can have tragic consequences.

167. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Jennifer Rodgers MBE

PERSONAL DETAILS

1. My name is Jennifer Rodgers. My current role is Deputy Nurse Director for Corporate and Community Services across NHS Greater Glasgow and Clyde Health Board (NHSGGC). I am based at the Board Headquarters at JB Russell House.
2. I provide strategic professional leadership to develop and support the delivery of the Board's objectives for nursing within NHSGGC's corporate and community services.
3. This position is within the Executive Nurse Director's Team. My line manager is the Executive Nurse Director, Professor Angela Wallace.

PROFESSIONAL BACKGROUND

4. I became a Student Nurse in March 1993 and qualified as a Registered Nurse in 1996.
5. I worked in various Staff Nurse roles, first in Glasgow, then Australia and New Zealand before returning again to Glasgow Yorkhill Hospital as an E Grade Staff Nurse. I later moved into a Senior Staff Nurse and then Senior Charge Nurse position within Paediatrics at the Royal Alexandra Hospital (RAH) in Paisley.
6. Following this, and on completion of the Scottish Patient Safety Fellowship, I undertook a wider role across NHSGGC Paediatrics and Neonates focussed

on Quality Improvement and patient safety at the Royal Hospital for Sick Children (RHSC) which at that time was situated at Yorkhill. It was during this time we designed and implemented a hospital safety huddle which was focused on safety, protection and flow. The huddle was successfully embedded in Yorkhill, and we then worked with colleagues across Scotland to share our approaches. We implemented various other improvement approaches during this time including utilising a 'What Matters to me' tool which I had previously introduced within the RAH paediatrics. This is a person centred approach asking children and families what matters to them as a standard part of care. Rather than focussing on what is the matter, we were flipping the perspective to instead ask what matters to patients and families. Children would draw a picture or write a list about what mattered most to them and then further discussions and care planning could be influenced by that. This was embedded across paediatrics and then adult settings.

7. I later become Lead Nurse prior to moving into the Chief Nurse role, covering all paediatric and neonatal nursing services across Greater Glasgow and Clyde.
8. In November 2020 I began my current role as Deputy Nurse Director, NHSGGC.
9. My professional academic qualifications are: MSc with Distinction; Nursing; BSc with Distinction; Health Studies; Advanced Paediatric and Neonatal Health Assessment with Distinction (Standalone module, M Level); Nurse Independent/Supplementary Prescriber (Standalone module, Level 9); and Diploma in Nursing.
10. I have undertaken a number of leadership and development programmes, these are detailed in my CV alongside further professional activities and awards.

WOMEN AND CHILDREN'S DIRECTORATE MANAGEMENT STRUCTURE

11. The senior management team for Women and Children's report to the Director of Women and Children's Services. The senior team include the Chief of Medicine, Chief Nurse, Director of Midwifery, Head of Finance, Head of HR, Organisational Development Lead, and the General Managers for Paediatrics, Obstetrics and Gynaecology.
12. My role within that structure was the Professional Lead for Nurses within hospital paediatrics and neonates. This included over 1000 registered nurses and around 300 healthcare support workers.
13. As Chief Nurse my line manager was the Director of Women and Children's Services, Kevin Hill. My professional lead was the Executive Nurse Director, Dr Margaret McGuire at the time, until August 2019 when a Deputy Nurse Director for Acute Services was appointed and my professional line switched to Angela O'Neill.
14. Professional clinical roles may have a direct line manager that is not a clinician, in which case they will also have a professional clinical lead. This is described in organisational structure charts by a solid line to the direct manager and a dotted line to the professional lead.
15. Given the size and scale of NHS GGC, the acute services are managed through a number of sectors and directorates. Each of these has its own director and senior management structure. The Women and Children's Directorate covers services for midwifery, gynaecology, hospital paediatrics and neonates.
16. The Director of Women and Children's Services reports to the Chief Operating Officer, which was Jonathan Best, now William Edwards. The Chief Operating

Officer reports to the Chief Executive, Jane Grant. The Executive Nurse Director also reports to the Chief Executive.

17. There are now two Deputy Nurse Directors in the Board, the Deputy Nurse Director for Acute Services and my new role as the Deputy Nurse Director for Corporate and Community Services.
18. In my current role, I provide professional leadership to the six Chief Nurses within the six Health and Social Care Partnerships across the GGC locality, which are Glasgow City, Inverclyde, Renfrewshire, East Renfrewshire, West Dunbartonshire and East Dunbartonshire as well as the corporate nursing team.

ROLE AS CHIEF NURSE

19. The Chief Nurse role spanned hospital paediatric and neonatal services across NHSGGC inclusive of a 256 bed tertiary paediatric centre, three neonatal units, two of which are level two, holding 50 and 28 cots, and the third a level three unit with 16 cots. The directorate also covers a range of national and regional paediatric and neonatal services including renal dialysis and transplant, ECMO (extracorporeal membrane oxygenation) and Cardiac surgery.
20. The Chief Nurse plays a key role in the planning and delivery of the strategic direction of the directorate as part of the Senior Management Team, informing and professionally influencing operational decision making. I provided visible, professional leadership to the nursing workforce.
21. I led and monitored nursing workforce planning within Hospital Paediatrics and Neonates ensuring application of workforce tools, national policy, principles of safe staffing legislation and ultimately the nurse staff plans to enable the delivery of safe, person centred and high quality care.

22. I worked to ensure that high standards of nursing care, professional governance and standards were met and matched to policy and professional principles through scrutiny, assurance and improvement in all areas of business. I would ensure that nurses were registered, complete revalidation and undertake appropriate education and training for their roles.
23. The Chief Nurse role did not have any direct reports, however I was Professional lead to four (latterly five) Lead Nurses.
24. In the context of my role, I am supporting and advising colleagues, including Director Kevin Hill, on professional nursing matters and aspects requiring consideration in any decision making.
25. My corporate responsibilities included Professional Lead for Person Centred Care and Chair of the Acute Child Protection Committee.
26. I provided support to the Executive Nurse Director and deputised for her as required.
27. The role included being part of the acute on-call executive director rota.

MEETINGS

28. The senior management team for the Women and Children's Directorate met informally every week and formally once a month.
29. Monthly Lead Nurse/Chief Nurse meetings were an open, safe space forum for professional issues.
30. There were regular one to one meetings between Lead Nurses and Senior Charge Nurses. Professional topics such as nursing assurance audits undertaken to monitor and continuously improve the delivery of safe, person-centred, effective high quality nursing care would be discussed at these meetings.

31. There was a further combined monthly meeting for the Senior Charge Nurses and this was chaired by the Lead Nurses. As Chief Nurse, I attended those meetings for particular agenda items and the Lead Nurses would update me on matters arising from the rest of the meeting.
32. Chief Nurses from all sectors and directorates met regularly for one to one meetings with the Executive Nurse Director and as a team to discuss professional business including care quality with the Executive Nurse Director.
33. Hospital paediatrics and neonates held a monthly infection control meeting which included Senior Charge Nurses, local Facilities and Estates. I chaired the group with the Lead Infection Prevention and Control Nurse for hospital paediatrics and Neonates. The group set to ensure that all areas were updated on policy changes, audit and inspections, any current/ emerging themes, shared learning and was also an opportunity for Senior Charge Nurses to raise issues and concerns.
34. The Infection Control Team would provide expert advice to clinical staff. They are subject experts in their field. I had good relationships with all the Lead Infection Prevention and Control Nurses for hospital paediatrics and neonates and worked with them very closely. I met with them at least every month as well as on a one-to-one basis to discuss any arising infection control issues. .
35. I attended a number of regular meetings as part of the Board's Governance Framework including: Women and Children's Clinical Governance Group; Child Protection Acute Group; and the Acute Infection Control Committee.
36. I would not be a standing member of NHSGGC Board level committees. However if requested, I would attend to present papers on a requested topic. For example, I presented a paper to the Board Infection Control Committee about the CLABSI (Central Line Associated Blood Stream Infection) quality improvement work.
37. Depending on the meeting, I could attend and give updates on behalf of hospital paediatrics and neonates. Equally, if there was information coming to

me from that meeting, I would go back and update my own local group as appropriate, so there would be feedback both ways. The majority of groups would work like that.

NEONATAL & PAEDIATRIC FACILITIES AT QEUH CAMPUS

38. The Royal Hospital for Children (RHC) is a 256-bed hospital. It is a national and regional centre for paediatrics services. In terms of regional, this means that children from the west of Scotland will utilise this service. National services are for the whole of Scotland. For example, any child in Scotland that requires a kidney transplant will come to the RHC.
39. The neonatal unit which is situated on the QEUH campus is one of the biggest in the UK. The unit is within the Maternity building, which is part of the retained estate and is not part of the new hospital buildings.
40. At the time I was Chief Nurse the RHC Outpatient Department saw around 100,000 children a year.

LAYOUT IN THE ROYAL HOSPITAL FOR CHILDREN (RHC)

41. I began working at the new RHC in September 2015. The offices of the senior management team were on the ground floor next to each other. We were a small team and all had good working relationships.
42. Also in the same area were the Clinical Service Managers, the Director of Midwifery and the Lead Nurses, so we were all easily accessible for each other.
43. The building has a beautiful atrium area. If you watch children walking in for the first time you would see their eyes light up, which was inspiring.

44. The families fed back that they really liked the single rooms. There were many more single rooms than in the old Yorkhill Hospital, and the parents liked that because it gave more privacy.
45. The rooms had en-suite bathrooms, whereas in the previous Yorkhill, the parents' bathroom would be shared between the whole ward. That was a big advantage for the families and carers who were staying.
46. The Medi-cinema is impressive and there is an added benefit to being co-located with the adult hospital in that we could run sessions for adults which was a service they did not previously have.
47. I felt that was important because there were some families where the adult would be in hospital for a long period of time, sometimes this would be at the end of their life. They could have a special movie session with their family in a 'what matters to you' approach.
48. The teddy hospital is incorporated into the main atrium, close to family support. Both are a great resource for families.
49. The Emergency Department design was also an improvement from Yorkhill. At Yorkhill there was a single entrance, meaning that if an ambulance arrived and a child was brought in, everybody would be sitting in the waiting room looking at the child and family as there was only one small corridor. In the new RHC ambulances arrive at their own specific entrance so privacy was enhanced. Also, the visibility of patients for clinical staff was improved in the design in the new RHC.
50. The resuscitation area is much larger in the RHC. It has four large resuscitation areas to accommodate all the equipment and staff required for a paediatric resuscitation or major trauma situation.

51. The majors and minors areas have staff bases in the middle and then all around them are the spaces for patients such that the clinical staff have excellent visibility at all times of all of the patients.
52. The live donor kidney transplant service also benefited. Live donors can often be from a child's parent. Previously, the parent would have had the operation in a different hospital and the kidney would then have to be transported across to Yorkhill. Now at RHC it is all done on the same site and the family are able to see each other more quickly following surgery. If, for example, the father is donating the kidney then the mother can go easily between both the child and the father, and the dad can come over and see the child when they are well enough.

RHC: BENEFITS OF THE NEW SCHIEHALLION UNIT

53. Benefits in the new RHC for the Schiehallion Unit included the TCT (Teenage Cancer Trust) area which previously was in a separate ward in Yorkhill to the paediatric haemato-oncology ward. Integrating these meant it was improved both for the young people and their families as well as the clinical team.
54. Single rooms were also an advantage for families' comfort and privacy. Previously there had been some shared rooms in the old Schiehallion.
55. There are more outdoor play areas in the new RHC than they had previously, so there is a much better scope at the new hospital for outside play for children and their siblings.

NURSING REPORTING STRUCTURES

56. The majority of registered nurses are Band 5 nurses, who provide care within the wards and departments. Band 6 nurses in acute services are Charge Nurses or deputies to the Senior Charge Nurses. The Senior Charge Nurse is a Band 7, similar to the old ward sister role. They are in charge of the overall management of their ward.

57. The haemato-oncology unit has more Band 6 nurses due to the level of acuity of their patients. Other areas will also have differing staff levels due to their acuity.
58. The Senior Charge Nurses report to the Lead Nurses. The Lead Nurse are Band 8A. Each Lead Nurses is responsible for their own areas, for example neonatal services.
59. The Lead Nurse reports to a Clinical Service Manager. There are two Clinical Service Managers in Paediatrics and Neonates.
60. Both Clinical Service Managers report to the General Manager who then reports to the Director.
61. From a professional perspective, as Chief Nurse, those Lead Nurses had a professional line to me.
62. Having worked as a Senior Charge Nurse and Lead Nurse previously, the communications between both your direct line manager and professional lead in my view worked well.
63. If there was a professional issue the Lead Nurses would escalate this to me. It was a small team and there would be good communication between operational and professional management.

NURSE STAFFING LEVELS AND RECRUITMENT:

64. When I started as Chief Nurse at the RHC on 7th September 2015, the hospital had only just moved in June that year and we changed from being a hospital that was around 30 per cent single rooms to having 80 per cent single rooms. This was more resource intensive for example in undertaking nursing observations and general duties.

65. It quickly became clear that we required additional nurse resource. To address this, I wrote an SBAR to the Executive Nurse Director, around October 2015. I worked with the workforce planners to look at the children's workforce.
66. At the time there was a national shortage of paediatric nurses, but we actively worked to recruit as many as possible within RHC. We were advertising widely. The issue was escalated through the Executive Nurse Director and that year in October 2015 a larger paediatric nurse student recruitment to universities was put in place. This meant that in October 2018, when these new nurses qualified, we would be in a better position. This was a challenging period for everyone in terms of being not able to recruit paediatric nurses.
67. When I first took on the role, it was identified there were staffing issues specifically in Wards 2C (Acute Receiving), Ward 3A (long term ventilation and neurosurgery), Ward 3B (surgery), and Ward 3C (renal and orthopaedics). Following the SBAR in October 2015, we maximised recruitment targeted to these four areas. This was supported by the Executive Nurse Director and the Director of Women and Children's.
68. Initially, Ward 2A was not specifically highlighted as an area of concern in terms of nursing workforce. However, this began to change with patients undergoing increasingly complex treatment regimens which often required more intensive nursing input. Alongside that, Ward 2A had a significant maternity leave pressure.
69. We use a triangulated approach to workforce planning. This involves utilising a workforce tool SCAMPS (Scottish Children's Acuity Measurement in Paediatric Settings), a validated tool for workforce planning within paediatrics, alongside professional judgement and quality measures.
70. Quality outcome measures will include data such as feedback/ complaints, pressure ulcers and Datix (e.g. medication errors).

71. Also considered in workforce planning is context, such as maternity leave, changes in service, whole time equivalent in post compared to budget, use of additional staffing, and percentage of planned absence allowance. This is calculated at 22.5 percent, with 1 percent factored for maternity leave. However, 2A had circa 5.5 percent maternity leave affecting staff availability. Following the issues coming to light we kept ward 2A's workforce closely under review and proactively recruited to the department.
72. As Chief Nurse, I would meet with Senior Charge Nurses, Lead Nurses and Operational managers to review their workforce together aiming to ensure it was fit for purpose.
73. Areas will roster their workforce matched to their activity as much as possible. For example, Ward 3B undertake cleft lip palate procedures on certain days, so they will put an additional nurse on those days. They will have good knowledge of what is required in their service and they will make sure their roster matches that.
74. On a day to day basis, there are a range of actions and mitigations in place should there be short term staffing pressures on a particular day.
75. This is escalated through the hospital safety huddles, workforce is central to the safety component of the huddle.
76. Each Senior Charge Nurse will make a Declaration of Safety at the huddle as to whether they are safe to start. If an area declared themselves not safe to start, the reasoning would be discussed and action taken to resolve it. This encourages a collective ownership of risk and to finding solutions.
77. Supplementary staffing is used in advance if staffing gaps are known about. This could be excess hours, staff bank and occasionally overtime or Agency.

INVOLVEMENT IN DESIGN AND BUILD OF RHC/QEUI: PRE-2015

78. I was not involved in the preplanning of the new hospital. I was also on maternity leave from October 2014 until my return in September 2015 so was not involved in the run up to, or the hospital move.
79. Prior to November 2012 I was based in the RAH children's ward which was not included in the move plans regards to Yorkhill. I therefore was not required to sign off ward drawings or plans.
80. I did visit the new hospital on one occasion prior to October 2014. It was very much a building site but the size and scale was very different to what we had at Yorkhill.
81. When I returned to work it was to the new hospital in September 2015.

PERIPHERAL ISSUES IN WARD 2A RHC: SEPTEMBER 2015

82. When I began working in the new building, I was aware there was a list of snagging issues, however I was not involved directly in discussions or managing any of the building / snagging repairs. I would not be able to describe the issues or programme of works.
83. From what I can remember I was not aware of any great impact on patients or families with the exception of the blinds. The blinds were cited as an issue and I recall operational and estates colleagues doing a programme of work to replace the blinds.
84. There was a period where if the blinds in patients' rooms did not work, the nurses, if able to, may have moved the family to a different room and request the blinds were fixed.
85. If anything impacted upon families, we would look to act on it and make sure that whatever the issue, it was reported to Estates. There is an online

reporting system called 'FM (Facilities Management) First' where nursing staff log issues into a system which then get picked up and addressed by Estates. Estates issues were generally not reported on to me in my role at the time.

CLABSI WORK – INFECTIONS

86. A central line is a plastic tube that goes into a major vein. Central lines pose an infection risk even in a relatively well person and you are at additional risk if you also have low immunity. Children with oncology conditions are more vulnerable to line infections as they also have low immunity and can be very ill from both their condition and treatment.
87. Children, simply due to their age and stage, may pose further risk of lines pulling or becoming contaminated for example children with nappies, or toddlers crawling around the floor, or pulling on their lines or not able to follow hand hygiene process.
88. Routinely we carried out audits in ward 2A/6A to ensure all staff were undertaking line care and infection control precautions properly.
89. We undertook additional, enhanced audit processes in the unit to ensure we were minimising any risks and nurses were accessing lines to best practice standards.
90. In 2016, there was a spike in line infections flagged to us by our Lead Nurse for infection control. It was thought to be attributed at the time to change of the type of central line from Bard to Vygon. Additional education was put in place and the issue seemed to resolve.
91. Subsequently the rate increased in early 2017, at that point the surgeon and I met and discussed adopting a quality improvement approach. We struggled to find data from comparable UK centres against which to benchmark our own data and so sought information from paediatric hospitals further afield. Mr

Bradnock, myself and others engaged with Cincinnati Children's Hospital who had undertaken a similar QI project.

92. Cincinnati Children's Hospital is widely recognised as one of the safest children's hospitals in the world. We held a conference call with them to discuss their published CLABSI QI work, and designed our quality improvement project based on their approaches.
93. We began working on improvements immediately and the project was presented at the Paediatric Quality Improvement group in March 2017. The focus was to reduce CLABSI rates within the paediatric haemato-oncology population. It would include all our haemato- oncology population with central lines that were inserted at RHC. This included outpatients and day-care patients as well as inpatients.
94. The first CLABSI QI meeting was May 2017. At that time, we had just started collecting the CLABSI rate, backdated to November 2014. Our median was 3.25 per thousand total line days.
95. It is important to have a denominator to enable us to track our own data improvement over time regardless of the actual and fluctuating number of patients included, also to benchmark with world centres and measure ourselves against the Cincinnati aim.
96. We generated a CLABSI graph for this population in order to track our position and improvement. At that time our data points were above the median.
97. CLABSI includes all types of microorganisms which cause line infections. The work was based on the CDC classification. A CLABSI is a primary bloodstream infection in a patient that had a central line, however, some blood stream infections (BSIs) are secondary to other sources other than the central line, e.g. mucositis that may not be easily recognised. A CLABSI is a laboratory confirmed bloodstream infection where a CVC is in place for ≥ 2

calendar days prior to a positive culture and is also in place the day of or day prior to culture and there are no other possible sources of infection. The CLABSI surveillance definition may overestimate the true incidence of CLABSI.

98. Mucositis is experienced in this population due to their treatment; children will get inflammation of their mouth and gastric tract. It is unpleasant and painful and can also lead to increased risk of infection.
99. The QI group comprised ward staff, senior charge nurse, surgeons, anaesthetists, intensivists, radiologists, oncologists, infection control nurses, nurse educators, Paediatric Oncology Outreach Nurse Specialist (POONS) managers and quality improvement experts.
100. Our aim was to reduce our CLABSI rate to the 'best in class' rate of Cincinnati's less than one per thousand line days. We agreed on four key work streams and we set out four subgroups to work on these. They were line insertion, line access and maintenance, staff education, patient and family education & engagement. Each group set out to review evidence based best practice for their topic and then devise tests of change to implement that best practice in our context. It was a very open forum, there was open challenge, any idea was welcome, that was the ethos of the group.
101. From a line insertion point of view, we adopted a closed theatre model, so only essential staff were allowed to be in that theatre for the line insertion, we also mandated that everybody would wear masks. Strict guidance was adopted to ensure patients were washed within 24 hours prior to the surgery. The line insertion bundle was updated and monitored. There was also a specific theatre line list commenced.
102. In terms of access and maintenance, the tissue viability nurse led a change of dressing to a superior product. We introduced port protector caps, which are alcohol impregnated caps which cover the needle free device at the end of the line. We had discussed this with Cincinnati, it was to mitigate the risks to lines

becoming contaminated. Staff and family training was undertaken regarding the caps.

103. We reviewed central line access, ensuring people were appropriately trained and using a non-touch technique. We held a session to discuss line access with the nursing team to enable open discussion regards to their view on the subject and the non-touch technique approach. Organisational Development chaired the session, we talked to the staff about practice, about what they thought, about any barriers, about what could be done to make things better. It was an open, safe space to try and delve down into the discussion. It was a positive session. We also ensured everyone had the right training for lines and supervision and support in accessing lines. We also looked at the number of times we accessed lines and looked to adopt strategies to minimise access.
104. In terms of staff education, this included education on how to use the port protector caps (introduced in August 2017) for all staff in 2A, 2B, theatres and CT, continued aseptic non-touch technique education, and continued infection control education. We also carried out central line care audits.
105. In terms of parent and family education, we undertook parent and patient engagement sessions on infection control practices and how to look after your child's line including the protector caps. This is important as families spend time at home whilst their children have central lines in place. New posters were designed and put in all the rooms.
106. This work started prior to any issues raised about water but the data and actions the group were taking did feed into subsequent IMTs.
107. The CLABSI rate started to drop as the interventions were implemented. There was a spike in March 2018, which was at the time of the IMT associated with the water. After that the data continued to improve.
108. The Medical Director, Dr Jennifer Armstrong, asked me to attend the Board Infection Control Committee (BICC) in November 2017 and presented a paper

on the CLABSI work. I returned to the BICC around May 2018 to provide a further update.

109. Several of us attempted to seek comparable UK data to benchmark our CLABSI data, via their UK networks. I did not receive responses to the requests I sent. Therefore, we maintained to work to the internationally acknowledged aim of less than one per 1000 line days.
110. Since the end of 2019 the median rate has been less than one per 1000 total lined days, this met our aim.

AUDIT

111. We had existing audit processes which were increased in frequency during this time. We were undertaking frequent line care audits, routine hand hygiene and also SICPs (Standard Infection Control Precautions) Audits carried out by the senior charge nurses in their own or a peer ward. These are usually 6 monthly but wards 2A/6A were undertaking them monthly. IPCAT (Infection Prevention and Control Audit Tool) audits are also part of a standard IPCT audit cycle across the board undertaken by the infection control team. These were unannounced and areas are audited on their infection control practices, hand hygiene, environment and staff knowledge. An action plan is generated with a timetable for actions to be completed and these are monitored. As Chief Nurse, a link to this information would be automatically sent to my email address. These would be followed up locally and also monitored through our formal Senior Management Team processes from the service perspective.
112. There were also Care Assurance Audits undertaken using our paediatric care assurance tool. These would be undertaken by Lead Nurses and peer Senior Charge Nurses and include focus on practice in areas including infection control, patient centred care, pain management, child protection, palliative care, food, fluid, and nutrition. The result will trigger an action plan and also the frequency of the next audit.

113. The Lead Nurses would provide me with a monthly update both in a one to one meeting and also when Care Assurance Audits were undertaken and improvement actions. This was formulated into a report for the wider nursing care assurance meeting I attended alongside Chief Nurses in the other sectors and directorate. The Senior Charge Nurses would also discuss this in their professional meeting to pick up shared learning and themes.
114. In summer 2017, Jamie Redfern and I completed a weekly update to the Medical Director, Jennifer Armstrong, at the end of each week. It included updates from 2A on infection control, service, Estates and Facilities. This was to ensure Jennifer had awareness of issues and actions, as she was the infection control executive lead. We received feedback from Jennifer about these reports, for example on 2 July she got back to me thanking me for the information. I also had acknowledgements from Kevin Hill and Sandra Devine.
115. The reports included a variety of information such as training updates, service updates, results of audits, Safe to Start position and information from Estates about physical repairs both required and completed. An example of an issue raised on one report was around 'clutter' in patient's rooms. A child and carer will essentially live in a single room for a long period of time so toys, clothes and personal belongings build up. We purchased additional units for the rooms to store people's belongings, and educated staff and families to ensure cleaning of the rooms could be undertaken.

CLADDING WORKS – 2017/2018

116. I was not involved in the cladding works as Chief Nurse. It was Estates and operationally led with IPC linked in. I recall the signage and the change of entrance. Estates and Infection Control teams would be able to talk about that in more detail.

CONCERNS RELATING TO THE WATER SUPPLY - MARCH 2018

117. I first became aware of the Lead Infection Control Doctor's (LICD) concerns around the water in 2A on, 1 March 2018. I remember this clearly as it coincided with the snowstorm on, 28 February 2018. A number of us stayed in the hospital overnight into, 1 March 2018 to ensure we managed the staffing and other challenges brought about by people not being able to travel to and from the hospital.
118. On that day, I was the only member of the children's senior management team onsite as others were unable to travel to work due to the weather conditions.
119. About 1 p.m. that day, I was informed by Teresa Inkster there was an issue with the water, *Cupriavidus* had been isolated in water testing.
120. In the hospital, water is routinely tested as part of legionella monitoring, but Teresa had found this through undertaking some specific tests due to a case of infection she was investigating. She said we must stop immunocompromised patients in 2A being exposed to the water, so we agreed on a plan to enact that that day. We achieved this under her instruction within a few hours.
121. We discussed this by phone. I recall the contingency plan we put in place. We agreed that I would send her an email afterwards with the points we had discussed, which I did. I have a copy of it, the email is timed at 13:55 on the 1 March 2018, here is what I said:
122. "Following on from our phone call, we have agreed the following actions to be taken today:
- (1) Stop patients using showers. Parents, carers are okay to use showers;
 - (2) If staff/patients' families wash hands in sink, they must use hand gel afterwards;
 - (3) Use bottled water for washing and brushing teeth;
 - (4) If no bottled water for brushing teeth, do a dry brush (although we did have bottled water at the time so this wasn't an issue);

- (5) Ian Powrie is linking with the company DMA to arrange Silver Hydrogen Peroxide dosing as soon as possible.
- (6) Sinks / showers can be used 2-4 hours after dosing.
- (7) Sinks in treatment and prep areas are ok to use.
- (8) Await information on potential to use an outlet which has tested negative.
- (9) Tests are underway to find the source”.

The email noted that there is no current risk to healthy staff / families but we are being cautious for patients.

123. These were the initial measures put in place. Teresa then emailed me back saying: “Thanks, Jen. Agree all below. I will clarify with the estates re two-to-four-hour period post dosing.” I have then replied “Thanks Teresa. Kevin has contacted Comms.”
124. There were limited people on all sites that day, however the actions were triggered as noted. The Infection Control Lead Nurse was communicating actions and plans with various teams including consultants and estates teams. The Paediatric Lead Nurse worked to update and support the ward staff and families. We will have updated people in terms of the situation and measures being taken. At that point the view was that this would be a case of dosing the water to resolve.
125. We take subject expertise advice from infection control and Teresa was the lead doctor on the Board for infection control. Teresa informed us of the risk and action required; my part alongside the wider team including estates and facilities was in making sure we were putting those risk mitigations in place.
126. The next day on 2 March 2018, there was an IMT meeting held.

IMT MEETING - 2 MARCH 2018

(A36690451 - Incident Management Meeting Minute, dated 2 March 2018, relating to Cupriavidus bacteraemia and Water Dosing – Bundle 1 – Page 54)

127. I attended the Incident Team Management Team meeting on 2 March 2018. My role within the IMT is professional nurse leadership, so I would be present to input to the IMT from a nursing service position and to support any team actions. I would also be there to support the nurses in ensuring everything was in place that should be in terms of what the IMT was discussing. I was also there as part of the SMT and to relay information to the relevant directors.
128. I was always aware of other people's roles at IMTs, introductions were always made. Even if there was one person there who was not familiar with the group, we would all do introductions, so it would be clear from the introductions what everyone's role was at that IMT.
129. I had attended IMTs before for various outbreaks including for example, diarrhoea and vomiting bugs as it would be appropriate to have an IMT when a number of children in an area develop norovirus, rotavirus or astrovirus or similar infections.
130. The IMT meeting on 2 March 2018 was the first IMT I attended in terms of the water.
131. Everyone around the table was doing their best to resolve the incident as quickly as possible with the patients at the centre of that decision making. This is the experience I have had with all IMTs, people around the table contribute to the solutions from their different areas of expertise.
132. This particular IMT was very focussed, it was managed as well as I think it could have been given the circumstances. We moved through actions as quickly as we could, and you will see from the papers that there were many of actions undertaken at that time.
133. There is an action in the 2 March IMT minutes accredited to Teresa and me which says, "Create staff and patient information." At this point, Teresa would most likely have written the brief and I may have added to it.

IMT MEETING – 9 MARCH 2018

(A36690458 - Incident Management Meeting Minute, dated 9 March 2018, relating to Water Taps in Ward 2A – Bundle 1 – Page 60)

134. There is an entry on the IMT from 9 March 2018 which records me asking Facilities to contact other health boards with other similar high risk patients to consider what taps they use. Infection Control took the lead on that with Facilities.
135. During the course of the IMTs, Teresa, as IMT chair, contacted people who she recognised as being international experts such as Peter Hoffman and others. There was a proactive attempt to ask, 'Who knows about this in the world? Who's been through this situation before? Who can help us?' that was the sense of the IMTs.
136. I cannot specifically say in what way these people helped, as I was not directly liaising with them. Teresa or the infection control team would be best to ask about the microbiology and credibility of the input received. In terms of HPS, they attended all the meetings from early to mid-March, they regularly inputted as was appropriate.
137. HPS inputted to the IMTs as the national experts. They led the debrief for the water incident which was helpful for the team. Later, they supported the 'Review of NHSGGC paediatric haemato-oncology data' in October 2019, which was also helpful.

IMT MEETING – 12 MARCH 2018

(A36690457 - Incident Management Meeting Minute, dated 12 March 2018, relating to Water Incident in Ward 2A – Bundle 1 – Page 63)

138. At the IMT Meeting on 12 March 2018 it is noted that portable handwashing sinks were being brought onto ward 2A.

139. The direction we were given from our LICD was to stop exposure to water for this vulnerable population. In stopping this exposure portable sinks were one of the agreed actions.
140. This was to meet the needs of children and families in providing warm water whilst keeping everyone safe, ensuring they were not exposed to the mains water. The practicalities of the portable sinks were challenging.
141. The sinks took up space within the room, however they provided a water supply for the families in their rooms for washing and brushing teeth. While not ideal, this was a balance of risk deemed to be appropriate by the IMT, mitigating against what our IMT Chair was clearly articulating was a bigger risk. Once the filters were installed and testing confirmed the water (from point of use filters) met the appropriate standard, we were able to remove the portable sinks and resume use of sinks with point of use filters on taps.
142. During this period we rostered an additional nurse to specifically communicate with everybody, families, staff, and communication through Estates, as we had so many different activities and work going on. This was helpful and acknowledged in the HPS Debrief. Nurses in this role would have changed over time, it would not have been the same nurse every day because they tend to work 12-hour shifts, three days or four in a week, so we would have tried to have kept this as consistent as possible.

IMT MEETING - 29 May 2018

(A36706508 - Incident Management Meeting Minute, dated 29 May 2018, relating to *Enterobacter cloacae* in Ward 2A – Bundle 1 – Page 91)

143. I attended an IMT on 29 May 2018. Reading the minutes of this meeting, I see it is noted that, “Some discussion took place around the environment of Ward 2A and the restrictions of the design. SD queried progress of finding an alternative room for the treatment room bed currently in the prep room. JR advised that she has discussed this with Jamie Redfern and finding a solution to the problem involved a larger scale investment and movement of some internal ward services. JR will continue to chase this.”

144. This relates to the treatment bed being in the same room as where the nurses prepared medication. This area was not frequently used for patients, however it should have been located in an entirely separate room. Discussions had been ongoing and I had escalated the issue to the operational General Manager requesting a review based on this being a potential IPC issue. Operational management, the Lead Infection Control Nurse and the Senior Charge Nurse did a walk round of the ward to seek a potential solution. We considered the pharmacy room, however it would require to move elsewhere within the ward. To enable this, larger scale work was required. Several room purposes would have to be relocated, which meant for example built in kit and cupboards, so would involve Estates work.
145. Whilst this was ongoing, mitigations were put in place including additional cleaning and that no-one in addition to those required used the room when a patient was there. This was addressed in the redesign of 2A; there are now separate rooms for prep and treatment.

IMT MEETING - 6 JUNE 2018

(A36690461 - Incident Management Meeting Minute, dated 6 June 2018, relating to Drain Measures in Ward 2A – Bundle 1 – Page 99)

146. Looking at the minutes for the IMT meeting on 6 June 2018, I can see it says, “HPS are keen to understand what the difference is between the new RHC and the old Yorkhill site. They will look at epidemiology of patients, staff, current policies in use. At the moment there is no scope of reference but HPS will be in contact with Great Ormond Street and Alderhay Hospital who deal with a similar patient population. Annette Rankin will write this up and give a copy to Dr Inkster who read over this for factual accuracy before being submitted to the government. Jamie Redfern and Jenn Rodgers have asked for a formal timeline and scope of this review from Annette Rankin.”
147. We will have asked for the scope and timeline so we would be able to undertake any associated actions required and to communicate with the relevant teams.

148. The IMT was closed on 21 June 2018.

SEPTEMBER 2018

149. Around 5 September 2018, IMTs were reconvened and had a focus on drains. This was not straightforward as drains by their purpose are not 'clean' and therefore it was challenging to interpret swab results and there was also no available guidance to help. This was more complicated than, for example, analysing water results as there would be an expectation to find bacteria in drains, e.g. we wash bacteria from our hands to prevent infection and by doing this the bacteria goes down the drain.

150. The drain IMT progressed through September, various actions were undertaken including chemical dosing of drains. By this point, there was growing anxiety and concern in the IMT given this had come soon after the water IMT.

151. The IMT group were grappling with questions such as 'Are children getting infections because of the environment? Are we doing enough? Are the things that we are doing working? If they are not working, what do we need to do?' That was when the conversation started around potentially moving wards.

IMT MEETING - 5 SEPTEMBER 2018

(A36629284 - Incident Management Meeting Minute, dated 5 September 2018, relating to X3 Gram negative bacteraemia in Ward 2A – Bundle 1 – Page 149)

152. I attended an IMT on 5 September 2018. Under the heading "Other relevant reports" there is a paragraph that begins "ES raised concerns in relation to HCSW staff being pulled from the area."

153. Emma Somerville, as the Senior Charge Nurse, is rightly raising her concerns, given this added IMT process was underway. The paragraph continues, "TI shares these concerns and wanted to be reassured that staffing will not result in a drop of standards. KT explained that staff were pulled to cover other

areas based on a risk assessment. JR reiterated that the SMT absolutely support nursing staff workforce to support quality and safety in ward 2A and 2B”.

154. This will be linked to risk mitigation across our wider system. Potentially this decision will have been made at the Hospital Safety Huddle to support another area due to potentially short notice sickness or increased activity. Another area may have required immediate resolve and this ward assessed as the area best able to provide that assistance. On checking the records from the time, I can see that the ward had on average 10 registered nurses and 2 or 3 healthcare support workers (HCSW) on each day, they were generally in a ‘safe to start’ position and on some days staff were moved from other areas to support ward 2A.
155. Kathleen Thomson was the Lead Nurse for 2A and some other areas. The Lead Nurses would chair the safety huddles and with input from others make staffing decisions.
156. It is noted that we were committed to supporting the nursing workforce and were working up an evidence base to support a case for further posts.
157. We looked closely at the 2A workforce, reviewing the various aspects around 2017. Workload had increased, there was a large maternity leave pressure and there were issues with recruitment. During this ongoing period, it was important the ward had the additional staff they needed; as well as trying to recruit this was sometimes supplementary staff or staff moved from other areas, and HCSW roles.
158. There is a line in the IMT minute that states, “AR advised that these most recent cases will become part of the public domain.” I do not know what information Annette Rankin had in regard to that.

DISCUSSIONS TO DECANT WARD 2A RHC - 11 TO 14 SEPTEMBER 2018

159. It was probably around about 11 September 2018 that the IMT began to raise decanting as an option. There had also been a few meetings outside the IMTs with the consultant group.
160. At this time, we also reiterated to everyone that handwashing sinks were for handwashing only as Teresa raised a concern that people were putting coffee, milk or other things down the sinks which could be creating a biofilm. When the drains were investigated small toys had also been found.
161. Posters were in place at sinks to that effect. These were put up at sinks and displayed a message along the lines of – Handwashing sink only - please do not put anything else down the sink. I do not recall the IMT instructing for signs to be made at the sink ever saying, ‘Do not drink the water’.
162. We met the clinical team in the morning of the 14 September 2018 and then we had an IMT, which is where we discussed Phase 1 and Phase 2. Phase 1 was the current measures that we had in place including new patients going to Edinburgh, case by case assessment for treatments, and some satellite care with DGHs. Phase 2 was the decant.
163. We met the 2A staff in the Medi-cinema at 08:30 to describe the situation. We agreed we would have the IMT and then meet the staff again later on in the day.
164. We had no new cases that day and we had five patients in total. Also, the IMT chair and HPS had contacted experts from other areas as the IMT were seeking advice at this point.
165. On the afternoon on 14 September 2018, Jamie met the 2A team, whilst Kevin and I went to the laboratory building and had a meeting with Jane Grant, some of her team, and others from the IMT where we discussed the decant, the options, the work so far and the general situation.

166. I went along to that meeting to support Kevin as the Director in my role as Chief Nurse.
167. I cannot recall all the people present, the Chief Operating Officer was there, as were Estates leadership.
168. We had a discussion which centred on the drains. I think Estates were looking to interrogate some of the information from a technical perspective. The Chief Exec was seeking detail around the decant options and how we would operationalise that. The focus was mostly about Estates and also working up the detail of decant options.
169. Jamie, with input from others, pulled together the options decant paper. There was a meeting with the consultants from haemato-oncology who went through a risk-based discussion on all of the options in that paper.
170. The Beatson was considered but discounted as they did not have a paediatric intensive care unit which was deemed essential for these children. It would not be an acceptable position for them to deteriorate and have to get an ambulance to cross the city.
171. Other wards in the RHC were considered, but Teresa was not content with the sinks in RHC and associated risks, noting the sinks in QEUH were larger and thus did not have the same risk of splash. The RHC was discounted as the LICD said the risk was too great.
172. We also looked at a potential porta-cabin ward on site but there was a 12 week lead time, which was deemed too long, and this could not be fast tracked.
173. There was also the option of closing and sending the patients to Edinburgh or Aberdeen, but I understood that neither of those sites could undertake the national BMT service or had the capacity to look after Glasgow's patient population in addition to their own.

174. Then there was the option of considering centres in England, but that was deemed unfair for families as well as a capacity issue for those centres.
175. The criteria we measured options against were; the impact on paediatric bone marrow transplant, paediatric haemato-oncology, hospital at night, clinical teams, support services, adult services, clinical staff, patients and families, and also the timings of when we could operationalise the move.
176. At that time I have documented in my notes a list of points we would need to consider in terms of decant. I gave this list to the clinical service manager who then inputted to a spreadsheet and developed it further with colleagues; this became the decant operational log.

IMT MEETING – 17 SEPTEMBER 2018

(A36629315 - Incident Management Meeting Minute, dated 17 September 2018, relating to Water Testing and Drain Cleaning in RHC – Bundle 1 – Page 169)

177. There was an IMT on the 17 September 2018. It was discussed and decided at that IMT meeting to continue to recommend a decant as there were ongoing concerns about the general environment, there had been one positive case over that weekend.

IMT MEETING – 18 SEPTEMBER 2018

(A36629310 – Incident Management Meeting, dated 18 September 2018, Ward 2A, RHC, Bundle 1 - Page 175)

178. In the IMT on 18 September 2018, there were no new cases. The drain cleaning was undertaken. I remember Grant Archibald, the COO, also came to this meeting and the decant was agreed. We still had not yet identified a ward, but had agreed it would be within the QEUH.
179. After that IMT, a communication was generated with the communications team, Teresa and others. I then went to the ward to update families to tell them a decision had been made in regard to a decant.

180. Jamie, Teresa and I with others had an open offer to talk to families. This meant some families who Jamie and Teresa had spoken to the day before had already discussed a decant as a possibility. I had not been involved in that conversation, but I remember Teresa and Jamie noting that.
181. We had another meeting the next Friday with a broader clinical team from across Hospital Paediatrics and Neonates that included paediatric intensive care doctors, anaesthetists and a broad range of people from across the hospital. I am not sure if HPS were there or not. Their input was mostly via the IMT.
182. I would expect HPS to advise on infection control matters, measures and mitigations in place rather than the operational move. The IMT agreed the QEUH as the decant site. HPS were present and part of that decision making. From an infection control perspective the new ward was signed off by Teresa Inkster as the LICD and by Estates. The Lead Nurse for IPC also signed off the ward as ready.

PREPARATION FOR THE DECANT

183. In preparation for the decant, nurse and medical staffing was an important area in terms of planning. Considerable planning was undertaken to ensure we would have the correct level of nursing staff for the ward in QEUH to cover days, nights and weekends. We met with the clinical directors and discussed ensuring the hospital at night team had additional staff to support the decant ward in QEUH as well as for ward 4B. The hospital at night team cover the medical needs at night. This was eight days before moving and we were going into a bank holiday weekend.
184. I ensured the Royal College of Nursing were aware and linked in for support.
185. A request to the Director of the South Sector was made to handover a ward to be used for the decant ward which was close to ward 4B. Bone marrow transplant patients would be cared for in ward 4B, the adult unit.

186. The Director came back with ward 6A, it was agreed at that point. Existing adult patients in 6A were then moved to another area.
187. The Hospital paediatrics team worked together to progress this in a short timescale. Jamie, as the General Manager, the Clinical Service Manager and I undertook a lot of the planning work. Lynne Robertson, who is now retired, was the keeper of the operational decant log.
188. The Director, Kevin Hill, was very much involved in this also. We were updating Kevin on all aspects, and Kevin was updating us on anything additional we needed to know or do.
189. We worked to ensure we had pathways and processes for deteriorating patients. The resuscitation team led this, wrote a standard operating procedure (SOP) and worked with paediatric intensive care consultants, anaesthetists and ward teams to undertake mock resus situations. This was once we knew the decant wards were 6A and 4B.
190. The resus team set up a mock resus, from Ward 6A to paediatric intensive care and from Ward 4B to paediatric intensive care. They considered the equipment required. They wrote all of this into a SOP.
191. For the decant we also considered any practice which may be different because it was a different location, any situational awareness factors that may have an impact on the way you are able to deliver care. As part of that the team looked at their current SOPs to ensure they would still fit in to the new ward. We looked at child protection and safeguarding, particularly as we were going into a ward within an adult hospital.
192. Child protection colleagues advised us around our safeguarding plan. They provided a brief which we worked to. For example whilst there were no adult patients or staff from adult wards in ward 6A, we set to ensure the doors were swipe entry so people could not cut through the ward. This formed part of the

safeguarding plan. We also installed a new lock on the back of the door of the unit and made sure that was locked so nobody could access the ward. All of this was considered and actioned.

193. In terms of pharmacy, we worked to ensure we had appropriate storage facilities for the medications and the correct medications in place ready for the move.
194. The Rights of The Child was embedded in the plan. For example we purchased parents' beds as in the children's hospital there were fold down beds for parents, but the QEUH did not have these. This is an important children's right to have their parent / carer with them, so we very quickly purchased over 20 parents' beds.
195. We also ensured there was a play area, however we had to set this up within the corridor docket. It had small tables, books and small toys. We had play staff covering every day, seven days per week, and additionally our activities coordinator for young people.
196. We purchased some wall art / glamour for the walls to make it a more child friendly environment.
197. We also worked to ensure we had the correct equipment within the ward.
198. We also arranged additional storage that we needed for children's hoists and special beds or baby baths. We needed to think through space and storage space for these things, so they were handy for the clinical team when they needed them, including the ward supplies and sundries. We required space and planning around procurement for stock supplies.
199. From an e-health perspective all the e-health was transferred over to Ward 6A, for example Trakcare system.

200. The floor plan had to be transferred because when we put Ward 2A and Ward 2B into Ward 6A, some of those beds were inpatient beds and some of them were day care beds, so all of that had to be arranged from an IT perspective. This enables us to work our patient record systems and admit and discharge people. Switchboard also updated the numbers on their system.
201. We also had to ensure people had the correct access enabled within their ID badges to access the areas they needed to in the adult hospital.
202. There was also work done to ensure the special feeds kitchen, who make up certain milks and certain products the children require, were aware of the move and had appropriate processes for 6A and 4B. This, alongside the children's menu, food choices, catering etc. had to be the same as in the children's hospital.
203. Estates had undertaken work in 6A beforehand, ensuring the area had the drains cleaned and filters fitted. I remember them doing some touching up work, as well as other requests infection control had asked for, but they should have the list of those actions.
204. We also planned routes from all the patient journeys children were likely to make. If you were a patient travelling from theatres, what is your route? If you are travelling in, what is your route? If you are travelling to radiology, what is your route? We put new signs up and communicated these with the staff and with the wider staff in the children's hospital and with other peers that we work with.
205. Planned procedures, including bone marrow transplant, were scheduled to coincide with the completion of actions required within the log.
206. We completed these changes in around 8 or 10 days. It was a lot to do but we worked through it methodically, as systematic and risk based as we possibly could at the time. I do think that the team should be commended for what they did and how they managed that move.

207. The team safely decanted one of Scotland's highest risk paediatric populations from one place to another in a very short space of time and did it safely, without incident and did it well. We took patients out of an area that the Lead Infection Control Doctor was saying was not a safe area and moved them to an area deemed safe. At the centre of this for us all was keeping children safe and well.
208. It was the right thing to do from the information and advice we were given at the time from our Lead ICD and national advisors HPS. It was organised and it was thought through, albeit it was in a very short space of time. Time criticality was important given the concerns at the IMT of any potential new cases, so it had to be at pace.
209. We worked as a team, sought advice from experts such as child protection, and resus officers, we used all our teams and collective knowledge, continually asking ourselves if there was anything else we should consider.
210. We met many times prior to the decant, considering each element with the wider team, including infection control, Facilities, Estates, nursing, and medical. People worked together with the shared purpose of getting the children moved safely and enabling IPC and Estates to take stock.

STV NEWS BROADCAST- 18 SEPTEMBER 2018

211. On 18 September 2018, around 6.15pm, while I was in the ward office preparing to go around the ward and talk to families of 2A, Brenda Gibson came in and told me the ward was on the news on television. STV played a piece which I think indicated the ward was going to be moved or closed. I did not see it.
212. This created quite a bit of tension and anxiety. I was in the ward to tell families about the situation and the move and then it came on the TV. I went around the unit speaking to the parents and giving them the briefing I had. Some had

seen the STV piece, some had not. Most parents at that time were okay when I spoke to them that night and understood the sequence of communication had not worked out as planned.

213. Our intention was to tell the families first, talk to people, also give the brief and then put out external communications.

214. Most of the families I spoke to that night were satisfied with the discussion.

215. I did not speak to every single family because we split the ward. I think myself, the consultant and the Senior Charge Nurse (SCN) were all there. When I spoke with families, I would give the families as much time as they needed to talk and answer the questions they had. That varied, you could be in with a family for 20 minutes or half an hour.

216. [REDACTED]

REASONS FOR THE DECANT FROM WARD 2A/2B RHC

217. As I understood it at the time, the decant had been made necessary by the work that needed to be done on the sinks (linked to drains) and the wider sense of concerns about the environment requiring a closer look. The hypothesis was that the filters were potentially too close to the drains, causing the water to splash up, aerosolise and then re-contaminate your hands. In terms of risk, the IMT Chair, our Lead ICD, clearly said there was a risk of children getting infections due to aerosolisation from the drains.

218. Work to replace the sinks would not have been possible with immunocompromised patients in the ward. There was also a sense of a need to 'get to the bottom of it'. The IMT wanted to mitigate as much risk as possible and so an empty ward would enable a close review of everything.

Teresa wanted to have a good look in the ward with no patients in the area. The initial time period was thought to be about 12 weeks, at that point we thought we would be back for Christmas.

219. The plan at that point was that the IPC team, microbiology and Estates would assess the ward, make it good, and then we would move back within a few months.

220. At that point, the filtered water samples were testing clear, so the filters were working. That was good and reassuring. The problems were noted to be the drains due to their proximity to the filters.

221. The initial water IMT had been closed off and a Water Technical Group was set up to continue the related work. I was not on that group, but know that one area they focused on was the chlorine dioxide dosing plant that we now have. The IMT closed late November / early December 2018. By that time chlorine dioxide dosing had commenced and the ward had moved.

STAFFING IMPLICATIONS FOLLOWING THE DECANT FROM 2A/2B

222. We moved children from one inpatient ward to two inpatient areas, 4B and 6A. This created a challenge in terms of a diseconomy of scale in nurse staffing. We rostered staff onto additional hours to ensure we had both areas covered with paediatric nurses. It was always paediatric nurses who cared for the children in 4B and 6A.

223. In order to ensure 4B and 6A had the staff they required, we booked additional nursing hours in advance, we collected the detail each week so we were clear about the extra due to the decant.

224. Additional hours could have been from bank nurses or the ward's own staff undertaking excess hours if they were part time or additional bank.

225. Staffing was still generally challenging at that time for the reasons stated above, but we were getting close to the new graduate recruitment of 2018, which had been the larger 2015 intake.
226. We were still advertising proactively all across the UK, trying to pull people in from London for example.
227. We also transferred paediatric inpatient facilities from the RAH, with that came around 16 WTE (Whole Time Equivalent) nurses who were able to join the wider team at RHC.
228. It was critical that 4B and 6A had the staff they required and everything was done at the time to support that.

STAFF MORALE FOLLOWING THE DECANT FROM 2A/2B

229. All the staff team were working incredibly hard through difficult circumstances at the time of the decant. It had an impact on everyone, as you would expect.
230. It felt a little better when the decant had taken place and the team and families started to settle into 6A/ 4B. In the first couple of weeks when I would go up, people said they liked the brightness and the straight design of the ward.
231. We thought at that time we would only be there for a few months. The move had taken place and they were managing okay between 4B and 6A. The decant was really hard, the IMTs were really hard, but there was a short period around October/November, where it seemed fairly settled considering all the factors. People were getting on with their jobs and were supported by the additional hours planning and now just awaiting Estates to inform them when they could return to 2A.
232. The Senior Charge Nurses of the ward and day-care worked closely and supported each other. The first couple of months seemed to be going okay.

CRYPTOCOCCUS IMT - DECEMBER 2018/JANUARY 2019

233. The next significant event was the Cryptococcus IMT.

234. [REDACTED] one case of Cryptococcus. There had been another case in an adult area in QEUH.

235. [REDACTED]
[REDACTED]
[REDACTED]

236. On 4 January 2019, I met the family of [REDACTED] who had Cryptococcus. There is a minute of the meeting.

237. I met with the family with Brenda Gibson, Teresa Inkster and Jamie Redfern. Teresa explained that the lab had found a Cryptococcus infection and she described that Cryptococcus came from soil and from pigeons. Teresa noted she did not know how or where [REDACTED] had got it.

238. At this IMT, air sampling was planned and undertaken and children were started on prophylaxis. At this point, there was not an understanding of how the patients had contracted Cryptococcus.

239. The anxiety of the whole IMT and clinical team was very high. People were very worried and saddened about what happened and were trying to understand what actions were required. They had already moved ward; this was a very difficult time.

240. Again, I believe everybody sitting around that table were focused on doing their best to keep children safe. We had a meeting on 7 January with consultants. I recall there being positive air samples, but it was not Cryptococcus neoformans, it was a different type of Cryptococcus from that in the patient cases.

241. There was a decision at the IMT on 9 January to install portable HEPA filters into 6A. A communication was drafted for families, however that evening it was decided that staff would receive an aide memoire to assist with the consistent communication and to clarify the points because it was fast moving.
242. We wrote an aide memoire which had about six bullet points to outline the position and actions. This included the deployment of HEPA filters and that HEPA filters scrub the air. Everybody was briefed on that including families.
243. The HEPA filters were installed in the ward on the 10th and the families were updated verbally based on the aide memoire briefing.
244. On 12 January 2019, which was a Saturday, I received a call informing me some families had gone to the Scottish Government as they were worried about the HEPA filter installation and the environment in general.
245. The Chief Executive set up the conference call on the Sunday morning. I joined this call and was asked to go to the ward to talk to the families with a written brief.
246. I went to the ward and was emailed a brief by the communications team to discuss with families. Brenda Gibson was also there. I went around every family present with the nurse in charge and spent time speaking with them.
247. Afterwards I emailed the senior team to tell them I had spoken to all the families and that they appreciated the communication. I emailed this to Jennifer Armstrong, Jane Grant, Ally McLaws, Kevin Hill and Claire Cook from the communications team. The wording on the email is as follows:
248. "Hi, Jennifer. I can confirm (accompanied by the nurse in charge) I spoke to all the families individually who were present on the ward today. They appreciated the written brief and the chance to ask questions. All of the families I spoke to were content with the process and the discussion. The

nurse in charge and consultant team have the brief and will share it with families not present. Many thanks, Jen.”

249. I received a response from Jennifer Armstrong “Thanks for the update. Helpful feedback, no doubt reassuring for both the staff and the patients to have you there today.” She sent that at around 7.20pm that evening, I sent my original email at around 7pm.

HEPA FILTERS WARD 6A - DECEMBER 2018/JANUARY 2019

250. HEPA filters were deployed in both the corridors of 6A and the single rooms as part of the Cryptococcus IMT. Estates later installed them into the ceilings of the bathrooms.

251. The HEPA filters are commonly described as ‘air scrubber units’, the HEPA filters essentially clean the air.

252. Air samples were taken to measure whether the HEPA filters were effective; this was complicated as people were coming and going in the ward which impacts on particles in the air. I understand from microbiology this was not an exact science.

253. This aside, the IMT were progressing to put in all measures that would improve the environment and therefore supported the deployment of HEPA filters.

ONGOING IMT 17 JANUARY 2019

254. At the 17 January 2019 IMT, I remember one of the suggestions Teresa made was that we may need to clean all the air vents in the hospital with HPV (Hydrogen Peroxide Vapour), which would have meant evacuating the entire QEUH ward stack. This was a challenging conversation in terms of people discussing all of the risks and impact on patient safety. Cryptococcus neoformans had not been found in air sampling.

255. By then we had HEPA filters in place for a week. Teresa thought that would mean that the air particles would be reduced, although there was not an exact measurement system to gauge it against. The bathroom air samples were higher than what Teresa thought they should be.
256. That is when the issue was picked up within the shower area, a small black line at the join. This was explored and mould was found to be under the shower floor due to water ingress. It was concluded that was the reason the air particles were higher than Teresa hoped they would have been.
257. It was not Cryptococcus, it was an issue underneath the floor. Work started to investigate the issue and it quickly became clear we could not do that work with immunosuppressed patients in the ward. Some higher risk patients were moved to 4B.
258. To enable the work to happen the patients again had to relocate. We resurrected the operational decant log and planned a decant to CDU in the children's hospital. That was a real low point for staff, the wider team and families, it was a really difficult time for everyone.
259. We were planning the move, talking to families, working to reassure staff and the media were printing very negative articles about the hospital with large pictures of pigeons. The media at the time impacted on the stress families and staff felt.
260. I recall there were media reports at the time which portrayed the move as due to Cryptococcus, but the move was due to the incidental finding in the bathroom of water ingress and resulting remedial works. We did describe that in a brief, and I remember several of those IMTs continuing until around nine o'clock at night.
261. Several members of the Board executive team came to the QEUH at that point, including the Chief Executive and Medical Director. They attended a

post IMT meeting with the consultants to listen to them and discuss the situation.

262. Consultants were able to speak about their concerns at that meeting directly to the Medical Director. There was a lot of anxiety about the move and the media.

263. Many of the nursing team were also anxious. Some of the staff were beginning to say they had rashes and were wheezy and wondering if it could have been the air. I contacted Occupational Health, who supported them from an OH perspective. I also brought in the Royal College of Nursing, again for additional support as well as offering psychology sessions to the team. Lead Nurses were also visibly present supporting every day. It was a low ebb and we tried to support wellness of the team through these approaches.

264. In terms of support for myself, Kevin, my line manager, Jamie and I were a solid team. We worked closely and were a good support for each other.

265. I cannot recall whether I was specifically offered any psychological support, but had I wanted it, I would have been able to arrange it. I would take responsibility for that myself.

WATER INGRESS IN THE BATHROOMS

266. The issue was raised with Estates who were responsible for the repair. They work with infection control to ensure they have an HAI-SCRIBE. They require to have an assessment of the works and mitigations in the form of the HAI-SCRIBE approved by IPC. In this instance it was deemed the work was too extensive for the children to stay in the ward.

267. The children moved safely to CDU and then, in February 2019, they moved back to 6A. As the work in 6A progressed, the Estates team updated the operational managers and clinical team to enable services to be managed accordingly.

268. The move was not because of *Cryptococcus neoformans*, rather the remedial work required for the bathroom flooring. It was very unfortunate and a difficult experience for everyone.

DECANT FROM WARD 6A TO CDU – JANUARY 2019

269. It was short notice and it was hard for the staff who had just been through the fairly recent move to 6A and now to be presented with this scenario of moving again. However the remedial work on the bathroom floors could not have been undertaken with the children in the ward.

270. For the decant from Ward 6A to the CDU we followed the same sort of structure as before. Some elements were relevant and some were not, because we were moving to a children's area. The operational log has the detail for this move.

271. We knew it would be a short-term move until the remedial works were complete. We also knew the filters worked in terms of water. CDU was prepared, the team there moved to another area, the Estates and Facilities team sanitised all the drains in CDU and, alongside infection control, they deep cleaned and prepared the area. High risk patients went to 4B rather than CDU.

272. The decision to move was again made as a recommendation by the IMT. Haemato-oncology patients already follow a pathway through CDU so it was not an entirely new place for them.

273. There were already paediatric patients in 4B so this number was extended. Staffing was challenging, the diseconomy of scale became even more of an issue as we had inpatients in 4B and CDU and day-care patients in the surgical day unit.

274. The complicated staffing model exacerbated the low staff morale as the team were split up into smaller teams across different areas. They also would support aspects of care for patients if they were for example in PICU or a surgical ward.

275. The service moved back to 6A in February 2019. The team were glad to get back. However, the period of time they were in 6A was now clearly extending beyond expectations. The move back had thought to be around Christmas 2018 but now we were in February 2019.

276. I was not involved in any of the groups who discussed the ongoing work in 2A. There was wide representation, including nurses, doctors and operational managers and the IPC team.

CABINET SECRETARY JEANE FREEMAN'S VISIT – JANUARY 2019

277. Jeane Freeman, the Cabinet Secretary, visited on 22 January 2019 and then later I remember showing her the parents' kitchen towards the end of 2019. This was when we were reopening the ward after the autumn 2019 IMT.

278. During her 22 January visit, we met the Cabinet Secretary within the RHC. From the Board there was John Brown, Jane Grant, Jennifer Armstrong, Tom Steele, Kevin Hill, Jonathan Best and myself. The communications team were present on the visit but not in the meeting. From Scottish Government there were Jeane Freeman, Jason Leitch and Fiona McQueen present.

279. At the meeting we discussed the Cryptococcus situation and the move to CDU because of the remedial bathroom work. We discussed the issues and actions. We discussed the Independent Review, which she would announce would take place.

280. There will not have been many patients in 6A at that point as we were relocating to CDU. We also visited 2A and 2B to see the works being done there.

281. I have a copy of a letter that the Cabinet Secretary sent to the Board and was sent on by the Chief Executive to thank the teams for their efforts.

282. There was a press release from Scottish Government following the meeting. They quoted the Cabinet Secretary saying she had visited the ward and spoken to a family and was also reassured that the Board were doing everything that they should be doing under the circumstances. The Independent Review was also announced.

283. The Cabinet Secretary would visit the campus for other business around that time, for example a few weeks later she visited to meet the team and hear about the work in NICU (Neonatal Intensive Care Unit).

MEETING WITH JONATHAN BEST AND CONSULTANT GROUP - 2
SEPTEMBER 2019

284. There was a meeting with Jonathan Best, the 2A Consultant group on 2 September 2019. I cannot recall the exact detail but in general terms it was the unit's consultants seeking clarity on whether there is an issue and if so what was the extent of the issue. There was discussion around what work had been completed to date and some discussion about seeking external independent view on the situation.

IMT MEETING - 6 SEPTEMBER 2019

(A36591637 - Incident Management Meeting Minute, dated 6 September 2019, relating to SBAR for Ward 6A – Bundle 1 – Page 394)

285. In the meeting on 6 September, the SBAR Emilia had received was discussed.

286. On the minute from this IMT, it says, "On the SBAR, it states that there's a build-up of dust on the chilled beams which typically harbours skin organisms."

287. Domestics undertake regular cleaning of the general environment to avoid build-up of dust. The chilled beams were separate to this. There was a cleaning schedule for them via Estates which was increased beyond the manufacturer's guidance to 6 weekly on advice of the IMT.

288. After this IMT, I have noted that I have been around the ward and spoken to families from around half past five to half past seven.

MEETING 9 SEPTEMBER 2019 – CLINICIANS' LETTER

289. There was also a meeting on 9 September 2019, which was triggered by a letter the clinicians sent to the Medical Director. They were seeking assurances in regard to environmental safety. The meeting was again listening to the clinicians concerns and discussing mitigations and the way forward.

290. I do not recall the detail of the meeting but have noted actions which included: Brian Jones, another microbiologist will review cases, Estates to undertake a peer visit to GOSH (Great Ormond Street Hospital) and plan for an IMT this week or early next week.

291. The same day at two o'clock, the Chairman visited RHC. I met him and took him to the ward where he met the Senior Charge Nurse. We went to one of the single rooms where Estates colleagues described the improvements and modifications that had been made and then he met several of the nursing and domestic staff. It was a supportive visit to 6A.

IMT MEETING - 13 SEPTEMBER 2019

(A36591627 - Incident Management Meeting Minute, dated 13 September 2019, relating to Epidemiology data for RHC – Bundle 1 – Page 360)

292. The IMT minute notes, "Dr Kennedy introduced his epidemiological data with commentary from Prof Brian Jones and Prof Alistair Leanord". It also states,

“Since moving to the Ward 6A the patterns of environmental gram-negative organisms are the same compared to the counts when the ward was at the old Yorkhill hospital” and “Senior microbiologists Prof Brian Jones and Prof Leanord both agreed that, from a microbiology point of view in their opinion Ward 6A, QEUH was microbiologically safe at this present time and IMT members accepted this position”.

293. Dr Iain Kennedy showed us a table of the different organisms which had been identified within RHC, the new hospital, and whether they had also been found in Yorkhill when he reviewed retrospectively.
294. This IMT had been ongoing for several months with mitigations in place. Case by case children were sometimes being cared for elsewhere if appropriate. The IMT's concern was around the type rather than number of infections. The IMT was now presented with data to say the infection types were not in fact unusual. This information was new to the IMT and took time to process.
295. Everyone then went away to consider the data. There were meetings scheduled to follow.
296. The other completion of the actions agreed in the action plan continued as planned.

IMT MEETING - 18 SEPTEMBER 2019

(A36591629 - Incident Management Meeting Minute, dated 18 September 2019, relating to SBAR for Ward 6A – Bundle 1 – Page 365)

297. There was an IMT meeting on the 18 September 2019 where it became apparent there were differing views between Brian Jones and Annette Rankin. HPS remained of the view we had an outbreak and Brian Jones said in his view we did not. My understanding was that he meant this had been treated like an outbreak, but we did not have an actual outbreak in the sense of a single type of infection, a source and patient cases specific to that. It was hard for people to take this in, it was a different view from a different microbiologist.

298. There was discussion about risk, if there was no outbreak then children being cared for in other centres would be better returning to their base centre.

IMT TELECONFERENCE - 20 SEPTEMBER 2019

(A37992136 - Minute of Teleconference to discuss Ward 6A Status, dated 20 September 2019 – Bundle 1 – Page 370)

299. On the 20 September there was an IMT teleconference. The data was discussed at that teleconference and that was the meeting where the group agreed to recommend the full reopening of the ward based on the data.

300. That dataset was updated, and people discussed and agreed to move forward with a re-opening plan. The group included Alan Mathers, Chief of Medicine; Scott Davidson, Deputy Medical Director; Pamela Joannidis, Consultant Nurse IPC; Iain Kennedy, Public Health; Sandra Devine, Associate Nurse Director for Infection Control; Annette Rankin and Laura Imrie, who are both Nurse Consultants with Health Protection Scotland.

IMT MEETING – 8 OCTOBER 2019

(A37992136 - Minute of Teleconference to discuss Ward 6A Status, dated 20 September 2019 – Bundle 1 – Page 373)

301. HPS were undertaking a review, comparing RHC to Aberdeen and Edinburgh's Children's Hospital. The review outcome was required in order to inform the position to fully reopen. The CNO would make the final decision as to whether the ward would fully reopen.

302. The other sites are not directly comparable (e.g. only RHC carries out Allogeneic Bone Marrow Transplants) but they looked at similar patient populations within the Scottish context as much as was possible. We received the review in late October / November. Essentially they found for the current period of time - gram negative infection rates in RHC were the same as the other centres and for gram positives RHC were better.

303. This was positive, however still challenging for everyone and still a complex process towards recovering and reopening fully the ward.

MEETING WITH FAMILIES - 2 NOVEMBER 2019

304. On 2 November 2019, we had a meeting with the families. We sent a letter to almost 400 families to invite them to the meeting and around 17 families responded. Some said it was not relevant to them, they did not require to attend, and some were complimentary about the service.
305. Of the 399 letters sent, 9 families attended the meeting on the 2 November.
306. The families that attended were understandably upset and at some points angry. The Chairman and the Chief Executive began the meeting with an apology and then a presentation. This was followed by the families talking about their perceptions.
307. I spoke at the meeting when questions came up about nursing. There were several questions about nursing, such as staffing and other points. I completed an action plan following that meeting for the nurse-related items. I wanted to ensure I had picked up all the families' points, listened to what they had said, and undertook appropriate actions.
308. Much of the points were ongoing but it was important to note work that was either ongoing or newly progressing. I submitted that to the Executive Nurse Director, Dr Margaret Maguire and also then to the Chief Nursing Officer.
309. One of the points they raised, which as far as I can remember was the first time I had heard this to be an issue, was in regard to the lifts. The issue raised was that the lift was also used by the adult population (as it was the QEUH building), therefore they were unhappy about this. Following quite a bit of complicated work and planning with Estates and the QEUH team, we secured the families their own lift. Out of the three available lifts, one was cordoned off for use only by the paediatric haemato-oncology families.

IMT MEETING - 5 NOVEMBER 2019 (P125 OF BUNDLE)

(A36591709 - Incident Management Meeting Minute, dated 5 November 2019, relating to Sequencing Results of the Enterobacter blood stream infections – Bundle 1 – Page 392)

310. The next IMT after the meeting with the families was on 5 November, which discussed the Enterobacter sequencing results. Prof Alistair Leanord had begun his genome sequencing work by then. This felt like ground-breaking science at the time, which drilled down further into the samples in terms of their relation to each other. Prof Leanord presented some of his work on genome sequencing in relation to Enterobacter, which concluded there was no link between the cases.

PLANNING TO FULLY REOPEN WARD

311. Jamie and I created a reopening bundle. This described robust and ongoing actions so that assurances were in place to help navigate us back to full reopening.

312. The reopening bundle was a type of action plan. It detailed the actions required including, for example, the bathroom HEPA filter installation.

313. We started a group called the 'Clinical Review Group' (CRG). It included representation from the Consultants, Brenda or Dermot would always be there or one of the other haemato-oncology Consultants. There would be the Lead Nurse for service, Senior Charge Nurses, Lead Nurse for Infection Control, Estates Lead and Facilities Leads.

314. The group would systematically go through each area of the business. Each person would update for example, how the service was, staffing, cleaning, SCIPs and supervision results.

315. At the CRG we would pick up any issues, for example, if they had a problem recruiting a housekeeper, we would look to allocate actions. In terms of

facilities we would discuss items such as how the floor cleaning was, if they were managing the deep cleaning, if there had been any complaints about cleaning.

316. Estates would update on any works that were ongoing, they would update us on the chilled beam cycles and Hyacin drain cleans. The meeting took place every week as part of the reopening bundle to navigate back out of that situation.
317. Infection control undertook a root cause analysis on every new gram negative case. IPC would feedback on the Root Cause Analysis (RCA) to the CRG. We continued with enhanced supervision and weekly assurance checklists and these would be emailed to the group and discussed at the CRG.
318. We also ensured the Lead Nurse continued to be visible, in the unit every day providing general support, checking the staff and families had everything required and that there were no new emerging issues.
319. We recruited an additional Band 7 SCN. Normally there would be one SCN in a ward. The second SCN would have an extended remit on the additional infection control work. Both had overall IPC responsibilities, however this created capacity for the additional work and to support the existing SCN. The work on staff wellbeing continued and was included within the reopening bundle.
320. We worked to ensure families were aware of progress and that we were communicating fully; part of that was through our closed Facebook Page.
321. We were building our Facebook communication for positive news and innovations as well as a vehicle for patient engagement, communication and working together.
322. We used Facebook to set up focus groups around catering, to listen to feedback and aim to make improvements on the food options. As part of this

we introduced a deli cart. The page was also useful during the pandemic, for sharing information and working together with families on initiatives such as photo picture stickers of nurses smiling as the children could not see their faces because of their masks. Families helped design the stickers.

323. We moved from bottled water to tap water as part of the reopening bundle. We put in additional portering for pharmacy and housekeeping hours.

324. The reopening bundle was a useful in navigating us towards full reopening. The CRG maintained a robust focus and engagement from all those involved. During this period everybody continued to work together to ensure a safe reopening.

EXPERIENCE IN THE NEW WARD 2A/2B – SPRING 2022

325. In Spring 2022, the paediatric haemato-oncology ward moved back into the refurbished 2A/2B in the RHC

326. I was no longer in the Chief Nurse role when the ward moved back to 2A/B. As far I am aware there are no concerns with the environment.

THE CULTURE OF IMTS

327. Reflecting on the experience of events regarding IMT culture, in March 2018 the IMT focused on the water, completely focused on safety. It was closed with the acknowledgement that if any issues came up it would be recalled.

328. The IMTs were always focused on keeping children safe, this ultimately led to the decant. The IMT in March 2018 was effective and robust based on the hypothesis of the LICD. Tests and actions were taken quickly. It was closed in a relatively short space of time. In relation to the drains IMT, this was more complex, however from an IMT management and culture point of view I do not recall any issues.

329. Although people had different points of view, from my perspective it was constructive and people could raise a different point of view if they wished. The IMTs were focused on the job in hand and doing what was advised by the LICD and the external advisors, HPS and HFS.
330. In June 2019, the M. chelonae and gram negative IMTs commenced. This began as a M. chelonae IMT, then became a M. chelonae and gram negative IMT, the M. chelonae part was then closed and it became only gram negative. It was at that time things became more difficult within the meetings.
331. By its nature, the IMT was harder for people to understand as there was not a marked increase in infection numbers. There had been some unusual infections that Teresa had been worried about. There was a large number of environmental swabs and samples being undertaken but nothing was being found that linked back to the children.
332. IMTs usually work around managing a specific infectious agent, COVID for example. If we know how it is transmitted then we can block the transmission, then infection rates go down and we install a permanent solution if possible. In this way the incident will be brought under control, monitored and closed.
333. This IMT was not able to follow the same process as there was no single type of infection and no clear source. We had mitigations in place including controlling admissions on a case by case basis and newly diagnosed children going to Edinburgh Children's Hospital. This was difficult for families who lived this side of Scotland and the further separation from their family units.
334. We were undertaking as many actions as possible but the hypothesis was unclear as that IMT progressed.
335. The group began to consider if it could be other sources rather than the ward environment but the Chair then presented us with slides noting that just because we had not found anything in the environment, it did not mean it was not there. To that end we continued and put in a whole range of mitigations.

336. At the IMT meeting on 14 August, there were some difficult conversations and challenge around views. An additional Infection Control Doctor was present who had a more confrontational approach. People were undertaking the mitigations but simultaneously struggling to understand the problem.
337. The two Senior Charge Nurses from 2A and 2B came to see me afterwards. They said they had found the IMT difficult and unhelpful. I discussed with Teresa Inkster what they said. To try and improve this, pre-meetings were arranged. Stakeholders such as Estates were getting information at the IMT and so had no time to consider it prior to the meeting. There may have been a couple of pre-meets prior to this but Teresa agreed that we would introduce them as standard at that point. However, Teresa did not chair the IMT again after that.
338. The meeting at Glasgow Royal Infirmary on 20 August 2019 was an open discussion seeking views and comments from those who attended the IMT. I remember people speaking openly. There is a minute which reflects the discussion. I recall that the recommendations were to have an independent chair and pre-meets.

CONTACT WITH OTHER AGENCIES THROUGH IMT MEETINGS

339. HPS and HFS were closely involved in the IMTs. I occasionally took HPS or Scottish Government colleagues around to enable them to see the facility. They were not involved in the operational running of the service.
340. HFS would link with the Estates and Facilities team outwith IMTs.
341. I did not have any involvement with Scottish Water, that would have been Estates again and microbiologists.
342. We worked closely with our Facilities and Estates teams. For example, when we moved to CDU, our colleague from Estates was Kerr Clarkson. The team

would give him lists of Estates tasks and he would make sure this list of actions was completed for every room. Infection Control would link with Kerr also.

343. When we undertook the HPV cleaning in 2A in June 2018, we had an Estates colleague in the ward at all times, working through the process with us each day.

344. From Jamie's and my perspective, we would speak to Tom Steele, or people in his team, regularly. They would update us on works and we could raise any concerns. From my perspective our relationship with Estates was good.

345. In relation to our liaison with the Scottish Government, we would be regularly communicating around updates, questions or queries from Scottish Government.

346. HPS who were at the IMTs also would update Scottish Government. The IPC team would also submit Hospital Infection Incident Outbreak Reporting Tool (HIIORT) reports to HPS.

347. From November 2019 following on from when the Board went on Level 4 escalation, we started updating Scottish Government on a daily basis. The daily brief for 6A/4B collated items including Estates work, any infection control issues, test results, and family communications. It would be approved by the COO and Executive Nurse Director and the PMO would send it to Scottish Government by midday each day.

348. Communication outwith the daily updates at that time included supporting the Case Note Review and working with Professor Craig White in regard to communication and, for me, the Communication Subgroup of the Oversight Board.

349. Scottish Government questions could arrive through various routes, for example via the corporate governance team, communications team, infection

control or nursing. Responses would be pulled together by the appropriate team, approved and submitted back to Scottish Government.

HOSPITAL ACQUIRED INFECTION AND HEALTHCARE ASSOCIATED INFECTIONS

350. A hospital acquired infection (HAI) is an infection that has manifested whilst the patient is in hospital. It is defined as a positive sample from a patient who has been in hospital for at least 48 hours. Depending on the type of infection, the incubation period can be longer, for example COVID, but based on national definitions it would be a HAI on the 48-hour rule.
351. A healthcare associated infection (HCAI) is where a patient has been in contact with any healthcare system in the previous 30 days.
352. These definitions would be used within the IMT process. People's infections would be commonly referred to as, 'HAI,' or, 'HCAI,' or community. The information would be listed in the IMT documentation.
353. These terms are widely used and understood and did not change throughout the IMT process. The case definition evolved, but HAI and HCAI are nationally understood definitions.
354. The case definition describes the type of cases which will be included in the IMT. For example, an IMT could start with a specific infection such as Enterobacter and then the IMT would then increase the case definition to include any gram-negative potentially associated with the environment. Therefore, the case definition would be extended to include more cases. Review of case definition does happen as part of IMTs and is specific to the IMT.
355. IMTs could be called for a single case of a particularly unusual infection or two or more cases of the same infection.

356. The water IMT was focussed on any infections that could be potentially linked to the water.
357. The Cryptococcus IMT was one child and one adult, so the number was small but the infection was considered to be rare.
358. The later 2019 IMT was focussed on unusual types of infection rather than numbers of infections. Our data had improved by that point in terms of the CLABSI rate.

RENAMING OF INFECTIONS

359. At each IMT, the status of patient cases and types of infection would be covered. Names or the 'renaming' of infections would be something to discuss with the microbiologists or IPC team who would be expert in that area.
360. Bacteria causing infections may belong to an overarching group of bacteria which will also have sub types. In previous years we may not have known or used the names of the subtypes.
361. There was some discussion about naming of infections within the IMTs but, in general, everyone was agreed that the purpose of the group was to ensure all actions were undertaken to stop infection spread / transmission from source.

COMMUNICATION WITH PATIENTS ABOUT INFECTION

362. Patients will receive information at the start of their hospital admission in regard to infection control and infection risk. This would be a standard ongoing discussion with their clinician specific to their care.
363. A patient's doctor will normally discuss with them or their family if they find the patient has an infection. They will discuss potential causes and also treatment. The clinician has an understanding of the patient's condition and would be able to describe any impact on their wider treatment or answer any

questions the family might have. This could be the consultant or another member of the team.

364. Managers would not be able to speak to that as they do not have the detailed clinical picture for each individual patient, and nor should they. This is for the clinical expert team caring for the patient.

PROPHYLACTIC MEDICATION

365. I was not involved in decision making in regard to prophylactic medication. This was a recommendation by the Lead ICD in discussion with consultants.

366. At various points across this period, based on microbiology advice and discussion with the consultant group, prophylactic medication was prescribed to at-risk patients. The prescriber or another appropriate member of the care giving team will normally discuss with the family the new medication.

367. The microbiologist might advise the consultant and they would make a clinical decision based on the patient's risk factors, their immunity, their condition, their contra-indications and their allergies.

368. Some of the communications briefs referred to this in general terms, such as some at risk patients will be prescribed prophylactic medication. If this was included in a brief with a family, I would not discuss their individual child's prescription as that would be something for their clinical team.

COMMUNICATIONS FOLLOWING IMT

369. Initially in the water IMT, a lot of the communication was verbal, although there was also some written communication. As the IMTs progressed we undertook to do more written as well as verbal briefs. In the Cryptococcus IMT and through 2019, we utilised more written communication and we still accompanied this with face to face discussions.

370. From the start of the water and the subsequent related IMTs, the offer was always included for families to speak with Infection Control and Teresa always made herself available as the Lead Infection Control Doctor.
371. A representative from the communications team would be present at IMTs as part of the IMT core membership. Communication is a standing item on the IMT agenda. They would advise on communications as the subject expert. They would help advise and guide the IMT around potential content. The final decision about press release would normally sit with the Chair of the IMT.
372. As the IMTs went on, we developed a written brief to go alongside our verbal updates. This could be used by staff and families and also be given to those in out-patients or day care areas. Incidents were fast moving and dynamic making it difficult for people to remember the detail, so written briefs were a useful tool.
373. We were trying to support consistency within staff to family communications and family to family communications. This was an attempt to ensure accurate information was provided within the context of substantial external media reporting, which was not always portraying the same information as our briefings.
374. Following an IMT there would often be staff communications, inpatient families' communication and external communications. The communication team had a central role to play in formulating all the communication briefs and releases. They would receive input from subject experts, whether these were infection control, microbiology or estates.
375. We developed a process where after every IMT we would go to the ward and update the staff, then join with a consultant or senior nurse to update the families individually. That would be Jamie or I and a clinical person, and we would talk to every family. We would give them the brief, discuss it with them and answer any questions.

376. When giving the briefs to families we created space for questions and discussion. I invited questions and always noting if we did not know the answer we would find out and get back to them.
377. I did not post any briefing documents under a room door, if a family were not available we would leave the briefing with the clinical team to update them when they returned or became available, noting we would be happy to come back and discuss / answer any questions.
378. Families told me they appreciated the information and conversations. I felt empathy and compassion for the set of circumstances the families found themselves in and now with this additional stress, it was very difficult for them and for the staff caring for them.
379. We updated families in an open and honest way, sharing the information we had been given.
380. We did the same with staff as it was important they knew the detail. We would talk to them in small groups, go through the brief and give them opportunities to ask questions. We would continue this until all the staff had been updated in the ward, often 2 or 3 groups each time.
381. IMTs often did not finish until the afternoon, it then took time for a communication to be written and agreed and approved. Thereafter, it would come to Jamie and I who would then go to the ward and begin the update process. This meant it was often late afternoon or early evening.
382. The communications team is managed as part of the corporate function in the Board; it does not sit within the sectors or directorates.
383. Alongside relevant others, the IMT Chair would input to and approve communications briefs written by the communications team.
384. IMTs have delegated accountability to make decisions and recommendations in regards to the incident, including the communications elements. Being part

of the IMT I saw part of our role as keeping the staff and inpatient families informed.

385. I very much imagined myself in the families' position and tried to always provide face to face opportunities to answer any questions and have conversations that were helpful for people.
386. The entire inpatient ward was directly impacted by the changes such as cleaning regimes, HPV and HEPA filters, so it was important we spoke to everyone and not only those families impacted by infection.
387. It would not have been normal practice following standard IMTs for members of the senior management and infection control teams to speak to every family on a ward after each IMT. This however was required over the course of these incidents.
388. Whilst we developed to do this well for inpatients, it was more challenging to communicate in a person centred way to the hundreds of patients' families who were at home attending only occasionally as inpatients or outpatients.
389. At many points we had IMTs every day. Things were moving daily and to attempt to communicate this quickly changing position with outpatient families was a growing challenge.
390. We became aware of a narrative that some families were feeling they were not being kept updated. It emerged that this was mostly feedback from people who were not in hospital but had a child who potentially could be admitted if their condition changed i.e. families currently in the community but perhaps using outpatient services.
391. To try and begin to address this challenge, Teresa and I stationed ourselves at the clinics in outpatients and asked the consultants to let their patients know we were there and that we would be happy to discuss the situation with them. Teresa and I spoke to a number of families within outpatients. I

regularly went to day care and spoke to families there. We gave out briefs in both day care and outpatients.

392. The organisation sent letters when larger pieces of news were to be shared. Some families responded asking to opt out of the letter process as they did not feel it was relevant to them. We wanted to be person centred in our approach and, with letters being sent to around 400 families, this was more challenging to achieve.
393. Outpatient families could get in touch and arrange to meet with us when they came for their appointment. We had long meetings with people in the outpatient area, but we still were not capturing all the families.
394. We then created a Facebook page which assisted us in reaching this cohort. It also meant people could choose whether to opt in or not as we knew some people were keen to be engaged and others less so.
395. We attempted to undertake face to face communication with the people directly involved. Talking to families on the ward alongside senior nurses and doctors, that was part of all our roles.
396. At the same time families would receive communications via wider media channels, social media, and a private Facebook page organised by families for peer support.
397. Social media moves very quickly so misinformation could travel quickly through those channels, which the organisation had no control of. That was a big challenge and I often found myself in discussions with families correcting things they had read elsewhere.
398. I always set out to communicate well and talk to families openly and honestly. The challenge was when those families were not there to have those discussions with and they had heard other information. The Board's closed Facebook group definitely helped us with that.

399. Looking back, the sense of this as a growing issue was in 2019. It was raised in IMTs and that started the process of creating a Facebook page as well as attending clinics and making ourselves as accessible as possible to anybody that wanted to speak to us.
400. As far as the content of the briefs, the communications team could speak more about that. Essentially, they would draft a communications briefing, key stakeholders would input to it or maybe draft it with them, depending on what the communication was, and then it would go through an approval process, starting with the key contributors being content.
401. In October 2019, following the appointment of Professor Craig White, once communications were agreed internally they were then sent on to Professor White for approval. From November 2019, external communications and media statements were also cleared by the CNO and Cabinet Secretary.
402. Once the communication brief was approved, Jamie and I would take it to the wards, speaking to staff and families in 6A/ 4B and sometimes other locations if a haemato-oncology patients happened to be in another area such as 3B or PICU.
403. The communication team are also contacted by external media for statements or comments. There were times when we were not aware beforehand of external media running stories. This was a challenge as we did not have the opportunity to update staff and families in advance of all publications.
404. The Cryptococcus IMT was particularly challenging in terms of media. Stories were running in the media, but we had a duty to the family and were concerned about the risk of deductive disclosure. This meant our communications were limited as the Board were protecting the families' right to confidentiality.
405. This population nationally is very small and the concern was that if any detail had been provided then people may have worked out who the family were. I

remember when I was going round talking to the parents and families at that time, some were asking who it was. We were trying to protect the confidentiality of that family. This is why the Board's communication sometimes read as high level, we were concerned always about patient confidentiality and deductive disclosure for individual patients.

406. Following that and a visit from the Cabinet Secretary, there was a release I think from the Procurator Fiscal and Scottish Parliament referring to the death of a [REDACTED]. The Board had not given an age or gender which made it appear less open, rather they were protecting confidentiality of the family.

407. I believe Jamie and I consistently going round the ward was the right thing to do in the circumstances.

DUTY OF CANDOUR

408. Duty of candour is a standing item in the IMT agenda. If a new case was noted at the IMT, the Consultant present will usually confirm that either they or their colleague will discuss this with the family. It would not be normal practice for managers to be involved in those conversations however we did offer support during the difficult periods as the IMTs progressed, as did Teresa.

409. During the IMT meetings, the Consultant would confirm that they were going to speak to one of their patients and Jamie, infection control and I would offer support if required. Usually they would prefer to discuss this with the families themselves but sometimes we were part of these discussions.

410. Normally if a patient has an infection and they are in hospital, their clinical team will talk to them/ their family and let them know they have an infection and the plan to treat that infection. That conversation would happen with the clinical team, which should be recorded in the notes, and the treatment would be started.

411. In an IMT situation, that would still happen and the clinicians would speak to the individual patients about their infection and treatment.

COMMUNICATION WITH FAMILIES

412. During the course of the first IMT, it was mostly Teresa Inkster and Jamie Redfern who spoke to the families who took up their open offer of a management / infection control discussion. A fair number of families spoke with Teresa and Jamie at that point. Then, when we moved into the next IMT, it was similar, but with more written briefs added and a constant offer to speak with the infection control team and managers, including Jamie and me.

413. We tried to update as a team. Clinicians were also at the IMTs and required to know the detail in order to discuss with families if there were questions within their routine interactions. If information was required for a newly admitted patient late at night, the staff that are physically there at that time would discuss with the family as appropriate. Further detail could be picked up thereafter with IPC or managers if they wished.

414. There was an emphasis on visible leadership, including Lead Nurses and Clinical Service Managers, being present on the ward, supporting the team and coordinating specific projects such as the HPV clean in June 2018.

415. There was additional support required because of the nature of the environmental issues raised and reassurance around actions and also in terms of the very intense media interest.

416. One day I was talking to a mum of a patient in Ward 6A Day care, and she was telling me about the separate family Facebook page, on which the members were saying there were no managers in the ward and that the managers were never there.

417. I clarified that, as the Chief Nurse, I was part of the management team in the hospital. She said, "No, no, I don't mean you, Jen, not you, I mean the

managers sitting up there, the Chief Exec.” This is the only parent that made a comment like this.

418. The management the parent referred to was Executive level, however within the structure we had responsibility as the directorate management team in such a large organisation. As I described earlier, the Board is split into sectors and directorates each with a management team having responsibility to manage their area.
419. There are I think some nuances around the term ‘Board’ and who they are. Jamie and I were communicating with families as part of the NHS GGC Health Board, but we are not members of the Board of NHS GGC. Jamie and I, with others in the clinical team, were communicating with families in the ward as part of that structure.
420. The majority of families welcomed our visits and were happy to speak to us and grateful for the update. I understand the outpatient families were not receiving as regular updates the same way and would have been receiving information from media outlets and social media and so some have felt they were not being communicated with directly. We worked to improve this as I described.
421. The Executive Nurse Director, Chief Executive and Chairman visited the ward as did the Chief Nursing Officer. There were various Scottish Government official visits. Kevin Hill, Jonathan Best and Grant Archibald were on the wards too. I do not know exactly how often, but they had been in the wards.
422. We were mindful this was a haemato-oncology ward so we do try to limit footfall and keep it as calm and well controlled as possible.
423. In that time, we probably had about 500 families through that particular service. The majority of families I spoke to in the hospital told me they were happy with the updates; I have described the issue with those that were not inpatients.

424. Information from the IMTs, including communication with families, was consistently communicated up the organisation to the Executive team.
425. On these visits families would often share things, for example I remember one family in particular. We were having the usual conversational update and the dad said he was annoyed as the mum was not allowing the child to have showers. This was 2019 and we knew the water was 'wholesome'.
426. I explained that the child had a central line and it was important they had good hygiene and were kept clean. I explained how important that was, but he said that some people on the Facebook page were saying they should not shower their child because the water was contaminated.
427. This progressed into a discussion between the mum and dad, him saying not to listen to that page, to listen to the staff and that the page was adding to her stress. Some families told me they had to come off the peer support Facebook page because it was causing them stress.
428. This was during the autumn IMT in 2019, so it raised a concern that perhaps some children were not being showered and kept clean and this could itself pose a risk of infection. I spoke to the Senior Charge Nurse who ensured staff went round every patient each day, ensuring they were getting their showers and reinforcing that it was safe to do so.
429. I also thought about how families were living within the environment, rather than only the environment in isolation. Were they showering? How they were using the bottled water, given that bottled water is not sterile.
430. I raised this at the IMTs, ensuring again we were reinforcing and being clear that the water was safe.
431. We then acted on removing bottled water completely via the IMT and the reopening bundle.

432. In general terms, families receive a lot of information when they first become patients in the unit. There is the family information pack and 'Welcome to the Ward' pack. They also receive a lot of infection control information throughout their stay, and, as standard, patients around the hospital will receive information on laundry and handwashing.

CHALLENGES RELATED TO COMMUNICATION

433. The sequencing of information was challenging at times. I noted comments in the Closing Statement by Counsel to the Inquiry stating that people only got informed via the media. If media statements were to be released we aimed to ensure the ward staff and families were aware and saw and heard that information from the Board first. Unfortunately, this did not happen every time as some of this was out with our control. The communications team would be better able to describe these processes.

434. When there was a planned media statement or press release we would go round to the ward and talk to families and tell them about the release. This was to ensure the families had that first by a short window; it was very close in terms of timings.

435. Due to the extent and timing of press enquiries, sometimes a reactive comment would go out prior to us speaking with the families. The communications team would be better set to speak to this, but they would receive a significant amount of media requests for comments.

436. There was recognition and discussion about the need to sequence the information to try to make sure parents and staff in the ward were updated first and did not get a shock from a media report. This was aside from or sometimes added to the IMT verbal and written updates. We continued to give updates that were unrelated to media.

437. In the Closing Statement by Counsel to the Inquiry there was a comment about the ward being closed in April 2018. This was a norovirus / rotavirus

outbreak, which is not unusual within paediatric wards. An IMT would have put standard restrictions in place, for example restrictions on visiting and closure of communal areas to stop the transmission of this virus. Information would have been shared with families at the time regarding this.

438. There is a reference also to communication at the time of the water dosing in Ward 2A. In terms of communicating that the water would be switched off for a period whilst dosing would take place, the Lead Nurse informed me they had told families about the switch off and had ensured parents had time to have showers prior to this happening. I had asked them to ensure all the families were aware and they confirmed that.

WAYS TO REPORT FAULTS WITHIN THE HOSPITAL

439. From a nursing point of view, if there was a fault found, for example with the floor, they would escalate this through the Estates management system (FM First). RHC also has a Hospital Huddle and Estates / Facilities are represented at this and would also note and ensure faults were actioned.

WHISTLEBLOWING

440. Nurses can raise concerns through their nursing structure. In a ward, this would be to their Charge Nurse or Senior Charge Nurse. If they have a concern about something ongoing they can raise this with their Senior Charge Nurse.

441. If the issue requires further escalation, the Senior Charge Nurse would raise it with the Lead Nurse. The Lead Nurse could bring that to either the Clinical Service Manager or Chief Nurse, depending on whether it is a professional or operational issue. It may then make its way to the Senior Management Team and further professional line depending on the issue.

442. If there is an issue a nurse does not want to raise through these structures, they may talk to their union, usually the Royal College of Nursing (RCN)

representative. They could talk to their RCN representative who could raise it directly with the Chief Nurse.

443. That has happened on a few occasions, not related to this, regarding other general professional issues which were managed. I had a good relationship with the union representatives and we were able to work through anything that was being raised and ensure we sat down and talked and listened to the people who were raising concerns and that we then addressed these issues.

444. The whistleblowing policy is another route staff would have. I did not receive any whistleblowing alerts raised by nurses. As far as I am aware no nurses went down that route. Nurses spoke to the Senior Charge Nurse, Lead Nurse or me directly about concerns. Nurses did raise their anxieties with me, specifically I recall around Jan 2019, which was a particularly challenging time.

445. The team were worried about the environment, the IMTs were ongoing there was a lot of media at that time. We involved the RCN and Occupational Health and tried to support wider wellbeing. Nothing was raised from a whistleblowing point of view.

446. I was asked to go to a meeting as part of a whistleblowing investigation. It was around October 2019 and I was asked to attend JBR where I was interviewed by Linda de Caestecker, who was the Public Health Director and also had a role in whistleblowing. She interviewed me about a particular IMT.

CONCLUDING COMMENTS

447. In terms of the expectations I had relating to my job and the reality of it professionally, working through a situation like this you learn a huge amount and take that learning with you going forward.

448. Healthcare is dynamic, you do not always know what you are going to face and you have to be prepared for that.

449. We approach any situation with a view to do the best we can for the patients, staff and people around us, no matter how challenging that feels at times.
450. We focussed on supporting teams. Although I know additional audits and scrutiny sometimes provoked additional stress, we had to undertake these processes to provide ourselves, our families and our staff with ongoing assurance around our systems and practice.
451. In terms of being involved in all the reviews and the Public Inquiry, there have been around seven external reviews, including the Independent Review, the Health and Safety Review and the Case Note Review. I tried to support and guide nurses through those to focus on what you can control and what your job is and your responsibility in caring for your patients.
452. Providing input to the reviews as well as the business as usual was time-consuming and stressful for the staff. It required a lot of additional focus and work for the teams. However, everyone wanted to fulfil their part and wanted to contribute and glean any learning.
453. Similarly with the media, I tried to support staff through some of the difficulties, as the anxiety around that for staff and families was a real challenge. There were points where their ward was constantly in the media, every day, and this impacted families and staff morale.
454. We were in a position as a local management team to work through each scenario, undertaking what was required. I would update the Executive Nurse Director, Margaret McGuire, and Kevin Hill, my line manager, both of whom were supportive.
455. There is no doubt it was a difficult time and had an impact on us and the teams. Jamie and I worked as a leadership team to attend all the IMTs, update families, support staff who were upset and worried and undertake IMT actions as well as the wider work.

456. While we could not immediately expedite the move back to 2A, we did other things to support the team as I have described, including RCN support, massages, psychology drop-in sessions for staff, providing additional staff, and enriching skills mix. We worked to respond to what was needed. Many of us worked long hours, weekdays and weekends to ensure we were doing all we could to mitigate risk to children and improve the situation.

457. I believe that the facts stated in this witness statement are true, that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Dr Andrew Murray

Witness Details

1. My name is Andrew Murray and I am the executive medical director in NHS Forth Valley. I am also the co-chair of an entity called Managed Service Network for Children and Young People with Cancer (MSN).

Professional Background and Qualifications

2. I have a Bachelor of Medicine and Bachelor of Surgery degree (MBChB) and I am also a Fellow member of the Royal College of Surgeons. I qualified in 1988 and have been a doctor for the last 35 years. I was a Thyroid surgeon in Ayrshire and then moved to take up the post of Medical Director in NHS Borders in 2016 and then in 2017 I moved to take up the same post in to NHS Forth Valley.
3. I have never worked for NHS Greater Glasgow and Clyde (NHS GGC), as a consultant. Around 1990, as part of my training, I did a brief stint of working within the Southern General Hospital in Glasgow), which was the precursor to the QEUH
4. In 2019 I was appointed to the Oversight Board for Queen Elizabeth University Hospital (QEUH) and the Royal Hospital for Children (RHC), and NHS Greater Glasgow and Clyde to assist carry out a review to achieve clarification over the prophylactic prescribing decision making in both bacterial and fungal organisms within the QEUH and the RHC in Glasgow.

Oversight Board Appointment

5. In my role in the MSN we get information from across the country on occasional operational issues, but it's more to do with standards of care strategy and other sort of governance information. As part of my MSN role, it was brought to our

attention by some of the clinicians in Edinburgh that there was an issue with the wards 2A and 2B RHC in Glasgow. The Edinburgh hospital was having to accept patients in the very early stages because it was deemed unsafe for them to be treated in Glasgow.

6. This was before patients were decanted from Wards 2A and 2B in the RHC into Ward 6A of the QEUH. When we were made aware that the Edinburgh hospital was treating some patients, we become aware that there was an issue in the Glasgow hospital and we kept a watching brief. the MSN is not responsible for operational delivery, so it was very much for us to be aware and ensure there were safe pathways for the patients and that we could be assured, in a safety oversight role, that the pathway was working.
7. As the months went by NHS GGC explained to the MSN that they were dealing with a bit of an evolving situation; a deteriorating situation in some ways. They were becoming more aware of the scale of the problem, and then the issues were in the media and it became of much more public interest. Again, the MSN role was to be aware of it but we did not have any instrumental role in any decision making. NHS GGC had responsibility to manage the issues from a legislative and statutory perspective.
8. Then the Oversight Board was established by the Scottish Ministers, but I can't remember the exact dates when.
9. My nurse director in Forth Valley, Angela Wallace, was being asked to support Glasgow as an external expert in infection control. Angela was telling me everything that was happening and I am sure she would have told me there was an Oversight Board.
10. At that time Fiona McQueen was the Chief Nursing Officer. I knew Fiona McQueen from Ayrshire, she'd been the Director of Nursing there when I was Associate Medical Director. I don't think they knew we existed as an MSN. I

knew I could approach Fiona without it being seen to be anything other than a genuine attempt to help. I felt I needed to make sure that people knew that the MSN was there, and that we were taking an interest as well.

11. I got in touch with Fiona McQueen to say, “Just so you are aware Fiona, we are here. You know we are here, we’ve got clinical experts that work to the MSN. We’ve got people who may be able to contribute to the Oversight Board because they’ve got that objective expertise.”
12. She took me up on the offer and then that really then became an invite for me, from the Oversight Board to say “Oh right okay, Actually, there’s something you could do”. I was commissioned to undertake some work for the Oversight Board.

Overview of Oversight Board tasks

13. Being a Medical Director means that you’ve got the ability to go into other Health Boards and, carry out diagnostic works, inspections and those kinds of things if called upon. I was asked to take on a similar piece of work for the Oversight Board.
14. I was asked, “Could I find out a bit more about prophylaxis: antibiotic and fungal prophylaxis”? I wondered what was going on. Given all the media attention, it was difficult for everybody involved when it becomes such a hot topic. We also understood that there were families impacted. NHS GGS had been escalated to Level 4 in the Board Performance Framework. The escalation wasn’t just for infection control. I think that it was also for person centred care.
15. Therefore given the Board had been escalated, and families going to the media and making complaints, it was becoming apparent that the doctors were not all doing the same thing in terms of prophylaxis.
16. This was despite all the work that had gone in at this point, to making sure the water in the hospital was all cleansed. Tom Steele used to tell me that the

water in the taps was cleaner than the bottled water you buy in the supermarket. The fact was the water that was coming through the taps was cleaned, and yet the doctors were prescribing antibiotics, and this appeared to be unsettling some patients. They were saying, “Oh no, we’re not sure about the water. We need to give you some antibiotics as well”.

Oversight Board: Role and the Terms of my Remit

17. The Oversight Board had already been set up by the time I joined and the terms of reference identified. To the best of my ability, I would have seen, and read, the terms of reference and gone “Oh, it’s fine”.
18. It was to provide structures to performance-manage the improvements that are expected in this. It was very much aligned to that, and as I said, the areas that NHS GGC were escalated on, was mainly person centredness and Infection Control, which is an unusual group. I think there was also maybe stuff about leadership, but I didn’t feel I needed a lot of detail around those more organisational issues, given that I was tasked with a very specific commission.
19. The official discussion was around the looking into the issue about the prescription of prophylaxis and was it being done consistently. I was trying to unpick that. My parameters were narrow. I was to achieve clarification over the prophylactic prescribing decision making in both bacterial and fungal organisms within the hospital. I was to look at this information and then it was come up with a view; it was really about clinical decision making rather than any other implication. The inference – and I brought that out in the SBAR with the recommendations – was that there was more and more unhappy patients and families because of the clinician concern being communicated to them. So, “You need more antibiotics. Oh, you need some of these.” I think that was then appearing through whatever routes, and that was causing concern to the Oversight Board, and could I redress that to be able to help reassure those families. Could I reassure the clinicians, and that reassures the families.

20. I did not speak to patients and/or carers, and their families during my time with the board and any reassurance to them would be in my final recommendations.
21. Any clinical reassurance would not be directly down to me and would have been done within any recommendations and then it would have been for others and the operational leads to deliver.
22. I didn't specifically question the remit of the Oversight Board into the use of prophylaxis within the QEUH . As far as I could see, they had a remit to go wherever they wanted. That wouldn't have been encapsulated in the terms of reference, but it's difficult in that situation as the health board to reject specific questions. I mean, they did, they were escalated on Infection Control, so it's aligned to that. I don't think there's any doubt that the Oversight Board had a remit to ask me to do the thing they asked.
23. I was verbally asked to go and gather information around its current use and assess and make recommendations about its future use. I didn't look at individual prescribing records, I didn't look at individual patient records and I didn't go down to the individual clinician level. This was at the senior clinician level, and at the governance processes, so I was given probably limited information in that regard but, yes, that's fundamentally what it came down to. It came down to not building an evidence base for why things needed to be different, but simply going back to what had been agreed before and reminding people that that's what we were expecting to happen. They could have come back and asked me to do a bit more work on that but they seemed to be happy enough with the high level assessment I provided in the SBAR.
24. It was a given that the prescription of prophylaxis was above the norm, and it was freely expressed by the senior clinicians that it was above the norm, and it was above the norm because of the concerns about the water in the hospital. The time I came in was when the water had been improved, and environmental screening had been shown that it was a safe area, and it was at that point that

they were still seeing the discrepancies with prophylactic prescribing. It wasn't to do with anything up to that point, with the rate of it or whether it was justified or not. Things had changed and we wanted to stop, essentially, inappropriate prophylactic prescribing.

Approach to the Review

25. Following my appointment I spoke to Jennifer Armstrong, the Medical Director in Glasgow to say “Jennifer, bear with me. I didn't expect this but I am going to be coming into your area. There have been questions posed so I'm going to be having a look at the issue.” She replied that was fine. We set up a time, and she put me in touch with her Deputy Medical Director, Scott Davidson. This was the first time I had met Scott. He and I had a conversation, so that I could understand what the issues within the hospital were from the clinical perspective.
26. We then set up a time for me to attend at the hospital to meet staff. I'm sure I was provided with some information. It might have been governance group minutes. Certainly I was provided with statements to what their journey had been like up to that point, and how the ward changes had taken place. Then I was given information about what was happening with the water and the safety of the water. This included information about all the devices that they had installed into their system, and therefore why they were confident in the safety of the water.
27. Scott also helped me understand the clinical context. By that I mean medicine can be very tribal; different specialties, different views on things, the same thing. He explained the infection control position. He explained the microbiology position: microbiology and infection control are different specialties. There was also infectious disease. There were the different players within those clinicians involved, and I was informed that there had been some tensions within those different clinical perspectives. I was also made aware

there was whistleblowing going on from within that group. That meant there might be different agendas, and a group of people expressing different views.

28. However, despite that Scott was able to tell me that there had been consensus. I don't know if it was unanimity, but there was certainly consensus in the October 2019 prior to that December 2019 amongst these key players that the water purity within the hospital was absolutely what it needed to be; and it was safe.
29. It was important for me to know that that was something that had been established, but maybe hadn't been totally understood by everybody. Maybe I was becoming involved at a time when some communication was required.
30. I was dealing with, information from the senior team about concerns about practices. They said that may have been the follow-up work, to look at actual numbers and activity there. Actually, it was more about reminding everybody that we'd all agreed we weren't going to do this, and that was the message. The purpose of the SBAR, was to help move things on.
31. I think that what was driving the concerns that practice was inappropriate; there was widespread prophylaxis prescribing and we didn't need to do that anymore. This was the agreement: the reminder was that the environment was safe, but that was exactly what was driving it, was the comments from the clinical teams I spoke to. It was their concern about the safety of the environment.
32. My tasks wasn't so much about trying to identify individuals in the practice. It was about reminding everybody about practices: it's the first step really in addressing the issue. There might have been a need to identify individuals if there had continued to be concerns around prescribing practice.

Antibiotics, Antifungals and Antiseptics

33. Antibiotics short-term are great, but long-term will start to produce some potential issues. The usual problems with long-term use of antibiotics is that

bugs will grow which then are immune to that antibiotic and they'll start to cause disease which then don't respond to antibiotics. That's one of our concerns around those sorts of antibiotics, and also that can lead to fungal infections if you're using broad spectrum antibiotics on a long-term basis. There are definitely potential downsides. In my specialty, the ENT surgery, we use long-term ciprofloxacin for chronic sinusitis. I do have some experience of the pros and cons of it. I think in a group of patients there is a need for it to be individually risk assessed. There will be times when actually long-term antibiotic use is the best option for that individual, especially when they're going through a prolonged course of treatment, such as somebody that's getting chemotherapy.

34. Regarding the advantages, when you get in infection you're vulnerable to sepsis in that setting. The haemato-oncologist wouldn't do it just because of the media coverage, making patients anxious for their own personal reputations. They see how quickly some of these kids can deteriorate and die with sepsis, so they were absolutely well-intentioned with it: all we were really doing was asking them to make the decision on an individual basis to be able to justify it – but, yes, there are potentially side effects, long-term side effects. I've got a bit of knowledge of that from my own clinical background and in broad terms that's what happens when you use antibiotics long-term. All we wanted to do was make sure the clinicians were applying that thinking on an individual risk-based assessment. I think I've got enough clinical knowledge that I would have known what that was, and that we couldn't universally give prophylactic antibiotics. We would then tip the risk-benefit balance there. Where we ended up with those discussions it felt like it was a reasonable place.
35. I had enough clinical knowledge to know what that was likely to be, and that if we used them in every patient every time, we would start to run out of those. I knew that as a principle of good infection control was not something that we could support. We needed to move to the individual risk assessment.

36. I was provided with the prescription policy for antifungal prescribing, it may have been bundled up in an overarching policy about antisepsis measures – I cannot recall. I definitely saw something that was about how they would usually use antifungals, therefore I was able to then make that assessment that what was going on from the way people describing things was compatible with that. But I don't remember, and it was in discussions as well with some of the senior clinicians getting an understanding about their policies. So, yes, definitely that was a reference point.
37. It wasn't about identifying maverick prescribers. It wasn't about that. It was about trying to see it as an improvement opportunity and remind everybody to take them, hopefully refine their practice and be consistent. Although there was different people doing different things likely, I don't believe there was anybody that was doing anything that was way out of acceptable clinical practice, but it just needed to be modified for the benefits of a specific patient group.
38. I was going to look at prophylactic antibiotics and antifungals and use of antibiotics. Prior to visiting the hospital I was given some information around TauroLock, the antiseptic, just so that I could be assured that it was an appropriate area for them to be looking at, so I did that. The prophylactic antibiotics was a very common antibiotics that was used so there is not really any doubt about its application as a prophylactic antibiotic in a specific sense. The antifungals are very much matched to the organism, so, again, there wasn't any concerns around that. There wasn't any need for me, with this sort of review, for me to start to look at specifics of the antibiotics; it wouldn't have been appropriate. But I was provided with some details about TauroLock so that I could make sure that that was felt to be a reasonable step for them to be taking.

Build Quality at the QEUH

39. I had no inside track on that. I was as much a spectator as anyone. I heard the rumours that went around, and it started off a way back at the MSN, when the

Edinburgh clinicians were saying, "We're having to take patients from Glasgow" and you ask, "Well, why's that?" They say, "Oh, well" and then they're talking to their colleagues in Glasgow and they're getting their version of it. There had been the pigeon thing as well already, so it felt like everybody was in a heightened state of looking for a problem. Then, through that clinical network these guys were saying that they believe there is something wrong in the building; they're getting some funny swabs back, and they feel there might be some issues for the patients. And then people comment that it's built next to a sewage works, which is the conspiracy theories amongst them. When the whistleblowing started I understand that it was very much focused around the build.

40. I think it goes back to the conversations with Scott Davidson, where he was helping me understand the governance processes, the information that was available. I'm sure we exchanged some documents in the run-up to my attendance at the hospital so that I could build up a picture in my own mind of that. The information I've quoted in the SBAR: -- they had met, there was a consensus about it, so yes. It was important. I just couldn't have made an assessment without getting some of that context.

Conducting the Review

41. We agreed that I was going to do it: I was on site for a day, met with various people and then I produced a report for the Oversight Board. Returning to the commission: I understood that the consultants were unsettling the patients and their families with the prescription of prophylaxis medication. These particular group of patients had cancer and they often have got pieces of plastic placed in them in order to receive medicine. The presence of the pieces of plastic in their bodies which means that they are vulnerable to infection, both because they've got cancer in the first place, but then also because they're getting these really toxic drugs which wipe out the immune system - they are prone to infection. In addition to that they've got a bit of plastic in their bodies that breaches all their natural defences. For all these reasons they are extremely vulnerable, and the

clinicians are used to risk-assessing that and making decisions around prophylaxis.: for example, “Does this person need to be on antibiotics to help support their immune system and reduce their vulnerability?”

42. Concerns were being raised because these central lines are flushed, and they also come into contact with the environment. Staff were cleaning the central lines with sterile water, but there was still enough concern from the clinicians, that simply being close to the taps, and being in the vicinity was potentially enough for these vulnerable people to develop infections.
43. I understood that view had been challenged and the consensus had been that that wasn't the case a couple of months earlier; but what tends to happen is doctors do not make good employees. They don't understand they're employees. They think, “Oh, that's fine for you over there, and the rules and policy, and all that, but I'm still not happy, so-- and I'm going to look after my patients. I want to do the right thing by them.”

Visit to the Hospital

44. When I visited the hospital, I spoke with Scott Davidson, deputy medical director, Alan Mathers, chief of medicine on the Royal Hospital for Children site. Dermot Murphy, haemato-oncologist. Then there was about three other people. I spoke to somebody from infection control, and I spoke to another haemato-oncologist, I'm pretty sure one of them is a microbiologist, but I haven't retained their names, I'm afraid. They were chosen because they could confirm the status of the water, status of the environment; they could confirm that everybody had agreed and explain to me what the circumstances of that agreement were. They could also explain to me what the governance setup was. So, “This is how we're monitoring this on an ongoing basis, and this is how we could monitor it if we are asking people to prescribe differently, this is the process that we could put in place,” and they would be able to deliver that. I was going through all that with them so that I could build up a view of -- because it's easy to be told, “It'll all be fine” or, “We'll make this change and it'll

all be good.” I needed to hear how that's going to be sustained so that I can give some assurance to the Oversight Board. I was meeting key individuals at a senior enough level who could look me in the eye and guarantee, that whatever came out of this would be implemented and it would achieve that sustainability in a change of practice.

45. During conversations with professionals, who are being open and transparent with me, they are showing me information to confirm what it is they're saying. I've got no reason to doubt the veracity of our conversation, so I assess it because that's the professional world that we inhabit and when we're doing this kind of review, obviously we've got a sense of whether there's any gaps in the information that I'm being told. I explored that at the time and make sure that I've got those gaps filled with explanations as to so, for instance, “What would be the process hereafter? Did you guys actually come in contact? Did you just tell me something that's theoretical?” “Oh no, right.” “Okay. So that is a potential way that we're going to be able to do that.” So I assess it through just, you know, your professionalism and ability to test out what you've been told at the time and do it collaboratively. I don't do any of these things thinking I need to find a way to catch people out or double check what they're saying necessarily.

46. During my visit I got a sense that that was probably something that was playing out there. The doctors were well-intentioned, but were prepared to give prophylaxis antibiotics over and above what they've agreed initially, which is, “We all agree it's safe. The environment is safe. Yes, we're all agreed, but I'll just go and give antibiotics anyway.”

47. In relation to prophylactic antibiotics, I mentioned that I know a bit about it because from a surgical background. Before you carry out a procedure you weigh up the evidence for prophylactic antibiotics. Our guidance for most conditions will have a section which sets out surgical conditions. For example if you're getting this type of operation, is there a role for prophylactic antibiotics? Yes/no? Therefore use and application of prophylaxis is something that I'm

familiar with. I also know that it needs to be evidence-based. It can't just be a comfort blanket. You can't hand them out like sweets. It's got to be evidence-based and it was being used in a non-evidence-based way because of anxiety about the environment; but they'd all agreed the environment was safe.

48. Therefore, nobody should have been getting prophylactic antibiotics, but they were, and the patients were getting unsettled. That is not just a statement, that was my conclusion: we needed to reaffirm that everybody agreed the environment was safe, and therefore proper antibiotics should only be used in a very individualised, risk-based way. Sometimes there will still be times when there's enough clinical concern that prescription is justified, and there's an evidence-base to support that, but it shouldn't be used on a population basis where everybody was getting prophylaxis..

49. I also looked a fungal prophylaxis. There was also the other matter of real interest in respect of fungal infections. There had been the matter of an infection being possible related to pigeons. Everybody was on high alert, and a few of these unusual organisms were fungus. Speaking to within the hospital people though, it was clear that prophylactic fungicides were not being used to the same extent. They were being used based on the evidence base, or there was a swab, or there was something really to trigger that intervention. Therefore I couldn't see any evidence that that prophylactic fungicides was being used inappropriately, and so that was just a case of re-stating: stick to the evidence base: the practice of appropriate prophylactic for fungus seems appropriate in the circumstances.

50. I also looked a third thing: antiseptic. There's antibiotics and antifungals which work to target very specific species, and there's antiseptics like Dettol. If you splash it everywhere, it'll kill everything. In some ways it's safer because it doesn't lead to selective strains emerging. The hospital staff were looking at antiseptic use. Related to that they were looking at use of plastic device, there an antiseptic-covered central line called TauroLock, They were looking at that

as another way to try and minimise any infections. I would describe this third aspect as a compromise – what do I mean by that? We're saying, “The environment's safe, so why do you need to do anything else?” The way they explained it to me by the hospital staff was, “Absolutely, it is safe, but what we would normally do is, we would look at anything that's emergent best practice that might actually help, not prophylactic antibiotics, but something in the processes that might help eliminate more of these infections.”

51. I thought they made a reasonable case. They were doing it under a quality improvement approach, which means that you don't assume it's going to work. You try it, you see that it might be 10 times more expensive. If it doesn't seem to do anything. You bin it. Therefore here was a kind of agreement that that was how they were looking at that. That step for the clinicians was felt to be helpful because it gave them something else that they might give them that extra effectiveness with their clinical treatments. After I spoke with everybody and checked out a few of these theories, it was dead straightforward to produce what we call the SBAR. The SBAR is the communication tool that a record what was found
52. Information was gathered via the conversations with Scott Davidson, conversations with Fiona McQueen, the support for the Oversight Board and, I believe that there were documents that Scott provided for me. When I turned up on the day at the hospital, I was able to meet with the senior teams who were able to share some further information with me, again in their sort of preparatory meetings before I then went on to speak to other people.
53. I think understanding and defining the terms of reference and the scope of it, making sure that that was manageable and then being linked into a range of clinical experts who could provide me with answers to the questions that for me came out of the question that I was being posed. “This is what I need to know to be able to form a view on it,” and just building up that picture. This was at a reasonably high level and to be provided with what I felt was enough certainty and clarity that I could then reach that assessment.

54. I visited some parts of the hospital but I understood that the concern probably wasn't a physical location. This group of patients were in ward 6A QEUH as that's where all the patients were that had been decanted. I think at times they might have had to use other spaces as well – during my visit I was following the patients in the practice rather than the physical location. Obviously, the physical location was important because it was getting environmentally tested, but I wasn't told, "6A, stick to 6A." It was more about the issue rather than the location.
55. I've got a vague notion that there was some comment that, people were starting to talk a lot about 2A and 2B which has been refit, or refitted or refurbished, and the standards that were going to be adhered to in there, and there was just discussions around how that would be ensured and how they would know that's going to happen, but there was no other hotspots, for want of a better expression, that were being signalled to me for any other concerns.
56. It was from that initial information that Scott and I had shared, and then on the day, that was confirmed by, either an Infection Control person or an infectious diseases person. Again, we got their professional opinion that that was the situation, and I also had heard informally in conversations the director of Estates that the water coming out of the taps was proving to be cleaner than the bottled water in the supermarket. Again, that's the professional opinion that I was getting. I wasn't asking to see, or for any evidence. I wouldn't be the right person to interpret detailed sampling information. I went with the professional opinion of those who had reviewed it. There had been a consensus conclusion regarding the cleanliness of the environment.
57. Given it was such a high-level piece of, and discreet, bit of work, I didn't feel it needed that level of, "integrity" around it. This was such a short, high level, "Can you go and answer this question?" piece of work, and then we'll see where we go after that. It didn't need the level of preparation or rigour that a more detailed or a more concerning picture might have merited.

SBAR: Findings and Oversight Board report – December 2019

58. I recorded my findings in an SBAR SBAR (**A42208416 – SBAR Review of prescribing in Haemato-oncology patients – Royal Hospital for Children (RHC) Glasgow – 12 December 2019, Bundle 6, page 10**).
59. After sense-checking it with a few people, submitted the SBAR to the Oversight Board who considered the contents at a meeting on 16 December 2019. At that point I had been co-opted onto a little bit more fully. The issue with the he discussion of the SBAR at the Oversight Board was that the timing of it was a direct clash with one of my NHS Forth Valley Board commitments. Therefore when the Oversight Board discussed the SBAR I wasn't in the meeting and I kept saying, "Do you want me there, because I can't be there at this time? Please could you change the time?" The time was not changed and I did not attend the meeting where the SBAR was discussed.
60. Any views would have been collated verbally and any personal reports would have been compiled and submitted by me.
61. My findings from the review were that there was agreement that the environment in the water was of very high standards – was very clean, was very safe, and that that had been signed off by all relevant clinicians in the October of 2019. That was confirmed by the senior clinicians who said, "Yes, that's exactly what's happening." It was confirmed that there was anecdotal reports of people not adhering to what had been agreed in that meeting, which was the restriction of prophylactic prescribing, and that it was, that would be agreed by the clinicians, including myself, that that was not a situation that we would want to continue because it was creating concern amongst the patients and the families: "Why am I getting antibiotics if it's all safe?" It was accepted there was a need for us to go back to the clinical community and restate that the environment was safe and that therefore prophylactic prescribing should only be done in the context of an individual risk assessment.

62. The work on antifungals appeared to be justified, and by that I mean the prescribing patterns that people were able to tell me there was nothing there that there was a concern, and that it was important to me that we built in a mechanism that if we make recommendations that those would be enacted and implemented. I got assurance by talking through the meetings and the governance processes that if we make that change that it's not just going to be an email goes out that says, "Don't do this," but actually there's a way that we can have that very continuous attention on it until we're sure that they did the right thing. So that was how I went about it and that's the findings that were reported back to the Oversight Board on the 11 December 2019.

63. There was a small change made, by the Oversight Board, to one of the recommendations which I did not see as anything material. At their meeting on the 13 December 2019 my finding were considered

- i. "The chairs introduced Dr Andrew Murray's SBAR on prescribing to haemato-oncology patients in the Royal Hospital for Children and asked for comment. CW Craig White suggested it'd be useful to get a steer on whether in light of environmental concerns recommendations around what to provide to patient families were implemented."

64. I made some recommendations around what I think should be said to patient families.

- ii. "AT felt it would be helpful to consider governance in more detail around decision-making in the audit trail with a more overt consideration of role of pharmacists prescribing. AM suggested that further assurance is required as to whether good practice is being implemented and evidence through patient records. [That's, I guess what, I was getting at through the governance processes.] The SBAR was accepted by the Oversight Board as agreed actions be remitted to

the communication and engagement subgroup and infection prevention control and governance subgroups.”

The document I am referring to is (**A34120071 - QUEH Oversight Board - meeting 3 - 16 December 2019 – minute, Bundle 6, page 13**)

65. The recommendations were sent on to those subgroups, and at that point that was the action and at that point that was the bit of work concluded, really. I got nothing else. No other asks coming back.
66. Although I was not involved in any other communications or reporting with the Oversight Board regarding my findings I did join subsequent meetings and participated in the discussions around the sort of wider escalation issues. Professor Craig White wanted to take those recommendations for patient and families into the sub group for patients and families.

SBAR Findings: further comments

67. I have been provided with a copy of the SBAR (**A42208416 – SBAR Review of prescribing in Haemato-oncology patients – Royal Hospital for Children (RHC) Glasgow – 12 December 2019, Bundle 6, page 10**). The lack of clarity for patients and families was coming because the clinicians. Families talk all the time, understandably, especially when their children get the same conditions. They come quite bound together in those journeys and I guess they'll be comparing what treatments they're getting and having those kinds of conversations; I think information sharing was through that. Whether that was getting out into the media, I don't remember, whether it was complaints or challenges from patients saying, “Why are they getting antibiotics? Why am I not getting antibiotics?” That was starting to happen and that was where the uncertainty was because of the inconsistent prescribing by the consultants.

68. I was being told by senior clinicians, I'd been told by Fiona McQueen at the Oversight Board that these were the concerns. I didn't look for complaints, I didn't necessarily look for it in the media and I wasn't going to go around to patients in a unit and asking, "Are you getting antibiotics or anything like that?" I was more focussed on the reports. The uncertainty for patients is really important, but it's almost secondary to the fact that consultants are doing things differently. It was the clinical practice that I was being asked to look at. The uncertainty I could fully understand; I think it's very plausible. I didn't feel the need to double-check it, and that's what happens when patients have a different experience under different consultants and compare notes: it creates that uncertainty, that's human nature. I was really being asked to look at the inconsistency of the prescribing that was driving the concern.
69. There were views regarding uncertainty. I think that we explored the fact that it was felt that clinicians were probably not doing what they'd all agreed to do. I'm sure that was touched on in the Oversight Board, but that goes back to the fact that most of this was conversations with people out with that room asking me if I would do that.
70. I think there was concerns that there was inconsistent practice. If I've said, you know, "There are clear concerns," I can't find it, but what I'm happy to stand by is that concerns were expressed that there was inconsistency about prescribing.
71. In this SBAR, I don't state, "There are clear concerns." As I said, what I can stand by is that concerns were raised, which initiated the commission, around the inconsistency of prescribing, and then from a clinical perspective, there are concerns if you do that what that might mean for long-term complications, etc. I think the use of the word "concerns" there is maybe being slightly overemphasised.

72. In the SBAR I talk about infection control experts and infectious diseases experts, but I don't mention pharmacists. Although I am aware of them possibly being there I am unaware of any concerns raised by them.
73. Alan Mathers is an obstetrician/gynaecologist who manages paediatricians. He gave a clear view from senior management and also the paediatrician perspective on this, and it was just restating, what I said. These are a very specific group of patients who are managed by super specialists, so paediatricians in general, their view would probably not be as relevant as the super specialists and the infectious control specialists. But Alan's view was, he was in the mix and he was explaining what he saw, - I don't remember him having any kind of different views to what we should be doing.
74. The confirmation was consensus from the people I spoke to and had actually arisen in a clinical meeting. My recollection was it was explained to me that infection control and infectious disease experts had looked at the environmental screening and had been able to explain everything to the haemato-oncologists, and everybody had agreed that the environment was safe and that they could stop using the prophylactic antibiotics. I took that at face value. If you want to design an in-depth investigation to test every word that's on the page, then you would go round all the clinicians afterwards and give them an anonymous survey or something to say, "Are you actually reassured?" The reality of clinical practice is if people are in a room and are saying, "Yes, no, we're fine with that," and they go out with the room, we're always aware that, maybe not everybody's completely on the page.
75. There was also comments made about, because childhood cancer is actually not one cancer. It's a hundred different cancers, so there's actually different levels of clinical decision-making that had to be worked through. The phrase that we used in the SBAR is "heterogeneity," so there's so much difference in there that it can take a wee bit of time before everybody applies the standards the same way, which gives people a bit of an allowance for that. From what I was being told, as I said, going back to that professional approach, high-level

approach to this question, there was consensus declared. Whether or not it was then everybody immediately doing what we thought they were going to do or that was thought by the management team, clearly that wasn't the case and this was the way to try and address that as a kind of intervention rather than necessarily investigation: but it was maybe more of an intervention than an investigation.

76. As part of verbal discussions with senior clinicians and senior managers, I was told they're reassured. I did nothing to then go and check that they were all reassured because my role was to ask everybody to remember what they'd agreed to, come back into line because it was unsettling the patients and their families.

77. At these meetings it was also agreed that antiseptic TauroLock commercial flush solution against Gram-negative infection in central venous catheter patients should be looked at and instituted, as it was felt to be best practice as an adjunct to current practice. I was reminded of and made aware again of the susceptibility of this group of patients to rapid sepsis. Because of these discussions and the initiatives that we were looking at, the teams felt they were aware that they shouldn't initiate any new changes in practice until that had been more widely discussed because of these sensitivities around prophylaxis, etc. They took the opportunity of explaining that there was a development that they had become aware of, I think that was being used in other centres in the UK, possibly Great Ormond Street, but they indicated that they wished to look at that as another way to minimise sepsis in this group of patients, and they have a good track record of quality improvement work as part of clinical practice, but they talked a lot about their experience in that. It seemed an obvious thing to encourage them to do that, but not in an ad hoc way, not in a way that would cause any difficulties or raise concerns in the way that the prophylactic antibiotic prescribing had, therefore they had to adopt a proper quality improvement approach to it, which means you test it, you see if it works:, you bin it if it doesn't work. It seemed like a legitimate area of inquiry

for them and something that could improve clinical practice. It was part of the discussions that this might be something that they could also look at and I was keen to support that and encourage that as best I could.

78. I noted that antifungal treatment is given according to prescribing protocols and which has a clear clinical criteria and evidence base for their use. This would have likely been after a positive swab result for that organism or a clear evidence base that this fungal organism is always associated with this condition. It would most likely have been that there is a confirmatory swab which says "This is what's grown"

79. Through discussions with Alan Mathers, who was the chief of medicine in the paediatric hospital within that wider group, they were able to demonstrate the culture of engagement. They were able to explain to me how they had previously gone about improvements in clinical practice. The hospital are a kind of academic tertiary centre, and they pride themselves on those. They are a high-performing group who have produced an incredible amount of publications and research that produces improvements and standards. I can't remember the specifics that we spoke about, but Scott Davidson was able to articulate some of those improvements and the operational managers definitely impressed on me that. I don't think it would be too difficult for anybody now retrospectively to go back and actually look at the sorts of outputs from that/those departments.

80. Prior to me asking questions, there wasn't a policy which said because this is going on in an environment that we should be prescribing. It had been done in an ad hoc way. It had been done in a kind of belt and braces, safety net approach by the clinicians. There hadn't been a policy to say, "We now need to do this."

81. In fact, I was met with, I would say consensus again from the people I was speaking with. I would often expect to find this in an area like which is under a

lot of scrutiny that there would have been differences of opinion, strong differences of opinion, and actually people representing that. I think that's why I was asked to go in, because I can usually bring that out of people in conversations. Senior clinicians caught in the eye of the storm were also agreeing as much regarding small things that there was any disparity on. It was like the TauroLock thing, "Should we, shouldn't we?" I said, "Well, you know, you could try it. You can see how you get on." So it was those kind of things rather than it being any of the fundamental principles.

82. As far as I can tell, it achieved what it was asked to achieve, which was not to be too ambitious with this. It was just to walk the walk as a senior doctor and say, "Guys, remember that thing we all agreed to do? Can we just do that, please?" As we're talking about it, I'm seeing it now almost more as an intervention than an investigation *per se*, and it was to try and bring people back on board, and as far as I know, it had that desired effect and it had the actions which were then taken into the subgroups, which is what I was hoping for.

Oversight Board Meetings

83. In the end I probably only attended maybe three Oversight Board meetings, and it was just around that time because it seemed to go in a very different way. I think the work carried out was a discrete bit of work at the front end of all of this, and it was probably the Oversight Board testing out, and it was a bit of engagement. It was a question the Oversight Board wanted answered, but it rapidly seemed to become a lot more about the person-centredness and infection control stuff. It was cases, not reviews. Eventually, the person who provide administrative support to the Oversight Board and I between us we agreed that when the meeting would on if I can go, that's fine. I was there at the beginning but not for the majority of meetings.

84. My involvement with the Oversight Board tapered off when I was only able to make some of the meetings and not them all, because of scheduling on a

Friday afternoon. I thought it was important to keep on top of the conversations, they developed each time, and coming into it fresh meant you were at a real disadvantage. My involvement petered out and then I had to call it and say "Look, I don't think I'm going to be able to make it anymore".

Recommendations

85. I was asked for my professional opinion as co-chair of the MSN and as a medical director. Apart from drafting and checking out with the person who was going to do all the implementing, which would have been Scott Davidson, there was no other process there. It was very much a sort of privileged position, you can say, my personal opinion on this.
86. I wrote the recommendations, but I could never have come up with anything that looked reasonable without having discussed that with the relevant people; so everybody in some way contributed to it. I made the final decision what I thought was important from that and distilled it down in the recommendations.
87. It has been actioned in that, the Oversight Board put the SBAR recommendations to the correct subgroups. After that, there's no line of sight. I don't know what happened after that.
88. I am unaware of whether the Haemato-oncology clinicians have met regularly with Infectious diseases and Infection control colleagues to review any recommendations relating to the prescribing of antibiotics and antifungals, nor any review regarding any adverse events through the prescribing either in their regular weekly departmental meetings or any separate governance groups? . I am not there to assure, I'm not there to see that all the way through. That's the local governance processes. I would be, I know NHS GGC has got a robust adverse events reporting process. I am very confident those sorts of incidents are getting picked up through that, but I don't review that information.

89. As for the development of a protocol for the use of TauroLock that again would be down to the local governance process.
90. My recommendation ultimately was that they just needed to tighten up some of their governance processes around decision-making with antibiotics, but I restated really clearly that everybody was in agreement. I think that was important. I think that's what they wanted, the Oversight Board wanted everybody to be reminded and reaffirm their agreement that that was where we were. Then a few things, I thought it was important that we had some recommendations for the families, just so that they got that level of reassurance as well.
91. I didn't know the clinical staffs views on prophylaxis, I didn't know a lot of what their experience had been like and what their views were of some of the big issues, but I was aware. Through the MSN, we had a national clinical director, Professor Wallace in Edinburgh, who had been liaising with the clinicians in Glasgow and was able to keep us abreast of how things were in an informal way, but through the MSN. We were aware about their concerns, for instance, I talked to them about the sewage works and some of the things that they were seeing, and the fact that they had had to move locations and that they had their own concerns about the environmental safety. That sort of information was coming to the MSN, so I knew about that, but not the detail about what they believed about prophylaxis and those kind of more nuanced ones.
92. I did not test this agreement during this. Apart from speaking to senior clinicians, speaking to people who are not shy at saying, "No, actually, I would have done this instead" and that's a pile of rubbish." I was confident in my reading of people and just the fact that I've been doing this for a long time, and my experience was telling me that I was in a group of people who had reached a consensus on that, and at that point I didn't see any need to question that. That might have arisen, if there had been any further issues that had fallen out of the fact-finding process or subsequently from the Oversight Board. There

might have been other areas that needed to be looked at and more rigorous questioning, really, of what I was being presented with but, at this stage, I didn't need to do that.

93. There wasn't really any dissent on that, the people I was speaking to about what the proposal was. The reality was, of course, that people were prescribing things a bit differently, so there clearly was still undercurrents of uncertainty, which is the word that I used, and that was explained to me. It is not necessarily that people have got different thresholds, risk thresholds. There'll be a bit of that, but also the heterogeneity of the patients meant that there was enough: you could give latitude to people that were doing things slightly different for a period of time.
94. I think what was described to me was more what I've explained to you, which is how it came to light. It wasn't that people were being informed or there was a consultant saying things like, "Well, I morally object to, I don't believe you're safe in this environment and I'm going to prescribe this prophylactically to you," and there was no policy there. There was individual practice, which was at variance and, you know, patients and families do talk to each other. I think that's what was causing the slight unhappiness amongst those service users, that they could see the doctors doing things a bit differently, and that's an unsettling place to be. It wasn't that there was a policy and that they were informed to say, "We're doing this." That's not what I was led to believe.
95. Whilst there wasn't a policy, it wasn't being the families weren't being informed through that. That wasn't how they were getting their information. I think there was a whole other arm of this with a patient and person-centred approach to it that was all about communication with families. I think whatever issues were arising that maybe were playing out a wee bit in this example actually were picked up as part of that much wider group. There will be a lot more informed opinion about the whole interactions with patients through that Oversight Board workstream.

96. I always go in with a view that I know exactly what it is that needs to happen here and it's just going to happen, and then you spend half an hour with people and you go, "All right, okay, it's a bit more complicated," and, "Right, this is actually very different," and you build up that much bigger picture of it all. There were things that as a medical doctor, you start to think, "Okay, is there a conduct issue here?". For example, somebody actually veering way off -piste, but when you feel that, when you hear the consensus and everybody's saying, you know, "We're working this through. Yes, we accept we're not in the right place yet. We have all agreed it, absolutely, and there's an opportunity for us to restate that to everybody and we want to take the opportunity," When you hear that consistency and you also hear some of the caveats around the different patient groups, etc. then it starts to become apparent that there's a reasonable way through all of this which will take everybody with us. It wasn't factual as in, "Oh, you've been lying to me." It was nothing with that. It was just me going in with my preconceptions.

Case Note Review Action Plan

97. In terms of the Case Note Review Action Plan, I definitely remember one which came to the MSN and Scott Davidson, and I connected my national clinical director with Scott Davidson and they were going to do the review. The unfortunate thing was the national clinical director, that was just coming out of the pandemic as well, resigned and took a grievance against everybody, so I don't know that that work was ever concluded.

98. In the situation of executive lead, I wasn't even asked. They just put your name against an action "You can do this." That's how that came about. It's possible that maybe somebody said to me, "Would the MSN have a view on this?", and I thought, "Sure," but it wasn't. Scott maybe emailed to say, "Would it be okay if we did this bit of work together?", but it really just comes back to the fact I'm in a pre-existing role as chair of the MSN, I think. And the fact that I

had been around and about the Oversight Board a wee bit and they were thinking, "How can we align this action?"

99. I connected the teams who were looking for the support and the national clinical director, who works to me in the MSN. I can comment that the recommendations / actions remain incomplete.
100. The subgroup papers started to get tabled at the Oversight Board, if I remember rightly and, we were all asked for comments on them, so I would try and give a comment. I do not have these sub-group papers. I had a folder in my inbox for Glasgow's Oversight Board, but I deleted it. I do an occasional clear-out. I hadn't anticipated that I would need it. I knew there was still a lot of controversy round about it, but I thought I was such a bit player in this, there was nothing really that I was going to need to retain. I'm afraid in terms of records retention, I wasn't given any instruction.

Duty of Candour

101. In the context of what I was investigating, to get it to an organisational level, you would need to do case note by case note review and you would need to then identify harm from a case note which is not always as easy as you might think it is. You've then got to apply a test to it to whether it meets the threshold of organisational duty of candour, and then you need to meet the family and write out to the family. That would have been a significant bit of work, which would have been part and parcel of their usual governance processes; so, in other words, when an adverse event was happening, as part of the internal processes for GGC, they should have been and would have been looking at that to see if their governance, "Is this organisational duty of candour?" and they would have been making that decision.
102. It would be really difficult to do as an external person, to make a call on the organisational duty of candour from that patient group. Again, that's all about individualised case note review before you could get at it the right information

to be able to take a view on that. That wasn't the gist and the drive of this particular review.

103. The SBAR report I produced was based on assumptions and some information, but it didn't require a huge amount of information gathering to then inform the next steps. It was quite a straightforward piece of work to be able to do.

104. If we were going to get anything out of this short piece of work, it was to try and bring that back into alignment with protocols as the clinicians were overprescribing prophylaxis because of their concern about the environment despite the reassurance. I wasn't totally surprised to find that people had been anxious about that and concerned given the tension that everybody was under.

105. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Melanie Hutton

PERSONAL DETAILS

1. My name is Melanie Hutton. I am currently the General Manager for Paediatrics and Neonates at the Royal Hospital for Children (RHC) in Glasgow. I am employed by the National Health Service Board for Greater Glasgow and Clyde (NHSGGC).
2. I took up the seconded post to Lead Nurse in October 2014 across in-patient areas at the Royal Hospital for Children Glasgow (Yorkhill) until July 2018. This was originally a secondment which later became a permanent position. In this role as Lead Nurse I had responsibility for Wards 2A and 2B RHC, which are for paediatric haematology and oncology in-patients and day-care, (from October 2015 until July 2018) as well as the other in-patient areas. My Line Manager at this time was Mrs Heather Dawes, who was the Clinical Services Manager.
3. From July 2018 until November 2021, I was the Clinical Services Manager for Paediatrics and Neonates at RHC.
4. My line manager from 2018 to 2021 as Clinical Services Manager was the General Manager for the (RHC) Jamie Redfern. Jamie is now the Director for Women's and Children's service and I took over from him as General Manager for Paediatrics and Neonates. I continue to report to him in this role.

PROFESSIONAL HISTORY

5. I began my nursing career at the Law Hospital in Lanarkshire, where I registered as a General Nurse in 1991. I originally worked with adults but,

having completed a conversion course in 1994, became a registered Sick Children's Nurse and began working at the RHC at Yorkhill in Glasgow, within the Accident and Emergency Department.

6. In 1995 I became a Senior Staff Nurse within the Accident and Emergency (A&E) Department at Yorkhill Hospital. In 1998 I qualified with a BSc Honours in Advanced Nursing Practice and became an Advanced Nurse Practitioner, still working within A&E at Yorkhill.
7. In 2006 I took over the role of Designated Senior Charge Nurse within A&E at Yorkhill, which involved management responsibility.
8. I remained in that position at Yorkhill until 2014 when I became Lead Nurse. During this time the role and responsibilities changed on several occasions so I was responsible for several different areas throughout that period.
9. In June 2015, we moved to the new Royal Hospital for Children, on the QEUH campus. I continued in my role as Lead Nurse there, from October, with responsibility for Wards 2A and 2B, which were haematology and oncology in-patients and day-care. Prior to that, the Lead Nurse for the Schiehallion unit in Wards 2A and 2B was Mary McAuley. She was with the Schiehallion patients during the move from Yorkhill to the QEUH campus, but retired in October 2015 when the wards then fell under my remit.
10. I also covered the third floor, which comprised three 24 bedded Wards: 3A (neurosurgery, neurology, complex airway); Ward 3B (general surgery, cleft and gastroenterology; and Ward 3C (renal, renal day dialysis, orthopaedics and respiratory).
11. I also had responsibility for Ward 1E, which was a 14 bedded ward for cardiac patients. At that point I managed the Clinical Nurse Specialists, whose specialities linked into those wards. They provide outreach and out-patient support by working with patients at home, providing them with the necessary

care and support to allow them to be treated at home rather than having to be admitted to the hospital as inpatients.

12. As Lead Nurse I did not undertake direct clinical care within my areas, however I did have leadership responsibilities for all of the areas which I covered. Each ward has a Senior Charge Nurse (SCN) and, as a Lead Nurse, I had a remit of multiple areas, so it was my role to provide leadership and support to the SCN's and their teams.
13. Prior to moving to the RHC, I did not have responsibility for haematology-oncology. At that time, that unit was under the remit of another Lead Nurse colleague, Mary McAuley, who subsequently retired in October 2015. After her retirement, responsibilities for the ward areas were changed and it was in October 2015 that Wards 2A and 2B and the Clinical Nurse Specialists all fell under my remit.
14. As Lead Nurse, I routinely chaired the daily safety huddle, at which I was responsible for ensuring safe staffing as well as escalating any concerns to the Clinical Services Manager and Chief Nurse. Each Lead Nurse has different areas of responsibility.
15. In terms of the supervision structure in the Wards, each ward under my remit had a Senior Charge Nurse and they all directly reported to me. There were nine teams of Clinical Nurse Specialists, whose team leads reported to me. One of the teams was the Paediatric oncology outreach nurses (POONS), whose main role was to aim to provide care in the home rather than in hospital. Anne Clarkin was the lead for this team. At that time Angela Howat was the Senior Charge Nurse for Ward 2B and Emma Somerville for Ward 2A.
16. In my role as Lead Nurse, Heather Dawes, who was the Clinical Services Manager, was my line manager. Heather retired in June 2018 and I was then appointed as the Clinical Services Manager for Paediatrics and Neonates at RHC until November 2021.

17. I succeeded Jamie Redfern as General Manager in November 2021.

CURRENT ROLE

18. Within my current role as General Manager, I have operational responsibility for the day-to-day running of the Children's Hospital as well as for developing and implementing services within RHC and Neonates, ensuring that there is a clear focus on the delivery of a range of high quality, safe and efficient patient-centred services to meet local and national targets. I work in close partnership with the Chief Nurse. She is responsible professionally for nursing staff. I currently line-manage the Clinical Services Managers, of which there are two. I am responsible for all national services. I also have budgetary responsibility for the RHC.
19. Since being in my role, I have not made any changes with regard to the monitoring of environmental safety in Ward 2A and 2B. The actual audit of the environment status sits under the remit of the Infection Control team and I have adhered to the processes that were put in place by that team. The Chief Nurse takes overall responsibility for infection control within the hospital, with support from the General Manager.

THE NEW HOSPITAL: PLANNING STAGE – PRE 2015

20. I was not part of the Design Team for the new hospital. At the design stage for the new hospital, I was in fact Senior Charge Nurse of the Emergency Department (ED), so I was involved in some pre-hospital meetings in relation to some broad aspects of the configuration of the ED.

RHC: DESCRIPTION OF THE PHYSICAL ENVIRONMENT

21. The Nurse Specialists were all based in the office block which was co-located separately from the hospital. They were not always in the hospital because they worked a lot remotely and they did a lot of clinics. Because of the size of the Children's Hospital and the fact we have a lot of national services, they also

provide a lot of remote care to clinics and other neighbouring health boards, so we did not always physically see them inside the hospital on a day-to-day basis.

22. The third floor included Wards 3A, 3B, 3C and the dialysis unit, which is part of Ward 3C. Directly below that floor were Wards 2A and 2B which were the haematology-oncology wards. Also on that floor was acute receiving, which was managed by another Lead Nurse.

UNIQUE FEATURES OF WARDS 2A AND 2B RHC

23. At that point, Wards 2A and 2B were physically very similar to those wards on the third floor, although there were some differences. Wards 2A and 2B did not have a four bed bay. All the wards on the third floor had four bed bays. Ward 2A had all single cubicles and the staffing levels were determined on single cubicle allocation
24. Ward 2A also had the Teenage Cancer Trust (TCT) corridor which had the four TCT rooms; these were different to the other wards. By that, I mean when you come in the corridor, you go through another room and there is a sub-corridor, so it feels like their own suite of rooms rather than them being in the main ward area. Then there are four cubicles with a different interior design to the others. Clinically, they all look the same, but the designs of them were very much geared towards teenagers and teenager friendly so that meant they were different from the other ward. The lighting was nicer and the area looks more grown up; the soft furnishings have been chosen to reflect the age group.
25. TCT has its own zone sitting area, which has a jukebox, a pool table, gaming chairs and outlets and a nice large television for them. They have their own kitchen area. That is not offered anywhere else in the other in-patient ward areas, so I think that is why it is different.
26. The Schiehallion unit also had the bone marrow transplant rooms which had anterooms going in to the room. When you enter the room, you step into

another area called an anteroom, before you close that door and open the door of the cubicle into the bedspace. The other rooms, you would open the door and be straight in the cubicle. The anterooms were specially designed at the build stage of the hospital.

27. Wards 2A and 2B had a playroom, which is the same as the other wards. Wards 2A and 2B also had a parent room, a classroom area and an interview room which the other wards did not have a parent room or classroom.
28. Ward 2B was a day care unit so it was designed completely differently. It was not seen as an in-patient area, but it was designed very similarly to Ward 1C, which is another ambulatory care area.
29. Ward 2B was designed more like an out-patient facility so there are not in-patient beds; they have examination couches instead. There are single cubicles for the couches and there are also bed bay areas with beds to allow treatment to be carried out.
30. There are also waiting areas for patients and office areas located next to the waiting areas, which the in-patient areas do not have.
31. I was not responsible for the Paediatric Intensive Care Unit (PICU), however I am happy to describe the layout. The PICU is completely different to an in-patient ward: it has six cubicles in it and it has a negative pressure room which is where any patients with infectious diseases would go.
32. It has bed bays which are to facilitate one-to-one nursing and also to accommodate the amount of medical equipment required, so the bedspace configuration is larger than it would be in a normal bed bay.

Protocols For Specific Patient Groups

33. We have many protocols relating to care and treatment within the hospital called Standard Operating Procedures (SOPs), however as I am in a managerial role, the responsibility for these sits predominantly with the clinicians and the clinical teams, rather than with me.
34. We do have clinical guidelines for patient care or pathways. These would be signed off by the clinical team - the nursing team and ultimately by the Senior Charge Nurse - rather than myself
35. The clinicians are predominantly responsible for the clinical guidelines, so the consultants and usually the clinical leads for the areas would sign off any guidelines of that nature.
36. SOPs such as handwashing and the various other processes and protocols sit under the Infection Control nursing team rather than the ward nurses. I would have sight of these documents and would also give comment, however I would not be the author or the final sign off authority for them; that would remain under the team who had ownership for that particular SOP.
37. Most SOPs are general for the hospital, however the handwashing SOP would be a generic infection control SOP which would be used across GGC.
38. There are some SOPs which would only be specific to one area, however, because they would be more patient focussed or specific rather than general and standardised.

INITIAL IMPRESSIONS OF THE NEW HOSPITAL: 2015

39. When we arrived at the hospital there was nothing I could see that gave me any cause for concern. We did some pre-visits prior to the children coming over, and I do remember at times there were small amounts of materials still visible and areas still under construction, but that was all rectified prior to us moving in.

40. I remember taking staff around and having to make them mindful that certain aspects would still require to be completed prior to the hospital opening, as they thought they were going to see the finished result. Wires were still visible on the ground and, in the out-patient area, in the main atrium of the hospital, there were broken tiles and there were some roof tiles also missing in some of the areas. We were mindful, however, that the hospital had not been handed over at this stage. There were still workmen working on site when we attended site visits. Any unfinished areas were cordoned off and they were working on them prior to us moving in. We had to wear working boots, a hi-vis vest and a hard hat during the site visits and we first had to sign ourselves into the project building site. We were given different badges to get into the hospital and we all got a health and safety check about entering the building. We had to go through all of that before we went on to the site.
41. But that was prior to us moving in to the building; once we arrived on site on the day of the move, I had no cause for concern at all.
42. When we did move in, it was completely different to Yorkhill. The new hospital looked very child friendly and young person friendly. It was very colourful. It had been designed very much with colour themes in mind and it all felt new; it felt modern.
43. The atrium was impressive: when you arrived in the hospital it was like no other hospital I had been in. It looked completely different. There was the out-patient area which looked more like a science centre, so that visually was completely different, when we arrived the hospital looked modern and new, large and colourful.
44. Comparing the areas I worked in at Yorkhill Hospital to the new RHC, we went from an open ward to single cubicles, which were very well received by the parents because they all had their own areas as well as an en-suite facilities.

45. Previously in Yorkhill, parents may have complained about not being able to sleep because they were in open bed bays and could hear babies crying and did not have individual washing facilities, so those issues had been resolved.
46. Each ward had a treatment room, which they also had at Yorkhill, but the treatment rooms at the new hospital were more modern and there was also a lot more storage space.
47. Medical equipment was the same in the wards, but the single spaces had their own bed heads, so each bed had its own gases, suction and oxygen. This was an improvement to the facilities in Yorkhill.
48. The emergency department was also far bigger than we were used to previously. It was designed with a standalone four bedded resuscitation area which they did not have at Yorkhill, which by comparison was all very cramped.
49. At Yorkhill the resuscitation area had been a redesign of an old part of the back of paediatric ITU and it had been made to fit, whereas in the new hospital it was designed for purpose, it had a much better entrance. The ambulances could come straight in, whereas previously they had to go through the clinical area, so everybody would see a sick child arriving in the hospital because they would have to go through the waiting area. When we moved to the RHC, we did not have that issue anymore.
50. We also had a separate area for triaging patients, so they had their own rooms. At Yorkhill this sometimes had to happen in corridors, so it was not private there at all. That issue had been resolved in the new hospital.
51. In the new hospital, within the Emergency Department, within the waiting area there was now an entrance and exit door for triage, so we were not having to take patients in and then having them feeling as if they had to go back out in to the main waiting area.

52. There was also a separate minors' area and majors' area too, so the emergency department was about three or four times larger than the ED we had in Yorkhill.
53. Also it was all very much better designed. At Yorkhill Emergency Department we were all in cubicles. With some of the doors you could walk along a corridor and often could not see all of the patients. Patients could be sitting deteriorating and the nursing staff would not be able to see them, but that is not the case in the new hospital.
54. The new emergency department is very much designed on what we call a 'ballroom facility': it is a round, curtained area and allows a member of staff to eyeball all of the patients in the unit at the one time. It all felt much safer than it did at Yorkhill.
55. I suppose now with the media coverage the general public may have now formed a different perception of the hospital. I do think that will change.
56. We have modernised the way that we work and we will continue to modernise, but that is probably more through IT and other innovations that we adopt rather than a focus on the fabric outlay of the building.

Room Temperatures

57. I was aware of issues with temperature in the rooms. There were times when people would report to the nursing staff in the ward that some of the rooms were too warm or too cold, but we had ways of escalating that through our Estates colleagues who would then rectify the problem. Issues like that would tend to be raised by the staff to the nurses in the wards. They would then log a call through our Estates facility which is done on our Facilities Management (FM) reporting system. The procedure is: the nurses would log the issue online; and Estates would then reply, and as the heating is controlled centrally, they would then adjust the temperature either up or down accordingly. There is also

a phone number that the nurse can phone straight through to the FM desk and Estates will respond directly to them through that if they do not immediately pick it up through the FM.

58. The temperature fluctuates quite a bit depending on the Scottish weather. For example, yesterday the building felt warmer because we had our heating on, but then it became warmer than expected outside and therefore Estates had to adjust the temperature down accordingly.
59. The Senior Charge Nurse would make me aware that they had contacted the Estates Department because the temperatures were either too warm or too cold, but I would not be the one to whom people reported the issue.

Functionality of Blinds

60. The blinds in the wards are all inside the glass units of the windows; they were designed that way for infection control reasons. Previously, when we were in Yorkhill, we had roller blinds, but these fell off all the time. They were always breaking and were challenging to clean, so part of the new build was to include what we call integral blinds. Now the blind units are all sealed inside the window. There are buttons on the inside of the window units that turn which can either open or close the blinds inside.
61. I am aware of times where blinds have broken and people have been unable to adjust them. Again, issues like that would be logged on our FM system and our Estates colleagues would come out and fix them. These issues would not be reported directly to me.

Television and Wi-Fi Issues

62. I am much more familiar with issues we had with the televisions than I am with the Wi-Fi. The televisions we had were patients' standalone televisions. This was something we were all excited about as we had not had anything like it

previously. Initially they worked very well, but then just with all the constant usage we had issues. I cannot recall when the issues with the televisions happened.

63. Remote controls began to go missing; people were accidentally taking them home or mistakenly putting them in the bin, so we went through an immense amount of remote controls at the very beginning.
64. Then the televisions themselves became problematic. There were issues with them not switching on and off, not functioning properly and not being accessible for everything they were designed to do. We routinely had Estates out checking them.
65. We couldn't really move the televisions ourselves because they were all wall-mounted, so we would try and accommodate patients as much as we could. If there were empty rooms, we would move the patients about so that they could get a room with a working television.
66. If we were aware of a television not working, we would offer DVD players.
67. Recently, however, just since the end of last year, we have rolled out a very successful redesign programme where we have removed all the previous televisions and replaced with iPads.
68. These have recently been installed throughout the second and third floors and are in the process of being installed across all of RHC. We have access to Netflix and Disney Plus on them and the children love them.
69. I was not as aware of Wi-Fi issues. There were spots when we moved in where we felt sometimes the Wi-Fi signal was not as great as other areas in the hospital, but these were resolved by the Estates and Facilities team who arranged for additional routers to be installed.

Plug Points And Battery Packs

70. I was not aware of any issues with plug points or battery packs, however, I am aware that, following the decant from Wards 2A and 2B, and we were doing the work for moving back from 6A to 2A and 2B, the nursing staff asked if we could put additional sockets in.
71. Our young people also asked for additional sockets in the TCT rooms, although that was more for having data points for charging their phones.
72. We did not have these originally, so we have put data points in the TCT room on the move back. We have also put additional sockets in, but that was the first time I was aware that anyone did not think there were enough power points.

Ward Entry Systems

73. I am not aware of any specific issues with the entry systems for Wards 2A and 2B. There was an issue with one of the other wards – Ward 3A that routinely had problems with their door when we moved in, however, that was resolved.
74. More recently, we have adapted our entry systems. We have moved on technology wise so we now have fingerprint readers for parents. I am aware that ward access was a problem felt by parents, not just in 2A/2B but throughout the wards.
75. We are obviously a children's hospital so we obviously have children and young people and babies in our wards. We only have swipe access for staff, so any visitor or parent had to press a buzzer to allow access and then they had to wait for a staff member to come and help. The buzzer would ring on the nurses' station, which is manned by the ward clerk.
76. Most areas, apart from Wards 2A and 2B, would only have a ward clerk on duty until 4 p.m. If nurses were busy in the evening, there may have been delays in

answering requests for entry where parents may have felt as if they were not being allowed access quickly enough. Ward 2A had cover in to the evening and over weekend.

77. We listened to feedback from parents, acknowledging that these delays were not acceptable, and therefore we looked for newer technology and we now have fingerprint entry installed in all of the wards. Now, when a parent is resident, we can take a fingerprint from them and it is recorded electronically, which gives them access if they use one of the readers outside the wards.
78. If you were to attempt to gain access to the ward and you did not have your fingerprint recorded, you would not gain access. When the child is discharged from the ward, the fingerprints of the parents are then deleted. This system is working exceptionally well.

Issues Relating to Sewage Leaks

79. There were more issues in external areas than in ward areas. I am aware that there was on one occasion a sewage problem in areas in the corridor behind the Aroma Coffee Bar; that was only initially when we moved in, and again that was escalated to Estates who rectified the problem. The Aroma Bar is not close to Wards 2A and 2B. The area with the leakage was in the corridor behind the Aroma Coffee Bar which is an office area.
80. I cannot remember the exact details, but I think that there was an issue in Ward 2C at one point, which is the acute receiving ward with a toilet which leaked. There was also an issue I think in the adjacent toilets to Ward 2C. I cannot remember the date this occurred
81. Our process in situations like these is for the nurse in charge to record the incident on our FM system. However, we also have our huddles that happen at 8am and 3pm every day, which is also an opportunity to raise any estates issues.

82. At the 8 am huddle, we would pick up anything that had occurred overnight and anything that needed action taken immediately. Our Estates colleagues would be at the huddle and we would escalate that straight away to them and they would send a team out, therefore, we do not always rely on the FM system.
83. If there was an issue with sewage, we would not just record that on the FM system and wait for Estates to pick up the call; we have a system where we can contact them either out-of-hours or during the day. Where we required an urgent response, we would phone the Estates Duty Manager, and they would respond immediately.
84. That would be over and above the online reporting, but we would also always log the call, so that this was recorded. It is the same if we are asking for a terminal clean of a cubicle. We have a system where everything is logged, for example, if you wish to request a porter, then you log it. But if you want something urgent or as a priority, there is another way that we could just pick up the phone and phone through to the on-call DECT (Digital Enhanced Cordless Telecommunications) phone and we would get an immediate response.
85. The term terminal clean is an enhanced clean. If we have had anybody that requires to be isolated due to infection, then we would request a "terminal clean".

Issues Relating To External Cladding

86. I am aware that the adults' hospital had some external cladding replaced and some panels in the children's hospital have also been replaced. I cannot recall when the cladding issue was, but I think it was around 2018.
87. The majority of the works in relation to cladding has been carried out in the adults' rather than the children's hospital. External panels were replaced in the children's hospital, although I am not sure exactly of how many or where.

88. **(A38845769 – Cladding briefing for inpatients dated 7 September 2018, Bundle 5, page 101)** I am referred to this document, which is a briefing for patients. This shows a picture of the Children's Hospital. I do remember this briefing being issued to the parents when we had to make arrangements for a different side entrance to the QEUH and provision of a designated car park area. It was not me personally who issued this communication; it was the nursing staff. The leaflets were also posted out to families who were not inpatients at the time. I think we also provided the families with a site map showing the location of the car park and the side entrance in order to access Ward 6A. With regard to the fourth paragraph of this leaflet **(A38845769 – Cladding briefing for inpatients dated 7 September 2018, Bundle 5, page 101)** I would not have been involved in any discussions about the use of anti-fungal drugs.
89. I remember that there was an occasion on which an external window fell out of the Adult Hospital and, as a result, an area had to be cordoned off outside the hospital. If you can visualise the two hospitals sitting side by side, you have the main entrance to the Queen Elizabeth and on one side of that is what is termed the side entrance. This used to be the discharge area for the QEUH; it is currently the SATA (Specialist Assessment and Treatment Area)
90. It was one window that had come out as a panel on the right hand side of the Adults hospital, which was a completely different side of the building from Wards 2A and 2B.
91. I did not have any personal involvement in this at the time; we would only be notified of an occurrence like that if there were a piece of work being commissioned which would result in areas of the campus needing to be closed off. That information would be disseminated via core brief or direct to me from the Estates and Facilities team to notify the wider team.

Issues Relating to Smells Inside and Around The Hospital

92. I am aware that we received comments about the smell of smoke coming into the in-patient areas in the hospital from members of the public smoking outside the adult hospital. Smokers tend to congregate there and then the smell rises up. The smell of smoke from below was experienced more on the theatre floor. We have cordoned off the area where the problem was so that the public can no longer get into that area. This was initially done with a temporary barrier, but it is now a permanent, fixed barrier. We have also implemented a No-Smoking Policy and it is now easier to enforce that because of the implementation of the smoking legislation which prohibits smoking within 15 metres of the hospital site. Members of the public will still try to smoke, but they are always asked to move on and to stop smoking. These changes were actioned as soon as the issue arose.
93. During summer months the smell from the adjacent sewage plant on the QEUH site can be noticeable.
94. We were all aware of the sewage smell when we moved over to that site. I think that had been an ongoing issue for people who had worked in the old Southern General Hospital site which was there before. It only tends to be more problematic on certain days, depending on the temperature. You tend to smell it more in the summer on the hot days but you are not aware of it all of the time. The sewage plant is not part of the QEUH campus site. I have never smelt it in the hospital; only in the outside areas of the hospital campus.

INFECTIONS

Hospital Acquired Infections

95. My understanding of a Hospital Acquired Infection (HAI) is that this is an infection which is a direct result of healthcare interventions such as medical or surgical treatment, or from being in contact with a healthcare setting. The term HAI covers a wide range of infections.

96. A non-HAI is an infection which would occur outwith a hospital setting.
97. I am aware there is a related term, HCAI – Healthcare Associated Infection - but I would know this acronym as being an HAI, a Hospital Acquired Infection. That would be the terminology I am more familiar with.

Protocols Around Suspected Line Infections

98. I do not have the expertise to be able to comment.

Monitoring and Investigation Of Infection In The Hospital

99. My understanding of the investigation and monitoring of infections within the Children's hospital is as follows. If a child or a young person is reviewed by the clinical team and there is a concern that the child may have an infection, then a blood sample would be taken and sent to the laboratories. They would then analyse it and send the results back. The clinician receives an automatic notification that the result is back and the results would then be passed to the person who submitted the sample.
100. If the Microbiologist in the labs feel there is an abnormal result, then that information is triggered directly to the Lead Nurse for infection control. If there is anything the lab is concerned about, they do not wait for it to come back through the normal process of it being updated on the Portal; instead there is an immediate phone call to the ward to say that the Microbiologists have a concern with a result and request for this to be passed immediately to the clinical team.
101. That information would then be cascaded to the appropriate people in the patient area, and that would be to the Clinical Lead, the Clinical Director, the Lead Nurse for that area and the Senior Charge Nurse for the area.

102. If the lab results show an unusual infection from the blood samples or if there is a concern that there is more than one patient with the infection, that would be a trigger for a Problem Assessment Group (PAG) to be held, which is a group which assesses an infection situation.
103. That is an initial stage which is led by the clinical team for the patient and infection control. If they then feel that the next level has to be triggered, then an Incident Management Team group which would be established, which is the IMT.
104. The IMT would be where the peripheral people to the patient would be involved, such as me in my role as Lead Nurse and then Services Manager, so I would not predominantly be involved at a PAG stage but I would at an IMT.

Involvement with Infection Control Procedures On The Wards

105. As a Lead Nurse I would be involved in attending the monthly Infection Control meetings that were chaired by the Chief Nurse. I would also be involved in cascading any information or policy changes.
106. I would also perform enhanced supervision, along with the Lead Nurse of Infection Control across all my areas. That would consist of ad hoc visits to the wards where we would go through a process looking at the cleanliness of the ward, inspecting the equipment, making sure we were happy with the standards within the ward, checking nursing documentation, checking our care assurance bundles and making sure that our CVC (Central Venous Catheter) lines are all marked that they have been checked.
107. It would be the same with the IV (Intra Venous) sites: we would check that all their paperwork was up to date, that we had assurance that this was all being carried out as per procedures, and this process would be across all my ward areas.

108. We would also seek guidance from Infection Control if we wanted to change anything in the ward or if we were looking for advice on visitors coming to the ward, or if there was concern that we had, for example, a patient with diarrhoea or vomiting.
109. We would also seek guidance if someone came in with chicken pox or anything else which is infectious. So in all these cases we would have direct communication with Infection Control.
110. Infection Control are always available for advice and support. They also have an on-call system; they have a Microbiologist out-of-hours. During hours you would predominantly go to your nursing colleague and ask them to seek advice from the Microbiologists. However, out-of-hours the nursing teams are aware of the on-call system through the switchboard which would access a Microbiologist if they were looking for any advice.

General Actions Taken In Respect Of Infection Control

111. I would walk around my areas every day when I was a Lead Nurse. I would not perhaps do an enhanced check daily, however we carried out monthly audits at that time and then, depending on what may have been found in some areas, I would go back more frequently until I was happy that any issues I had asked to be addressed had been resolved.
112. However, in general when I walked through my wards, I was very much aware of aspects which could potentially be issues, such as storage. For example, were there items stored on floors that should not be there? Was there equipment in corridors that could be moved? You get a feel for the general tidiness of the ward and you work proactively to keep it as clear and as safe as possible.

113. Equally, if I found that if, for whatever reason, there was a cubicle closed, I would take action to inquire why and, if issues were still waiting to be addressed, I would escalate it to Facilities
114. We would also be assisting the staff if occupancy was high in the hospital and we were looking to move patients, I would go and make sure that we had beds to ensure that the patient flow continued in the hospital. All that would be done as a Lead Nurse; it would not have been done as a Service Manager.
115. When I became a Service Manager, I began to have very limited access or presence on the wards. I would still have involvement but not as directly as I would have as a Lead Nurse.
116. The Clinical Service Manager is the line manager for the Lead Nurses. I am still very much aware of the Lead Nurse structure and, having being a Lead Nurse, I would like to think I am able to support them a bit more than if I had not been through that journey myself.
117. Once I was appointed as Clinical Services Manager, I did not attend the monthly infection control meetings. My colleague, attended on behalf of the Service Managers.

Cleanliness And Hygiene Within The Hospital

118. I have never had cause for concern about the cleanliness of the building. If we required an area to be cleaned, we relayed this to our Domestic Team/Facilities Team and it would be escalated to the supervisor via a telephone conversation. There would either be an immediate response or this would be actioned within a reasonable time frame.
119. There have been times when I might go in to an area and visually see something and want it cleaned. We all carry DECT phones and, if that were the case, then an automatic phone call would be placed to the duty manager for

Facilities. If they ever got a phone call from a Lead Nurse to say we had concerns about an area or room we wanted cleaned, then it would be actioned on as soon as possible.

120. I would say that was part of everyone's role in the hospital: if we see something we are not happy with then we have a responsibility to escalate that and to ensure that it is done. Perhaps as nurses we are more visually aware than other specialities and, because of my role, I always wanted to ensure that my area was clean and tidy.

CHRONOLOGY OF EVENTS: WARD 2A/2B RHC

ISSUES RELATING TO THE WATER SUPPLIES: 2017 to 2018

CLABSI Group: 2017

121. In May 2017 a Quality Improvement project was formed following an upsurge in positive central line cultures in haematology and oncology patients since July 2016. The primary aim of the project was to reduce Central line associated blood stream infection (CLABSI) rate.
122. As part of this quality improvement group the use of Curoc port protectors was introduced – I assume this is what is referred to as the green caps. Representation of membership of this group would have included the Lead Nurse for Infection Control.
123. The CLABSI improvement group demonstrated a reduction in line rate infections.

INCIDENT MANAGEMENT MEETINGS (IMT)

ROLE AT THE IMT MEETINGS

124. When I changed roles from Lead Nurse to Clinical Services Manager, my role within the IMT meetings also changed. Initially my role was more about

gathering information, so my presence more often or not was in listening. It was about being given information and then being asked to act on the information we were given, and to implement the recommendations from the group into practice.

125. Then when I changed roles to become Clinical Service Manager, I stepped back slightly from these meetings. To give you an understanding of the structure, at that point our General Manager, Jamie Redfern, was very involved in the IMTs and therefore he was my direct line manager so there was operational representation at that forum. It was felt that it was probably unnecessary that both of us were in the meeting because I also had responsibility for the rest of the hospital.
126. Because of this it was decided at that stage that he would attend the IMT and that I would take the lead for the move back. I then became part of the Project Board for the refurbishment in ward 2A/B Initially this was to be the redesign but, as matters evolved, it went on to become a complete rebuild of Ward 2A and partially 2B. This was managed by the Project Board, which was governed by the Capital Planning Team.
127. Initially my involvement in the IMTs was as Lead Nurse. It would be normal practice that the Lead Nurse would attend any IMT for any of their areas, so if that had been any ward under my remit I would have been invited as part of the membership to the group.

MEMBERSHIP OF THE IMT GROUP

128. Membership of the IMT group is based around the roles of the people involved. There are key people who are always invited; the clinical lead for the speciality is always involved. If there are single patients directly involved, then the lead consultant for those patients would attend.

129. The Senior Charge Nurse and the Lead Nurse would be invited as well as the Infection Control Lead Nurse, the Clinical Director, the Clinical Lead for the speciality, the Microbiologist and the Clinical Services Manager for the area. That would be the standard membership.
130. Infection Control send out the invites for the IMTs, so they have the protocols for inviting people. They have an organisational chart for the areas of responsibility and they know who the members should be for any specific incident.
131. Through time, the membership did grow as we discovered more along the process and more senior management became involved who would maybe not have usually become involved at IMT level previously; people who would usually have an awareness but would not necessarily have full membership.

CULTURE WITHIN THE IMTS

132. At the IMT meetings I attended, everybody was given an opportunity to speak. I always felt I was able to speak freely, voice my opinion and be heard. I never saw anything at any of the meetings that gave me cause for concern.
133. I am also unaware of anyone ever raising a concern that they were not able to speak out. At times we asked some external experts to come in, for example I remember a meeting where we had a drain and all of the plumbing components on the table. I can remember asking what parts were for, what the different sections did and why we were concerned about certain aspects of the drainage.
134. For me there was never a time where I felt any question I asked would not have been answered or that I would feel stupid in the way that I asked a question, so we were all given an opportunity to speak. In fact, at the end of the meeting we were all asked if there was anything else that anybody wished to raise or have clarified, so I felt that everybody in the group had an equal voice.

135. I can remember some IMT meetings more than others. I do remember a HIIAT (Healthcare Infection Incident Assessment Tool) scoring system, where there were laminated cards on the table and we were all given a HIIAT card with a red/amber/green component and there were four topics that we were asked to risk assess. All of the members of the group, whoever was present at the IMT, were asked to comment on each component of the HIIAT score. I did feel that it helped very much because it guided you to what level was the outcome. Each area was discussed and then it was a consensus agreement amongst the membership of that forum of the score for each section. The four sections then tallied up to produce the end result. The Chairperson of the IMT then talked us through the four components of the score but everybody present in the meeting had the ability to comment and give their opinion.
136. There were times when some people in the group maybe did not agree and that sometimes resulted in a bit of debate, but the consensus of the group was always that the whole group were asked to score, and then the final score would be the result.
137. We always scored the HIIAT at the end of the hypothesis and I do not remember any occasion where we ever disagreed on what the outcome of the final HIIAT score. There might have been some discrepancies as the meetings and the membership became very large, so it would trigger a lot of discussion at times. But I would always say that the feeling was at the end that any agreement reached was agreed by the whole IMT.
138. The first IMT was chaired by a microbiologist, Dr Teresa Inkster. I cannot remember if I was fully aware of the reasons for the IMT being convened beforehand, but it became clear through the meetings that there may be some concerns on the part of Dr Inkster that water may be the source of infection.
139. There were many IMT meetings as the group tried to establish what was or was not the cause. That was not something I was closely involved in as it is not my specialist area to interpret the water sampling or to understand infections in this

patient group. I was a member of the IMT group as the Lead Nurse for Ward 2A and 2B. I did not have clinical knowledge of that field but I was aware there was a potential concern over the water.

Water IMTS: 2018

140. As Lead Nurse I would have been involved in IMT meetings if it had anything to do with my area of supervision. I was at several prior to the IMT meetings of 2018, but the only one I can really remember was when we had a norovirus breakout in 3A in either 2016 or 2017 over the Easter weekend and we had to close the ward for a number of weeks because of it. I would have been involved in others as well but I cannot remember exactly what the cause was or what they were

IMT Meeting – 9 March 2018

(A36690458 – Incident Management Meeting, dated 9 March 2018 relating to Water Contamination in Ward 2A, Bundle 1, page 60)

141. I attended an IMT meeting on 9 March 2018. There are various investigations listed in this set of IMT minutes. I do not remember much about this meeting. The water sampling was ongoing at that time, but I would not have been involved in that; it would have been Estates team that would have undertaken the water samples. I first became aware of concerns about the water through the IMT meetings. I believe this IMT was called in March 2018 due to a patient presenting with *Cupriavidus* bacteraemia.
142. The results of those samples then went to the labs. I would not have been involved in any discussions about the results until it came to the IMT.
143. I remember Teresa Inkster asking for a tap to be brought along to that meeting by Estates. The tap was dismantled and bags containing all the component parts of the tap were displayed on the table so that we could look at them as a group. A member of the Estates Team identified a flow straightener and explained that the purpose of bringing the tap was for us to be shown what it

actually looked like because there had been a bit of discussion about the tap and the flow straightener being potentially problematic.

IMT Meeting - 12 March 2018

(A36690457 – Incident Management Meeting - 12 March 2018 relating to water Contamination in ward 2A, Bundle 1, page 63)

144. I attended an IMT meeting on 12 March 2018. There are a number of control measures listed in the minutes, some of which I had a role in. I would have been responsible for implementing some of the actions at this meeting along with whoever the nurse in charge was. This was when we had the mobile hand basins coming on site.
145. If I remember correctly there was a decision made that they were going to be brought in at night. We spoke about options, such as staying on shift and rolling them out at night, but the children would be sleeping, so the group agreed we would wait until first thing in the morning. I was in the ward the next morning and that is when I spoke to Facilities about bringing them in.
146. They had to outsource different suppliers to get them, so they did not all look the same. They were all different shapes and sizes and I remember that we asked for a demonstration from the Facilities team. The clinical team had various questions around the temperature of the water and how it would be controlled. I assisted the Facilities team to take the mobile sink units in to the ward area and it was the Facilities team that gave a demonstration to the nursing team on how to use them so they in turn could demonstrate how to use them to the patients and family.
147. We introduced bottled water at this stage for washing and bathing and I ensured that staff knew how to decant the water and assist colleagues with hand washing. I am not sure if any of these control measures at all impacted on the patients' treatments. I would say it impacted on them from the

perspective that it was not common practice to have a mobile sink unit in your room and it was not common practice not to be allowed to shower.

148. At this time sterile water distributed from the pharmacy was initially used for drinking. I cannot remember at what time, but we did begin to change to using normal bottled water for drinking, not sterile. We did, however, continue to use sterile water for our Bone Marrow Transplant (BMT) patients, who are our most immunocompromised patients.
149. I was aware that this was not normal practice; I had never done anything like this or been asked to do anything like this before, so I did ask questions. Myself and colleagues were giving assurances to staff and families that we had been advised by Infection Control that these were proper measures to put in place, and were doing our best to make everyone aware of what we were trying to do and why we were doing it.
150. At this time, I was not dealing with the parents directly; it was the nurses in the ward who were speaking to them. I am aware of one incident where a parent asked the nurse in charge to speak to the more senior management team. I then accompanied Jamie Redfern to speak to that parent. They wanted us to explain why we were bringing the sinks in and why we were asking them to use bottled water.

IMT Meeting – 21 March 2018

(A36690549 – Incident Management Meeting, dated 21 March 2018 relating to Water Contamination in Ward 2A, Bundle 1, page 75)

151. I attended an IMT on 21 March 2018. In these IMT minutes, it is noted that I raised concerns that a four bedded bay in Ward 3A had not been fitted with filters and that there were immunocompromised patients there.

152. By this time, we were now looking at filters outside Wards 2A and 2B, across all of RHC. I walked all my areas every day and 3A was part of that, so one of the things I started to do was making sure all the taps had filters fitted.
153. I do remember raising the issue that there was a sink in a four bed bay within that ward that did not have a filter on. It just so happened that I was coming to the IMT and I raised this at the time so that it could be actioned straight away. I remember Colin Purdon actioned it and they were fitted that evening. Colin was a member of the Estates Team but I cannot remember his title at this time
154. **(A39123924 – Email from Angela Johnson to all senior staff nurses subject: Water Incident Update 28.03.18 dated 28 March 2018, Bundle 5, page 132).** This was an email communicating the direction and actions that came out of an IMT that had to be circulated to update staff. It was my understanding that this was more directed at the nursing staff than a communication that was to go out to families, but there was information that was potentially going to be communicated to families within Ward 2A in due course. The people copied into the email are the Senior Charge Nurses and Lead Nurses, which would be the normal process and the Infection Control Team would be copied in too. I was a Lead Nurse at this time which is why I have been copied into the email. It was copied to all the heads of service, ITU, NICU and Theatres. It was for nursing staff to implement the actions that are taken from it as the result of an IMT.

IMT Meeting – 29 May 2018

(A36706508 – Incident Management Meeting, dated 29 May 2018 relating to Enterobacter Cloacae in Ward 2A and 2B, Bundle 1, page 91)

155. I attended an IMT on 29 May 2018. In these IMT minutes I have reported that Ward 2A are carrying out SICP (Standard Infection Control Prevention) audits weekly and hand hygiene audits monthly.
156. At this time, we had increased our normal practice and were carrying out weekly SICP audits (Standard Infection Control Precaution Audit). These are

carried out by one of the nursing team, usually the Senior Charge Nurse or a Band 6. The audit is then uploaded on to an IT platform which Infection Control has sight of.

157. SICP Audits review the safe management of care, environment and equipment.
158. There is also mention in these IMT minutes that I would arrange a peer review of line care on Wards 2A and 2B. Our peer review was an observational study carried out by our Clinical Educators. They are the nurses who train our ward nurses on line care and management. We have Clinical Educators across multiple specialities, as well as a generic team, to cover in-patient areas. A number of speciality areas have their own educator or Educating Team who follow a competence pack and complete a training structure in order that all the ward nurses are trained and competent in line care.
159. At the time, the Haematology-oncology department had its own Clinical Educator, who was responsible for delivering education and training to the ward staff. However, a peer review, is undertaken by another Clinical Educator from a different area.
160. So because of the high risk nature of Wards 2A and 2B, the Neonatal Intensive Care Educator and our Paediatric Intensive Care Educator were probably the best comparison areas where we had a lot of patients with lines in, therefore they would come and carry out the peer review.
161. Likewise, our haematology-oncology nurse would also do peer reviews in either NICU or PICU.
162. At this point, I had been asked to arrange a further peer review to make sure the same standards had been reached as the previous peer review. If I remember correctly, it was the educator from NICU or PICU who came over to do that and that report would have gone to the Chief Nurse.

IMT Meeting – 4 June 2018**(A16690448 – Incident Management Meeting, dated 4 June 2018 relating to Water System Incident in Ward 2A and 2B, Bundle 1, page 94)**

163. I attended an IMT on 4 June 2018. At this IMT there was a discussion of cleaning with Actichlor. I do have an awareness of this process: Actichlor is a chlorine-based cleaning agent. The Estates and Facilities team undertook chemical dosing but I cannot remember the exact timeline.
164. This was arranged by the Estates team. From what I have read in the IMT minutes, we were suggesting that we could use chlorine dioxide for the initial drain cleaning and that would be followed by an aseptic acid as part of an ongoing programme.
165. In the same paragraph, the IMT minutes mention the decanting of patients to Ward 2C in order to enable the cleaning. I cannot remember if we decanted patients to 2C.
166. I was there at the HPV clean and I remember from reading this that there was a debate about whether the drain should be cleaned before or after the HPV. From reading the minutes, I think Teresa Inkster said they should be cleaned before it and then the HPV clean would happen afterwards and this was agreed.
167. I cannot remember if we had closed Ward 2A to admissions at this point or not. I cannot remember the number of in-patients at this time, but I do remember that, on the day of the clean, we had empty rooms to allow us to start the cleaning in the morning.
168. I emailed the Estates and Facilities team the details of what the empty room numbers were and we arranged for the HPV cleaning company to gain access to allow the cleaning process to start with an existing empty room first. Once that room was cleaned, we moved a patient out of a room that had not been

HPV cleaned into the clean room, which allowed HPV cleaning to be undertaken in the vacated room and we worked along that process, until all rooms were complete.

169. At this point, the HPV cleaning company only had a couple of cleaning units. The cubicle had to be emptied, the vents had to be insulated and at that point it was like a mist that came off the machines which could set the fire alarms off, so we had measures in place to prevent this. The contractors came in and sealed up each cubicle. We did have patients in the ward when these were done, but we tended to try and move them so the patients were co-located in an area to allow three or four rooms to be cleaned at a time. Because Ward 2B is a day care Monday to Friday ward, it was felt that it would be better to clean it over the weekend when there were no patients, so that area was done on a Saturday and Sunday which was much easier to do.
170. The HPV was done over a set period of time, but I cannot remember how many days it took. The process has evolved and it is now completely different. The process took a lot longer than it does now.
171. After we arranged for Wards 2A and 2B to be cleaned, we decided we would do the PICU and then we also thought we would do the NICU (Neonatal Intensive Care Units), because they are our other high risk area. After advice from Alistair Leanord, who was the Microbiologist at the time replacing Teresa Inkster and also chairing the IMTs at this point, this became standard practice.
172. It has evolved into a much better process now. The cleaning is conducted with an electric wand rather than the big machine, which I think was carried out for the first time in NICU. The process is therefore much quicker and not as cumbersome. This method was in place and it was being used when the patients came back from Ward 6A to the new Ward 2A. However, while the patients were in 2A prior to the decant to 6A, we did not have the new cleaning system. It was rolled out when the patients were in 6A. Facilities co-ordinate the cleaning companies and it is a different company which undertakes the HPV

cleaning now. It is like anything else, it has improved over the years and now it is standard practice.

173. **(A39123885 – Update for parents on ward dated 7 June 18, Bundle 5, page 142).** This is an update on Wards 2A and 2B from 7 June 2018 when it was decided to undergo the HPV clean. We would have had approval for communication by Jamie Redfern, Jen Rodgers and Kevin Hill and the update would be cascaded down to the Lead Nurse, which would have been me at this time. We would then pass it on to the Nurse in Charge and the Senior Nurses for printing at ward level. Parents would then be given a paper copy.
174. Staff would not just walk into the room and hand families a piece of paper; there was an opportunity to have a verbal discussion and then they were given the paper as an aide memoire to ensure that they also had it written. Whenever communications went out, more often than not, the Chief Nurse would go with the Nurse in Charge or the Senior Charge Nurse and hand out the information to the parents so that there was an opportunity for the parents to ask any questions as well and they would give the verbal update.
175. **(A39123918 – CWH8 Poster, Bundle 5, page 143).** This is a poster/sign that was placed in Wards 2A and 2B in June 2018. From memory, I think there was a feeling at the IMTs that because the patients in the wards were long-term perhaps families were sometimes using the hand wash basins for disposing of other substances, such as the bathwater from the baby bath, or milk, coffee or juices. Although the staff were verbally explaining the position to them, we felt that an aide memoire at the sink might be a better prompt or trigger to try and prevent them putting liquids down the sink that should not be going down the hand wash basin. These signs were put above every hand wash basin in the ward.

IMT Meeting – 8 June 2018

(A36690464 – Incident Management Meeting, dated 8 June 2018 relating to Water System Incident in Ward 2A and 2B, Bundle 1, page 109)

176. I attended an IMT on 8 June 2018. In these IMT minutes reference is made to me speaking about a contingency plan which could be used if the cleaning did not go to schedule. The contingency plan related to how we could accommodate the patients who turned up on Monday morning if the cleaning in Ward 2B was not finished by the Sunday night.
177. The agreement was that they would be admitted directly into Ward 2A and we would run day care patients out of that ward, because by that time it had been fully cleaned.
178. I do not remember ever creating a formal contingency plan in relation to this; it was just an option that was available at the time. There would have been enough capacity in the ward for the day patients rather than them going in to day care.
179. I do not have any memory of us having to do that so I would expect that Ward 2B opened as planned on the Monday morning.
180. **(A38662234 – Updated for parents on cleaning dated 13 June 2018, Bundle 5, page 144)** This was an update about the HPV cleaning in the ward. Again, the communication would have come from Jen Rodgers and Jamie Redfern for cascading and that would have been given to the Nurse in Charge and the Senior Charge Nurses for communicating to the patients.
181. It would follow the same process I have just described. I think I have previously commented that the patients did not move back to into their room after the HPV cleaning was carried out. From reading this update, which notes that, “Your child can go back into the room once it’s finished.” I think there were some patients who wanted to go back to their original room and we accommodated that as well. But it would only have been if, for example, parents liked to be at a certain area in the ward, with window facing the outside. Some parents chose not to return and others did.

CLOSURE OF WARDS 2A AND 2B/MOVE TO WARDS 6A AND 4B: 26**September 2018**

182. I did not have any part in the decision-making for the moving process when Wards 2A and 2B were closed and the patients within those wards were decanted to Wards 6A and 4B.
183. As noted above, in July 2018, I left my Lead Nurse position and became the Clinical Services Manager for Hospital Paediatrics and Neonates (HPN), that was across all of the Children's Hospital and the three neonatal sites and is very much a different role. This role does not require a clinical background, so I actually moved away from nursing at that stage.
184. I was involved in the IMTs because Wards 2A and 2B were under my remit the other Service Manager, had a different role; she led for the directorate on our business continuity plans and major incident planning.
185. I led on more operational day-to-day matters relating to patient flow, such as the front door, the waiting list management and the theatre management.
186. While I was on the IMTs as a result of my responsibility for Wards 2A and 2B, in the September I went on annual leave and when I returned from holiday the ward had moved to ward 6A.
187. I was away for just over two and a half weeks. When I left there was no indication that we were moving, then when I returned to the ward on my first day back, the ward had moved to 6A. It was my colleague who led on that in my absence.
188. I was told at that point that it was felt that there had to be more intensive inspections of the ward and that it would not be safe for the patients to be there when some of the works were undertaken. Therefore, it was felt it would be better for the patients to be re-located out to another area.

189. We did not have a spare ward on the children's site and I am aware from discussions which took place after the event that the likelihood of them going to a similar facility had already been scoped out. That would have been the Beatson Clinic in the Glasgow Area, but the Beatson is at Gartnavel Hospital and, from what I am aware, the management team did a risk analysis on this with the clinical team and it was felt it would be more of a risk to have the children off the campus site rather than to remain on the QEUH campus.
190. By remaining on this site, they would still be co-located near our intensive care unit and the Children's Emergency Department, bearing in mind that Gartnavel did not have an Emergency Department either.
191. Therefore, if we get children presenting through the emergency department who have a haematology-oncology condition, it was deemed to be safer if they remained on the campus site and hence why the Ward 6A in the Queen Elizabeth campus had been chosen.
192. The bone marrow transplant unit had its own specifications which would require the ante-lobby room and the only environment in the Queen Elizabeth campus which simulated that was on Ward 4B, hence why they had chosen the cubicles in 4B to be allocated to paediatrics.

COMMUNICATION RELATING TO THE CLOSURE OF WARDS 2A AND 2B

193. I cannot comment on what communication took place prior to the move as I was not part of that process.
194. I have been shown a number of documents which show communications from the Board on 17 and 18 September 2018.
- **(A38662124 – Press statement from NHS GGC on decision to move patients dated 17 September 2018, Bundle 5, page 148)**

- (A38662122 – Briefing for parents for ward 2A and 2B patients dated 18 September 2018, Bundle 5, page 149)
- (A38662166 – Briefing for parents for other parents and patients dated 18 September 2018, Bundle 5, page 150)
- (A38662180 – Core Brief dated 18 September 2018, Bundle 5, page 151)
- (A38662164 – IPN updated from NHS GGC dated 18 September 2018, Bundle 5, page 152)

195. The way we communicate with parents is discussed as part of the HIIAT. One of the scoring elements is how we will communicate with parents. There are various different methods of communication and the communication process would always be agreed in that particular format.

196. We would discuss parental anxieties and public anxiety. There would be a discussion about what do we thought needed to be communicated and at what level. Once we had reached a decision, information statements would be shared between the Infection Control team and predominantly the Senior Management Team and the Communications Team. A statement would then be agreed and, once we received the final document, we would be asked to circulate that.

197. I was on leave when the IMT took place on 17 September 2018.

IMT Meeting – 1 August 2019

(A37991876 – Incident Management Meeting, dates 1 August 2019 relating to Gram Negative Bacteraemia in Paediatric Haem Oncology, Bundle 1, page 334)

ISSUES ON THE WARD: AWARENESS OF REMEDIAL MEASURES USED

198. As mentioned above, I was aware that filters were used as a remedial measure for the water supply. Together with the chloride dioxide dosing and HPV cleaning, these were measures led by Estates and facilities. From a nursing

point of view, our involvement was mostly to make sure that we were facilitating access to the rooms to allow Estates and Facilities access to carry out the procedures.

199. I helped the nurses put them in to the rooms, so I assisted with that. When the bottled water arrived, we explained to the nurses how to do hand washing with them. We also supervised to make sure they were doing it in a way that was not going to give us cross-contamination with them holding the bottles.
200. I was also responsible for ensuring that the staffing levels were appropriate for the situation and that we could bring in additional non-registered nurses for cleaning. We increased our housekeepers at that time in the wards and we increased our staffing numbers to help assist with additional cleaning.
201. My understanding of the situation now is that we have a good maintenance programme in place. We have our filters on and we obviously have a sampling process. We have our sampling checks and assurances The sampling is undertaken by an external company, instructed by the Estates Team, but I do not know the process or the company name. The results are then fed back through Estates to Microbiology and the Infection Control Team and the Infection Control Team then cascades the results down to the Clinical Team.
202. I am confident that the control measures put in place have ensured the water we have in the hospital is within an acceptable level.

Use Of Source Isolation

203. I was not aware that we increased our use of source isolation. Source isolation is one of the processes we use for infection control, but it can be done for a number of reasons. Use of this is predominantly to protect the child, family and the staff members and also to prevent cross-contamination.

204. This is done throughout the hospital and for various different reasons. For example, if someone has vomiting and diarrhoea, we would put them in to source isolation.

COMMUNICATION RELATING TO WATER CONCERNS

205. At the very beginning stage, because the IMT was not aware of whether there was or was not an issue with the water, it was not sure what the communication to families should be.

206. However, as the IMTs evolved, communications were routinely issued to families either verbally or in a written format and holding statements were regularly created for the press.

207. The aspects of communication with which I was directly involved were my attendance at the IMT meetings and thereafter cascading information to staff. If there was an immediate action required after the meeting, it would be communicated verbally at the meeting and you would take that away as an action and then it would be followed up. These actions would be logged in the minutes of the meetings and a copy of the minutes of the meetings tracking these actions would be circulated to attendees after the meetings. I felt this was an efficient way of communicating. I did not ever leave a meeting not having a clear indication of what was expected of me as an outcome of that meeting.

208. There was information that external expertise was sought from out with the NHS with regard to water, and the Board set up its own water group that I was not part of, but information from that group would be relayed to us. I was not involved in this group at all; I am just aware that the group was set up.

209. If there was a wider cascading of information required other than me passing information from the IMTs via the huddles and staff meetings, that would be done through email, or it would be myself going round areas and making staff aware of changing circumstances and issues which were ongoing.

210. We also had a Senior Charge Nurse meeting happening monthly, so all the Senior Charge Nurses would also be updated by the Lead Nurse and Chief Nurses through that forum.
211. Even if we sent things verbally we would still follow it up by writing to the parents or by issues emails to staff. I would also send information to the Senior Charge Nurses and expect the Senior Charge Nurses to cascade that out to the teams directly below them. I would also be given information either from the Chief Nurse, or the Clinical Services Manager to cascade downward.

EVENTS IN WARD 2A/2B - COMMUNICATION WITH PARENTS AND FAMILIES

212. I was aware that meetings with parents occurred, but, as referred to above at paragraph [140], there was only one occasion where I was asked to accompany the General Manager, Jamie Redfern, at the time to meet with a family, and that was at the family's request. That was my only direct communication with a family.
213. I thought the communication was managed very well. I felt that we took decisions from these meetings and cascaded them immediately. There was both written communication and verbal communication. I am aware that the General Manager and Chief Nurse were in the wards more than once a week to pass communications on to parents.
214. Equally, I am aware that at Board level, Jennifer Armstrong, our Director of Medicine, Jane Grant, our Chief Executive, and Professor Margaret McGuire, our Nurse Director, had an open question session with families and parents, and that they were available to speak to them if they required.
215. There was a closed Facebook Group set up in 2019 but I had no input into this and was not a member of the group.

216. When I was a Lead Nurse, I did not have any role in the creation of content regarding the communication to patients and families in wards 2A and 2B at that time. Within my role now, I am more involved in this side of the communications.
217. I personally felt we communicated the information we were aware of at that time and we communicated it as quickly as we could.

EVENTS IN WARD 2A/2B - COMMUNICATION FOR STAFF

218. I felt I received all information that I required at that time and I felt that there was an open communication channel. If I ever felt that I needed further information I knew where to seek it and who to speak to.
219. I can only comment within my current role, but I feel I have good processes in place to communicate with staff. Visibly, myself and the Chief Nurse do walk-arounds and we conduct Question and Answer sessions with staff. These are not just for 2A staff but for the whole of the hospital's paediatrics and neonates. I feel we have a very good open door policy and that we are visible in the organisation.

RISK OF INFECTION FROM THE WATER SUPPLY AND IMPACTS

220. The control measures taken in respect of the water supply did have an impact. On a daily basis we were getting new information and we were cascading that information down, and that was changing some of our practices in the wards.
221. The installation of the portable hand basins at short notice caused some anxiety for the staff because each one of the basins worked differently and some of them were producing hotter water than others. There was also a question of who was going to top them up and where we were going to get the water from, so this did have an impact on the way the nurses worked.

222. The control measures had an impact for the patients also. The families and children were seeing this and it was abnormal practice; it was not what we were used to doing or wanted to be doing. I am not aware of any family member raising this as a concern and nobody raised it as a concern with me directly. I think that was the perception of the staff. There was a communication issued whereby the families were advised about what we were doing but the installation of portable sinks had not been done before so was abnormal practice.

NATURE AND IMPORTANCE OF THE VENTILATION SYSTEM

223. I am aware that outwith Wards 2A and 2B there are negative pressure rooms throughout the hospital. I am aware of what they are and that there is a Standing Operating Procedure on what the correct pressure levels are also that there are pressure gauges outside the rooms to check the pressure.

224. I am also aware that within 2A there are cubicles used for the bone marrow transplant patients or any patient that the clinical team feels should be in a positive pressure room. These rooms are used as infection control measures. There are also pressure gauges outside these rooms which are monitored and an alarm which goes off if the room pressure exceeds or goes below the acceptable level.

225. I first became aware that the Estates team was looking at a programme relating to ventilation as part of the IMT process. There was a group set up to look at ventilation pressures at the time, but initially that was in Paediatric ICU, in relation to air exchanges, rather than in Wards 2A and 2B. My understanding is that they were looking at the differentiation in air changes between some areas in PICU and others. For infection control reasons, the patients required to be segregated. For example, air changes for cardiac patients had to be higher than patients with Respiratory Syncytial Virus. I do not know enough about what happens technically when the air passes through the chambers, but this group was set up by Estates with Infection Control input and I did attend a few of those meetings. This meeting was regarding the ventilation pressures in

relation to PICU, it was a very technical meeting and it was chaired by the Head of Estates. We were given directions by infection control colleagues on where we could locate different cohorts of patients with different conditions, because the air exchange has to be different for an infection versus an immunocompromised patient.

226. How to achieve the air changes and how the levels were adjusted to allow that to happen was led by our Estates colleagues. With regard to Wards 2A and 2B, I probably only became aware of concerns with the ventilation system after the patients had been decanted from the Schiehallion unit and the contractors had come on site.
227. At that point we thought it was just going to require a few adjustments to the existing ventilation system to allow them the contractors to achieve the pressures that the Estates team felt they should be achieving. However, we were subsequently informed, via the Capital Planning Team, that the whole ventilation system required to be replaced, which would delay the decant time.
228. The Board Capital Planning Team is governed by Greater Glasgow Health Board. They run programmes relating to refurbishment. The Assistant Head of Capital Planning was James Huddleston, who led the capital project for the refurbishment of 2A/B.
229. Any control measures taken in respect of ventilation would have been arranged by Estates. I am aware that they attended on site, made adjustments in the plant room and measured the pressures on the ward. Otherwise I have no memory of being involved in any ventilation mitigation measures.
230. We now have a very good maintenance programme arranged and also for ventilation cleaning on a six monthly basis, at the same time. We have ventilation cleans of all our ceiling vents and then get an HPV clean in all our high risk areas. And with Wards 2A and 2B, the HPV cleaning was the last thing that happened before everyone moved back at the end of May 2022.

231. On the day prior to the ward returning to Ward 2A (Schiehallion) the ward was completely closed; nobody was allowed in, neither internal staff nor external contractors. All the works had been finished the day before. We did a full HPV clean and then the patients came back across from 6A to 2A within RHC. We moved back to the ward the following day. Since then we have a six month HPV clean in both these areas as standard practice.

COMMUNICATION RELATING TO VENTILATION ISSUES

232. I cannot remember anything specific about communication in relation to the ventilation concerns but the processes would have been just the same as previous communication processes.

GENERAL: COMMUNICATION

Staff: Communication through Core Briefs

233. A core brief is an email which is sent to all members of staff within GGC. They are prepared and sent out by the Board corporate team and include details of anything that might be happening that day which could affect our business or service.
234. For example, if there were to be ongoing campus works, an upgrade of our IT system which would result in downtime, or train strikes, that would all come out as a core briefing. Every employee receives this by email.
235. Some of the issues may have been communicated to us in the core briefings but I cannot remember any details exactly. I do not remember ever receiving any communication about smells. I do remember that, when the window fell out, we were all alerted to the fact that there was an area which would be cordoned off outside.

236. No communications were issued in relation to the TVs; we were all just very much aware of that and aware of the work that was being done in the background to try and resolve the issues.
237. The TV issues would be reported through our daily huddles, where we would often report how many televisions were not working and ensure that we had alternative provisions.
238. Over the period when investigations were ongoing in ward 2A/2B there was press coverage. It was not a pleasant experience to see what was being said in the press, and I chose not to engage or read it, and felt that that was better for me personally. I chose not to listen to media coverage at the time.
239. I can only comment on the current position in respect of my communication processes in my current role. I have good processes in place to communicate with staff, including conducting, together with the Chief Nurse, Q&A sessions with the whole hospital paediatrics and neonates department. We have an open door policy in the organisation and staff know how to get a hold of us.

Staff: Patient Safety Huddles

240. Patient Safety Huddles take place at 8am and 3pm every day. They are chaired by the Lead Nurse, and the Lead Nurses are on a rota for chairing the huddle. The rotas are usually made up for every three months, so you know in advance what day you are taking the huddle.
241. Pre-COVID, these meetings happened face-to-face and they were held in a seminar room. The nurse in charge for every area would come in for the huddle. We would have the flow coordinator in attendance, who completed the huddle paperwork electronically.
242. We would also have our Hospital Coordinator for the day in attendance, who would be a Senior Nurse responsible for coordinating staffing. Facilities and Estates would be present as well as a Child Protection Advisor. GGC has its

own Public Protection Team with its own Chief Nurse and they are called Child Protection Advisors and are employed under the Public Protection Group, rather than by the Women and Children's Directorate. There is a number of nurses who hold those roles but they do not do any clinical work within RHC. They would attend huddles as being the person on duty. Any concerns could be raised at this forum with an appropriate attendee. The Child Protection Nurse Advisors only came to the morning huddles. Usually one of the advisors or the Lead Nurse for the Service would have attended the huddles.

243. The Child Protection Nurse Advisors used to just be called Child Protection, then it was Child and Adult and it is now Public Protection. There are adult advisors too, working under the same structure as the Child Protection Advisors.
244. At the start of the huddle, each ward records the number of patients they have and any free beds, any free cubicles and what their staffing levels are for that day.
245. Where there are concerns about patients, these will be discussed and there would be discussions about how many high dependent patients we have, how many patients require IV (intravenous) infusion, and also how many patients there are who we would call 'watchers'.
246. A 'watcher' is somebody who is clinically scored on a Paediatric Early Warning Score (PEWS) chart or somebody the clinical team are maybe concerned about, so that we are aware of them. The PEWS is a recognised tool that all children would be scored on to track the severity of the concern. A patient with a higher acuity than another patient will have a higher score scored high on the PEWS chart and would be classed in the huddle as being a "watcher".
247. This does not always necessarily mean that the patient is very sick, it can also mean there are a lot of complex things going on with them. They are basically patients who we need to have specific awareness around.

248. We will also report on things for specific areas. Some of the wards will report how many long term ventilated patients they have or how many patients are in dialysis.
249. The Nurse in charge of the ward will then score the staffing and afterwards they are asked to declare whether they feel they are safe to start or not. 'Safe to start' means that they feel at that moment they are what we call 'green' and in a good position to go through the day without any additional support.
250. We might report 'amber', which means we are fine at that moment but we anticipate that as the day goes on, the ward may require additional support. That may be due to something like someone from PICU stepping down in to the ward, or it may mean they have four admissions due in at lunchtime or that they have two members of staff finishing early.
251. Each ward is then given a RAG (Red/Amber/Green) score and, at that point, each ward will also raise any issues that they have. This could be a child protection concern or an issue with facilities. It could also be that they have an issue such as discharge cubicles which have not been cleaned and they want them escalated and prioritised for a clean.
252. It could also be as simple as wheelchairs which have gone missing somewhere and we need a request raised for Facilities to retrieve them. Issues such as a light being out in a cubicle or a toilet not flushing would be escalated to Estates. As noted above, Facilities and Estates are expected to prioritise anything that is escalated at the Huddle and they will respond immediately afterwards.
253. Following the huddle, there is a brief time where the Lead Nurse and the coordinator will then look at safe staffing in all areas. We aim not to leave an area red, so we will look at what we can do to support the ward, ideally to bring it from red to green. At times we may not be able to get an area to green but we can get it to amber.

254. If there are any concerns at that stage that they are unable to bring a ward out of a red area, the matter is escalated to the Chief Nurse, because it will predominantly be due to staffing issues. The Lead Nurse will then speak to the Chief Nurse and escalate the matter that way.
255. The huddle is all about patient safety. Since Covid it is now conducted virtually on Microsoft team, which is actually a really good example of something that has gone well as a result of the pandemic.
256. Previously, if you can imagine having a ward which was going to declare itself red and you were asking the nurse in charge to leave that ward and come up two flights of stairs to attend a huddle room, it could put even more pressure on that ward for that 15 or 20 minutes. So holding the huddles online has had a positive impact.
257. Now every ward has an iPad. We have Teams on an iPad and the nurse in charge can take the iPad with them while they are doing their Huddle and therefore they are interacting, but they are still very visible in their ward at the same time.
258. Therefore, we are getting far greater engagement, so it is one part of Teams that nobody in the Children's Hospital wants to give up. We will not be reverting back to face-to-face meetings.

DUTY OF CANDOUR AND COMMUNICATION WITH PATIENTS

259. Everyone has a duty of candour to make sure that patients are informed and briefed and that the knowledge that the clinician has should be shared directly with the patient. In our case that also meant sharing information with the parent or carer.

260. In terms of communication with patients in general, and paediatric oncology patients specifically, the way I would communicate with patients would depend on the age of the child or young person, rather than what their clinical condition was.
261. I have an awareness of the process we should follow when telling a patient about infections, but I have not had direct involvement of having to speak to a parent to let them know that there is an infection.
262. Every child has their own named consultant, so it is the responsibility of that named consultant to make that communication, usually supported by the Infection Control Microbiologist and normally with a Nurse. They have that conversation to inform the family of the infection the patient is presenting with.
263. The Microbiologist is also there to support the medical member of staff and to provide a bit more in-depth knowledge of what the pathogens of the infection are.
264. A Nurse is usually in attendance to make sure the medical staff do not go off into too much jargon and to answer any further questions in a more relatable manner which the family might have after they have been given all the information.
265. If there were any problems with the treatment, or if anything had gone wrong, again that would be exactly the same process. It would be the responsibility of the Consultant and any other specialties who might be involved in that incident, whether the event happened in ITU or in theatre. Again these specialists would be supported by the relevant nursing teams.
266. If there was any cause for concern at all, then that would be recorded on the Datix system and it would be reviewed by the clinical team.

267. The Datix system is a recording system which is reviewed and held by the Clinical Risk Team. Anybody can submit a Datix and you can submit it for any reason, such as a fall or a near miss. The Datix are submitted and they are then reviewed by the Datix holder, which predominantly is either a Senior Charge Nurse or Head of service for that area. They can then ask for other people to investigate the incident. For example, if there was an issue that involved the Laboratory Team or Estates, then they would ask to investigate their part of the Datix. They are then reviewed and signed off by a final approver.
268. If any Datix scores a four or five, that means that it is scored higher when you answer the tick-box questions as part of the process and a briefing note requires to be attached. The briefing notes are then sent to Clinical Risk and they go through a process where the General Manager receives and reviews the briefing note with the clinical team and a wider governance team. A decision is taken on whether that needs to be commissioned for a Significant Adverse Event Review (SAER). If so, an SAER Team would be commissioned with a remit and a purpose for investigating the incident. It was previously called an SCI, Significant Case Incident. For cases involving a duty of candour incident, this is an automatic trigger for review.
269. I believe that the facts stated in this witness statement are true, that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Gael Rolls

Witness Details

1. My name is Gael Rolls. I was previously employed by NHS Greater Glasgow and Clyde (NHSGGC). I now work with NHS England Specialised commissioning services in an Operational Delivery Network and am hosted by University Hospital Bristol and Weston.
2. My current role is Lead Nurse (LN) for the Surgery in Children Operational Delivery Network in the Southwest of England.

Professional Background

3. I graduated from the Western College of Nursing and Midwifery in 1989. I graduated as a Registered Children's Nurse on part 8 of the Nursing and Midwife Council (NMC) register. In circa 2003 I went on to achieve a distinction BSc in Specialist Practitioner Paediatric Intensive Care.
4. I graduated with a post graduate diploma in Advanced Nursing from Glasgow Caledonian University around 2008. I also completed the Scottish Improvement Leadership Skills course in 2020.

Awareness of Patients and Families Evidence

5. I am aware of some of the evidence given by patients and families, I have no further comment other than it is their experience and that is what they have spoken to.

Overview of Roles

Senior Charge Nurse - Paediatric Intensive Care Unit (PICU) – 2015 (in RHC) – April 2019

6. I was the designated Senior Charge Nurse (SCN) in Ward 1D (PICU). I was ward based and clinical and had a lot of administration to do within the role. I had clinical supervision of the nursing care being delivered and was responsible for the day-to-day running of the unit, to ensure that patients were being well cared for in an environment suitable for high quality healthcare to be delivered.

Acting Lead Nurse in PICU – February 2019 – April 2019

Acting Lead Nurse Inpatient Areas - April 2019 – June 2021

7. My role as LN was to ensure the safe running of all my areas of responsibility (from April 2019-June 2021 this included Wards 3A, 3B, 3C Renal, 3C Ortho, LTV service, Schiehallion day unit and Schiehallion inpatient ward including transplant patients. This included managing: Workforce (communication, retention and recruitment, absence management, training and education, adherence to NMC code, adherence to NHSGGC policies and including any HR issues), Environment (NHSGGC infection control policies observed, estates issues -feedback loop closed, domestic services oversight, area fit for purpose –caring for patients and parents). Patient safety (skill mix and staffing levels, observe quality indicators and action,) Leadership (role modelling, setting a good example, displaying professionalism, professional oversight). Communication was a key role. This ensured that there was a flow of communication from the senior leadership team to the ward staff. The chief nurse would also share professional advice which I would ensure was disseminated to all staff. I worked closely with Melanie Hutton, Clinical Services Manager, who was my line manager.

Managing Environment in RHC

8. If an estates issue arose, it could be raised by any member of staff. Every member of staff is vigilant at all times for anything that may need fixed. We would take advice from Estates and any other relevant professionals, as well as IC, who were always involved, in giving advice and in preparing an HAI scribe if required. Schiehallion used FM First, and also logged issues in a communication book, so that the ward had a written copy of any estates issues that had been raised. Both PICU and Schiehallion, used communication books, for estate's issues. This ensured a note of what the issue was, who requested it, when they requested it, and what the status of the repair was. Estates issues arose while Schiehallion was in Ward 6A and they were dealt with immediately according to policy with infection control involved throughout. An example would be a leak found in the kitchen and once the appliance was moved there was further concerns noted behind and underneath it. The estates department made sure that they worked under infection control guidance from an HAI scribe and investigated the issues that were found and rectified the problem.
9. There was a robust system of closing rooms in Ward 6A to ensure any estates works required could be carried out, following which the room would be decontaminated and handed back from the estates team to the ward nurse in charge.
10. Everything was carried out as per HAI scribe. The scribe is the process to ensure IC around any works being carried out. It's a step-by-step process of what must be done to ensure infection prevention and protection, there are actions which must be done by the estates worker, and description of what must be done post-remedial work to ensure the room is clean and fit for use. Once that's done, the room can be used again.
11. During the time period April 2019-June 2021 I was also responsible for Wards 3A (neurology, neurosurgery, endocrinology, long term ventilated patients, complex airway service), 3B (gastroenterology, general surgery, specialist surgery), 3C Orthopaedic (ortho patients including chronic respiratory medical patients), 3C Renal

and the long term ventilation service (children in community who receive LTV care from ventilation support workers)

12. Within RHC there are five lead nurses with different areas of responsibility. While I was in post there was a LN responsible for acute receiving including ED, Ward 2C, PICU, 1E, Hospital @ Night, Resuscitation service, a LN responsible for Theatres, Day-surgery, pre-assessment, and out-patients and a LN responsible for clinical nurse specialists. There was another LN responsible for neonatal care in RHC, Royal Alexandra Hospital (RAH) and Princess Royal Maternity (PRM).

Patient Demographic

13. The patients in intensive care are critically ill children who may require support with their breathing, or circulation or require close observation and continuous monitoring in case of deterioration. This requires a higher ratio of nursing staff. Patients are usually cared for 1:1 in this area depending on their acuity.

Additional ward staff

14. In ward 3A there was also a LTV team to support the training and ongoing education needs of the ventilator support workers (VSW), as well as co-ordinate the VSW's to care for LTV patients in their own homes.

Schiehallion Ward

15. The Schiehallion Ward was on the second floor in RHC initially and then it moved to the adult hospital (QEUH) on the 6th floor and 4th floor, which was for transplant or severely immunocompromised patients. When I cared for Schiehallion patients, they were on the fourth and sixth floor of the adult hospital. When Schiehallion (Wards 2A and 2B) was in the Children's hospital it was on the second floor.

Intensive Care Ward

16. Ward 1D is the paediatric intensive care unit on the first floor of RHC. It consists of 22 beds. 4 4bedded cohort areas and 6 isolation rooms. There are two nursing hubs at either end of the unit, both of which have central patient monitoring.

Ward 4B and Ward 6A

17. The fact there were no facilities for the parents within the adult hospital Wards was very difficult for the families. They were reliant upon the Schiehallion staff to bring them snacks and refreshments from a trolley, which the staff in Ward 6A did frequently. The staff were very aware of how necessary it was for parents and children to have access to drinks and snacks. Parents did not want to always have leave their children and go to the retail or canteen areas in the hospital. Partly to avoid mixing with a large group of people as they were trying to minimise exposure from others to their child, and because they wanted to stay near their child and not leave the area completely. The nurses were obviously mindful of IC so would make sure everything was single use, everything was wrapped individually and was decontaminated between rooms. This snack service was for patients as well as parents and visitors.
18. In an environment where families are for such a long period of time, it was very much needed. The staff would ask families what could be done to improve their everyday life whilst their child was in the ward. The frequent response was 'we would love a parent's room'. It was expected initially for the move to Ward 6A/4B to be a short term decant but then it became clear that it was going to be longer. A parent's room was something that was required as an interim measure on Ward 6A and was requested by staff and parents on the ward to NHSGGC board members and the RHC senior leadership team during ward visits. The room was achieved fairly quickly but I can't give a timeline of when the parents' room did open on ward 6A as I can't remember.

CHRONOLOGY OF EVENTS**PRE 2015 – PLANNING STAGE**

19. In 2015 I was working in intensive care. I was part of the design team for that area and had contributed to plans on what the environment would need to achieve when we moved and how we would work as a team within that space. At the time, I was the designated SCN in PICU which became Ward 1D after the move.
20. There was a team of PICU doctors, nurses and allied health professionals involved with the planning design and I was asked for an opinion on the areas that I had an understanding of. I did not give any input to the built environment. My input was based around how we could best organise the space to meet the nursing and clinical needs of critically ill patients.
21. Before moving to the new hospital, we were aware of what the new PICU was like. We had the opportunity to visit the new hospital on several occasions to orientate staff to the new environment. All staff within PICU were offered the opportunity to visit prior to the hospital move date. There was also planning to ensure that equipment needing replaced was achieved prior to moving, so we were able to move with a lot of new equipment including patient monitors, bedside computers and keyboards, patient beds, visitor chairs etc.
22. Not all of our suggestions or requests for the new unit were included in the final plans. I can't remember all of them, but one would be the example I give later when discussing HEPA filtration within our PPVL rooms. I don't know why this was not included in the final build.
23. For the last year prior to move, my colleague was heavily involved. She was the other SCN in PICU and along with one of the PICU consultants made our eventual move very smooth as all critical care needs had been planned. I was responsible for

planning staffing of the week of the move to ensure we had a complement of skilled nursing staff covering both Yorkhill and RHC while we had ICU patients and while ED and the wards had any remaining patients.

General views on the opening of RHC and comparisons with Yorkhill Hospital

24. When we first moved to the new hospital in 2015, I thought it was a good hospital. I can't comment on the internal built environment because that was something I had no awareness of until latterly. The curve of the wall within the wards were a challenge due to visibility of patients that wasn't present within Yorkhill. I don't have any comment as to whether it should be called a state-of-the-art facility.
25. The biggest difference from Yorkhill PICU, is that in Yorkhill the clinical environment was more open. There was still 6 isolation rooms but the remaining bedspaces were visible from the nurses station. Another change was that there was less clinical bedspaces in RHC, which has a fixed complement of 22 beds. In Yorkhill there was more space as there was another clinical area which mostly cared for highly dependent patients but had a further 4 bedspaces and 2 isolation rooms.

Common Issues (Exterior of the building)

26. On one occasion the staff were informed that scaffolding was going to be erected to deal with an issue on the outside of the building. I can't be more specific and I think this was back in 2016. I am not aware of any families within intensive care raising any concerns. I don't recall how we were informed about the issues with the cladding.
27. I have now been provided with a Core Brief that I vaguely remember seeing after Grenfell, **(A38845623 – Core Brief dated 12 July 2017 – Bundle 5 – Page 67)**. There were some windows that fell out in the hospital, but I don't remember all the

details. I remember this happening, but I wasn't concerned because when it was communicated to the staff, we were told what was put in place to ensure safety.

28. I am not aware of any those building issues while I was in PICU affecting any of the patients and families.

Common Issues (Interior of the building)

29. We never had HEPA filtration in Yorkhill Hospital PICU, but we had considered that it might be a good addition to our new build. We requested it be included in a couple of PPVL rooms in PICU at planning stages although it wasn't initially fitted when we moved into the new build. I know that it was retrofitted, but I can't remember dates.
30. I have been provided with minutes from an IMT (**A37987226 – Incident Management Meeting, dated 5 August 2016, relating to Increase in Aspergillus Infections in Schiehallion Unit – Bundle 1 – Page 22**) which was related to the increase in aspergillus cases in the Schiehallion Unit. I wasn't present at this meeting but note that I have been mentioned in the minutes. This is the first time I have seen these minutes and was not aware that I had been mentioned prior to this. I don't know if I was asked about HEPA filtration within PICU as an action of this meeting.
31. Within intensive care I am not aware of any Wi-Fi issues. We had the odd time a DECT phone call would drop out, but that would be fixed by Estates. As soon as we came across any areas of concern around IT coverage, we escalated that to Estates and IT, and I'm sure there were extra Wi-Fi points put in in the ceilings to ensure continuous service without dropouts.
32. I have been provided with minutes from an IMT in June 2018, (**A37989601 – Incident Management Meeting Minute, dated 6 June 2018 relating to increase in Acinetobacter within PICU – Bundle 1 – Page 105**). I am mentioned in these

minutes, but I wasn't present. This increase was in PICU and I wouldn't know if there was an increase elsewhere in the hospital. There was a previous cluster in PICU and all I can really remember is that the number of cases never breached the control line on the SPC chart held by IC.

33. Quite often by the time we had the IMT, we would only maybe have one or two patients in the unit because it takes time for the samples taken to grow a result, and then there would be an IMT immediately following that. Some of the infected patients would have improved during this time period and been discharged from PICU.
34. Further in these minutes it mentions that I provided Pat Coyne with a list of beds that needed twice daily cleans. This refers to isolation rooms not actual beds, it's referring to patients in isolation rooms and the rooms required a second daily clean as per infection control policy. Twice daily cleaning is an infection control measure. If the second cleaning didn't take place this would be escalated until the cleaning, took place.
35. The minutes mention Dr Spenceley raising concerns about staff shortages. This is not something I can make any comment on as I do not know specifically what his concerns were around staffing whether he was referring to the workforce strategically or in relation to any occasion. To my memory he did not mention any specific date or time, and this is not my recollection. I would always ensure there was enough staff to care for the patients on any given shift. There were procedures in place that ensured there was always support to ensure safe staffing levels in PICU and these staff would have the appropriate training to work with the patients which they were allocated with supervision from experienced PICU staff. . RHC have twice daily safety huddles where amongst other things patient activity and acuity is described for each clinical area and any staffing requirements would be considered and a plan put in place to ensure patient safety.

36. I have been provided with minutes from an IMT to discuss the rise of Acinetobacter in PICU, (**A37990970 – Incident Management Meeting Minute, dated 3 July 2018 relating to increase in Acinetobacter within PICU – Bundle 1 – Page 140**). At the time of the meeting there were four cases of inpatients within PICU with positive test results of Acinetobacter
37. The minutes from the meeting talk about a sample from a blind BAL. This means it's a sample of fluid from deep within the patient's lung. If the patient has any respiratory infections they would get picked up by this procedure. As an action following an IMT or PAG regarding Acinetobacter in PICU, blind BAL practice was investigated by one of the PICU consultants and a member of infection control and new guidance was issued around the process of sampling of blind BAL, this was to eliminate any possibility of contamination of samples. I don't know if this was arising from this meeting or another. Another action arising was further education to the PICU nursing staff from the complex airway clinical nurse around tracheostomy site and tube care.
38. Achtichlor is a chlorine-based agent used in decontamination according to IC policies. This has different strengths for different uses. Enzymatic cleaning powder is used for cleaning tracheostomy tubes to be reused for a single patient.
39. At this meeting I enquired whether specialist ventilators called High frequency oscillators could be swabbed. The reason these would be swabbed is as part of an elimination process. Everything else around the patient had been swabbed so these were included in the surveillance of the environment. I remember making the request for this but I can't remember anything else. I don't remember any changes around use of the oscillator following that, so I can only presume that the results did not show any area of concern.
40. I also took an action from this meeting to ensure current patients in PICU would be screened for Acinetobacter. This would have been a request from microbiology or IC

team, just to ensure there was no more patients infected in PICU than this cluster we had already seen. I don't think there were any more Acinetobacter cases identified from surveillance at that time.

41. I have been provided with minutes from next IMT that I attended, **(A37991121 – Incident Management Meeting Minutes, dated 6 July 2018 relating to increase in Acinetobacter within PICU – Bundle 1 – Page 145)**. I have no recollection of this meeting. The meeting was again to discuss the increased cases of Acinetobacter within PICU. The minute states that I was to remind staff about ensuring all trolleys were to be emptied after being in an isolation room where a patient has Transmission-based Precaution (TBPs) in place. I would have ensured any action/s assigned to me was done.
42. Any non disposable equipment would be cleaned according to infection control decontamination procedures of near patient equipment.
43. The minute states that I asked for the ventilation covers in the ceilings pre-planned maintenance cleaning schedule for the PICU. I know the cleaning was being carried out I just wanted prior knowledge as to when this cleaning would take place. This would also allow me to know when the next cleaning was due and ensure that there were no issues with access as much as clinically possible.
44. If patients developed HAI infections such as Acinetobacter, part of infection control and my actions would be to ensure compliance with hand hygiene by reviewing recent audit scores and identifying any areas of concern for action. In PICU there was on-going education sessions to ensure everyone knew what was expected of them. Hand hygiene is everyone's responsibility and staff were regularly reminded to challenge any areas of non compliance that was seen and to inform the SCN who would have a further action to ensure the staff member was not requiring education or any other support to maintain HH. The most common cause for failing hand hygiene audits was the amount of time taken while washing hands. Signage was put at every hand wash sink within the unit with lyrics from a song which helped staff to

ensure the correct amount of time was being taken. NHSGGC's hand hygiene co-ordinator regularly carried out audits and bedside education within PICU. He would use different opportunities targeting various groups of staff. For example, he would occasionally join the ward round and promote good hand hygiene amongst visiting and PICU multidisciplinary team members.

45. Under risk management in the minutes it states a lot of patient movement within PICU was noted. Within PICU patient dependency is a factor in the decision to move bed spaces. This allows 2 patients who are less critically ill and not requiring 1:1 ratios of nursing care to be cared for by one nurse.
46. If a patient doesn't need to be in an isolation room, they would get removed from isolation policy measures. Quite often people will go into an isolation room prior to results coming back, especially if admitted with a respiratory illness.

The Water Supply

47. I had no concerns around the water system in RHC in 2015 and 2016 and had no concerns until the issues were communicated to the clinical teams along with the safety measures being put in place such as chlorine dosing and the application of water filters onto taps. Within PICU we were monitoring ventilator associated pneumonia (VAP) and central line associated blood stream infection (CLABSI) rates and had not noticed any increase which may have prompted concern. The Acinetobacter positive patients were mostly receiving those results from blind BAL which was being done as a routine test. Since moving to RHC the clinicians had started to increase the amount of blind BAL tests that they were performing on patients and it became a routine test. This was not a procedure that was carried out routinely in Yorkhill.
48. One of the parents in 3A had mentioned concerns about the water around December 2019. The mother certainly had concerns regarding water because there

were filters on the taps. Parents in the surgical wards and Ward 6A/4B did occasionally raise concerns with nursing staff and myself regarding the water supply and we reassured them with the information we had at the time regarding what measures were in place to ensure water was safe for use. The mum spoke to one of the nursing staff in ward 3A to raise concerns. She was handed a jug of water for drinking and she refused to offer that to her son or to drink it herself. She stated that they would drink bottled water instead and would bring their own water in from home. The mother also did not want to wash her child in our facilities because of the water. I went to speak to the Mum just to reassure her that the water had been tested and that we knew it was potable and it was safe to drink and safe to use for washing. She went on to discuss this issue with the CN too as she was not satisfied with my responses to her. The mum was encouraged to use the shower facilities in her child's room as it was best for infection prevention and protection for her child to be kept clean.

49. At that point in time, we were saying that people could drink the water. We were advising people to have jugs of water. We were also giving them out in Schiehallion at that time. We were saying the water was safe to drink. There were no concerns from our point of view and that was communicated to all staff from the SMT.
50. There was a period of time where we were given bottled water. I can't remember what the instructions were round that, or if that was to do with the fact the water coolers had been removed. Once the filters were put on, I was concerned what the situation had been prior to that. After the filters were on, we were told the water was being tested regularly and was safe.
51. With communication around the water supply issues, I was not involved in press releases. I would always pay attention to them, and I'd be aware of them because they would give the staff information I can't remember how different the press release would be compared to the information given to patients and families.

Communication regarding the water supply while LN for Schiehallion

52. Information would be communicated from the CN to me and I would then go and speak to the staff on duty with the SCN and we would leave written communication in their nursing handover on a shared drive which was on every computer within the ward. The staff would subsequently speak to parents and families that were in the ward. Where there was certain communication from the senior management team and/or the healthboard/ScotGov, then the Chief Nurse and I would go to Ward 6A/Daycare and Ward 4B and we would give the written communication to them as well as verbally discuss what was written and ask if they had any further questions. This was documented in the child's case notes. Who communication originated from depended on the situation.
53. I would always pay attention to any press releases regarding the water within RHC, that Staff and parents and patients were given information and updates regarding the situation, this could be communication from various sources and we would follow the process above to ensure all parents/carers and where appropriate patients as well as staff were kept fully informed. There may be a press release regarding this updated information, but sometimes this was only released to the press if it was requested.
54. Communication on the ward also happened on an ad hoc basis between parents and nurses providing patient care. The SCN's were always available to speak with parents if they wished or if a parent wished to escalate any concerns. Similarly, I was available as was the CN if parents wished to speak to someone else and escalate any concerns they may have regarding any aspect of their child's care.
55. When patients were admitted to the ward, they would be informed of the ward routine and also of the routine water testing and filter changes that happened. In Ward 6A parents would also be informed of the need to move rooms for chilled

beam cleaning and that there would be routine inspection of their environment to ensure standards of infection control were being met.

56. I don't think that there was delay in receiving communication from the IMT's to give to patients and families. Sometimes you would maybe hear a plan at the IMT, but it needed to be evidence-based, and fact-checked before it would be communicated further. Sometimes there were communications which I think would go through Scottish Government for sign-off. We were never told what we could and couldn't say to patients and families. If we knew anything, then we shared it with staff and parents/carers alike.

INFECTIONS – Acinetobacter in PICU

57. There's a process for doing hand hygiene. There are moments of opportunity and technique and all these are assessed. One of the things to consider when an infection is seen is to consider what the hand hygiene audits results have been. The nursing staff caring for the patients would routinely remind parents/carers, visitors, visiting staff etc. to wash their hands and the process to do that before approaching a patient. There are monthly hand hygiene audits carried out in all wards and departments. That's done by Local Hand Hygiene Coordinators, and you will pick staff, and train them. NHSGGC has a training module, and you'll train staff to be able to do hand hygiene audits, and they will do them discreetly throughout the month. The hand hygiene co-ordinator carried out monthly audits up in Ward 6A for a period of time. He would also take the opportunity to carry out education of staff while on any ward. Any Areas of non-compliance would be targeted. It would be highlighted, and all staff made aware of it.
58. Acinetobacter became a concern in Ward 1D PICU in RHC as it was a recurring infection in the unit. The staff, nursing and medical in PICU work closely with microbiology staff and infection control staff on a routine day to day basis anyway and whenever a positive result was obtained for Acinetobacter all teams above were

aware. Microbiology would process the results and highlight their concern to both PICU nurses and clinicians at the same time as informing IC team, so we all became aware as soon as possible. IC would decide when to call a problem assessment group meeting (PAG) and we would have representation from all stakeholders at that meeting including consultant clinicians, senior nursing, IC doctor and nurse, microbiologist, and a senior member of the estates and general services team. At this meeting it would be decided how to proceed with further investigation or actions and decision may be pending whether it would proceed to an incident management team (IMT) meeting. IC chaired the meeting and would perform HIATT scoring at the end.

59. Domestic services would request a deep clean of the clinical areas and would perform a further audit of the unit to ensure cleanliness was being routinely maintained by the current schedule of cleaning.
60. Following identification of patients infected with Acinetobacter, the parents of the child were informed with full duty of candour and this was usually done by the consultant intensivist who explained what it would mean for the child in their current condition and answer any questions which arose. This would be reinforced by the bedside nurse who would be present during the parent conversation and who could also go on to answer further questions if they arose.
61. The Oversight Board records show Acinetobacter popping up in 2016, 2017, 2018 and 2019. I don't remember a time and date. I just remember there were instances. I do remember it was a trigger for me to be concerned, because it was a recurring infection. We measured our ventilator associated (respiratory) and blood stream infections monthly. Following the move to RHC, in critical care it had been possible to reduce our VAP rates by 70-80%. This was an achievement which won an award from the Scottish Patient Safety Programme. This improvement was likely due to several factors including new profiling cots which were delivered around the time of the move to the new hospital.

62. IC swabbed everything in the environment and we swabbed all our ventilators looking for a source of Acinetobacter but we never found it. The cases of Acinetobacter within PICU were resolved either by patient discharge or by the patient testing negative for the organism.
63. There is duty of candour, which we would always carry out. We wouldn't have any delay. If it was thought that there was infection related to the clinical environment then that would be shared with the parent but we would always ensure the child's consultant had a conversation around the infection with the parents as they are best placed to address any further queries a parent/carer may have with regards to the effects on their child in the current time and in the future.
64. The impact on patients from getting an infection can depend. It can range from nothing, and patients can be colonised with an organism which, isn't making them unwell, or patients can suffer harm and have illness, minor or severe which may require further intensive care treatment to support their organs. It can prolong the length of stay you are in intensive care or in hospital, it can mean patients require antibiotics, it can possibly mean the patients need to have a central venous access device removed or cannot have one inserted until the infection is clear and it can cause other treatment such as chemotherapy to be delayed or omitted which may have consequence on any underlying oncology progress, or it can cause death.

Closure of Wards 2A and 2B and Movement to Ward 6A

65. The involvement I had in the movement from RHC to QEUH for wards 2A/B was the emergency response from PICU to Ward 6A/4B in case of clinical deterioration. We signposted our journey from PICU towards Ward 6A/4B because it wasn't a familiar route to go for a child resuscitation, so we made sure that all our teams within PICU were aware of the change. We made sure that everybody knew how to get to the wards and knew the best way; we had access from lifts on the adult side so we

could get everybody there as quickly as they needed to be, we did test runs where it was planned and timed, the route was mapped, and signposted.

66. I don't know why Ward 6A and 4B were picked. I imagine 4B was chosen because that environment was already being used for adult patients receiving BMT, so it was deemed a safe environment for paediatric patients receiving BMT.
67. Ward 6A was built as an adult ward then changed into use for paediatric oncology patients. As time went on, we found some issues with the environment such as lack of parent facilities and lack of patient playrooms that needed action and we found some IC issues arose that needed dealt with., The issues were dealt with as they arose and rectifications taken. Both the playroom and the parents rooms were commissioned following visits from the health board and SMT to Ward 6A where staff highlighted the difficulties caring for patients and families in that environment. Estates issues were managed as they arose with prompt action from that team.
68. I am aware of the use of source isolation but this was only ever used when totally necessary because of a child's clinical condition. I am not aware of any excess use of this. Source isolation is only used when deemed necessary by the IC policies.
69. If Ward 6A was full and a patient needed to be admitted through urgent care, they could sometimes go into another ward, into an appropriate room. There is a pathway which describes the rooms which are appropriate to accept Schiehallion patients, and that is kept by the Bed Manager, the Duty Manager and every SCN in every area in the hospital. None of these moves would affect the care the patients received; the care would remain the same.
70. The PPVL room has a ventilated lobby It is a room with double doors and airflow is positive meaning the air in the room is being pushed out towards the corridor. Some Outside the PPVL rooms are monitors which let the ward staff know what the air pressure is inside the room. These are monitored daily and have parameters to be

maintained. It is necessary to contact estates department if the readings fall out with designated parameters.

Events in late 2018/2019 whilst the Schiehalion Unit was on wards 6A/4B

71. There was an incidence of Cryptococcus in a patient while I was working [REDACTED]. I had no involvement in any discussions around that or any care of [REDACTED].
72. There was a leak from the ceiling at one point within Ward 6A. The estates department were notified and they attended the incident and switched a valve off to stop the leak. It was later reported that a valve had lost integrity on a hot water pipe. IC were notified.
73. The position of the day care to the ward was not optimal because patients had to come in through a ward entrance and walk up a communal walkway in the ward, before they could get to day care. In an ideal world, that would have been the opposite way around and we would have the ward at the other end so people accessing day care didn't have to walk all the way through the ward.
74. I was in ward 6A when the ward was closed to new admissions in autumn 2019. There was a cluster of gram-negative infections at that point but I don't think they were all the same organism. I can't remember clearly, but I think there was similarities and there were concerns that they were attributable to either the water or the environment within 6A. At that point the decision from the IMT was not to admit new patients until they were quite sure that the environment within 6A wasn't contributing to these infections. I couldn't tell you how long the ward was closed to new admissions.
75. There was concern at some point around the chilled beam system dripping water occasionally. The Estates department investigated each occasion when it was reported. There was chilled beam cleaning which was a process that occurred every

six weeks and each chilled beam system was cleaned. It meant that the patients were moved rooms in the ward quite a lot as the room required to be empty during cleaning for IC purposes.

76. Parents were aware of the routine of chilled beam cleaning necessitating a room move every 6 weeks. Any moves required for ad-hoc estates rectifications were discussed with them at the time the defects were found. An example would be when the toilet flush would fail, which happened frequently at one point within Ward 6A and the patient and parent would be moved to another room while the defect was repaired. IC scribe procedures would be followed for decontamination of the room before estates would hand it back to the ward for another patient use. Families were told what the defect was and when it would be repaired and that they were being moved rooms for infection control and prevention purposes.

Late 2019 to March 2022 (the move back to 2A/2B)

77. Ward 6A/4B staff continued central line surveillance, and achieved good rates, displaying minimal line associated blood stream infections. I left GG+C before ward 2A and 2B reopened in RHC last year.

Ventilation System Issues

78. I am aware that the environment within the hospital was a sealed environment, so we were reliant on the airflows and the air cooling and heating system within the hospital. I had an awareness of the condition of the air vents and would ensure access for planned maintenance and cleaning. If any vent required cleaning out with the schedule, estates would respond to the request for cleaning.
79. There was a very good working relationship with the estates department and we had a designated contact who was responsible for our areas that we could make requests to directly even although they were also reported onto FMfirst. This was

encouraged and helped to ensure a swift response. I also had contacts of more senior estates department who I could escalate concerns to and expedite a response if it was necessary.

80. This close type of working relationship very much echoed that which the SCN and I had with the general services team who would regularly visit the ward, audit environment and meals experiences, I was in contact with the senior members of the team regularly to discuss the ward with a view to making improvements where possible. An example would be in relation to the food served to patients in Ward 6A/4B and as a response the team introduced a new catering initiative to allow patients more choice of 'deli style' foods rather than meals, which also remained an option. The IC team members were well known throughout the hospital and worked closely with the clinical teams at all points. As before we had allocated members of staff who worked within the paediatric environment and that the ward teams were in regular contact with. As before with the other teams, there was access to escalate any issue with a more senior member of the team who had thorough understanding of the ward and patients.

OTHER INFECTIONS IN PICU

81. I wasn't aware of any other infections in PICU that were recurring in clusters like Acinetobacter.
82. I can't remember clearly but in January/February 2019 there was five gram-negative bacteria of two pseudomonas, two Acinetobacter and one Serratia which led to a PAG. I think there had possibly been some Serratia infections prior to that who were patients that had previously had serratia when they were inpatients in Neonatal ICU (NICU). Pseudomonas is a water borne infection and IC swabbed sinks within PICU. The IC team also would have done an environmental audit of the unit, looking to ensure water-based precautions were in place. An example would be ensuring water from ventilator circuits was disposed of correctly and that nothing other than hand

washing water ever was disposed down a sink drain. In regard to patients and family's communication, I can't remember this specific case but I expect they were made aware of the infections and that they were environmental organisms. The usual process would be to tell parents everything we knew in regards to what the infection was, how it was likely to have been contracted and what the implications were for their child at that time and any potential future implications.

Infections in Schiehallion

83. I have been provided with minutes from an IMT meeting, **(A36591625 – Incident Management Meeting Minute, dated 19 June 2019 relating to Ward 6A Gram Negative Blood (1) – Bundle 1 – Page 320)**. This meeting was called after a PAG meeting had taken place to discuss 4 cases of Gram negative bacteria (GNB). GNB may result in sepsis or line complications. Because of that the child might have to have their line removed. They could become seriously unwell and it could cause a delay to treatment or they may clinically deteriorate and even require intensive care. Antibiotics would be needed.
84. Two patients in ward 6A were discovered to have Mycobacteria Chelonae. They are the only two patients I have ever heard having that bacteria, I had never been aware of it before. I have no knowledge of anything further regarding those patients and their Chelonae diagnosis.
85. There is part of this IMT which says, "Parents not to be informed of gram-negative bacteria at present as no inconclusive evidence it's due to healthcare environment". My understanding is that staff shouldn't say it was a healthcare environment associated gram-negative bacteria because at the time we didn't know if it was healthcare environment associated or not. At that time, we didn't have the evidence to link the infection with environment so we didn't tell them that at that time.

86. I was happy with the information the families were receiving. Patients who had infections knew that they did, what the infections were and what the course of treatment was for. The SMT made decisions about what to communicate to patients and families, taking the ICD's advice at that time.
87. I am aware some Schiehallion patients had infections that were attributed to the environment, but I can't say how many. I gained this understanding from the IMTs. That would have been decided then, what was attributed to environment and what wasn't.
88. There was another IMT to discuss infections in Ward 6A and I have been provided with the minutes to this **(A36591622 – Incident Management Meeting Minute, dated 25 June 2019 relating to Ward 6A Gram Negative Blood (2) – Bundle 1 – Page 325)**. The IMT was called to discuss the 6 GNB positive cases in ward 6A, which had occurred in the last 3 months. Out of the six, 2 are Healthcare Acquired Infections and the 4 are Healthcare Associated Infections. When trying to source the cause of infection, if it is a healthcare acquired infection, the IC team investigates ward compliance with infection control procedures such as transmission based precautions including hand hygiene, and compliance with central line bundle maintenance, pvc bundles, and Aseptic non-touch technique (ANTT) for administering IV medications as well as observing the ward environment including recent domestic and estates scores
89. ANTT is a method used for administering medication to a patient. The aseptic non-touch technique is a whole programme of techniques. It requires education and training in the process before being deemed proficient. Schiehallion used educators from other areas, in the hospital to evaluate staff on ANTT technique, to ensure that they were still compliant with all the elements within the programme as part of quality assurance.

90. Initially The filters were put on places which were felt to be a part of the high risk patient pathway. They didn't go onto every outlet in every ward, and at that point they were not included in theatres. They were later added to theatres and drain cleaning was done in that area.
91. IC carry out IPCAT audits looking at the clinical environment. Every single ward has this assurance process from IC. It looks at your transmission-based precautions, your standard control of infection procedures IC practice in the ward is inspected and part of it includes whether you were displaying results of your audits.
92. The results from IPCAT audits are entered onto an electronic format. The SCN's would be told that the results were available. They would receive an alert from the system that it's entered onto, letting them know that this was there. We would always be told as well, so we could review the results and actions required, if any. Actions required to be completed within a set timescale based on the criticality of the rectification. As well as ICT led IPCAT audits, which occur across the health board, within Schiehallion weekly audits called enhanced supervision was carried out. Enhanced supervision within Ward 6A consisted of a member of the Estates team, myself as Schiehallion's LN, the Infection Control Nurse (ICN the nurse in charge of the ward, Ward SCN, and a member of the general services team. The team would randomly pick rooms to look at as long as clinically appropriate. They would look at a number of occupied clinical rooms, and if possible, a number of unoccupied clinical rooms, as well as a number of the day care unit rooms, and the disposal room containing the sluice, and the clean prep area.
93. Anything required as a rectification was noted, and notes given to the nurse in charge, senior management team as well as the estates and IC teams, with a closed feedback loop with a date of when the rectification was completed.
94. I was further mentioned in the minutes about working out a schedule of cleaning for certain theatres. I believe that refers to when I contacted the Theatres Lead Nurse to

ask that he facilitated access for the drain cleaning of Theatres. The minutes go onto mention shock dosing for water tanks. I am aware this happened but don't know further details.

95. I did attend another IMT regarding the Gram Negative infections in Ward 6A. I have been provided with the minutes for these **(A36591628 – Incident Management Meeting Minutes, dated 3 July 2019 relating to Ward 6A Gram Negative Blood (3) – Bundle 1 – Page 330)**. This was called to again discuss the 6 GNB in ward 6A. Water results were discussed, one of which related to being traced in an ARJO bath Estates were requested, on the basis that the bath was a little used water outlet, to remove this bath in ward 6A as it was not used.

Infection Monitoring, Reporting and Infection Prevention Control

Infection Prevention Control (IPC)

96. Part of my role, and every other nurse, is IC. It's part of the SCN's role as well to ensure they're monitoring this all the time. There was a very close relationship with the IC team and the ward. There was always communication around IC with the staff whether when on enhanced supervision or as part of daily ward visiting. The IC team were often in the ward observing care given and reviewing care plans and they also discussed IC with the staff on shift regularly. My understanding of a Hospital Acquired Infection is that it is an infection which develops in a patient within a certain amount of time that they have been in contact with the hospital. They may have been an in-patient or out-patient and receiving treatment, so having their line accessed within hospital.
97. A healthcare associated infection is something where the patient's perhaps not been in hospital during a certain period of time, which IC will tell you what that time is. We would expect IC to give us that definition, they would be the ones who would have the information to do the root cause analysis (RCA) and look at other things and decide whether it's a healthcare associated or a healthcare acquired infection.

98. Any infection is highlighted by the clinical team, microbiologist and IC team. The more integrity of your skin is breached, the more at risk you are of developing an infection. Obviously the less immune system you have for whatever reason, either hereditary, treatment or disease, then you're more likely to be susceptible to infection. In ward 4B, where the patients are receiving BMT and they've got no immunity prior to receiving transplant, these patients are our most vulnerable patients, which is why they're in that environment. In a Schiehallion patient, you might not want to wait to start treatment if you suspect an infection, because by waiting, they'll become more unwell in the interim, so treatment would start as soon as there was suspicion such as raised temperature. There were conversations with Clinicians, Microbiology and IC teams about how best to manage infections, this is something that would happen regularly.
99. There are several different types of central lines. Some that can be used for several weeks, some can last for a year or several years, it depends on the patient condition and their requirements. You can have a central line which has two, three lumens. This is a type of catheter which allows several different infusions with only one access point on the patient often used in critical care and routinely for short term use. Oncology patients often have a central line called a Hickman line which can be placed through the chest into the superior vena cava, this line is suitable for long term access. PICC lines are long very small bore lines that can last a long time and similarly are inserted into a large vein. Often they will be sited in an arm. They are most likely to be used for administration of small volumes of medicine, like long term anti-biotic use. There are also port-a-caths, which are another Central Venous Access Device (CVAD), which sits under the skin, and is accessed by a gripper needle. The benefit is that there is no external line exposed when IV therapy is discontinued. These devices also last long term and are often sited in oncology patients.

Prophylactic Medication

100. I am not aware of any other wards using prophylactic antibiotics, we did not use these in PICU to reduce the risk of infection from the environment. I know that Schiehallion patients received antibiotic and antifungal prophylaxis. I was not involved in any decision making around this.

Cleaning Process

101. The wards had a schedule of daily and weekly cleaning with a regular domestic. As described earlier there was a good relationship between the ward staff and the domestic staff and there was regular communication between them. It could be regarding patient discharges so that the domestic knew which rooms would need a terminal clean that day. The supervisor regularly visited the ward and audited the cleaning in place. The nursing staff decontaminated near patient equipment as per infection control policies. Following an IMT that took place around the cases of *Acinetobacter* in PICU, it was decided that extra high level cleaning was necessary. The monitors, ventilator and infusion pumps are mounted on a ceiling pendant. It was noted that the cleaning schedule in place for the pendants at a high level was in and that there was residual dust so a new regime for high cleaning was put in place that was effective. We would have communications with our domestic team in the morning, so we that could share, which bed spaces were going to be empty, which we wanted to use. It made for good work communication between our teams. A parent raised concerns about cleanliness regarding the floor in ward 4B. This was resolved by the domestic services manager with a plan for a new type of floor cleaning device to be used to provide a deep clean and it was facilitated by nurses moving patients rooms to allow for deep cleaning regularly. Within Ward 6A parents were moving rooms regularly for other IC reasons such as the chilled beam cleaning so this opportunity could be taken then.

Impacts

102. Bringing in IPC measures like the extra cleaning, HPV, remedial works and enhanced supervision, had an impact. With the chilled beams being cleaned or any remedial estates works, it meant moving patients into different rooms in the ward.
103. Parents didn't like being moved rooms frequently as they were often living in this room and acquired a lot of belongings and made the room into their space.

Communication

104. Duty of candour is applied to all incidents involving patients that have caused harm, this includes infections. As far as I am aware this is always done in a timely manner and the implications for their child explained both short and long term.
105. When patients were admitted to Ward 6A/4B they were told a lot of information around their child's condition. They were orientated to the ward environment including infection control measures that they need to observe to protect their child. Parents were given information about being at home with their child, how to care for any CVAD in situ, how to care for their child and infection control and prevention. This was supported by written patient information as well as being given verbally.

Board Communication

106. As noted before there was a process to communicate any information from the board and SMT to the parents of Ward 6A/4B/Daycare and staff. There are also Core Briefs which is routine monthly communication emailed to all staff.
107. Copies of written communication would be given to parents as well as verbally and would be left for other parents attending the ward or daycare to take for information. On occasion the Facebook page run by RHC would be used for communicating with parents with board communication uploaded onto it.

108. If there was anything in a brief that might need to go to parents or patients then they would have briefings for the staff, patients and parents. We would brief the staff and give them copies of the letter which would be uploaded onto a shared drive for future shifts to be able to access and we (Chief nurse, SCN/myself) would then visit each family and discuss the contents of the letter with them and write in the child's case notes that we had done so. This would be done in Ward 6A/4B and daycare, with further letters left for more family's attending daycare.
109. Ward 6A was visited by Jane Grant and Chairman Brown. They asked how the staff were feeling and what the environment was like to care for patients and families. They would check if there was anything we needed specifically or anything else they could do to help, it was during a visit from the board when staff asked for a play room for patients and parents room for Ward 6A. The board ensured that this was achieved. The ward was also visited by the health minister at the time, Jeane Freeman and the Chief Nursing Officer. They spoke with staff and were concerned with staff wellbeing.

Staff Communication Assessment

110. Staff were regularly communicated with, whenever there was an IMT or whenever there was any information from SMT or board, it would be shared with the staff on shift who would upload a written account to the shared electronic nurse handover for staff on subsequent shifts to access. In assessing the communication, one of the things we'd always said and asked staff all the time was: are you happy with the communication? Is there anything more you want? Quite often the response would be to have better communication but this was a general statement and staff didn't have any thoughts on what else could be done. On the other hand some staff really felt they were being listened to and communicated with. I think that communication between the IMT's/SMT/Board etc and the ward staff was good. The staff concerns were heard and play and parents rooms were quickly commissioned. As was a staff

room to support staff morale by allowing a place for the ward team to be able to relax together and help build the team dynamic. This was along with staff hand massage, yoga classes and access to psychology to improve staff wellbeing.

RHC Safety Huddle

111. The huddle runs twice a day, in the morning at eight o'clock, and in the afternoon at three pm. It would be chaired by the duty lead nurse that day along with the Bed Manager. There would be representation from every ward in the hospital. It follows a very structured format. It's a safety huddle. In-patients were discussed, any patients who were 'watchers', (this was patients that ward staff were concerned about), workforce in each clinical area and if there were any areas of concern for the shift ahead. If an area was short of beds for planned admissions, then a plan would be made to manage the flow of patients etc. It was necessary to address all issues with the aim to make each area safe for the shift ahead. Each clinical area would be given a Red Amber Green rating representing safety status. Any patients who were being discussed as potential watchers would have a plan of escalation in case of deterioration. General services and estates would be present for escalation of any domestic or environmental concerns and any clinical estates issues. This report allowed the senior management team to understand the safety position of the hospital for the shift ahead.
112. Communication is a difficult thing to get right for everybody which is why we tried very hard to ensure we spoke to people in person and that we asked if they had questions. When we had communications to give out and there were people in the ward, we were able to address that directly, to have those conversations and writing the notes. That felt to me like that was getting it right. Even if families are not actually in-patient at the time, they still have a huge investment in the staff, the area, everything about it, because it means so much to them and quite rightly so. That was more difficult.

113. As an in-patient, you would have the information given to you as it happened. As we came out of IMT that's what we would do, we'd get the communication, and we would go round families and we would update them as soon as possible. It was often an evolving situation and we would update with information when we had it.
114. Any additional things that we found out, we would inform the families.

Media Communication

115. On occasions, communications would be prepared in case the media had a query about anything in particular that had changed that we were doing. We would have comms in the background if they were required. There was the television programme that had been made about the ward and there was a request for information from GGC. I don't know about the requests at the time by the television maker. I know afterwards, there had been a request from one of the parents for a response from GGC regarding some questions they and other families had about the programme.
116. Ward staff were informed that the TV programme was going to be aired and what time, and that there was support for them if they wished to discuss any of the issues, with either myself or the chief nurse. I went onto the ward the following day and spoke to staff, but there didn't appear to be an issue with staff morale following the broadcast.

Communications between Staff and management, with Patients and Families

117. Communications between patients and families and staff, was something that the nursing staff used to manage. Written communications were shared that were handed out to parents. Some parents appreciated having written responses. After IMTs, there was a system for communication. If information came from the Scottish

Government, from Craig White, from IMTs, anything that affected the whole population of Schiehallion that had to be communicated.

118. Staff were informed first. There had been occasions where media releases had gone out and patients and parents had been told prior to staff, which made it challenging for staff when being questioned if they were unaware of the current position. There was a learning from that and staff were communicated with immediately prior to discussions with families and media releases.
119. Day to day, being in the ward every day, I would always walk around, make sure everybody was okay, speak to some patients, some parents. If anybody did have anything that concerned them, it was possible to speak to them there and have ad-hoc communication.
120. Ward staff were looking forward to moving back to Ward 2A/B to access the specially designed area to help them care for their patients. I was aware that the project was extended, but I have no further information on the re-fit of the Ward/s.

Facebook Groups

121. There was the official Facebook group run by the hospital and the unofficial group run by some families. The media team all had access, the SCN's in 6A, me, the CN, the General Manager and the Patient Services Manager.
122. Around COVID there were some things where the families all had generic queries around the safety of their children and didn't have direct access to ask someone as their child was either not an inpatient or not attending day care regularly and the Facebook group allowed those families to have a quick response to a query.
123. We always invited parents onto our official Facebook group because it was a good adjunct to communication. The parent led Facebook group sometimes caused

parents and families distress due to the content of the posts on that forum. Some families told me that they removed themselves due to how it made them feel and that they felt they got good communication from the ward or RHC run Facebook.

124. After an IMT staff would be updated and then we would update parents if there was relevant information then we could share it. I am not sure how information got from the IMT, to be written up by the communications team. I wasn't included in that process.

NHS GGC Corporate Communications team

125. I had no role in the NHSGGC Corporate Communications team.

Specific Document Communication Examples

(A39355086 – Press statement from NHS GGC on bacteria concerns dated 23 March 2018 – Bundle 5 – Page 131) and (A39123924 – Email from Angela Johnson to all senior staff nurses subject: Water Incident updated 28.03.18 dated 28 March 2018 – Bundle 5 – Page 132).

126. I don't remember seeing these documents however, my name appears on the recipient list in regard to the email.
127. Media statements were not routinely emailed to me. Only if it was possible that I might need to forward onwards to inform staff what would be released in the media or what was a 'holding' statement in case any response was likely to be required. Whenever I was ever given media statements, it was something I would email to the SCN and have her discuss with the staff.

128. I have been shown the following documents:
(A39123885 – Update for parents on ward dated 7 June 18 – Bundle 5 – Page 142).
(A39123918 – CWH8 Poster, referred to as poster for hand wash basins in Bundle 5 – Page 143).
(A38662234 – Update for parents on cleaning dated 13 June 2018 – Bundle 5 – Page 144).
129. These would be examples of standard communication when I was in the hospital which would come with a full discussion and an attachment.
130. We had Bee Safe Posters – Helping to Keep Your Child Safe from Infection which were displayed in every room in Ward 6A. **(A39123933 – Poster for parents titled “Helping to keep your child safe from Infection” version 5 dated September 2018 – Bundle 5 – Page 147).**
131. I have been shown a number of communications relating to IMT from September 2018. However, I was not responsible for Schiehallion at this time and have no comment.
- (A41519618 – FAQ QEUH Ward 6A – Bundle 5 – Page 365)**
- (A41519619 – Letter for parents dated 9 September 2019 – Bundle 5 – Page 366).**
132. These documents were circulated around the time we closed the ward to new admissions.
133. We would have distributed the document in the same way as I’ve explained previously.

Letter from Kevin Hill (A41501454 – Letter to parents on ward 6A dated 12 November 2019 – Bundle 5 – Page 382)

134. We left copies with day care and followed the usual process with inpatients in Ward 6A and 4B.

Letters from Jane Grant to Patients and Families

(A39123935 – Letter Haemato-Oncology Unit 6a dated 14 November 2019 – Bundle 5 – Page 383).

(A39123910 – Parents Letters on Plans to Reopen Ward 6A No 1 – dated 21 November – Bundle 5 Page 395)

135. I think these would have been distributed as before and they might have even been put on the Facebook page for wider sharing.

Oversight Board / Independent Review / Case Note Review / Public Inquiry

136. I was not involved in the independent review or case note review.
137. The process for being involved in the Public Inquiry, has been challenging due to the amount of time taken to complete my statement and the time taken between oral evidence and written statements which has been almost a year if not longer. There has also been a lot of repetition in questions which has taken a lot more of my time that was necessary. It's going to take time to investigate and that is understandable, however individual process has been very challenging to achieve my statement. I'm happy to give any time that's required for this process because I know how eagerly awaited the case note reviews were for affected parents and it will be the same for this inquiry. If it gives any peace of mind that lessons can be learned and similar events will never happen again then it will be invaluable.

Concluding Comments

138. I don't think the events have had any particular kind of impact on me personally. It's just part of life and you have to learn from it and move on and find out the best things we can do to make sure this never happens again.

139. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Kathleen Thomson

PERSONAL DETAILS

1. My name is Kathleen Thomson.

EDUCATION

2. I studied to become a registered General Nurse and achieved this in 1986 when I became qualified from the Victoria Infirmary in Glasgow, the School of Nursing. In 1987 I then took further education to become a registered Sick Children's Nurse. In 2005 when I was 40 years old, I completed my degree, which was a Bachelor of Science in Health Studies at the Glasgow Caledonian University.
3. Throughout my career I have completed many courses in Leadership Management and Professional Development. Additionally, I have completed other in-house courses and online courses. In 2018/2019, I became a Scottish Improvement Leader.

PROFESSIONAL BACKGROUND

4. I qualified as a registered General Nurse in 1986 from the Victoria Infirmary in Glasgow, the School of Nursing. I then progressed to working in theatre for about a year, before undertaking my Sick Children's training. I qualified as a registered Sick Children's Nurse in 1987. After finishing education, I predominantly worked in theatres. I became a Senior Charge Nurse, which back then were called "Sisters." I was a Theatre Sister from 1998 at the Glasgow Royal Infirmary, where I was a Charge Nurse in the cardiac theatres.

5. In 2004, I left the Glasgow Royal Infirmary and went to the Children's Hospital in Yorkhill. This was to take up a Senior Charge Nurse role (Theatre Sister), which was a G grade nurse. This is known as a band 7 now. I was in that role from 2004 until 2017 and I was the Theatre Sister for general theatres and endoscopy.
6. In 2017, I took on a seconded role as the Senior Quality Improvement Nurse at the Royal Hospital for Children (RHC) in Glasgow on the new campus.
7. At the end of July 2018, I took on the role as the Lead Nurse for in-patient Wards, which included Wards 2A and 2B in the RHC. I also was responsible for the Clinical Nurse Specialists and Community Ventilation team. I was in that role for the nine months of the secondment, and I left in April of 2019.
8. At that point I returned to theatres. Half of my work was in theatre as the Senior Charge Nurse for Anaesthetics and half of my role was as the Senior Nurse for Quality Improvement for the hospital. I then returned to working in the theatres full time as the role required me to be there full time rather than part time. Within this role, I worked four days a week from 8.30am until 6.00pm or from 8.00am until 5.30pm. I did not work weekend unless I was on call. I was in this role until I retired in December 2020.
9. In December of 2020, I left my post with the NHS and retired. Officially, I did not retire until March 2021 however, this was due to holidays. I moved to Australia in May 2021.

AWARENESS OF PATIENTS/FAMILIES EVIDENCE

10. I have seen some of the evidence that has been given to the Inquiry and I have read one of the statements that was on the Scottish Hospitals Inquiry

website. I am very interested in hearing the patients' and parents' views as I think they are very important.

OVERVIEW

11. As an individual, my specialism is managerial nurse leadership skills, but also with a focus on being a quality improvement leader. I was able to look at all the Wards with that view to see what improvements we could make within the clinical areas, to ensure high standards of care for our patients and parents that were using our services. I will come on to talk about that in more detail.
12. In respect of my experience of working in the RHC and QEUI, there are some specific events I will mention. I worked in the RHC from 2017 to 2020 and I spent time across many wards including in Wards 2A and 2B, and also Ward 6A QEUI. I worked in many wards across the hospital. I was present in the decant from Ward 2A/2B RHC to ward 6A QEUI, and I was also involved in the move from Ward 6A to the Clinical Decision Unit (CDU). I attended a number of Incident Management Team (IMT) meetings related to infection outbreaks. I will come on to talk about these events on more detail.

PREVIOUS ROLES AND SPECIALISMS

Senior Nurse for Quality Improvement – April 2017 – September 2017

13. In my role as a Senior Nurse for Quality Improvement, I was given key priorities within the hospital. I had responsibility for the whole hospital as well as neonates and worked with different teams. I supported them to improve, to increase capacity and capability within the hospital for quality improvement, and to encourage the staff to use quality improvement methodology when they recognised areas required for improvement. In my first year within this role, my focus was to introduce the National Paediatric Early Warning Scoring System (PEWS). We had our own Paediatric Early Warning System in

Yorkhill, which went to the Royal Hospital for Children with us, but the National Paediatric Team wanted to introduce PEWS.

PEWS project

14. My responsibility was to manage the PEWS project, and to manage the introduction and rollout across Greater Glasgow and Clyde, which not only included Sick Children's but also leading up to Inverclyde Hospital, Glasgow Royal Infirmary. There were many hospitals: there was Stobhill, the Royal Alexander Hospital, places that had Accident and Emergency departments where children could attend. I went along and did education sessions, held presentations to introduce the medical and nursing teams to the changes that were going to come into play in the September and supported the hospital during this time. I commenced the role in April 2017, and I think the rollout was starting from, 9 September 2017. We took up that challenge and spread across 14 health boards within GGC and we adapted it to be specific for us. The project had nothing to do with my role as Lead Nurse in Ward 2A.
15. In my role as Quality Improvement Nurse, I worked as an individual supported by Jen Rodgers, Chief Nurse. Jen gave me key priorities and how I would work through that. I met with her regularly, as often as every two weeks sometimes, to discuss progress within certain projects or what we were doing. I also took part in the Scottish Improvement Leadership Programme.
16. In implementing PEWS in Ward 2A came the focus of trying to improve recognition and escalation of care of the deteriorating child. I worked closely with Ward 2A to put in interventions within their Ward to improve the recognition and management of children that could be deteriorating. We put in interventions such as highlighting the watchers: a watcher is a child who has risk of deterioration. We introduced twice-daily huddles with the medical team meeting in the morning with the Nurse in charge and the Ward round was

focused on the watcher patients always first. Children that were identified as watchers in the Ward were discussed first at any case review or meeting.

17. We referred to academic research as part of this project. There is a paper written about a hospital in Cincinnati, one of the authors was Pat Brady . The researchers looked at hospital huddles, and how they mitigate when a child or patient was raising concern. Further they looked at how the teams escalated their care for a deteriorating child, whether it required attention by a medic, or whether the patient required to receive a higher level of care like Intensive Care or High Dependency. They looked at several different aspects that allowed them to bring down or increase escalation, but also improving situation awareness and therefore reduce harm: harm being that the patients were not required to have an unplanned admission to PICU or Intensive Care. From that paper, we copied what they were trying to do. To improve situation awareness there were several factors that we already were carrying out in the RHC.
18. We wanted to create a structured response, which was what Pat Brady had written about, and a lot of the Scottish patient safety teams across Scotland and Intensive Care areas have all tried to emulate that sort of system where there is a structured response tool. Their tool looked quite complicated, but they had success and what we were trying to do, was to develop a structured response tool that would work for us. We tried to look at reducing unrecognised clinical events and serious safety events. That was our goal.
19. Jen Rodgers and I were looking at patient safety across the children's hospital. We were interested in testing this and began by introducing some small steps: the first was meeting with the medics as part of the ward huddle in the morning before the ward round. This allowed the teams to make a decision as to whether a deteriorating patient required unurgent attention, or whether we had to escalate care. We did get to 95% reliability and now it is embedded in every morning meeting where the medics meet with the nurse in

charge and go over any deteriorating event or issues or situation awareness, or even thinking about beds and discharges and all that sort of stuff.

20. Following the huddle, we then encouraged teams to go to the sickest patient first during the ward round, regardless of team. Eventually down the line, after doing different cycles within that process, and identifying watchers in the ward, it became a visual prompt when you would go into the ward.
21. Our idea was that patients' names would be on the Ward board, and next to them there would be a denotation such as a red dot or a "W." It would mean that anyone walking into the ward, or a team would straight away see that there is a watcher in our ward. A watcher is a child who is at risk of deterioration or is even on therapy that required extra care or situation awareness needs to be raised about it, awareness need to be increased with this patient. We also did ward-based simulation training so that teams could work effectively, and we could learn from those events so that we could work better as a team and analyse those situations. They were quite real. In fact, the Simulation Team from Intensive Care, the crash team, would come along, and they would simulate an event, and the emergency buzzer would be raised, and they would come along, and they would be told by the simulation team what was happening, and they became part of that situation. Afterwards, they were given a brief of what happened and how it went, and if there was any improvement that was required or further training.
22. When the patients were discussed at the afternoon huddle for the ward, the watcher patients that we felt required a structured response or review were discussed first at those meetings as well.
23. We then went on to develop a structured response tool, which we adapted from another hospital, and we were testing before I left my post. The structured response tool was called SBARD tool, which was Situation, Background, Assessment, Review and Decisions. A decision was made as to what was going to happen with that child.

24. SBAR is a tool that is used throughout healthcare, or any sort of communication events, not necessarily in healthcare but in lots of industries as well. We used that tool because it was recognised within our areas. I worked with the Schiehallion team: medics and nurses, and the educators. The team had some good data from the tool, and they were developing what we first started off with.
25. We looked at how we could implement something like that within the ward, which would raise awareness of anyone coming into the ward as to what event or what situation or what awareness we need to look at for this child. So, we looked at various forums on how we could improve it and, prior to me leaving the Sick Children's, they were finding that they were able to use this tool more regularly. Whether you got reliability yet, I am not sure. I left it with Jen Rogers, and she had put on the improvement team - the risk management team, and there was a project leader who would be working with them. I am not sure how they are doing, but when it was introduced, we were getting good feedback from the Hospital at Night team, and from the teams in the ward. We chose to use a different coloured piece of paper, which was orange. It was quite visible in the patient's notes, and in the front of their room .
26. This was particularly good for people coming onto the Ward, like the Hospital at Night team, as they were able to identify a child very quickly. The Hospital at Night is a team. Every ward has their own night shift teams working with them, but Hospital at Night are a team of medics and nurses who provide immediate assistance which could just be the inserting of an IV. They were often required to give immediate assistance to a ward or assess children that may be a risk of deteriorating. They cover the whole of the Children's hospital, unless they were a specific medic working in Intensive Care, Theatre or Accident and Emergency as they had their own teams. Staff were available within that campus rather than moving offsite.

27. Finally, we also introduced simulation training and we looked at our data for unplanned admissions to the Paediatric Intensive Care Unit (PICU). We looked at the number of huddles that were actually carried out, the percentage of PEWS compliance and the number of SBARD forms that were completed for those children. The deteriorating child encompassed the use of the PEWS system, which was the national PEWS and it encompassed benchmarking with the Children's Hospital in Cincinnati. It was a paper written by Pat Brady where they used the methodology for quality improvement, and some of the key aspects that we utilised within our project, they had also had benefits and were able to reduce rapid admissions to the PICU.

Additional Tasks Within the Role as Senior Quality Improvement Nurse

28. Within my role in Quality Improvement, I also worked with the hospital trying to reduce medicine harm and I worked with Ward 3C, the Renal Ward on the third floor for this. It never really got on track though and there are several reasons for that. When you do a project, you would often like the team to lead that project and, due to sickness and maternity leave, that never came to fruition on this ward. By the time that I moved into another role, it was no longer my responsibility, but they did try to look at reducing the medicine round. There is an actual visual cue within every ward, where the nurses that are involved in medication administration wear a purple apron, which alerts people to what is happening. We felt it needed to be more visualised, and we were looking as a project to think, "How could we make this apron or situation so that not only nurses would understand that the purple apron was for medicine, but also let the parents and patients understand that they're involved in this medicine administration, which required their full attention?". As part of that project, we were thinking of changing the apron, and we got some aprons that were going to be red, that said, "Please do not interrupt. I am giving medication" or, "Medication administration in progress." We also looked at the number of interruptions, and how we would try and reduce those. That is where we got with that. There may have been more, but I cannot remember as it has been that long ago now.

29. I represented the RHC in Glasgow with Excellence in Care and we looked at producing a Care Assurance Improvement Response (CAIR) dashboard for Paediatrics, which is now in use within NHS GGC. We reviewed all the Care Assurance Standards (CAS) documents for Paediatrics and reviewed them for neonates.

30. These projects I worked on differed in length. For PEWS, it was a project which was time sensitive. We had targets to work with teams, to work with the experts in the fields from Neurology and PICU. There were lots of people that collaborated with that document and how we were going to roll it out. We then did a series of testing with certain Wards. For instance, we looked at Ward 2C, which is the Acute Receiving Ward, and they assessed that form to see how reliable it was in identifying a child that could deteriorate, although all the data had been collected by the national team and therefore sensitivity and specificity was approved by them. We just needed to test our staff and how they would respond to the escalation process that we had identified would be for our health board. Once that was done and we had reliable data to show that the staff were able to understand the process, we then did a gradual rollout with a rollout date to be 9 September 2017. I did a lot of education sessions prior to it being rolled out and set live because the whole of GGC had to be starting this on the same date. That was from when I first went into the post, which was in April 2017, and the rollout of national PEWS happened in September 2017.

31. Other projects were dependent on the team that you work with. During one of the education sessions about PEWS, when I spoke to Professor Gibson and her medical team at one of their meetings, they asked me to join them. They wanted to participate in this project, and I was looking for a team to join us to look at reducing harm in a child that was at risk of deteriorating and the management of their care. They asked if they could be part of that and it seemed that they were one of the Wards that could be represented and give

us good results because we were able to study what happened with their children. Their children are in a High-Dependency Unit and often require the care within the Intensive Care Unit also, dependent on their conditions. We worked with them and that went on until I left the post in 2019.

The Rights of Child Group

32. I was part of the Rights of Child Group. It is a group where they looked at different facilities and programmes throughout the hospital that could make improvements within those groups of children. I cannot tell you much about it because I cannot remember. We met bi-monthly and issues about the televisions and other issues surrounding the rights of the child were discussed at those meetings. I attended them as a Senior Quality Improvement Nurse along with Lynn Robertson and the Patient Engagement team. There was parent representation also at the meeting. I cannot remember all the team members that attended. There were also play leaders and lots of different disciplines that are involved in that group: chaplain, child rights group, external group members. It was just another meeting that I attended, and we would have some responsibility to put some actions in place if I had been given that responsibility.
33. The Rights of the Child Group is to do with the European Association for Children in Hospital (EACH) Rights of the Child. There is a charter that we have which is about ensuring that we set those standards and we agree to those standards and work towards, during that, at all options.
34. The Rights of the Child meetings are good meetings because it brings external people into the hospital, such as the teams that work for Children's Health Scotland. I cannot remember all the organisations that come along. However, they can then put some onus on the hospital to ensure that they are meeting those standards, or question what are we actually doing to improve, or what is the situation at the moment? They might ask if we can work on a

certain situation? Or something may have been raised as part of the meeting that everyone must concentrate on. Ensuring that we know about the Children's Charter and working towards that and ensuring that the child is foremost, and families are foremost in their vision, or going forward, is something that we all want to work towards. My attending that meeting was good because then I could look at my areas of work and ask, "Is there anything we can work on for improvement?" or as a Lead Nurse, "What is happening with the wards? Do we need to make changes or is there something we need to focus on?" Those were particularly good meetings I just cannot remember them all.

Lead Nurse – September 2018 - April 2019

35. In September 2018 I took on the Lead Nurse role. Given my previous experience of being a Nurse for 38 years, of which twenty-five of those years were spent in management leadership roles, I had built, within the hospital, strong relationships with the multidisciplinary teams including medical, nursing, Allied Health Professionals (AHPs), clinical and non-clinical staff.

36. Within Wards 2A and 2B they provide quite specific and specialised care in Oncology and Haematology. I did not have this specific experience at the time; however, I brought experience in management and leadership to the team. Oncology and Haematology was only two of the six Wards that I was responsible for managerially, so that did not exactly need to come into it. With this role being a new role for me, it was a learning curve to find out about the specialisms within each of those areas. A lot of that time was spent within Wards 2A and 2B finding out about what was required of me to support that team and what the needs of that department were at that time. Over time that progressed to attending some of the Incident Management Team (IMT) meetings and the decant from Ward 2A/2B to 6A, and then to the CDU.

37. In my role as Lead Nurse, I was leading for six Wards, all the Clinical Nurse Specialists at one time in that role and the Ventilator Support team. Wards 2A and 2B were just one of my roles I took on in the seconded post. Melanie Hutton was a Lead Nurse beforehand, and she took a seconded role as the Clinical Service Manager. She was my line manager and was the Lead Nurse for Ward 2A/2B and all the other Wards. She took a Clinical Service Manager's role for nine months, and her role was advertised as a seconded nine-month role. A decision was to be made whether she was going to stay in post and then for the post to be substantively advertised. She now is the General Manager for the hospital, and at the end of the nine months, I asked to be relieved from the post, and I went back to theatres and still kept on that role a half of the time as the Senior Nurse for Quality Improvement. Latterly I went full time into theatre as the Anaesthetic Senior Charge Nurse. I did not stay in the Lead Nurse after 1 April 2019.
38. Within the role as Lead Nurse, I worked five days a week starting at 7.30am and finishing at 4.30pm. That was officially my shift, but I worked longer hours when I was required. If the service required me then I would stay on. Sometimes over that period, I would also work at weekends, depending on what was happening with Ward 6A/Ward 4B, Ward 2A/Ward 2B, when they were housed over in other hospitals. It depended on what was happening.

Royal Hospital for Children - Area/Unit worked in

39. One of the Wards that I was responsible for was Ward 2A, which is a Haemato-Oncology Ward with 26 beds. They were all single rooms with an en-suite. There was a Bone Marrow Transplant (BMT) unit within the Ward, which had positive pressure rooms with an anteroom next to it so the staff, when entering the room, would wash their hands and then go into that room. It acted as a barrier for ventilation coming from the corridor into that particular room for that child.

40. The Ward has a long straight corridor, splitting the Ward in two sections. There are quite a few sections because the BMT unit was down one side, with the Ward going further past the nurse's station and up to the end where the Teenage Cancer Trust (TCT) rooms were for the adolescents. The Ward had a treatment room, a medicine storeroom, a store area, offices, and meeting areas where the Senior Charge Nurse could be. The Doctors and research staff had a Ward kitchen and there was also a parents' kitchen. There were two quiet rooms, one which was adjacent to or near to the parents' kitchen. There was a quiet room where staff could choose to talk to parents confidentially and give them space and time to reflect on any news they were given. There was a playroom and a Nurses' station with an integrated monitoring system. The Ward also had a Ward View board which gave you access to individual patient's details, where they were in their journey, access to track care, etc. The TCT rooms were up the other end of the Ward where the adolescents were and there was a TCT recreation area, which included their own kitchen, microwave, fridge, and there was also a bathroom with a bath.
41. Ward 2B in the RHC was an out-patient day care. They delivered chemotherapy and it was a pathway for admission to Ward 2A. If a child became sick out of hours, they would be directly admitted to Ward 2B to be seen by a Medic or Nursing staff to decide what their journey would be from there, whether it would be admission to Ward 2A or to another Ward within the hospital if required. There were several single rooms in that Ward. They were like treatment rooms, quite large that allowed parents, children, and staff to work easily around in those areas. There were four bedded areas, an interview area, medicine preparation area, a store, and a waiting area.
42. In September 2018 Wards 2A and 2B of the RHC moved to Ward 6A in the QEUH which was an adult Ward. I will come on to describe events on Ward 6A later in my statement. Ward 6A had to be commissioned to receive the children from Ward 2A. It was not what we had in comparison to Ward 2A, so

we had to look at the area closely. Ward 6A had 26 beds in total and 17 clinical beds were for Ward 2A. though the rest of those beds were used for the day care unit. They had a day reception area at the top of the Ward which was used predominantly for Ward 2B's out-patient area so that the children and their parents who came along to wait for a clinic appointment could have somewhere to sit. We had to close off that area completely to Ward 6A and it was then used for our patients.

43. In Ward 6A, there was a bathroom at the end which was redundant. We could not use it. We were not going to use that bathroom for the children. We were only going to be in Ward 6A temporarily, and therefore the bath area was deemed not to be used because we were not having a bath area. Every child would have their own shower, and therefore that whole room was not going to be used. I think it was also due to the situation that we were in that it was deemed that showers were the best course of action for the children.
44. That bathroom had a toilet in it as well. It was a huge room because it would take the facility of a hoist and disabled access, possibly even taking a bed, because it was adult patients that were in those wards before, and so therefore that was a redundant room.
45. There was a Nurses' station, a couple of small offices where the Senior Charge Nurse had access to the Doctors, and there was another small room, which I do not think was used very often, but the play team could be there to have access to it, especially TCT. Every room was single, with en-suite facilities. There were small storage areas within the Ward and a kitchen, which was only accessed by staff. Outside the Ward, there was a large area which was used as a meeting space. Initially, there were two toilets on either side and the lifts adjacent to that. There was a call entry, which was a buzzer, for anyone that was coming to the Ward to gain access.
46. In regard to Theatre, in RHC it is on the first floor and the QEUH it is on the second floor, which also has a link to the second floor of the RHC. Although

co-located, the theatre suite is our theatre suite. When I talk about the theatre suite, I talk about not only our theatres, which there were 11 theatres, and I am talking about the joining corridors, the corridors that go up the stairs that our patients and parents are walking up to go to our theatre suite. When I talk about the theatre suite and environment, I am also talking about that as the area where our patients and parents would have contact with.

Protocols In the Schiehallion Unit

47. On the Wards, my role would be there to support the Senior Charge Nurse and the Nurses in the Ward. Their responsibility is for the protocols within the Ward. When we moved to Ward 6A in September 2018, we had enhanced supervision which continued throughout my time in post. We had weekly visits with Infection Control (IC) coming to the Ward to assess the environment and to ensure that standards of care were maintained from a nursing perspective, IC perspective and from Facilities. I was the Lead Nurse on Ward 6A at that time, so I was going to these meetings, doing the audits, and walking around the Ward. If there was any increase in infections or a new infection or something had happened within Infection Control's remit, they would put that in place to ensure we can make improvements.
48. We were doing weekly enhanced supervision where we would access five rooms, for instance, we would choose different rooms at different times. In the process of that, I would look at the environment. It is also the Senior Charge Nurse's responsibility to look at these rooms, and it was Angela Howat, the Senior Charge Nurse for Ward 2B, who had noticed in one of her rooms, which was not used for the shower, that there was a sealing problem.
49. Enhanced Supervision is an Infection Control term, meaning that it is an audit which involved various members of the team, the Nurse in Charge, the Lead Nurse, Facilities Manager, and the Senior Infection Control Nurse would be on this team. They would do a weekly or bi-weekly audit on the level of cleanliness, and facilities or defects to things that could be improved.

Information was then fed back to the Nurse in Charge as to how the audit went, whether it was a satisfactory visit or whether improvements had to be taken and turned into action; an improvement plan would be given, and she would make those changes until the next audit.

50. The rest of the Wards under my responsibility did not have enhanced supervision. The other Wards, including Wards 2A and 2B, participated in IC audits and Standard Infection Control Procedures (SICP's) audits, but in Ward 6A at the time, given the level of infections that we had prior to moving to Ward 6A, there was a requirement for us to ensure that standards of care were maintained. Therefore, we assessed the environment and the nursing practices weekly until IC looked at the data that we were receiving, if there was sustained improvement, then we would agree to reduce assessments and auditing to, for instance, twice every second week rather than weekly.
51. I was not the Lead Nurse until the Schiehallion Ward had moved over to Ward 6A so I cannot comment on whether enhanced supervision was done then it not.

CHRONOLOGY OF EVENTS

Involvement at Planning Stage of the new hospital: pre-2015

52. Before the move to the new hospital, I was consulted about the theatre suite, but not for the Wards. We would meet with the Project Managers, and the Architects, they would look at the drawings within the theatre suite and they would ask for our opinion and ask for some advice. We would give our opinion and, over the time before the hospital was built, we had several different plans presented to us. The final plan which was eventually signed off is what we have at present. A team of Senior Charge Nurses, Medics, Lead Nurses, Clinical Service Managers, and possibly the General Manager, attended the meetings. We discussed changing rooms and storage facilities within our area

and whether there was any way within the plans to make alternative arrangements.

53. However, I do not feel a lot of what we said was taken on board. When it came to the changing rooms, I had a particular issue with the size when I saw both changing rooms, given the number of staff that would access theatres at the time, and I made my comments that the system would not work. At the time, the Chief Executive felt that the way that we access theatres and changing facilities should change in recognition to what we were going to be receiving as that changing facility. For instance, I would never own a locker and therefore it would be a daily usage locker, which could work in effect. But, given the amount of space we did receive, that model did not work and could not work from day one of moving into the theatre suite. Therefore, those rooms were not suitable and alternative arrangements had to be sought once the hospital opened. I cannot remember who the Chief Executive was at the time, but I do remember they were a Cardiac Surgeon.

GENERAL VIEWS ON THE OPENING OF THE NEW HOSPITALS: 2015

54. When the hospital opened in 2015, I thought the newly built hospital looked fit for purpose and clean. Having a new hospital was good and the new equipment was also an added advantage. It was also good to have parking located near the children's entrance of the hospital. The ceilings looked nice, colourful, bright, and inviting for the children. It was a very vast and large open space which gave a sense of space and volume. At the time when the hospital was built, I was a Senior Charge Nurse in theatre.
55. Good things about the hospital were the newness and single rooms. We felt that the single rooms would pose an issue for staffing, although single rooms gave privacy to the patients and their parents and gave them facilities like en-suites. At Yorkhill, in the old hospital, there were very few single rooms and that always posed a problem when a child was either immunocompromised or

needed to be source isolated because they may pose an infection that could affect other children or patients within the Ward.

56. By the time I retired, I was still happy with the hospital. Looking at other hospitals I have worked in, I think the site and the facilities are very good. I have no problems with the hospital.

Issues with the New RHC

57. One thing I did not like was there was no dedicated restaurant for the children and their parents or staff within the RHC. The restaurant was co-located in the adult hospital. It did not cause any issues for me personally or our staff, because we worked in theatre and we had facilities within theatre, as every theatre suite, we have our own kitchen. I suppose when you look at a comparison from the other hospital we came from, which was very much its own hospital and had its own canteen, which was then perfect for parents and children to go down and enjoy a social event eating with each other, and staff also had an area that was cordoned-off for staff. That was the ideal situation that you would have, but when they make a campus, I can understand why they want to bring services in one place, which makes it easier to manage. There were advantages of having the Queen Elizabeth University Hospital (QEUH) co-located to RHC and the fact that there were resources, staff, and expertise on site.
58. However, when it is children's hospital, we are still wanting to have that social event, if we can, and somewhere that parents can easily go and grab some food. What would have been better still, would be if we had our own facility on-site that allowed parents and children to sit. There is a small coffee area at the front of the hospital next to the charity shop, where people can go and grab a coffee, but they cannot really have hot meals other than soup. There was just the canteen area and that was all. It was just a comparison to what there was in the old hospital to what they have now.

59. The other thing was it brought perceived problems, the fact that we now have adults from another hospital who may have other issues pertaining to their problems that might include drugs or alcohol, or patients' relatives smoking outside the hospital. Those sorts of things we did not necessarily see when we were at Yorkhill.
60. The theatre suite was based on the first floor, co-located adjacent to the Intensive Care Unit (ICU) and the cardiac Ward was adjacent to the day surgery unit. Day surgery, theatres, ICU, and the Cardiac Wards are on the same floor.
61. When we first moved into the theatre suite, it was quite evident that the changing facilities were not adequate and Surgeons, Medics, Clinical Nurse Specialists were no longer co-located in the Wards with their own office next to the Wards. They were now located in an office block, which was some distance from the main hospital.

HPN Control of Infection Steering Group: 13th of June 2017

(A36412002 - HPN Control of Infection Steering Group, dated 13 June 2017 – Bundle 6 – Page 6)

62. In June 2017 I attended an HPN Control of Infection Steering Group. In relation to the information contained in that minute, I am unsure as to the reason for the change in policy with Cleanliness Champions being replaced by Scottish Infection Prevention and Control Education Pathway. They looked at the Cleanliness Champions and decided that they would need to improve the access to the Cleanliness Champions, and I think they put access online so that nurses could access that course. There was a change that was accepted, and if you were a Cleanliness Champion and you were ensuring that your staff were going to go forward, they would go onto this other platform to ensure that they had the same knowledge that was required as a professional within whatever group or Ward they were in.

63. At the meeting, I made a point about proposing a tagging system for cleaning the orthopaedic beds. We had a situation where Facilities were feeling under pressure about the support they could give to the extra requirements. But through the environment of the hospital, we lost storage space of where we could keep our beds because with children, we need all different sizes of beds. This then means we need to have a storage area, which would be a repository sort of if you need a cot, a bed, or a chair, that we would have a storage facility, and that was no longer available in this new hospital. What we were finding was that beds were in corridors outside particular Wards. For instance, in an Orthopaedic Ward, they need to have a special bed which allows the patient to have traction for splinting a fracture or to support a hip or different joints. These beds do not always need to be used, so have to be stored somewhere and they were in the corridor. In the audit from HAI, they noted that there was dust. One of the things I thought about was, you could know how often these are cleaned if you had some sort of process in place to identify a cleaning date, and therefore if you walk by, you could see a tag easily. It was just a suggestion, one I would hope they would take up, and I am not sure if they ever did.
64. I advised I would like support from IC regarding information for staff wearing uniforms out-with the hospital. I do not think I received further guidance about this, but there were constant updates that were given to staff in the hospital. There was always communication regarding uniform wearing outside the hospital. Therefore, you would question if it was acceptable. That was the support I was really looking for, to find out if in fact there is an issue with them wearing their uniform out-with the hospital, with it being such a large campus and a lot of access to the Wards were outside.

Quality Improvement Project: 2017 to 2018

65. This period would have been late 2017 into 2018, when we were working on the Quality Improvement Project. The project was set up because there was an increase in infections, and the management team had asked to speak to Tim Bradnock, Surgeon, to see if there was any change with insertions for example, the lines they were using, anything at all that could indicate a problem.
66. Mr Bradnock became involved when there was an increase in line infections, and he had been looking at what happened around that time in the timeline to see if there was anything that could be associated with the increase. From that point, we started looking at all of our own techniques, be it insertion, maintenance, education, how we access the lines, what we put on the lines, how we clean them, aseptic non-touch technique, and what the children were doing with their lines.
67. Mr Bradnock, gathered a multidisciplinary team together, consisting of key people within the wards including me as a quality improvement nurse, to look at several aspects within his project to try and reduce the amount of line infections. Everything within the group moved quickly once we had the team teams together. The aim was to reduce Central Line Associate Bloodstream Infections (CLABSI) to under one per thousand line days, put some interventions in place, and work through different teams. There was a Theatre team, a Ward maintenance team, Staff Education, Insertion Group, and they all worked together to reduce the central line infections, which was compounded at that time, when the water portable sinks were in place.
68. We saw a rise in our data, but we were seeing a shift in the data indicating there was an improvement in the line infections, and we were able to attribute those to the different improvements that we had put in place. We had put some interventions in place, such as review of practice.
69. We had looked at an alcohol-impregnated cap which had very good results in lots of literature and research that had been carried out. Some of it may have been done by companies but this Curoc cap was showing good results, and

therefore, Vygon was invited to come along and talk to the improvement group with Tim Bradnock, and a decision was made to introduce what we call the green caps to the patients' lines. With using the green caps, it negated the need to scrub the hub: when you access a line the nurses should undertake decontamination of the hub of the line for 15 seconds and because we use chlorhexidine, the line should be left to dry for 30 seconds. Now that is 45 seconds, which is a long time before you can access a line, and therefore that was variable when looking at auditing the nurses and the time they took to access lines.

70. The standard was not always being met, because people felt that 15 seconds was shorter than it actually was, and that happen in a lot of things but with using the Curoc cap that negated the need for that. As long as the Curoc cap had been on for one minute the efficacy of decontamination and disinfection was far better than any scrub the hub wait time to access a line that you would ever have. I think it reduced the bacterial count or CSUs down to under six. Prior to doing it that way, we worked with Nurses to show them how techniques in accessing lines could be improved by using Curoc caps.
71. We were benchmarked against a big children's hospital in Cincinnati, America. The reason for often picking Cincinnati: the first one was really because Jen Rodgers did her improvement fellowship there and worked with those teams and saw the kind of work they were doing, as did Tim Bradnock. I understand that Mr Bradnock benchmarked against the hospital as well. Often, in improvement methodology, you would do a lot of research and benchmark against different hospitals, or reading paper research that you would try to see the standards or interventions that they had put in place and whether that would work for improvement methodology. The CLABSI rate is based on how many infections you have per one thousand line days and the Quality Improvement group, looked at various aspects, to again, reduce the CLABSI per one thousand line days within that population of patients in that ward.

72. The company, Vygon, worked alongside us to see if we could achieve that level. Vygon were the company that made those Curo caps, but they also had their own hub or access port which our nurses and some of the medical team did not like because of their bulk, and it was difficult to see them. We were using Vadsites at the time, which is an access port to the central line, and this Curo cap would go on top of that, but that proved not to be suitable just using our data, and we switched to smart sites. The Curo team had looked at both hubs and were happy for us to use it. Later, once SmartSite – which the company is BD, they produced their own impregnated cap for lines, which we then swapped over to. Again, through data, able to demonstrate an improvement or if it needed to be changed. Quality Improvement in this sense is driven as a quick step of change, and if something does not work then you look to see why and if improvement needs a change to happen.
73. Throughout that whole project, there were lots of interventions made to improve and decrease the central infections. From what I have read recently, it has gone down to 0.77 infections per thousand line days, which is really a good standard to have. The team worked through different parts of the project to achieve that.
74. We would collate data and you can see there were situations where there had been improvements. There was a shift in the data which indicated improvement in line infections, and we were able to attribute those to different interventions that we had put in, for example, the Curo caps I have spoken about and education. We saw a shift and an improvement in line infections, and they were able to demonstrate improvement and sustained improvement, but I do not know what it is like now and I do not have any of the graphs or data now. The person you would be best speaking to about all of this is, Tim Bradnock.
75. At this stage, there were not any suggestions that causes of infections were from the water. At the beginning, yes, we were looking at ways to mitigate the infections. At the beginning of that project, we were concentrating on line

infections as in practice, by ensuring that practice was sound within the Ward, looking at practice across the hospital including going to other Wards and looking and reviewing their practice as well. The Nurses would also be peer reviewed by their own educators or educators from other areas who would come in to ensure that nursing practice was good, and having confidence that the practice was sound.

76. In communicating about the Quality Improvement Project, there were key people within the group that were responsible for going back to the Ward and letting the staff know what was happening. The Educator and the Senior Charge Nurse, the Advanced Nurse Practitioners and the Paediatric Oncology Outreach Nurses were all part of the group because they all had specific roles to play within that Project Management team, therefore their responsibility was communication. We also did newsletters, and we showed the data for what the changes were bringing about. We would leave the newsletters and data in their coffee room on the Wards. They still would have access to the data that would be updated.
77. I was not aware of communication with staff and patients about the water, however I would imagine that there was a lot of activity within Ward 2A. Before I took responsibility for those Wards, the point-of-use filters were put in place. The parents were asked not to drink the water or use the sink for disposing of their cups and washing their plates. It was important to point out to the parents and children of those areas that the handwashing sinks were for hand washing. Therefore, to mitigate the risk of any further infection happening within the sinks, for splashback, a staff member came to wash her hands and check that a cup had not been poured down the sink. I would imagine the staff in the Ward would have been informing the patients and parents that the point-of-use filters are coming in, that the sinks were being cleaned with Hycin, which I believe as a cleaning solution that hadn't been used before but was now part of the regular cleaning due to the situation within the water and the drains, and there it was said that it was necessary as

part of the IMT and the Infection Controls and their recommendations along with the facilities Management Team I think. The drains were being washed, when staff were going to do specific cleaning within the drains or the sink and when the parents and children had to be re-moved to another Ward. Therefore, there was a constant move of children to a different room to accommodate the cleaning that was required within the room.

78. I was not aware of communication with external bodies about issues with the water. I can only comment from the IMT meetings where there was a representative from Health Protection Scotland who directly reported to the government. I come on to talk about that in more detail later on in my statement.

79. By the time I retired in 2020, the issues were not resolved because the children were still in a Ward which was out-with the RHC and had not moved back. They were still using point-of-use filters and we were still giving bottled water to the children. Although, I think the water was deemed wholesome to drink, the children remained on bottled water and were still in Wards 6A and 4B. By the time I had left the hospital, they still had not moved back. From the time I left the post as lead nurse to leaving my post completely as a retiree, I cannot answer whether the issues with the water system have been resolved.

Incident Management Team Meetings (IMTs): 2018

80. I was invited along to IMT meetings as the Lead Nurse of the Nursing team, and I would attend with the Senior Charge Nurse. My role would be to inform of the events that were happening if required. I would be able to advise and allocate resources to them. For instance, if extra Wards or extra rooms were needed, I would take actions from the meeting as well.

81. The IMT is confidential, so I would only take back anything that I was asked to communicate. There's representation at the meeting which includes both

Senior Charge Nurses of the Ward and/or a Senior staff nurse who would be there to represent the Nursing team. There were Senior members of the team from the Wards who would go back and tell their teams anything they needed to know.

82. I was invited to IMTs because of my position, but ultimately the person who would decide suitability would be the IMT leader, who at that time was Teresa Inkster or the Chief Nurse. I would imagine because of the nature of this IMT that the Lead Nurse would be required to be there to be able to direct resources, to be able to give advice, to lead any changes or suggestions that were asked of them. If it were an all staff meeting however, I would attend those and be there to answer any questions that staff would have.

83. I think IMTs were very effective in giving information. For me, I learned a lot because I was not aware of the Health Protection Scotland involvement with the drain issues. All of those different issues came and gave me more understanding and knowledge of what was actually happening prior to me taking up this role. They were managed very well, sometimes because of the nature of what was happening it was a very stressful environment and they often helped people who came onto the meeting. From the first meeting that I was at, there was more and more attendance, and from that came frustration of having to repeat certain issues. The same sort of questions came back, but they were necessary questions. I could understand the role of the IMT Chair could be quite stressful for that individual and the decisions that were at hand of what was actually happening at that time with the increase in infections. It actually settled down, but a decision had to be made as to how we went forward investigating it. It was a very contentious situation, but other than that my experience of the IMT was informative. Decisions had to be made and it was a good forum to have everybody there from different specialties and bringing different skills to give advice with regards to the situation at hand.

IMT - 5 September 2018**(A36629284 - Incident Management Meeting Minute, dated 5 September 2018, relating to Gram negative) bacteraemia at Ward 2A – Bundle 1 – Page 149)**

84. The first IMT I attended was on the 5th of September 2018 when the IMT was reconvened from prior to the date that I started in post.
85. The IMT minute notes that there were concerns of staff being pulled from other areas to cover and advised this action would be based on a risk assessment. As the Lead Nurse on duty that day, I was also responsible for the safety of the hospital, as in the safe staffing of all the Wards. Every day, the staff in the Wards have to identify if they are safe to start. That means I would identify that they are safe for staffing, they have enough staff to nurse the dependent children in their Ward and the level of dependency is identified as well. The Lead Nurse also identifies how many watchers they have. On that day that the staff were alluding to, there were shortages within the hospital. To allow the safe staffing of another Ward, I had to, when I was aware that Ward 2A were in the process of trying to move rooms, allow for the extra cleaning that was required, to move a patient from their room that they were currently in to move to another room to allow the cleaning of that room and for them to subsequently move again. It would require extra healthcare support workers to provide support within that Ward. They had extra healthcare support workers over and above the level of nursing that would provide them with a safe environment. The Healthcare Support Workers were there predominantly to help move the items. A very important job, but at the time the hospital required assistance to ensure safe staffing within another Ward. My decision that day was to take a Healthcare Support Worker from the Ward.
86. The Senior Charge Nurse, Emma, was concerned that this had happened and had asked for reassurance that it did not happen again. This was raised at the IMT meeting that day and, given the complexity of everything that was happening, I tried to explain the reasons to justify what happened. I was very

mindful going forward of how I would be able to support the Ward again. Risk assessment is based on what actually happens to allow other Wards to have a safe environment, and unfortunately, that day, which was the decision that had to be made.

87. When there's not enough people, other areas have to support the wards that need it, as long as what they were doing did not involve the safety of an individual child at that time. The process was an ongoing process and, although I was delaying that from that shift, the action that required was still going to get carried out. On that day I needed to think about safety of the other Wards I was responsible for as well as Wards 2B and 2A, not putting them in any risk that I perceived until I went to the meeting and the concern was raised by the Senior Charge Nurse. It was also the concern that was shared by Teresa Inkster, the Chair of the IMT. I cannot change what happened that day but, going forward, I was more aware of the support that was required for that team.

88. I queried the quick generation of dust within Wards 2A and 2B and also reported dust in the vents and chilled beams. From memory, dust would generate very quickly within the Ward which is why this was raised. Angela Howat, the Senior Charge Nurse for Ward 2B, would be more equipped to give the full explanation. There were so many things that we were noting that we wanted to make people aware of and to see that processes were going to be put in place to ensure that these areas were dusted. You would look at the vents above, it was constant scrutiny of every area and therefore you were very aware of the environment and changes in the environment.

IMT - 13th of September 2018

(A36629307 - Incident Management Meeting Minute, dated 13 September 2018, relating to Gram negative bacteraemia at Ward 2A – Bundle 1 – Page 160

89. I attended an IMT meeting on 13 September 2018 and I asked if families of patients present on the Ward should be informed that the incident had

reopened. However, I did not have direct conversations with the families. The background to this IMT is that by 5 September 2018, they had another three cases of infection in the ward. This is when I started to become more involved. As there were another three cases, the decision was made to re-open the IMT, The IMT had been closed down from prior to this happening again. Therefore, they were meeting with the three parents of the children who were now involved, and I asked if everybody should know that they have reopened this IMT and let everyone know and the IMT agreed, yes.

90. I was new in role and had never been to an IMT until this had happened and therefore my questions were of an inquisitive nature. The group agreed that Teresa would work on the information and after the IMT, Teresa and, Jen Rodgers, the Chief Nurse, and Jamie Redfern would communicate with the Health Board with regards to how the information from the IMT was to be communicated with parents and staff. I would imagine that it would be confirmed at the next meeting that parents had been spoken with. There were daily meetings at this point and so much was happening. They were going to meet with the consultants and nurse representatives from the ward so all of this would definitely have been communicated to the ward.
91. When a decision was made as to the communication, which often came late at night, we would go into it after 5PM and it would be often late, six/seven o'clock at night, before any information would come back. By then, it was the responsibility of the Senior Charge Nurse, Jamie Redfern, or Jen Rodgers to actually go round and speak to patients and parents individually. That role was never left to me. I had other areas of responsibility that took up some of my time, so I did not always have to concentrate all that effort on Ward 2A/2B. I had the Senior Charge Nurses on the wards to be the communicators.

IMT - 17 September 2018

(A36629315 - Incident Management Meeting Minute, dated 17 September 2018, relating to Gram negative bacteraemia at Ward 2A – Bundle 1 – Page 169)

92. I attended an IMT on 17 September 2018 and it is noted that I enquired whether the Clinical Decision Unit (CDU) would undergo a drain cleaning, however at that time it was classed as low risk. This was concerning as the patients that go there are from a high-risk group, which is our patients that are immunocompromised. What happened was an immunocompromised patient could be attending the hospital via A&E, Thereafter the children would be directed either straight to Wards 2A/2B or, out of hours, would go to CDU if there was a bed issue on Ward 2A. Therefore, I asked that question as I wanted to ascertain whether CDU should undergo the same drain cleaning and filters as was initiated in Ward 2A/2B and any other Wards where the patients might end up. The meetings were evolving very quickly.
93. As the IMT meeting progressed, you would see the questions were evolving and you would produce another idea, "Well, what about this Ward?" Often, I would come into the next meeting saying, "I hadn't thought about Ward 3A, I hadn't thought about Ward 3B, can we add this?" Andy Wilson was constantly getting updated from me with extra requirements, which put added pressure onto the Facilities, Maintenance, and Estates teams. In asking these questions I wanted to make sure that every option or area was covered and that I was not missing anything. I asked a question to make sure that someone asked the question. If not me, someone would ask the question because everybody was heavily involved in trying to do their best to make sure that we had covered every eventuality and mitigated any risk.
94. At this IMT I also raised the question of basins. Basins should be single patient use only, but what Annette from Health Protection Scotland requested was that these basins should be single use only. Once they have been used, they should be put in the bin, and that is what had to be put in place. My confirmation or response to her was, "At the present time, these basins should, in the Ward, be single patient use. From that meeting, the Senior Charge Nurse and the other Senior Nurse from that Ward put that measure in place. I spoke to them afterwards and they ensured that they bought more

because the resources that were required to ensure that every basin was going to be single use meant that they had to increase and buy so much more basins because single patient use is completely different from single use. Single use is use once and bin; single patient use is used for that patient's entire visit, which would be decontaminated in between times and cleaned and then dried and left for that patient to use, and then it should be binned once that has been used.

95. On every basin it would have a sign denoting whether it was a single use with the symbol "2" with a line through it which would indicate that it is single use.

IMT – 18 September 2018

(A36629310 - Incident Management Meeting Minute, dated 18 September 2018, relating to Gram negative bacteraemia at Ward 2A – Bundle 1 – Page 175)

96. I attended the IMT meeting on 18 September 2018. I had concerns about rooms 19, 20 and 21 in CDU and wanted those rooms specifically cleaned because they had positive pressure air ventilation. They were the pathway rooms on the ground floor where patients are admitted from Accident and Emergency prior to being admitted to a long-term ward, which could be Ward 2A or 2B. Those were probably identified rooms, room 18 and then they would also use 19, 20 and 21 for those patients because they had possibly positive pressure ventilation systems.
97. We were ensuring that all rooms where patients in this group of patient population were going to different areas of the hospitals through their journey. Therefore, we needed to ensure that those rooms were having the same standard of cleaning. The draining cleans for example, were also happening in those rooms as well.

IMT – 19 September 2018

(A36629316 - Incident Management Meeting Minute, dated 19 September 2018, relating to Gram negative bacteraemia at Ward 2A – Bundle 1 – Page 180)

98. I attended an IMT on 19 September 2018. There was a delay in terms of waiting for Ward 1B to be cleaned first. Ward 1B is quite an extensive out-patient area where our patients could have access, especially Haematology patients. I emailed Andy and I gave him the room numbers, and he just said, "Look, I will get to this job eventually." I remember I had put on extra pressure now onto the system by requesting extra rooms to be cleaned or to put to the point-of-use filters in, the drain cleaning, all of those things add extra pressure to the process he has already got in place. I have to agree that he should do 1B because already they have identified one room in CDU, which was room 18. I have now come back and said, "Well, actually, I would really like these other rooms to be available for the children if needed." It was always just a safeguard to ensure that we had a safety net in place.
99. We had to make sure that all opportunities were ensured that we were going to have these measures in place. If I was going to put the measure in place in one area, then I wanted to make sure that, if any child was going to go to any of the other Wards, we also had those measures put in place as well. This is what happened in other Wards as well, in Wards 3A and 3B. Then those rooms those children were going to be in, they had the extra interventions too that they had in their other Wards.
100. I never had concerns that the cleaning regimes would not be carried out, it would always be done as they had a template which they updated. IC were already involved in that, and they had a programme of vent cleaning, and when that was going to be done. There was a full programme in place. If there was any reason for it not happening, they would justify and they would arrange another day if it were like vent cleaning.

IMT – 20 September 2018

(A36629320 - Incident Management Meeting Minute, dated 20 September 2018, relating to Gram negative bacteraemia at Ward 2A – Bundle 1 – Page 185)

101. I attended an IMT on 20 September 2018. At this stage I was confident with the decant plans. I remember that decision, and the decant was when patients would move to certain areas. The proposal, at the end of the day, was agreed that the BMT patients would move to Ward 4B, and the other patients would all move to Ward 6A. This would allow Ward 2B to continue operating on that day of the move, they would continue with their out-patient Chemotherapy treatment and reviews. By the end of the day, we would move that Ward over, which would just only include staff and equipment that they would require when patients would require to be moved or to be in an environment, they were unfamiliar with at that time. It made sense to move the patients from Ward 2A to 6A first, and 2B latterly, and they would start operating the next day.

102. There was a mention about information provided to the media was wrong or had been published wrong. I do not understand how that happened, I cannot remember or recall, but I do know that families understandably were upset, not only with the move but also the timeframe of when they were given the information prior to notification on the television. You can understand that they should hear from us first. I do not even know how that information got out to the media and so I cannot comment.

103. I asked what would happen if a Middle East Respiratory Syndrome (MERS) patient arrives at CDU, would they use one of the four beds already assigned for the Haematology-Oncology patients? I was covering all aspects. At that time, MERS was quite prevalent in the UK and therefore we could get a child with that condition, and they would require a positive pressure room to ensure that it does not go out into the corridor, and they would use one of our rooms. I was just wanting to make sure that I had four rooms available to us. If they did use it, what would that mean to us, having it in that area, because we would have children possibly in that area where a MERS child was getting

cared for. It was an evolving situation that could or could not have happened, and I do not think we ever got a MERS patient, but it was just something I wanted to query.

IMT – 25 September 2018

(A36629324- Incident Management Meeting Minute, dated 25 September 2018, relating to Gram negative bacteraemia at Ward 2A – Bundle 1 – Page 190)

104. I attended an IMT on 25 September 2018. With regards to if a patient from Ward 2A/2B was going to need to have a bed on any other Ward, I wanted to assure that every Ward was capable of having the same standard that they would expect in Ward 2A/2B. I asked that I could identify rooms. I was adding to an ever-growing list, but I had to ensure that I had confidence that if a child were required to be on any of those Wards, I could say I put the same process in place, and that was it. All in attendance agreed, and although it was noted that the requests were sporadic, it would be difficult to do. They wanted me to identify and email all the tag numbers.
105. With the drain cleaning I wanted to make sure if you are doing something in one Ward, I would do the same on the other Ward. I think what happened from there, was that they would consult with Susan. I am absolutely positive they got the drain cleaning done as well down in 4B, but I just wanted to make sure.
106. I was quite confident in the plans for the proposed move at this stage because there were other teams working on this. The IMT would discuss the instances you can see in the minutes, but in the background there was a Clinical Service Manager, Lynn Robertson, who had a dataset of everything that was required to assist with the move, looking at the business contingency plans, looking at the risk register, what we could do, how we were going to ensure safety of the children's move and all of those things were getting looked at. There was also a huge datasheet that Jen Rogers and Jamie Redfern kept ensuring that we were on target for the move, that we were at green, red or

amber. It was all rated and we knew that we were on course. Nothing was going to happen unless every single eventuality was looked at. That went from getting more staff to help with the move on that day, whether it was ensuring that we had an intensivist moving with every patient, ensuring we had oxygen facilities, what we were going to do in the lift, how we would move a child's belongings, ensure it was in the right place and medication with pharmacy input. We had every input you could think about, including telephones, walkie talkies, absolutely every option, eventuality, situation was reviewed and played out to ensure that we were in the right place. By this stage we were definitely sure that we are going to manage this successfully, although it is something that nobody ever wants to have to do. We had done it five years ago prior to moving from the children's hospital in Yorkhill to the new hospital.

Closure of Ward 2A and 2B and the move to Ward 6A and 4B: September 2018

107. I was involved in the decision to move Wards initially. As part of the IMT, when it reconvened in the beginning of September, we had regular daily meetings, and it got to the stage where the control measures that were put in place, like the point-of-use filters on the taps, showerheads, the drain cleaning and the hydrogen peroxide vapour cleaning. At that stage we were no longer managing to keep to a timeframe between the cleans to mitigate those risks. When they were making monthly changes, it was gradually becoming unmanageable. They would look from the IMT's perspective as to, were there any more infections.
108. They were monitoring water and different things that needed further investigation and for us to do that they needed to move the patients to allow that process to happen effectively. Each time they were trying to investigate everything over that time as much as they could with a ward present in those areas, and therefore, a decision was made at the IMT that the children should

be moved from Wards 2A and 2B. This was to allow the Wards to be fully investigated because the investigations that were required would be quite substantial, including opening drains, and would not be conducive for care for the children in that Ward with that undergoing at the same time. There was a lot of anxiety with the staff about the safety of the Ward and how the infections were happening.

109. We moved on, 26 September 2018, and the decision to move was made around the middle of September. There was a lot of discussion around the water, the drains, access to drains, cleaning of drains, cleaning of drains within not only the Wards 2A and 2B, and any Ward where those children may have access to. They had to look at how to mitigate risk for the patients, and to ensure there was safe points-of-use filters, cleaning, drain cleaning was happening in those areas that they may be exposed to. The timeframe is in the IMT minutes; it involves various people within Health Protection Scotland (HPS), Directors of Facilities, Health Board Chairman and people that came out-with our own hospital that came along to the meetings such as Infection Control out-with our hospital, so they would be from the Health Board. I would imagine they were maybe invited to the meetings, but I do not know for certain. We reviewed several options for the move for the children and discounted locations not suitable. The Ward where the children were moving to was not decided until one was identified by the Health Board and from there, we reviewed that Ward to see its suitability.
110. Ward 6A and 4B were deemed suitable because that was a Ward which was used for winter planning for the GGC. It was on the same campus next to the RHC, so we had facilities such as paediatric intensive care (PICU) and access to medics, in particular Hospital at Night.
111. The reason for Wards 6A and 4B was 4B was an automatic choice because it was the Ward for the Haemato-Oncology adults, and bone marrow transplants took place in that Ward, so it made sense to accommodate some of our children there. We were lucky to gain four beds in that area. Initially they

offered us three, but because of the number of patients that were required, we were able to accommodate four children. Ward 6A was just two floors above Ward 4B, so out of the Wards that could be in Queen Elizabeth building, it most likely was a better choice than any other. I do not think any other Ward was offered. Those patients that were in that Ward were easily moved within the hospital.

112. The Nurses on the Wards and the patients had to go through a process of relocation. We reviewed that Ward to ascertain its suitability for our needs, and although it was never going to be the exact same as what we had in Wards 2A and 2B, given it was two separate units, we could see how it could work given that it was only going to be for a few weeks. The whole process initially, to gain access to the drains and the units of work that was going to be required in Wards 2A and 2B, was only going to be for a short period of time, but prior to that move, we had to ensure that the standards that we had left behind were going to be maintained. The Ward had to be ready for us to move in and the Facilities Management team assured us that that would be the case.

113. The Ward was, however, located in another hospital. Therefore we had to look and ensure that we had safety routes for medics out of hours to be able to access the Ward; that included things like thinking about the access to the Ward via the lifts, so they would have to have a special key to access the lift so they could get there if they are in need for an emergency. Having the Ward out-with posed a problem for hospital at night and therefore also part of our staff, which was the Advanced Nurse Practitioners, who then had to change their shifts to ensure there was a presence on the Ward overnight, to ensure there was a Nurse Medic there at all times to support the hospital at night team. The environment itself of Wards 2A and 2B, it was one Ward that was going to be split into accommodating an out-patient section of the Ward as well as an in-patient section.

114. There was no playroom for the children, so we had to consider this. Play is very important to children and socialisation, as the room is their home. When a child is in hospital, especially with conditions that are long term and they are requiring lots of treatment, the parents and the child are often there for a long time, so their room becomes their own personal space. Not all children can get to a playroom because often during their care they may have various types of infections that do not permit them from leaving their room. However, with the play service provided across the hospital, it gives that area for children to allow them to play, do different activities and meet other children. On the ward at that particular time, we didn't have the facility to have an actual dedicated playroom and we were trying to use the space in the Ward as effectively as we could to accommodate the requirement to have those two teams together, and also give the aspect that initially it was going to be a short-term solution.
115. We had to consider the layout of the Ward and the usage of what we were going to use the Ward for. At the top of the Ward, where the large dayroom was, this could have been used as a children's play area, but it was going to be used for the out-patient waiting area. Therefore, how could we guarantee that would be cleaned and given the attention it requires to use it later on in the evening. We thought about, out of hours, would the children play in that area? What should we do? Should we just separate that whole Ward? That is what we decided in the end, given the time frame that we were going to be in the Ward. That would be an inconvenience that the children could get over that period of time, that short period of time which we expected.
116. The Ward did not have any areas for the teenage children to meet. We had this small room, but again it was too small, and they probably would not want to go in. There was no kitchen area for the parents because the kitchen in the Ward was not open to the parents. The play area that they created for the children was in the corridor which was a small desk. It was not really a play area at all, the play was going to be limited to the children's rooms, the individual rooms themselves, so that was an issue. There was not enough

office space but given the timeframe that we were going to be there for, these workarounds could be effective.

117. Distance is always a problem when we are transferring a patient. We need extra resources, and therefore that would be not only for intensive care but taking patients to and from theatre. The theatre orderlies and staff who would transfer patients to and from theatre had access lift keys, and therefore, for them, the time waiting for lifts were greatly reduced. The journey from theatres or intensive care was increased because they had gone from access from Ward 2A by one floor to now going through hospital corridors to access a different set of lifts to go up to six floors. Distance, therefore, would be an issue, but one that the risk was mitigated with the access of the lift keys and the staff knowing the routes. There was signage throughout the hospital to raise awareness of how and which lift for staff to go for, for example, hospital at night, if they had to attend the Ward.

IMT – 26 October 2018

(A36629329 - Incident Management Meeting Minute, dated 26 October 2018, relating to Water Contamination in Ward 2A – Bundle 1 – Page 212)

118. I attended an IMT on 26 October 2018. There were mentions of a desk being unavailable and this was because there were quite specific in their requirements. There are a set of doctors within that Ward who everything that they record for the patients' clinical episodes are done electronically. They have specific requirements where for a desk that would walk with them and is able to store securely a laptop and secure the case notes if there was any written at all, and that as well. I just got online to medical equipment companies, and I took some time to source different options, and I gave it to the clinicians. They were quite happy with the choices, and they selected the one that they wanted and, and I ordered it.

IMT – 2 November 2018

(A36629288 - Incident Management Meeting Minute, 2nd November 2018, Water Contamination in Ward 2A – Bundle 1 – Page 233)

119. I attended an IMT meeting on 2 November 2018. There was a discussion about trough sinks and whether they were to be removed or not. This conversation meant a lot to Professor Gibson, and she relayed that her colleagues also felt the same. There were two camps there, and I can understand both, but I cannot give an opinion as to who is right and who is wrong. That responsibility is left to the decision of both individuals to go back to both of their colleagues or professional experts to understand the need for what they were wanting. What I got from that was a decision not necessarily needed to be made that day, but because the move was only going to be weeks, I suppose a decision like that may have needed to be answered. Professor Gibson was looking for support and I cannot give support in that, and I could not give that precise knowledge, I would have to do some research myself and look into the pros and cons. Knowing the way sinks work Professor Gibson's concern was about moving the trough. When a trough was actually required, which is a scrub sink, it could have been reduced to a hand-washing sink, that is something that they would have to decide. From that conversation, the next meeting I was not involved.

IMT – 30 November 2018

(A36629326 - Incident Management Meeting Minute, 30th November 2018, Water Contamination in Ward 2A, RHC – Bundle 1 – Page 241)

120. I attended an IMT Meeting on 30 November 2018. There was a discussion in regard to sinks and I made a request to receive additional sinks, but I probably just added to his list. I am only acting on my other Wards who have told me that their patient had gone to that ward, and so therefore I have added to the list. The list became quite extended, and therefore what she was meaning by that was we were then going to get a work plan in place so that the rooms were all identified and therefore you could have a process to ensure that the cleaning process was being done.

121. There was an error in the minutes where it says, "Kathleen Thomson stated original date" it was given the 14th of February, but it should have been the 14th of December.
122. The 14th of December was a move back date. If you did not have a date, then we had to look at other options for how we go forward with the Ward. What facilities were going to be acceptable for a longer stay? For example, the central monitoring. I wanted central monitoring to put in place then and got advice from medical physics department and got quotes to get a central monitoring system put in place that can allow the patients to be monitored from the Nurses station and alerted for alarms. I wanted to see a kitchen put in place for the parents. I wanted a playroom and all these things that were that were very important, but because of the length of stay that we initially were having, if this was going to change then the requirements for the Ward would also have to change.

IMT - 18 January 2019

(A36690595 - Incident Management Meeting Minute, dated 18 January 2019, relating to Cryptococcus – Bundle 1 – Page 274)

123. The first time we were aware of the Cryptococcus incident was at the IMT and thereafter, at the IC meeting. The incident was a terrible thing to hear that we had moved to another area that again was raising concerns, had an associated infection and ultimately a child had died.
124. We were informed at an IMT and also at an Infection Control meeting, that where were two patients with Cryptococcus. [REDACTED]. It was felt when they further investigated it, that the cryptococcus, came from the ventilation system. Other than [REDACTED], I was not aware of any other issues with the ventilation.

125. The sealing around about the shower area had given way, so the Senior Charge Nurse brought that to the attention to estates, and it was recognised that the sealants were required to be looked at in several of the rooms. That was brought to the attention at the IMT. The Lead Nurse for Infection Control, Susan Dodds, and one of her colleagues, Teresa Inkster, looked at the rooms and identified eight rooms that required some resealing done.

Move from ward 6A QEUH: January 2019

126. At that time, which was after January, when it was noted that parts of the shower were coming away from the wall or the fabric of the building of the shower area, we had to move some of the children and identify children that would move to Ward 4B. There was a requirement to refurbish these areas and when the work started, it was noted that every alternate room was going to be involved and therefore, for works to be carried out in these rooms, they had to be screened off and that would make it impossible for an individual room to be blocked and would make it an impossible area to work from in the safety of the children, the parents and the staff. This was because they could not gain access to certain rooms because they would be blocked off. A decision was made that we should look for alternative accommodation for the Ward over that period of time while that work was being carried out not only to ward 4B, but also over to the Children's hospital because that was the only other place we could go back to, and they would accommodate us in the Clinical Decision Unit (CDU). The Clinical Decision Unit then had to be accommodated throughout the hospital. The CDU area was then used for the then-Ward 6A, which was initially Ward 2A.

127. There were not many people in the Ward at that time. The same process happened as it did in Ward 2A and 2B regarding the information of patient and families. Jen Rogers and Jamie Redfern would, I imagine, have went round individual patients and parents to explain to them the situation that required us to move to CDU. I am sure we did get a script of what we should say and go

round, because it is hard to articulate the right information to ensure that we are getting the correct information to the parent and children if it is appropriate to talk to them (the child) about what is happening. It was a very emotional time.

128. Remedial work went on for just under a couple of weeks. We were concerned of links with the ventilation, with regard to the Cryptococcus infection. A room was closed off [REDACTED] and it was at the same time that the showers were noted for sealant. I am not sure if there was any mould in those rooms, but I know the sealants definitely raised the concern. Prior to this, I had no concerns about infection in Ward 6A.
129. In regard to communication, the IMT would give us direction as to what communication that we would give. At the time, we would meet with the staff, both medics and the nursing staff, and explain about what had happened [REDACTED] [REDACTED] within the hospitals. They had contracted Cryptococcus infection, and it was presumed it came from the ventilation system so that room had been closed. Communication with the parents, again, would have been through a written form that had been given to the staff to give to the parents, and we would talk to the parents and let them know about the situation as well.
130. There were situations where parents and children who were out-patients did not get the opportunity to get first-hand confirmation of what issues there were within the hospital, whether that be in Wards 6A, 4B, 2A or 2B. They saw the information first hand on the news. They were particularly angry or concerned that they had not been informed directly by us, and we had several phone calls to the Ward resulting from that communication.
131. Communication came directly from the IMT, which would be approved by the Health Board, and they would give us information as to the means of communication to give to the parents. Staff would have been informed by the Senior Charge Nurse on the Ward as to direction and lines of communication.

BUILDING ISSUES

Interior Issues

132. I did not hear about issues with the temperatures of the rooms *per se*, but over the course of my time being a Senior Charge Nurse in theatres and Lead Nurse for the wards, I became aware that the rooms could become hot and therefore the patients and parents relied on fans. Mainly, this was due to the fact that a child could spike a temperature and one of the ways of trying to reduce their temperature, not only with drugs like paracetamol and fluids, is to cool the patient down by means of a fan. The fans were available to patients and parents up until a time when the board, IC and GGC had asked for the fans to be removed for infection control purposes.
133. With blinds, because the windows housed the blinds within the two sheets of glass, often if the blind was broken, there was no means of fixing that or bringing it down. That would pose a problem for patients and yes, anecdotally, I was informed about issues with the blinds.
134. TVs were a problem throughout the hospital. This was raised several times in many meetings, the rights of the child meeting and at health and safety meetings. It was raised continually not only for remotes, but also that the entertainment system would not work. There was going to be a process of when these were going to be fixed and a programme to do this, whether to replace all of the televisions. There were decisions that had to be made regarding this and that posed quite a lot of problems, especially in my quality improvement role. In a lot of the questionnaires, we asked parents and children, the television was a common theme. The TVs never seemed to be fixed.

135. I did not experience any issues with the Wi-Fi, power outages, plug points or battery packs.
136. The Ward entry system can be troublesome. Jen Rodgers was keen on having better access for parents and families to come into the wards and improving that service. We were looking at how we could upgrade what was at that moment just a bell system, which had a camera and relied on the patients' parents or carers or family members to buzz to get entry, then someone who was at the desk, which often was the Ward Clerk for the Ward, would allow the entry of that parent or carer. They would be able to see a video of that person and they would then get access. If there was no one on the desk, that would pose a problem for the parents or carers or family members to gain access to the Ward. Also, with Ward 6A, because we were directly next to another adult Ward, often people would be confused as to which Ward they were going to and the Wards on that block do not communicate on either side. Initially, when we first moved in, people thought it was a shortcut to another Ward and it was not, so we had to make sure that that did not happen. Therefore, we looked at how we could get a fingerprint system within all of the wards. This was prior to me going back to my role in theatre, and I would imagine other priorities took precedence however, I did pass the information over to the then Lead Nurse who was taking that on board.
137. In regard to sewage leaks and issues with the roof, I do recall them however I cannot remember specifically what happened in each case. I did not experience any leaks from the roof or anything like that in my time within the hospital.
138. I was aware of flooding in en-suite bathrooms. The flooding that I was experiencing was when we were moved to Wards 6A and 4B, and there was flooding in one of the bathrooms in Ward 4B. It was due to the fact the floor was bevelled and the water automatically drained towards the door of the

bedroom. Job requests were requested for those bathrooms. I am also aware of the flooding of the bathrooms from some of the parents' interviews from the Hospital Inquiry. The extent of my awareness of flooding in Wards 2A and 2B is through this inquiry because my experience with the Wards was limited in Wards 2A and 2B. Ward 4B is where I witnessed the water not flowing as well to the drain because of the direction of the floor. This issue was mainly in one room on Ward 4B. The majority of the water drained into the drain but, because of the bevel on the floor, the direction of the water took towards the door as well.

Exterior Issues

139. I was not aware of any issues with the play park. I am aware that the play park was closed off at the time when we were removing the cladding.
140. The cladding on the building of the RHC could have been related to the same cladding that was used in the Grenfell Tower tragedy. Therefore, the decision was made by the health board that this cladding would be removed at some stage, which it was during the course of my responsibility within Wards 2A and 2B.
141. Around about the time when the cladding was being removed and we had the contractors outside the building, a glass panel had fallen from some height in the adult hospital, which then fell below onto the area where everybody goes through the main entrance of the adult hospital. No one was injured in the process of this falling, but I am aware that a glass panel fell from the QEUH building.
142. Routinely, I would smell the sewage, and that was not only outside, but also inside. The smell was not constant. It was particularly noticeable at certain stages of the month. We had concerns that we could smell the odour through the ventilation system, in particular in theatres. Any smell that came through

theatre, we would raise the issue through a Datix, or we would put a risk report in. I got used to the smell within the hospital and out-with the hospital, so I took it that the smell was part of our environment, whether it be external or internal.

143. A Datix is a reporting system for incidents that happen within the hospital. It is the recording of any clinical or situation that you want to raise awareness of. The reports submitted to Datix are sent to key people within the organisation who are made aware of the situation. It is then the responsibility of, for instance, the Senior Charge Nurse of that area to ensure that the appropriate action is taken and decide on what individual teams need to be informed. It can then be closed off by the Lead Nurse if it has been resolved.

144. In terms of the issues, I have discussed above, it would not be my job to communicate to the patients or families. For example, talking about the televisions would be the responsibility of the staff on the Ward. They would explain that our report had gone in or that job request had gone into facilities. There was a system that the staff would use online for reporting a job that was required, whether it be TVs, whether it be a sink or any issues, or a light out or a bulb out, they would put that on FM facilities website. I would then ensure that those jobs were carried out. As a Senior Charge Nurse in theatre, I would be responsible to see when those jobs were carried out or still outstanding.

145. All of these issues impacted the patients with the main impact being frustration. Television is quite an important part of a child's entertainment, especially in a hospital, if a child is in a single room with their parent and they want to watch television. That was frustrating for parents and disappointing for children. We would try our best to provide game stations that would come in on the trolley, and they would have access to those. Often children had their own iPads and streaming systems. The heating was not an issue apart from the fact that the fans were no longer there, then that was a source of issues for parents.

146. These issues also affected staff as they compounded their workload. The issues ongoing with Wards 2A and 2B were compounded by the day-to-day issues such as TV, blinds, heating. I would imagine that the entire process of this was stressful. The staff worked extremely hard to protect their patients and the families, and anything else that compounded it would have made their job more difficult.

SEWAGE WORKS AND ODOUR

147. In relation to whether I thought the environment was fit for purpose including its design, accessibility, and practicality: one of my concerns, amongst others, was the hospital's close proximity to the sewage facility. We raised this concern at the first consultation meetings prior to the build. I brought it up and said, "What is happening about the sewage facility?" We were told that the environmental issues were raised within. I do not know if it was the council or someone else, they raised it with, but they gave a clarification as to the reason for building at that area and that it did not pose any problems that we were perceiving. I cannot remember who was at these meetings. It was 13 or 14 years ago. Any smells that we could smell that were out-with the theatre environment, we would make a Datix report and that would be logged in that system.

148. Regarding the smell coming into the theatre, we did not know whether it was a risk or not because the ventilation system should be in place and therefore ensure that we have air quality. The smell did come through and not just me or my team complained, medics complained about it and wanted it recorded. Whether it was recorded at every opportunity, I cannot tell you, because there were a lot of theatres. Depending on the situation or what somebody felt took priority to their activity that day, because you could be busy in theatre doing other things and that would be a low priority in some teams to fill in that sort of paperwork.

WATER

149. I did not have any concerns about the water supply until I was involved in Ward 2A with regard to the increase in infections. Other than that, I was not aware of any issues with the water supply. I became aware of concerns regarding the water system during the quality improvement process and then further on during my Lead Nurse role. With Ward 2A seeing an increase of infections there was a quality improvement project, which was set up to reduce the number of central line bacterial infections. I was part of that team and we looked at practice within the Ward. I reviewed and changed the central venous catheter maintenance bundle and tested it on Ward 2A.
150. The water problems were evident in that Ward because they used water filters: that was the point-of-use filters. The patients, at a certain time, were asked not to shower or drink the water. That was during the course of the quality improvement project. We brought in portable sinks and alcohol gels for staff to clean their hands with and cleaned the drains. Until that point, within the hospital, we were not aware of any issues with the water.

VENTILATION

151. Ventilation systems allow the passage of clean air and the prevention of what is deemed as a 'dirty' environment going into a 'clean' environment. When a child is immunocompromised, they should be shielded from the air or environment out-with their own particular room. To achieve that, the patient should be in a positive pressure room which stops the external ventilation from out-with that room from entering and allows the passage of air to move out at a positive pressure. That is a problem when a child has a communicable disease, such as chickenpox, and therefore they should then be in a negative pressure room which will ensure that their air does not go out into the general corridor.

152. Ventilation is important in the theatres. We have to have a set standard of flows per hour, and we would want at least 20 air changes in that environment, in particular theatre. There are different criteria for different types of rooms, and we would ensure that we would have those monitored. In a theatre suite, we would have validation checks of ventilation carried out at regular intervals within the calendar year. It is once a year, and therefore ventilation is important when a child requires protection or when you want to protect others - so it is source or protect the source. I do not know if there were any validations carried out on Wards 2A, 2B, 6A or 4B.
153. I was never aware of any issues with the ventilation until later in the IMT meetings when it was raised. It was the water investigation that triggered the decant from Wards 2A and 2B to Wards 6A and 4B, and in the course of the investigation and changes of the environment with regards to the water, the review of the ventilation took place. Through that, from what I have read too and listened to on the website from this investigation, and in the IMT that the ventilation was also investigated over that period of time, it made sense to do everything whilst patients were decanted. I was not aware of any issue with the ventilation until it was disclosed at the IMT. We were reassured that it was slightly negative neutral but that was no issue with regards to any of the infections that transpired prior to the children moving to Wards 6A and 4B.
154. HEPA filter units were put in place in Ward 6A to ensure that the air that was filtered in the corridor was as clean as possible. We needed to ensure that when the doors opened in those rooms, there was a degree of HEPA filtration within the unit and these were recommended units to use within a certain distance, spaced out within the Ward.

INFECTION CONTROL

155. In regard to HAIs, originally the term universally used was “hospital-acquired infections,” but latterly the term is “healthcare-associated infections” because healthcare infections can happen not only in hospital, but in day care units and in the community; therefore “healthcare-associated infection” is what it is deemed as now. It is important to know that the patient normally does not have an infection prior to admission or access to that healthcare. In determining if a patient has an HAI, we have to look at infection within 48 hours of admission to the ward. It can include infections such as catheter-related urinary tract infections, the central line-associated bloodline infections, wound infections, ventilator-associated Pneumonia, and also C. Difficile and MRSA. The term encompasses a broad spectrum.
156. Patients that are immunocompromised cannot fight infections as others who are not immunocompromised would normally do. Their immune system is extremely vulnerable and therefore they require added protection, and often the protection is prophylactic medication, be it antibiotics or antifungal medication. It is important that they are shielded from infection.
157. Different ways to mitigate risk of infection are using prophylaxis, ensuring that standards of care are high, using aseptic non-touch techniques when accessing lines, that we look at the processes that are in place and ensure that practice is of a high standard. We look at the general environment and look at the standards of precaution for infection control and do regular audits to ensure that we have confidence in our area.
158. The group of patients that are severely immunocompromised, going through chemotherapy, are subject to more infections or they are more prone to infections than others. Therefore, everything we can do to mitigate that risk is put in place. I am sure that there are infections that are exceedingly difficult to treat like MRSA or Vancomycin resistant infections that are proven now to be very difficult to treat, but we still progress and try to fight those infections.

159. One of the different lines to give drugs to patients are peripheral lines. The downside to peripheral lines is they do not last very long, so they are at risk of tissueing and no longer working.
160. Peripheral lines are a small catheter which goes into a vein, so it is a peripheral cannula. They are secured with a small dressing and, with the movement of a limb or children touching them, or with skin that becomes wet or sweaty, there is a risk of the dressing dislodging and the line dislodging. Also, with the amount of fluids that can go through and particular drugs, it may not be suitable to use that vein because certain drugs require a central venous access, which is a deeper vein that goes directly into the heart, and they can take the different drugs that are required for those lines and they are longer term. The peripheral lines have a risk of what I said was tissueing, which is extravasation, which is when the fluid leaks out of the vein and penetrates the tissues around the vein just below the skin. That can cause irritation, if it is certain drugs into the skin and can often even cause a burn around the area, depending on the fluids that have been used and it can cause pain. The nurses use an audit tool which allows them to assess the peripheral vascular catheter twice a day and they will look out for signs of redness, swelling or pain, and if any of those aspects happen, an assessment would be carried out and most likely the cannula would be removed.
161. For some really strong medication that we use, such as chemotherapy, they require access to a central vein and therefore we would use a Hickman line, or another line called a Port-a-cath. A Port-a-cath is buried under the skin and is accessed through what is called a 'Gripper needle' through the skin and medication is given that way so it is completely enclosed in the skin. The Hickman line is a line that goes into the main vessel, the main vein into the heart, into the right atrium, and is accessed via a subcutaneous area in your clavicle.
162. If we suspect a line infection, we will take blood cultures and we would stop using the line. We would put a peripheral venous cannula in position and

administer medication that way. Often, if a child is showing signs of infection, we should initiate antibiotics once the blood cultures have been taken. Often, we need to resuscitate the child with extra boluses of fluid, so we would give 20ml per kilogram of Intravenous Therapy fluid to ensure the child is not in septic shock or any sign of sepsis.

163. If a child is showing signs of infection, they can do several things: one is taking swabs from the wound site, the access site of the port or Hickman line, blood cultures, and, a line would be removed if it were deemed necessary through microbiological review. If the microbiological review could include antibiotics, that is what they would do. I think they would rest the line and they could challenge the line. I do not have full knowledge because I was not a Clinical Nurse within the area, but it is fairly recognised that investigations into any infection would take place, and microbiological review along with a pharmacist review of appropriate antibiotics would be deemed necessary for each child individually.
164. I did not have any concerns of amounts, locations, clusters, or types of infection within the hospital until I was aware of working with wards 2A and 2B in my role as Quality Improvement Nurse and then latterly, as the Lead Nurse. I was informed of those environmental infections that were out-with the normal expected infections that we would see in that population, especially having Hickman lines but not whilst I was working with the Ward itself. For me personally, as a professional, I did not have a good understanding of the different types of infections there are. A lot of the terms that are used for infections and the names of infections, the nurses who were the Senior Charge Nurses or nurses who worked in the Ward, were familiar with those terms. I did not come across those terms as most of my background was in theatre, but I was informed that some of those infections could be based as environmental. I was informed of this at the meetings.
165. In theatre, we often saw an increase in infections in cardiac surgery. Cardiac patients are a group of patients who, again, were at greater risk of infection

because of the type of surgery. They were a group of patients renowned, not only in paediatrics but in adults as well, of having a higher risk of infection and therefore work or quality improvement would be carried out by your tissue viability nurses. Therefore, there was always a group that worked alongside that team, looking at dressings, access to the patient's wounds, along with tissue viability and infection control. They would try to ensure that infections and improvement methodology was put in place to mitigate any risk to them, and that happened in our hospital as well.

166. I was not aware of more infections being found in QEUH compared to Yorkhill and due to my role, I was not exposed to any of that information.

167. I cannot comment on whether there was an increased risk of infection from exposure to the ventilation system because that was not raised until the incident on Ward 6A. In regard to the water supply, when I attended the IMT and we were aware that the mitigations to reduce the exposure to any environmental organisms within the water were not working, I felt that was a risk and therefore the most appropriate action was to move the children from that Ward to understand what was happening. From that time, I had confidence because of the interventions we put in place, such as Curoso. The change in practice to Aseptic Non-Touch Technique, which is a recognised technique, all of these different things that were put in place, the dressing changes, then I was hoping that it should be getting resolved.

168. My impression of infection control procedures and governance was that the staff were very visible within the Wards, they were a very good resource, they were knowledgeable, they would answer questions, assist you, and support you when you had any concerns. I always had access to them at all times. They were incredibly supportive and visible on the Wards to answer any questions, queries and to give advice.

169. In regard to cleanliness and hygiene within the hospital, I had concerns regarding resources. I felt that facilities, the domestic service that clean the

Wards, did not have enough staff and so they had to concentrate their staff on many of the clinical areas. On opening the hospital, the changes for cleaning the Wards and the floors were to use water, and to use water and Actichlor during the winter months when we had high levels of infections within the hospital such as Human Respiratory Syncytial Virus, winter bugs, viruses and the flu. My concern was using water only on the floors. Was it appropriate when surfactants were needed to remove dirt from the floor? We possibly needed some sort of detergent, and I asked for advice from the facilities and infection control regarding that in my role on many occasions. Other than that, in Wards 2A and 2B, they had dedicated domestic staff and all-round people that were monitoring that area, so therefore that should have been quite sound within the remit of domestic support.

170. I cannot remember if I got a response because in the notes dated in 2017, I asked for that to be clarified. Regardless, that question was put to infection control to go back and find out whether that was appropriate. The floors were made of an antibacterial material, and I had questioned if that would negate the need to pour the detergent. They had not come back to me after that meeting and that had been discussed prior in the many years when we first opened that I had asked that question.
171. Apart from IMT meetings I had been involved in a Problem Assessment Group (PAG) meeting. That was probably for chickenpox in one of the children in one of the other Wards. They are the only meetings that I have been involved in.
172. I was aware of the views from people in infection control from the IMT meetings. When we discussed these infections that were not normally seen routinely in that patient group, that is when that was discussed and the link to the hypothesis was that these infections could be linked environmentally and could be linked to the drains or water from the samples that were taken.

173. I am aware that some children's treatment had to be stopped or paused because of an infection, and their treatment was reduced or prolonged. Obviously, having an infection could have a detrimental effect on their life and how they go forward with their treatment. It is always a possibility.

174. [REDACTED]

PROPHYLACTIC MEDICATION

175. I do not have in depth knowledge with regards to prophylactic medication and the treatment of Haemato-Oncology patients. I do know that because they are predominantly immunocompromised and as part of their treatment protocols, they would have been prescribed prophylactic antibiotics and antiviral and antifungal medications. All of these medications would be given as part of a course of treatment to protect them.

176. I do not know specifically if all patients were on prophylactic medication. I would imagine that the group of patients, in particular patients that are on strong chemotherapy and are immunocompromised, would require a certain amount of prophylactic medication for their protection. I am unsure as to the duration of time that patients were on this type of medication. Additionally, I could not go into the side effects or risks of prophylactic medication.

177. The patient's individual clinician would be responsible for prescribing the medication, including the team they work with. If it were the Haematologist team, it would be the patient's Consultant or the patients' Doctors that are working alongside the Consultant. If it were the Oncology team, it would be

the patient's Consultant or team that would prescribe the medication unless it was an Advanced Nurse Practitioner, if that were his/her role as well.

COMMUNICATION

Communication with Staff

178. For staff, we have core brief that come from our own board and there would be team briefs. There are quite a few avenues of communication with the staff but mainly electronic versions through emails; the core brief would come out and you would be given that by email. Everyone has access to email in GGC, so they would be expected to access their email and you would also put the core briefs up on the staff message boards. There were also notices: if I were in charge of an area, I would put a notice up on the Ward or on the wall of the department informing staff, at staff meetings, etc. Everyone has access to computers but there will be a pinboard in areas too.
179. The core briefs would tell you about what was happening and why it was happening. For example, with the cladding outside or things like that that had happened. We would be told things like that.
180. The core briefs are regular, I do not think there is a day goes by when there is not some sort of brief happening that you are told about. It is not always corporate things; it can be social things too that are in it. I think they come from a communications team however, there are some that are directly from the Chief Executive. The core brief can be downloaded as its online.
181. It was information to the vast majority of staff that it possible did not affect. I felt the information was appropriate that was given out.
182. In our team huddles in the morning, we would discuss team and core briefs. The wards have their own huddles, they would be told anything that came back from the big huddle. They would talk to their team about that, and same

in theatre as well anything that came up in the core brief that the Senior Charge Nurse felt was important to discuss directly, then it would be. If not, it would be up on a notice board that people would have access to and their emails. Staff do not have allocated time slots; they have to find the time to do it.

183. I would imagine we would be told about any infection outbreaks, for example. We would be told by Infection Control at their meetings. Infection Control meetings happen monthly so anything that happens, that are outbreaks they are discussed at Infection control meetings and the Senior Charge Nurse who are at those meetings, would then tell their teams about that. I would imagine the Board had to let us know so we would be told but as I have mentioned, there are core brief.

Communication with staff - Team Huddles

184. As a Lead Nurse, I would be responsible for possibly leading the huddle for the hospital huddle. That started at 8 a.m. every morning, and we met with all of the nurses who were in charge of either wards or areas, and we would discuss the challenges or situations within the hospital and staffing. We would look at situations that may arise throughout the day and put plans in place to mitigate any problems we were foreseeing. The same would happen in theatre. We would have a huddle every morning with all of the leaders from every theatre. We would discuss staffing, challenges we may face throughout the day, break times, how we would coordinate sickness, staff issues, equipment, that sort of thing.

185. We put plans in place and then after that, we had a team huddle with every individual team, where we met with the surgeons, anaesthetists, and nurses. Every theatre met at quarter to nine every morning before the list starts. They would discuss challenges they were foreseeing, and we would discuss every

patient before we came and any issues or concerns that we may have about going forward.

186. There would be a hospital meeting, which is the huddle for the hospital. Every team leader from every area attends that. That would include theatre, Intensive Care, all the ward areas, any area that would require any assistance, and including domestic service, such as Facilities. Anyone who had to forward information or receive information would be at that meeting. If you could not attend it, you would send someone else in your place so that your ward would be represented and if they could not attend, then we would link in with them via telephone. There were a few areas that would link in via telephone. The maternity units would link in via telephone and they would listen to the huddle. The huddle was also streamed up on a screen, where you would be able to visualise the areas that we were discussing and look at the staffing levels which was a concern, and whether any of them were safe or unsafe to start. They were categorised by a RAG system: red, amber, and green. Green meaning safe to go, amber meaning there is some concern that we could possibly help mitigate their problems and red meaning that they are unsafe. Therefore, action would have to take place to allow them to move into either an amber situation or a green situation with consultation with the Nurse in Charge and the Lead Nurse, the Hospital Coordinator, and the Bed Manager.

187. Huddles are an effective way of getting information passed out quickly. If I had to speak to everyone about a situation or inform them of anything, I would do it in the morning huddle.

Communication from IMTs

188. From IMT, communication would be verified or accepted by the Senior Management Team who would possibly take it to the Health Board or Senior Management there so that everyone would know exactly what to say, so the

conversation was guided. They would be given some information that would be written, so that it could be verbally given to the patient or parents and/or given as an information leaflet. I think for example, this may have happened regarding the cryptococcus case, but I cannot remember.

189. IMTs were an ever-evolving event. Every single day information was being updated or new information was coming to light. The communication had to be agreed by the team and also confirmed by the Board and you had to be able to facilitate meetings with the ward staff and the parents.
190. Communication can always be improved. You have to work with what you have at the time. My level of communication that I was given would be sufficient for me, but it did not necessarily mean it is going to be sufficient for someone else. It is also subjective and objective with the person that is giving it and therefore often being given a script or a paper to tell staff or parents is giving objectivity.
191. If there was anything in the media, that would be discussed at the IMTs too. Part of communication considerations looks at several aspects. They look at the level of concern as well and what needs to happen. There is a communication team there as well on the press and whether they decided what information has to be given over to the wider public, that is discussed at that meeting and decisions are made. Communication is always discussed at the meeting; it is part of the process. I do not know if the communications team was the same team who we sometimes referred to as the corporate press team. I imagine however, that the corporate team would always have a communications team.
192. Regarding the communications that went out round about the time of all the infections, I did not have anything to do with that.

Communication with patients and families

193. Communication to patients and families would be from the Senior Charge Nurse, General Manager, would communicate with parents and go around and give them information.
194. For the bigger things like the cladding, in Wards 2A and 2B, it required the Consultants or the Clinicians and Nurses within that Ward to talk to the parents to let them know that the cladding was being removed because it affected children with immunocompromised conditions. The cladding, once removed, could create spores in the external environment, where the patients would be walking through to come into out-patient clinics, and therefore they would require some Prophylactic Anti-Fungal medications. The Consultants would inform them of this Prophylactic and Antifungal that would be required. I think most of the patients were on the Antifungals and as part of their treatment plans, but anything extra they would be informed of that. I cannot recall whether there was an official notice that about the cladding.
195. Communication from Clinicians to patients and families was the first course of action because they have a close relationship, as do the Nurses in the Ward; anything that was official would come through in the form of a letter.
196. The ward also had patients coming from out-with the ward and it was difficult to get over the information as quickly as it was required. Therefore, there would be some patients that may have missed that, and the communication was not delivered as effectively as it could have been. Whether communication needs to be looked at as team communication within that group or population, it is difficult to know. How do you get information out? Is it through the media? That is not the way most people want to hear things. You want to be able to contact everyone but what resources do we have to contact everyone? People are going to be missed so it was as effective as it could be.
197. In particular with the Cryptococcus incident, we knew it was going to be on the news, we are going to move the patients again to another Ward and explain the situation. We were also talking to the staff and having meetings

with them. It was a challenging situation for all. I would have spoken to parents individually as well, explaining perhaps why we were moving or what the situation was.

198. There was talk of doing text messages at one point. That was an issue, because we had to get permission to use people text and quality improvement was looking to get feedback and also looking at ways to trying to get feedback and the big problem was, do we have permission to use people's texts or their emails? You would also have to make sure that their contact details were up to date and ensure that you did not make any mistakes. That suggestion was a particularly good one, to use text groups, WhatsApp groups or whatever to disseminate information quickly but there will always be someone who feels, "Actually, I would rather have that personal information given personally, rather than as a group text." It is a good idea, and it is something I think in healthcare that when you ask for someone's phone number, that you are basically giving your permission to say, "contact me."

199. I think in healthcare, where we over-analyse a lot of things and to the extreme where you may be missing out on vital feedback. For example, I was looking to try and get vital feedback from patients and parents and how we do, as I have found it quite easy here in Australia to just be sent a text and it is done, I never gave my permission for them to do it, but they do it.

Communication: Cladding 2017

200. I do remember seeing a Core brief sent out about the cladding (**A38845623 – Core Brief dated 12 July 2017 – Bundle 5 – Page 67**). I remember the cladding was looked at because of what happened at Grenfell. I cannot remember if that was the exact briefing, but we were told that the cladding on the Children's Hospital was going to be removed.

201. A similar document was given to the patients and families regarding the cladding (**A38845769 - Cladding briefing for inpatients dated 7 September 2018 – Bundle 5 – Page 101**). As I mentioned earlier, their doctors would tell them what was happening but there were two areas in Ward 2A/2B. The in-patients who then are readily able to be given that information. Those that are outpatients or are not in the ward at the time are not there to receive the information. They would not have had a clue about what was happening and so they were going to be admitted from A & E or from home and they do not understand what is going on, and then there are the other set of patients who are out-patients and there are a vast number of them who access the hospital not only from Glasgow but also from other health boards. (**A38845789 - Cladding briefing for outpatients dated 7 September 2018 – Bundle 5 – Page 103**). It is about ensuring that everyone gets the information in a timely fashion and often that did not happen.

202. I remember that the cladding was going to be removed and that it was similar to Grenfell, but it was not a concern because we had been given assurance that it would be removed as part of a programme for anywhere in the country that had similar cladding.

Communication: BBC Disclosure Programme – 2020

203. I am unable to fully comment on the communications about the BBC documentary because I was in another role at the time. From memory a core brief was issued but I did not have sight of this at the time.

Duty of Candour

204. When something goes wrong during care or treatment, you should be open and inform the patients and parents or carers as to that event. Sometimes a

doctor may have to give information that something may have happened, harm or an incident for example and this covered by the duty of candour.

205. The duty of candour is when a clinical event has not gone to plan, where there is often in extreme danger or an event that may have caused care not to be as planned, and therefore you have to explain to the parent, a child, or a patient as to what has happened, and be open and honest about it. Often there is a criterion for duty of candour, as in the event could be one that is detrimental to that person's health, treatment plan, or indeed has caused severe injury, which could also include death. It could be an act or omission.

206. When I was a Lead Nurse, I did not have any concerns about wrongdoing, failure, or inadequacy within the hospital. If there was any situation that was not in the course or the plan, you would report that. First, you could write a written report on Datix and report it to your manager and seek advice as to that situation. There is always a way of reporting an issue. I always felt encouraged to raise any concerns I had.

OVERSIGHT BOARD / INDEPENDENT REVIEW / CNR / PUBLIC INQUIRY

207. The impact of participating in the Public Inquiry, from my own perspective, it has made me quite anxious. It causes me anxiety, wondering if people think we did anything wrong and really the interest for everyone is to ensure that best care is given, and we were all working to ensure that that happened. I can imagine, for me, looking in and looking over as to that period of time and what other people must be going through now, then, yes, it must be causing them great anxiety too. That whole time was a tremendous strain on teams working out-with their normal environment, working with parents and children who were upset and not understanding what was going on.

208. Now, I have been four years down the line after events and I have been asked questions when I do not quite understand the whole thing. There have been so many reviews carried out.
209. I cannot understand what more there is to learn from it. I just felt that when the first review was carried out, the independent review, which was what was required and now there is this Inquiry. I have listened to lots of parents and through the YouTube videos, I have listened to some professionals from Edinburgh, and I understand the parents, how they feel about the situation. I do not know what to say. I am taking part in this; I just wish it were sooner that they had some more information. I wish that I were one of those people still working in the organisation where I would have access to everything rather than trying to remember a job that was extremely stressful at the time. It was a secondment to me that became very much the focus of my role predominantly was taken over by working with Ward 6A and 4B along with my other remits. I am sure lots of people had the same constraints, but I do not have anything (emails, notes etc). I do not have any information to refer to. For me, this has caused me a lot of stress, but that is nothing as my stress pales into insignificance compared to what our patients and families feel or may have gone through and so I am happy to participate. However, from a personal note I can state that it has caused me a lot of stress and anxiety.

IMPACTS

Impact on Staff

210. Regarding the staff, anecdotally they may have felt that it was so much more work than they were ever expected to have to do prior to those times. Pressure would be on them because ultimately when anything is being reviewed or audited a certain level of what they may feel is blame. They may feel that they are being subjected, or they are being blamed for things that are out-with their control, but they feel responsible. Therefore, the added pressure

of cleaning and moving patients to different rooms, preparing the rooms, or getting ready for HPS cleaning or any of those sorts of things, they ultimately took the blame. Any audit that was on the ward technique, for example, when we audited their line access and all that makes them think they are to blame when in fact, auditing demonstrated positive outcomes and their level of care that was given was exemplary. We had to assure the care that was being delivered and make sure that, if anything, we were going to improve.

211. There was an impact on the staff during the moves too. I was not there for the first move as I was on leave. It was all co-ordinated, but it was out-with the norm. People would be anxious, that is a given, because they are not sure why or how it is going to move to another area. But it is co-ordinated with the teams have a plan and so therefore they try and follow the plan as best they can. We transfer patients throughout the hospital all the time, for example, back and forward to theatre, to intensive care, these things happen. What was happening in the wards was we were moving belongings as well as patients. We can move patients anywhere. We are all very familiar with doing that in a safe environment and a safe method, safe transport. We can do that. We just need to make sure that there are plans for lifts, for freeing up corridors, all that stuff. The extra work that comes along with a move is the belongings and the furniture and ensuring that you have facilities available so when you arrive on another ward that you have things like resuscitation carts, medication, all of those sorts of things are duplicate. Before you make a move, you involve all the teams that are going to have the specialist knowledge in all those areas, for instance, resuscitation, pharmacy, intensive care, extra doctors, extra porters, facilities, we have all those teams working in the background. Therefore, it comes to on the day it is just the physical move, which is another added pressure, but it is basically straightforward. By the time the second move happened, we were used to it.

212. There was planning for all the moves from the day that the IMT started back again until the patients moved and even to the point, I left that job: it was

constant. There was constant planning for teams to be available, doctors to be available, nurses to be available, it was always, always in the forefront of everyone's mind.

213. When I say everyone knows what they are doing, there is always going to be team members who are unfamiliar and have come from another area and when they may discuss or talk and give that impression that they do not know what they are doing and therefore just one person saying that, what everybody thinks, "Oh, you do not know what you are doing, actually." The amount of preparation and planning for all of those moves was documented. It was talked about with various teams, meetings were taking place ensuring that everybody knew what was going to happen on those days, ensuring we had the right amount of staff and the time of day that it should happen: the movement of patients, all of those things were discussed with lots of different teams.

214. Staff were all putting in extra hours at this point too. They were working in different environments. They were going to have two different wards they were going to be working in. We had to staff the teams and ensure we had enough staff. Sickness was an issue with some of the staff, maybe that be long-term or maternity leave. We had to cover two different areas so therefore we had to ensure we have more staff available and with the team limited numbers they have for that ward that has been agreed. We then have to find more staff and ensure that you have the right staffing levels to accommodate that. At the beginning, it is always going to be anxious for all teams, working out-with a norm for them.

215. The teams often had to change their roles, so the Advanced Nurse Practitioners, they went onto the medic team for covering at night, we had different levels of teams to cover Ward 6A and some to cover Ward 4B. There were times where, yes, their stress and anxiety came to the front, and we would be made aware of how they were feeling. I think that the movement of

the ward did have an impact on the staff, but they are a very resilient team, and they should be congratulated for everything that they did, and they continued working as they did, and they did so as a very professional group of staff.

Impact on Patients and Families

216. The inconvenience of moving a room on a regular basis over that period of time, which would have been out-with the normal. Patients do move rooms, especially if they are in long-term, because they have to do like a real deep clean because you cannot get into half the room because of the patient's belongings, for example. It must have been a real inconvenience to the parents. But that I was never really aware of anything like that because I did not work on the ward. I do know, by listening to the YouTube hearings, that that had an impact on several of the people interviewed.

217. When the cladding was removed, there was an impact on the patients and families. The patients in Ward 2A and 2B, because of their conditions had to be very careful. When the cladding would be removed, there was a perceived risk that it would increase spores. They would therefore have to look at reducing fungal spores and they would have to have antifungal drugs. Now, a lot of patients that are in that population in Ward 2A/2B are already on antifungal drugs and those antifungal drugs were already protecting them for that event. The other thing was to look at mitigating the risk to them by asking them to take a different route to the hospital. We closed off certain areas so that they would come through the other part of the building which was through the adult's hospital.

CONCLUDING COMMENTS

218. The last few years of my employment have been an extremely difficult, challenging, stressful time for not only myself but for all staff, patients, and parents, and carers, the families that were involved. Everything that we did was to ensure that the best option we had at hand was in place for those families. We were hoping that this time would have been short, and not the extended time for them to be back in Ward 2A/2B. and I only hope now that they have a Ward that has got everything they want and need. Prior to all this happening, there was a plan that I worked with for some of the Doctors that was a room for Radiotherapy which would allow the doctors to carry out treatment that would normally send a patient down south to receive. All those things went on hold when this decant ultimately had to happen. Everybody did everything they could, and more so the staff that were present on that Ward Day in, day out. They were coping with the things or issues that were in front of them on most days, proactively and actively dealt with the challenges in front of you. Everybody did their ultimate best in a professional manner.

219. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Dr Jonathan Coutts

WITNESS DETAILS

1. My name is Dr Jonathan Coutts.
2. I am a Consultant working in the Neonatal Unit at the Royal Hospital for Children (RHC) in Glasgow.
3. My Qualifications are MBChB, FRCPCH, FRCP.
4. Most of my clinical work is spent in neonatology. I also work as a paediatric respiratory consultant. I am based in the neonatal unit, but I have out-patient clinics in the RHC building.

PROFESSIONAL BACKGROUND

5. My senior paediatric training took place in Glasgow, Vancouver, and Hong Kong.
6. I was appointed as a Neonatal Consultant in 1995 in the Queen Mother's Hospital which was part of the Yorkhill Hospital site. I was appointed Clinical Director for Neonatology in 2006.
7. I worked at the old Yorkhill Hospital site in neonatal and respiratory paediatrics. The neonatal unit had a dual role. We provided standard neonatal

care for babies from our maternity unit but also acted as a regional and national referral unit for babies requiring the specialist services available in the children's hospital. This included babies that were born with congenital problems or those with complications arising from their prematurity.

OVERVIEW

8. The new Neonatal Unit on the old Southern site opened in 2010 before the new children's hospital was built. As the neonatal Clinical Director, I chaired the group that helped design the new neonatal unit with the architects. This was a completely new build next to the existing maternity and gynaecology building. The labour suite was placed on the ground floor and the neonatal unit on the first and second floors. Therefore, I can speak to the following themes: the benefits of triple co-locating services, what links exist between the neonatal unit and the other buildings on the QEUH campus, issues with the water supply within the neonatal unit, the Serratia infection outbreak in the neonatal unit in 2015/2016 and other issues relating to HAI reporting.

NEW NEONATAL UNIT AND PROPOSALS TO TRIPLE CO-LOCATE SERVICES

9. Clinical services previously located on the Yorkhill site closed at different times. The maternity hospital (QMH) closed in January 2010 and relocated to the new maternity building on the current QEUH site to join the maternity service previously provided as part of the old Southern General Hospital. Children's services stayed until 2015. I think it was on 10 June 2015 that everything started to move over to the new children's hospital.
10. Therefore from 2010 neonatal services were based on three sites. The new maternity building on the current QEUH site, the Princess Royal and from 2010 up to 2015 in the RHSC based at Yorkhill. Once the RHSC closed the

neonatal beds on this site moved into the new building on the current QEUH site.

11. Before and during the reconfiguration of neonatal services I was in a Clinical Director role. This is mostly a clinical role, but I was acting as the link between the clinical team and the hospital managers. I attended meetings to give both an insight from the clinical side and then to help the management team deliver clinical “targets.” In this role my line manager was the associate Medical Director, who is now known as the Chief of Medicine.
12. As a clinician I am an advocate for the best care for neonatal patients and families, which sometimes would conflict with the Health Board policy. Just before I became the Clinical Director there was a disagreement about the plans for maternity service reconfiguration in Glasgow. The initial Health Board policy was to relocate the maternity service away from Yorkhill but to delay building a new children’s hospital for another ten to twenty years and to keep the RHSC open. The neonatology team did not want to have a stand-alone children’s hospital as this is not a good model for families. If mum and baby are both ill at the same time but the care they require is situated in two different hospitals then you need to separate families so they can both get optimal treatment. Triple co-located services means that we are not splitting families up therefore it is the best model of care for the families. After a long campaign we persuaded the Health Board to plan for triple co-location though there was a delay of four or five years to implement this with the building of the new children’s hospital next to the new maternity and adult hospital on the QEUH site.
13. At the start of the process of reorganisation the RHSC at Yorkhill was an independent NHS Trust with our own identity and management structure. When NHS Trusts were abolished in Scotland and services reconfigured as NHS Health Boards, we lost our very effective management team and

became a small part of a large adult orientated structure. One example of the change in our structure was the resources we had allocated in RHSC to our clinical governance unit, which were subsequently redistributed around the Health Board.

14. Our feeling as paediatricians at the time of the re-organisation was that despite the appearance of listening to different working groups the Health Board had already decided on their preferred model. We were pleased when the Scottish government developed an interest in our campaign.
15. We really did not care where the actual site of paediatric services was going to be, only that it should be a triple co-location model. It was a fairly last-minute decision to build the Children's Hospital on the Southern site. I remember talking to Alan Seabourne, who I knew from his previous role at Yorkhill, when he was asked to change his plans for the building at the QEUH site to include a new children's hospital.
16. We thought that it would be beneficial to building the hospitals at the same time. At the time, I raised a specific concern for the Risk Register about what would happen if the neonatal unit moved whilst construction work was continuing on the Southern site. A baby within the neonatal intensive care unit is vulnerable to infection and I was concerned that if buildings were being demolished nearby, then the babies in the neonatal unit would be placed at risk of environmental infections. There are clinical papers that report premature babies getting fungal infections such as Aspergillus during adjacent building works. Therefore, we proposed that initially we should keep the QMH open to enable a delay in the transfer of services to take place once all the building work was completed.
17. Whilst we did not have any preference for a location of the new hospital, just a preferred model of care the fact that the new hospitals were built beside the

sewage works seemed odd. When I worked in the old neonatal unit at the Southern, I would often be aware of the smell from the sewage works. Sometimes there was a smell; sometimes there was not. It did not impact us as such, we just thought it was odd.

Link between the RHC and Neonatal Unit

18. When the RHC was built, a corridor was installed to link it to the neonatal unit which was already on site. You can easily walk through to the RHC from the maternity building, but initially we had hoped that the buildings would be physically joined and not linked through a corridor. I think the only physical connection, apart from the hospital corridor in the bridge is the vacuum tube system for blood samples.

EVENTS INVOLVING WATER SYSTEMS

19. In the neonatal unit we originally had water fountains to provide cold drinking water. It is important for the doctors and nurses to stay well hydrated in the warm working environment that exist in critical care areas. During one of the infection control meetings, it was decided that we had to get rid of all the fountains. I do not think they ever grew any organisms from these, but there was a theoretical risk to keeping them in place. This is why we all have our own bottles of water now as opposed to the piped drinking water supply.
20. I cannot remember when the water fountains were removed and if this was as a response to the Serratia infections.
21. For hand hygiene we always had these trough sinks rather than the particularly small sinks that they have elsewhere. Trough sinks are long sinks, like surgical hand washing sinks. Over time the taps have been changed

because they now have these filters attached to the bottom of them. I cannot remember exactly when this occurred.

22. During the infection control meetings, we discussed the design of the taps because there would be a little bit of standing water or something similar when the taps were switched off. I think at the time the sampling had picked up contamination while they had been doing checks. That is possibly why the filters were put on.

SERRATIA INCIDENT

23. We had a number of babies colonised with Serratia on the neonatal unit in 2015/2016. Colonisation is not the same as infection. All of us are colonised on our skin with bacterial organisms, and it is therefore normal that all babies in the neonatal unit will also have skin colonisation with one or more bacteria. As a routine we swab our babies in the neonatal unit regularly to look for the bacteria that have colonised them. We do this so that we are aware which organisms an individual baby has on their skin so that if they become unwell, we can give appropriate antibiotics. Every day on the neonatal unit we have a discussion with the microbiologists to plan which antibiotics we should be using if a baby develops sepsis. We also like to track certain bacteria which have the potential to cause more severe illness and spread between babies, and Serratia is one of these organisms. We know that if an intensive care unit is busy with a lot of activity, then there is a higher chance of skin bacteria passing between babies. The neonatal unit at the Southern has regular admissions of babies from other neonatal units around Scotland. Some of these babies will have been hospital inpatients for a prolonged period of time before transfer, which increases the chance of them acquiring "problem" bacteria on their skin in their local neonatal unit. But because it is not normal practice for other neonatal units to perform routine bacterial swabs, we are often unaware about the colonisation history of these patients prior to transfer

and admission. At this time, the number of babies colonised with Serratia was increasing, with Infection Control tracking who had it, was it the same type of Serratia, and which bedspace was the baby located in. They were looking to see if there was an environmental issue to explain the increased colonisation or was it just that the unit was very busy with children receiving multiple antibiotics because they have chronic conditions.

24. Our patient population would be considered vulnerable to complications of infection. Because of our specialist nature we have patients with a mixture of conditions in the unit. In addition to premature babies, we care for babies with surgical conditions who often will require a stoma operation and subsequently will often be in the hospital for a long time before discharge. We have other complex patients who tend to stay for months in our unit. This is in comparison to other neonatal units in the UK who are restricted in mostly caring for premature babies, with only one or two older ones. We have a significant workload of older patients that would be in a PICU in other parts of the country since most neonatal units are located outside a children's hospital. A lot of our patients tend to have abnormal gut bacterial colonisation and they tend to have multiple courses of antibiotics because they often require to have central lines for prolonged periods of time which can then get infected. As I mentioned previously it is a bit unusual in that we screen all our babies routinely, we actually look to see what germs they have even in the absence of any concerns. I thought it interesting that when the team from the HPS decided to help with our local infection control process they asked whether we had a higher rate of Serratia colonisation than other comparable neonatal units. We suggested that they should try to find a unit to compare us against, but they were unable to identify a unit in the UK with a similar policy. Most neonatal units will only get a report from swabs saying something along the lines of "It's not MRSA, it's not an antibiotic resistant organism," but that is as far as it goes.

25. Our microbial surveillance was a continuation of our practice from Yorkhill. When the service relocated, we continued our usual practice. We have a daily visit from Microbiology to review our results and obtain their advice. Should we just give an individual baby our usual antibiotics or do we need to give them different antibiotics? We find it extremely helpful, and we will identify if we have a pattern of organisms in our unit that other places would be unaware of. They will often only identify an organism such as Serratia if they suddenly get an outbreak of invasive infection with babies developing sepsis. In that situation they may resort to a period of routinely swabbing babies, whereas we are doing it all the time. I again stress that our practice had identified increased Serratia colonisation in well babies rather than increased invasive infection.
26. The more testing routine swabs that happen, the more we identify organisms in the unit which the clinicians find helpful. There was a bit of disquiet, I think, from the HPS staff who questioned this practice, but it has been our routine for many years, and it is a clinically sound practice.
27. I cannot remember the exact dates of the Serratia outbreak, but it was shortly after we combined the neonatal units. The regular meetings created a lot of work for the unit and at the time we queried whether it was a real priority because babies were not getting invasive infections and we were just identifying the colonisations because of our routine swabbing process. Having said that we wanted to understand if there was a real underlying problem and at the end of the process, we wanted more efficient environmental cleaning.
28. We suggested that the increased colonisation could be linked to the change in the local patient population. Until the neonatal units combined, we looked after mostly little premature babies at the QEUH site, but following the move we became much busier with a different patient population. Complex cardiac, ENT and surgical patients were now admitted to the unit. However, the unit

cleaning did not really change much. There was a slight increase, but this only took account of the increased number of patients but took no account that now we had a marked increase in footfall of staff into the unit. The new babies were often looked after by multiple teams, they needed more X-rays performed, and visits from other new staff members such as dieticians. Each of these babies was getting far more people coming to see them compared to previously when we only had little premature babies in the new unit. So clearly, we needed more cleaning, and this had to occur more often because we now were a different unit due to the change in our patient population.

29. We would regularly have the unit hand hygiene compliance checked. That has always gone on and mostly we score reasonably highly. We had to emphasise to visiting specialists the need to be extra careful with their hand hygiene which they were happy to engage with as it was in their interest to improve. We needed more environmental cleaning and any temporary increase needed to be maintained with now and again a deep clean.
30. The unit is terribly busy compared to other UK neonatal units. For example, our workload is about four times greater than the Princess Royal which would be considered as a reasonably large and busy neonatal unit in the UK. There is always a pressure to admit babies that are referred. We cannot say "Sorry, but we're closed." We cannot close, which may seem odd to some clinicians who will think that we must shut if we are full. However, since we are the largest neonatal service in Scotland and provide specialist services that are not replicated elsewhere the consequence of our unit closing is that some complex babies would end up going to the south, across the border to England. Therefore, it would be a very difficult decision to refuse a referral and therefore all the staff work hard to ensure that this does not happen. For example, we have some ability to put an intensive care patient upstairs in our special care and we keep all options available of moving patients around a bit, but it is difficult to close the unit.

INFECTIONS

31. We did not have any concerns that infections in the neonatal unit were linked to the building. Initially as I mentioned we had concerns about the risk of fungal infections due to ongoing building works, but we did not see any fungal infections as a result.

COMMUNICATION

32. Because of my previous management role, I tend to read all the email communications from the Board. I know some people delete them because of the huge number of emails that we all receive but I try to read them all. There has been a change in how the Health Board communicates to their staff. When I was the Clinical Director things happened that do not happen anymore, and whilst I recognise that not all change is bad, I do not think that the current communication policy is as effective. In the past I would go with all the other Clinical Directors and other service managers to the Health Board headquarters, then at Charing Cross, on a regular basis. We would all sit round this huge table, and not only did we get information, but we were able to share information with the Health Board. One example of this was when I explained that the requirements for IT services that I was planning for in the new neonatal unit would overload the out-of-date system that existed at the Southern site. It was clear that this information had not yet been shared with the Health Board by the IT department.
33. At a lower level we would also meet in a separate Women and Children's meeting. Again, that meeting was effective for information sharing down from the senior management team and upwards from the staff. There would be people there from all the services. This type of meeting slowly stopped happening.

34. One result of the change in communication I can think of was seen when the Health Board were taken by surprise when they first held meetings about the new hospital. The most important thing concerning staff was about parking and travel issues. The Health Board just had not realised that this was a problem because they had stopped having their previous style of meetings and at a high level just had not thought about how staff were going to get to this new hospital which had no transport links and very limited parking. If they had continued to have their old style in person meetings, the staff side representatives would have pointed that this was a concern right at the very start.
35. Currently when you get the email communications you think, "Why are they talking about that? That is not important." However, they do not realise this, and they think they are communicating effectively with their emails since they have no way of getting communication back up the system from their own staff. That is a problem.
36. I think emails are part of the problem because people email everything to everybody. We all get a lot of useless emails sent on "For your information." You often get more than one copy of these useless emails as it is much easier to hit the "Send to all" than to think about who actually needs a copy. A lot of what we are sent by email is irrelevant. Therefore, people tend to switch off when they are sent too much irrelevant information. When I go on holiday, I can come back to 500 emails.
37. We all receive a Core Brief and generally I will read all the Core Briefs. Having said that, I do not recall seeing anything recently about the cladding being removed from the adult hospital. There is a lot of information within the Core Brief that is irrelevant. In contrast to this corporate communication, we have good local communication in neonatology. For example, every Wednesday,

the neonatal Consultants have a meeting where we go through an agenda, and we speak about patient problems and staffing issues. But we also discuss social things too, holidays, for example and we generate an excellent team spirit. We have other separate unit meetings to discuss complex problems. For example, this afternoon we will hold our Neonatal Unit management meeting. Internally, we have quite good communication as well and every shift, one of the senior nurses will be going around each room, giving key messages face to face to the nurses on shift.

38. I would definitely say the Health Board have changed the way they manage communication and I think they have lost sight of some things. There is not that bottom-up chat now. I recognise that the organisation is huge and complex, but it has always been huge and complex. If you are only surrounding yourself with a small group of people, you lose out on what is going on elsewhere. An example of that would be my earlier reference to the IT system. If I had not raised that at Health Board meeting, the wider group of attendees would not have known it was an issue. It has an impact on relationships too. It is far easier to ask someone something in a meeting than to send an email, which may not be read. Those meetings gave you the chance to form relationships and find out what each person does within the hospital.
39. I cannot think of an exact timescale when it changed though. I stopped being the Clinical Director about ten years ago, but I suspect that my successor Morag did not have the same experience of access to the Health Board managers.
40. When we were in Yorkhill, you would be able to just go into someone's office, for example, Jamie Redfern, and ask him a question. There was always somebody at the office you could speak to. However, there is a clearly defined management structure, and you need to stop people jumping straight to the

top of the service. It is best to feed things up through the management structure at Women and Children's.

41. It is not all negative. I thought the running of the Problem Assessment Group (PAG) meetings seemed to go well and they were always run in a very formal way. The meetings would involve all the relevant staff. There would be domestic managers, other professionals and doctors and nurses. They were usually held in the neonatal unit so it would be easy to get to them.

HIAT Scoring and Infection Control

42. There were a couple of PAG meetings that I attended where HPS were also involved. These meetings were chaired by a senior figure from Infection Control and HPS would dial in. I was not clear as to why HPS were involved in these meetings, and I did not find their involvement helpful. They considered their role as maybe some kind of senior oversight and to consider their involvement as an important part of the process, but my assessment was that they did not understand the situation. For example, after a meeting one of the HPS participants said something along the lines of "Right, we now need to discuss are we going to close the unit?" as if this was a decision with no consequences. My immediate response to this question in the meeting was "We can't, and we are not going to." They had no idea of the consequences of closing our unit. As I mentioned previously if our unit closed a significant number of complex babies would have to travel long distances to units in England, it was not a casual decision to consider. The time and distance involved would adversely affect the health of children. At the time I thought, "You don't actually understand what we're talking about, but you think you are taking control." I did not find the involvement of HPS very helpful. Another example of was to do with our HIAT scoring.

43. The HIIAT score is a tool that we use to score how serious we need to consider an outbreak of infection. Initially as a clinician I found it unhelpful since we did not at that time have an outbreak of infection, but an increase in colonisation with no actual episodes of sepsis in our babies. At the end of the PAG meeting the Chairperson of the infection control meeting would go through each part and we would agree the total score. There are different parts to the scoring system that need agreement.
44. At one point we had a baby that developed *Serratia* [REDACTED] [REDACTED] [REDACTED]. However, when we came to agree on the HIIAT score we reported as “Red” [REDACTED] [REDACTED]. At the end of the following meeting when we agreed the HIIAT score, we scored “Green.” At this point HPS interjected and disagreed saying “You cannot be green. You were red last time.” The rest of the PAG meeting did not agree with this assessment because the score was obviously green. HPS then made a comment along the lines of “But you were red last time, we can’t say that you’ve gone from red to green, the First Minister is copied into emails.” I got a little bit irritated at this point and suggested that we had to be objective in our scoring and that “a minister maybe getting upset was not part of the HIIAT scoring system.” In the end we were scored “Green acting as Amber” because HPS would not agree to the score changing from red to green because of political concerns. I felt this was not professional and sent an email to my line manager immediately after the meeting. I actually had a reply from one of the infection control staff saying, “Thank you for your input at the meeting. Sometimes clinicians like you can say things that we cannot.”
45. I felt our local Infection Control team managed things very well. We had our own Microbiologists who were effective chairs. They were quite clear as to what we should be doing, and they would be robust in challenging the clinicians such as myself if they felt we were not managing the situation as we

should be. It was their job to do that. I did not see Health Protection Scotland adding anything to the process. They were acting like they did because they had issues with our infection control systems of which I was not aware.

46. There was a lot of anxiety in the Scottish Government Health Department about our outbreak of Serratia, even though there was obviously confusion about true infection versus colonisation. Using the term “Outbreak” infers you have an epidemic of disease whereas we just had babies who were growing Serratia and were mostly well. I agree that increased colonisation is important to review closely but it was not an outbreak of illness.
47. The press reports were not helpful. Professor Pennington apparently said we wash babies under the taps which was untrue. We cannot do anything about that, as that is just the press. You will have people on one page say how fantastic we are and then you will turn the page and see a different story saying how terrible we are.
48. The nurses find it upsetting. A lot of the nurses are on social media. I am not on social media as I do not have the time and I cannot be bothered. We need to understand that in the old days people talked about us in their homes without our knowledge. Now they talk about us on social media, it is the same thing. Some of us have decided to “listen in at their window” so we should not get upset about it, but a lot of the nurses do get upset.
49. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Dr Milind Ronghe

1. My name is Dr Milind Ronghe.
2. I am currently a Consultant in Paediatric Oncology.
3. I work within the Women's and Children's Acute Directorate at the Royal Hospital for Children in Glasgow.

EDUCATION

4. I studied at the University of Bombay and completed a Bachelor of Medicine degree in 1989. In 1993, I completed a Diploma in Children's Health at the College of Physicians and Surgeons in Bombay and completed post graduate qualifications (MD and DNB) in Paediatrics in 1994 in India.
5. From 1996, I have undertaken UK qualifications MRCP, MRCPCH and obtained Paediatric Certification Completion of Speciality training in 2002 by the Royal College of Paediatrics and Child Health UK. I have been Fellow of the Royal College of Paediatrics and Child Health UK since 2005.

PROFESSIONAL BACKGROUND

6. Since 2005 I have been involved in a number of national and international steering groups. I have been the only paediatric oncology representative within the Scottish Sarcoma Steering Group for number of years.
7. I have been the UK CCLG (Children's Cancer and Leukaemia Group) Centre Co-ordinator for Glasgow since 2002. I have been a Principal Investigator (PI) for a number of oncology trials with the most recent being 2021.

8. I was the Clinical Trials Lead for Paediatric Oncology for Yorkhill from 2010 – 2018. Currently I am Early Phase Clinical trials paediatric lead for Scotland. I am a member of the NCRI CCLG novel agents group and member of the ITCC Europe.
9. I have a specialist interest in Liver Tumours, and have been chair of the UK CCLG liver interest group for several years. I have received a number of research grants and have a number of articles published.

OVERVIEW OF JOB ROLE

10. The main element of my role is as a paediatric oncologist. My principal role is treating patients with malignant solid tumours and brain tumours.
11. I work within wards 2A and 2B at the Royal Hospital for Children in Glasgow (RHC). Within the wards we have three different teams: solid tumour, haematology and a transplant team. I am part of the solid tumour team. My working day consists of ward rounds, daycare reviews, various MDTs, clinics and patient related administrative work along with teaching and training of junior doctors.

PATIENT GROUP

12. My patient group is generally treated by chemotherapy, radiotherapy and more recently immunotherapy.

Vulnerabilities of patient group

13. The patients receiving chemotherapy are immunosuppressed. The extent of immunosuppression depends on the protocol that patient is following and the type of chemotherapy. Some chemotherapy regimens such as high dose chemotherapy cause more immunosuppression than others.

PROTOCOLS

14. Most of the protocols we use to treat patients are Standard UKCCLG protocols/ guidelines which are similar to those in other western European countries.
15. These protocols are available online to the members of CCLG.
16. There are general guidelines for management of patients, and guidelines on how to manage some of the most commonly occurring problems, for example, febrile neutropenia. There are also Schiehallion guidelines for these, which are available on the intranet.

Prophylactic Protocols

17. Where the risk of infection is felt to be significant, we use prophylactic antibiotics. Septrin is the commonly used antibiotic and is used for pneumocystis carinii pneumonia (PCP) prophylaxis.
18. If the patient is undergoing High dose Chemotherapy or following a bone marrow transplant-type protocol, then there would be a recommendation to use antifungal and antiviral prophylaxis during the period when the patients are highly susceptible to infections.

Infection Protocols

19. For our patient population, if a patient develops a temperature, the febrile neutropenia guideline is followed for the management. The guidelines ensure prompt and appropriate treatment as per current recommendations.
20. If a patient attends the hospital with a temperature and the ward is full, they have to be boarded out to other wards. During routine hours, the patient will come through Schiehallion Day Care and be seen by oncology team, while out of hours, they are assessed by the on call Schiehallion team. Cultures are

taken and then they're promptly started on broad spectrum antibiotics. Once blood culture results are available then the antibiotic treatment is reviewed in consultation with the microbiologists. The results may change the antibiotic regime given to the patient.

21. The patients or their carer will usually phone the Schiehallion Day Care or Schiehallion ward triage phone if the child becomes unwell at home. The patients and the families are well-informed that if they have any concerns about their child then they should phone the ward and inform that they are on their way to the hospital. If the ward is full the patient is reviewed by our team, and if they have to go to go different ward, there is a nursing handover. Staff on the other ward are advised to follow Schiehallion guidelines. Sometimes staff on the other wards are supported by Schiehallion nursing staff in the management of our patients. The medical team does daily reviews of these patients.

Communication Regarding Protocols

22. When the patients and families are first informed of the diagnosis in a new case, the management plan is discussed in detail. After obtaining written informed consent, the treatment commences. The patients and families are aware that during the immunocompromised state on chemotherapy or during the period of myelosuppression, the patients will be at increased risk of infection. They know to contact the hospital or their key worker if they have any concerns.
23. The families are informed of the CCLG website for parents and families where they can access useful information. There are patient information booklets on the ward. For the first discharge, a discharge planning meeting is undertaken with the nursing staff. The patients and families are given all this information and given the triage phone numbers, ward numbers and Day Care numbers, and told who their outreach nurse is. They are also advised that if the child is exposed to someone with chicken pox or measles then they need to contact

us immediately so that we can give prophylactic medication. All the patients have central lines/port-a-cath, and they are advised about appropriate line care.

CHRONOLOGY

PRE 2015 – BEFORE THE MOVE TO THE NEW HOSPITAL

24. I was not part of the project group and did not have a role in the design, planning or site selection of the hospital. The clinicians were contacted at a later stage, and we had a few meetings with the project team. There were some discussions about the design of the ward, for example, number of cubicles, bed bays etc.
25. At the time we did express our dissatisfaction with some aspects. I think the number of beds were cut back. We wanted a bigger unit with more beds. In the Yorkhill Hospital our offices were close to the ward but that wasn't going to happen in the new RHC or QEUH complex. We also raised issues with regard to the lack of a pharmacy room and family room. There wasn't a staff room or a dedicated seminar room.
26. Although some suggestions were taken into consideration, all requests were not addressed.
27. There was a need for dedicated Teenage Cancer Trust unit (TCT) unit which was not there in Yorkhill. This was provided in the new hospital.

THE OLD YORKHILL HOSPITAL

28. The proximity of consultant offices to the ward, and access to the family room, were better at Yorkhill. Yorkhill hospital had a family room close to the ward which was better for the parents. The design of the ward was better in Yorkhill. Supervision from nursing station was easier in Yorkhill, whereas it is more difficult in the new hospital because of the horseshoe design of the ward.

29. Yorkhill had a dedicated paediatric lab, which was advantageous, whereas in the new hospital lab services are amalgamated. The dedicated lab in Yorkhill enabled samples from our patients being processed quickly. In the new hospital, the ability to turn around results really quickly for our patients was lost because samples are processed with those from the adult hospital.

IMPRESSIONS OF THE NEW HOSPITAL

30. When we heard the new hospital was going to be built, we were certainly looking forward to a state-of-the-art facility for our patient population.
31. Initially, the new hospital appeared to be like a decent facility. However, one impact of the move is that our offices are in a separate office block away from the ward area which means that we are least 10-15 minutes away from the ward. Also, we have shared office space in the new RHC whereas in Yorkhill we had individual offices. On the ward we have only hot desks. There were some areas in the hospital where mobile signal was poor. The IT was a problem initially because the Wi-Fi issues created difficulties for families who were unable to access internet. There was no room for pharmacy on the ward initially. The new ward does not have a room for social workers and outreach nurses, which was the case in Yorkhill and which facilitated better and quicker communication in the old location. This was also lost. Parking and vehicle access at the new hospital was extremely difficult, as there are only limited spaces. I think not having a staff room in the new hospital where you can sit down and have an informal chat with colleagues has an impact on the staff.
32. Another issue at the QEUH site is that, as the RHC is co-located with adult services, smoking at the entrances to the hospital is an ongoing issue. This did not affect our patients at Yorkhill to a significant extent as the ward was located near the lab and it wasn't near the main entrance of the hospital.

33. However, individual patient cubicles are very good, including the size of the cubicles and the layout inside. There are better facilities for children's entertainment. The TCT social area is great. The problems with mobile signal improved to some extent over the years as boosters have been placed in certain places. The demand for a room for pharmacy on the ward led to this being implemented, which is useful.
34. The Paediatric Neurosurgery department was always based in the Southern so when we were at Yorkhill patients had to be transferred from the Southern to Yorkhill after neurosurgery. This is now not necessary as the new hospital is at the same site.
35. We were aware of the smell issue at the site of the Southern. This did not raise concerns because there had been a health care facility at the Southern for a number of years.
36. Overall, the new hospital was a decent facility. There wasn't any reason to suspect that anything was grossly wrong.

ISSUES WITH THE BUILDING - Exterior

37. I'm aware of some of the issues with the exterior of the building, but do not have any detail or specific information. The hospital entrance had to be changed temporarily because of repair works. Within the atrium of the hospital there is still some work going on.

ISSUES WITH THE BUILDING - interior

WATER SUPPLY

38. We have meetings with microbiology/infection control on Fridays. We started noticing infections with organisms that we hadn't commonly encountered in patients during their treatment. The general feeling among the clinicians was that these were unusual infections, and literature search suggested that these

could be environmental infections. This was discussed in the Friday meetings with the microbiologists and infection control doctors, including the potential source of infection. These were felt to be environmental organisms and also water-associated. It affected our patients' management as they needed more prolonged antibiotic treatment, or their central lines had to be removed. As clinicians, we raised our concerns to infection control / microbiology.

39. A variety of water related investigations were conducted to assess if the water was a potential source of infection. Water filters were brought in, patients and families were asked to not drink water from the taps and bottled water was given instead for a period of time. At one point, we had portable sinks in the ward cubicles. Therefore, we assumed that there were some concerns about water or water supply. Various actions were being taken in relation to this such as hypochlorite cleaning or treatment with chlorine dioxide, and change of shower heads, but I can't remember the exact details.
40. Scottish Water was asked to look at the way that the water was coming into the building. We knew this was happening, but we didn't know what the outcome was or what was going on apart from all of these measures.
41. We had raised our concerns with infection control and microbiology, and we were treating patients appropriately with antibiotics as per their guidance. I don't think we ever received confirmation that investigations had established a link between the infections and the water supply. Given the frequency with which the infections were happening, and the amount of work that was undertaken, we assumed that there must be some problem which was getting addressed.
42. I wasn't aware if there was an issue outside of Wards 2A or 2B.
43. I think because these infections were happening more frequently or because they were more unusual infections than we would have expected, a group was formed for looking into this called the CLABSI (Central Line Associated Blood

Stream Infection). There were hand hygiene audits, and a variety of things were checked such as the surgical insertion of lines, or whether there had been a change of supplier of the lines or of the bungs that are used at the end of the line. I wasn't a part of that group. There was representation from surgery, oncology, haematology and Infection Control.

44. I think obviously this had a huge impact on staff. I think some staff members felt that they were under scrutiny, and were constantly being watched to see whether they were following hand hygiene etc. Nurses started working in pairs, so that they could prove they were following all the recommendations and precautions of the protocol. So it was very difficult, challenging and demoralising for the staff.
45. We were obviously under tremendous stress because we were at the coalface; we were facing the parents and all the work that was going around. It was very stressful and demoralising.

VENTILATION

46. When we first moved to the new hospital, I had no concerns about the ventilation. It is not my area of expertise. I think we had heard one or two weeks prior to the visit that there was some issue with the HEPA filters. I don't know the details of that, but as far as I understand they were fitted at a late stage, although prior to our move.
47. My concern for my patient population was more about the water. My recollection is that a haematology patient was suspected of having an infection. It wasn't one of my patients, so I don't know all the details, but I vaguely recollect that there were some discussions at Friday meeting with infection control team/microbiology.
48. There were lots of things happening in and around the ward. Portable HEPA filters were brought in to improve the quality of the air, so I assumed that there

must have been some problem. I think the Infection Control and Estates teams were taking all the steps. They were carrying out regular air sampling and we were told that they were taking these steps to try and mitigate whatever the problem is. We were told that they were doing all these things to improve the quality of the air. There were some issues with the chilled beams but I'm not sure if this was connected to ventilation.

49. I think the cryptococcus incident happened when we were on 6A. This is an unusual infection and the involved clinicians raised concerns with microbiology and infection control.
50. Ventilation is not a vital requirement for some of the patients under my care, but it is vital for those who undergo certain types of treatment such as autologous stem cell transplant or if it is in the protocol that they need to be treated with high dose chemotherapy. In those circumstances there are transplant cubicles which are recommended to be used or preferred when the patients are neutropenic.

Communication

51. The communication with staff was in the form of core briefs. We used to get information from Professor Brenda Gibson, who is our Lead Clinician, sometimes through the minutes of the IMTs and core briefs.
52. I think later on, the management was updating the parents and the families with written letters. Communication at the start could have been better. It improved significantly towards the end of the process. I wasn't a member of the IMT group so did not attend the meetings regularly. I remember that the minutes were sometimes circulated quite late.
53. I think management also developed a Schiehallion Facebook page to try and improve communication with the parents and families.

54. As far as I can remember there wasn't a formal process for giving information to staff. It was coming through various channels such as core briefs, unit meetings, governance meetings and IMT minutes, emails or by talking with colleagues.

INFECTIONS

55. Cupriavidus and Elizabethkingia are infections that we do not commonly see. Some patients had mixed Acinetobacter/Enterobacter infections. These are all unusual infections which have links or association with the environment. Clinicians were asking microbiologists and the Infection Control team to review this. I think this was discussed in the IMTs and we were told after the move to 6A, that the infection rate in 6A was similar to that in any other hospitals in Scotland, but clinicians were concerned about not just the number but the type of infections, and questioned if the environment was safe.
56. As our patients were on chemotherapy and other cancer treatment, they were prone to infection, so we didn't necessarily think there was a link to the environment initially, but it evolved later. It was difficult for the clinicians as we could not see the whole picture. We were aware of individual cases of infection in our patients, or on our wards. However, all of the blood cultures for these individual cases would have been known to Infection Control. They had all the data and were best placed to put it all together and note an overall increase in unusual infections. Although we had our regular Friday meetings with Infection Control, these were not attended by all the clinicians every week, and so we did not necessarily know about patients other than those under our care. As clinicians on the wards, we did not become aware of any overall pattern or trend until much later.
57. Gram-negative infection is more serious; gram-positive infection is usually not life threatening. Gram-negative infections can lead to ITU admission if not treated promptly.

58. Another impact of infections is delay in the ongoing treatment. This is because the infection needs to be treated first and sometimes the central line (which is used for administration of drugs) needs to be replaced. The decision about replacing the line is complex, as there may not be another suitable vein available. As a clinician, we have to consider the balance of risks and benefits of line removal. We were in a situation where most of the lines, I think, needed to be removed in order to treat these unusual infections.
59. We make the individual decision on a case-by-case basis, after discussion between the microbiologist and the patient's clinician.
60. The nature of infection sometimes gives us clues as to its possible source. When oncology patients get infections, they are usually from endogenous bacteria. However, we noticed that our patients were getting infections with unusual microorganisms, and that is what raised concerns.
61. We discussed these issues with the Microbiology and Infection Control teams. My role is really to treat the infection appropriately when it happens, including taking the decision to remove the line if necessary. Looking for the source of the infection does not come under my remit. When we noticed these unusual infections, we had discussions with the microbiology and infection control team who then further investigated this to assess if the source was likely to be environment related (water or ventilation). We were relying on them to advise us on this issue. The infections were the reason for the IMTs and for the introduction of precautionary measures.

The parents and families were told if the patients had infections. It is routine procedure to inform families if the patients have infection. The families of cancer patients are aware that the patients are at increased risk of getting infections due to their immunocompromised state. I cannot remember if the families were informed about a potential outbreak or multiple linked infections initially. However, they were aware of the work being undertaken on the ward.

Later on, there was communication with the families in the form of letters and leaflets produced by the management team.

PROPHYLACTIC MEDICATION

62. A group was formed to assess the need for prophylactic medication over and above the standard practice. This group had representation from a haematologist, oncologist, microbiologists and infection control. The group reviewed the literature. I was not part of this group. They advised us to use Ciprofloxacin to minimise the risk of infection, and that is what was prescribed to the patients following discussions with the Infection Control team.
63. I spoke to my patients once the decision was taken to use this prophylaxis. I can't recall whether there was an information leaflet for the families regarding this. My patient population was made aware that we were starting this additional antibiotic to minimise the risk of infection.
64. Later a decision was taken to change the prophylactic antibiotic to TauroLock. This decision was taken after further discussions with microbiology/infection control (CLABSI group). I think this was decided in order to reduce the side effects and possible development of drug resistance to Ciprofloxacin. There were also concerns about potential drug interactions with other medications.
65. Posaconazole (an antifungal drug) was used in some patient populations. I think it predominantly would have been in haematology patients, who are more immunocompromised, or transplant patients, but in our patient population, again, certain patients would have been prescribed it. Posaconazole interacts with some of the chemotherapy drugs (Vincristine), so Posaconazole had to be discontinued two days before giving Vincristine. It was intermittent prophylaxis rather than ongoing regular prophylaxis. Some of the High dose chemotherapy patients were prescribed Posaconazole prophylaxis, but for some patients it wasn't the appropriate so they were prescribed a different antifungal drug, AmBisome, instead. Within the solid

tumour group there were fewer patients who would have been prescribed antifungals than the leukaemia or haematology transplant-type patients.

THE CLOSURE OF WARD 2A/2B AND THE DECANT TO WARD 6A

66. I can't remember being significantly involved in the decision to close Ward 2A and move to 6A. I can recall there was a meeting with the management to look at various options, and a risk assessment was done after that. I think what prompted the decision was that it became clear that it was unsafe to continue in 2A, because of the rate and nature of infections. I think Ward 4B was our most preferred option because it was the adult transplant unit. However, I think that was deemed to be not possible. Schiehallion was given four beds on Ward 4B for our patient population. From an infection prevention and control point of view, Ward 4B would have been ideal, but it was not possible to have all of our patients moved there.
67. I don't know how Ward 6A was selected. We were not entirely comfortable with the decision because the ward wasn't really designed to look after the immunocompromised patients. The other potential problem we had was that it was away from the children's hospital, so out-of-hours middle grade cover was difficult as juniors were not on site. Pharmacy was far away. It was away from intensive care, which was a problem. Then there were problems with the lift (one of the lifts had to be reserved only for our patients). Patients were having to come through the adult entrance. There were no dedicated Day Care facilities because it was just one ward, so we had to make some of the beds of Ward 6A into Day Care beds. It was really not ideal. There was no playroom in that ward. There were lots of drawbacks, but we were informed that this was the best-possible option under the circumstances, and we thought it was going to be a temporary measure for just a few weeks. Our other option would have been to divert the patients to different hospitals. We had anxieties that we might face similar problems with infections on this ward as well, as QEUH was on the same site as RHC and so the environment (water and air) would be the

same. I don't know who exactly decided or how it was decided that this is where we had to go.

68. I can't really remember the exact nature of communication about the move and what was done, but I would assume there must have been some communication as it was a substantial move. Parents and families would have been told. In-patients certainly would have been told by the ward nursing staff including the reason for the move. I believe that there would have been a letter done by the management to send to the families to inform them of the move, but I can't remember the exact nature of the communication as it was a while ago.
69. We were on high alert when we moved into Ward 6A because of everything that had happened in Ward 2A. Then, similar problems re-occurred in 6A. I can't remember the exact details, but obviously the team was probably much more aware of things, so the problems probably were identified sooner. Infection control probably did more sampling of the air and tested the water more stringently. I remember at various time points a different kind of work was going on in various cubicles on 6A. Sometimes we were just told you can't use this cubicle because of ongoing work. We did not question it because we were just assuming that the work was being done to improve the quality of air or water.

MOVE TO CDU – January 2019

70. There was a time when we moved from Ward 6A to CDU. I think that was related to infections. I remember the line infections problem recurred and, again, the similar unusual organisms started appearing in our patients. That's what prompted the closure of 6A.

IMPACT

71. The management had done some leaflets and letters to the families to keep them informed of the ongoing work regarding this. I can't remember the exact content of the letter, but the letters were done to reassure or to tell the families that all the appropriate steps were being taken.
72. At some point we had to stop new admissions, and the patients had to go different hospitals. All this obviously had an adverse impact on those families.
73. The impact included the move to 6A and CDU, sending patients to other hospitals, the need for prolonged antibiotics, the removal and replacement of lines, and patients being looked after in wards that were not designed for their care. Additionally, we were having to give prophylaxis, drugs that potentially they may have avoided. These drugs have side effects or drug interactions and that all had an impact. We were concerned about all of that.
74. There was an impact when we moved from Ward 6A to CDU too. It impacted on the families because infections led to more antibiotic treatments, more line removals, more trips to theatre, sometimes delays in chemotherapy. Then obviously the closure of the ward led to patients going elsewhere for chemotherapy cycles. That obviously had impact on the patients and on the staff.

Impact on Staff

75. The move from 6A to CDU had an impact on staff again too. It was very stressful and demoralising. We were felt to be under constant scrutiny about hand hygiene. It led to more sickness in the staff or staff exhaustion. The root of the problem was not getting identified which was frustrating. We were doing all these things without actually knowing whether there was an outbreak or not, because it wasn't very clear.

COMMUNICATION

76. I can't remember exactly when any communication was received. I found out about the issues with the water because of the work that started happening around in the ward, and then through colleagues or IMT briefings or meetings among the staff and clinicians.
77. I think we should have probably received more frequent or more formal, regular, timely updates from the Infection Control team, IMTs or the management. I don't think there was a definite formal process to keep staff updated. The dissemination of information could have been better. Sometimes the IMT minutes were circulated quite late, and a pre-read wasn't possible. My feeling is that communication got better with time.
78. I think with time, information leaflets were created for the families. Also, management started doing walk-arounds on the ward. Also later in the process, if a child had an unusual infection, then the patient's clinician along with the Infection Control doctor used to go and see the family to inform them of the infections and answer any questions, rather than just clinicians seeing them. That was really helpful for the clinicians. The infection control team and management were reviewing the cubicle the patient was in, sampling the air and checking the water supply etc for that cubicle. A process was set up towards the end where there was root cause analysis being done in consultation with the clinician. I can't remember the exact timeframe for this.
79. There were unusual infections, which we were discussing with Microbiology / Infection Control team in our weekly meetings. To each individual clinician, it would have been one or two rare cases, but I think collectively the Infection Control team would have had a grasp of the total number of infections in the unit. We were telling the involved patient and the family something like, "Your child has got an infection with a Gram-negative organism. It's a sticky bug and an unusual organism, and the Microbiology advice is to pull the line out and give a course of antibiotics for treating that". In the beginning stages, we were talking to Microbiology, saying that we have not seen these infections before. There was no suggestion in the initial stages that this may be associated with

the hospital environment, because the patients do go home in between treatments so could potentially catch infections outside.

80. I expect that, as the microbiology/infection control departments had overall data of cases from the unit, they would have escalated this issue within their departments. As clinicians we were questioning whether these were waterborne infections because we did literature search on these organisms and learnt that they could be water-associated infections. Over time, work was carried out to address the dampness or the drains. We then felt that there was likely to be a problem when patients were told not to drink water, and water bottles were supplied and portable sinks installed. The drains, the connections and showerheads were changed. I can't remember now the exact timescales and what happened or when, but at that time we were under the impression that there was a problem with the water. I don't think we were ever told that there was a confirmed link between the water and the infections. We were told that these cases were sporadic and there wasn't an obvious link.
81. Towards the end of the process, an Infection Control doctor would join clinicians when informing the family of an unusual infection. I don't know if management saw every patient, but they were doing a walk-around on the ward, trying to inform the families that they were doing everything that they could to try to enhance the ward environment. I think they were briefing the families that wanted to be briefed. I think I can remember there were one or two meetings which were open to Schiehallion patients and the families to come and attend. They thanked the families and acknowledged that this was a concerning matter for the families. They were happy to answer any questions that the families may have had.
82. I think there were a few management walk-arounds. Jamie Redfern was the main point of contact. Towards the later part of the period, he used to attend our unit meetings and governance meetings, and share an update about what work was going on. So there was support from local management. Also, there

were some rounds which were done by the senior Health Board representatives.

83. Towards the later stage, there were letters that were produced by management, which were given to the parents or the carers.
84. The Schiehallion Facebook page was set up to disseminate information. I think the parents had a Facebook page too. I am not on Facebook so I'm not sure what the content was. I understand that management subsequently felt that they needed to be more proactive rather than reactive regarding their communication.
85. As a part of the IMT process, Health Protection Scotland was involved. Also, I think there was a water group who were looking at water samples and sources of infection. Estates were there too. Subsequently, all the cases were reviewed by the independent case review. Before the independent case review, I think there was some review done by GGC as well. Following the independent case review the report came through which was circulated to clinicians. It was also circulated to the individual patients and families who were affected by the problem.
86. I don't think the families would have been told that there was an outbreak of infection.
87. I can't recall if there was any formal communication regarding the prophylactic antibiotics from management. There may have been a letter handed over to the families explaining prophylaxis. I can't remember the details of that communication. My patients would have known why they were on Ciprofloxacin. It was not the case that they were taking it without knowing reason behind it.
88. We prescribed prophylactic antibiotics based on the advice we received from the group that was set up to consider prophylaxis.

89. The media reports had a negative impact on staff. I think sometimes we were informed that there was going to be news reported regarding this on the TV or in the newspaper so it was stressful. That is when we suggested to management that they should actually be proactive and try and produce a leaflet or a statement giving an appropriate response. That got better towards the end of the process.
90. When we were at the point where we had experienced all the infections on Ward 2A and then encountered further problems with infection rates on Ward 6A, we were still asking if the hospital environment was safe. There were unit meetings, IMTs and governance meetings where we raised the question. Eventually, the consultants wrote a joint letter to the Health Board management to ask that question.
91. Following the refurbishment, things have improved now. We continue to have regular meetings with Microbiology/ Infection Control on Fridays. We discuss each and every infection that happens. There is a formal process of recording all that now, which wasn't there in the past: notifying parents of what infection is there, what root cause analysis has been done, etc. There are processes in place now, which are so much better, but fortunately we are not seeing the same unusual infections anyway. We are still very stressed with the Inquiry and all the time that it is taking. The whole process has been very, very stressful and demoralising for the staff. Our outcomes are still as good as any other national benchmark, but it's all been a very stressful period for the duration that it has happened. It has been extremely time consuming and brings back stressful memories.

MOVE BACK TO WARDS 2A and 2B – May 2022

92. We do not have any concerns about the water now because since the move we are not seeing the same infections as we did previously.

93. I am not aware of any concerns about the ventilation now. We were shown around before the move back to Ward 2A. If you were to come into 2A now, externally, there isn't really anything new that appears to have happened, but we were shown the amount of work that has been undertaken. Since the move back, I have not had or heard of anyone having concerns and we no longer use prophylactic antibiotics in the ward for environmental reasons.
94. The ward now looks exactly the same as it did in 2015 but a lot of work has been done. We've been reassured by the work that has been undertaken to improve the ventilation and water and drains, etc. We had visits arranged by the Estates team when the work was being undertaken to show us what was being done and we have been told the ventilation is now "state of the art". The infection rates have dropped significantly.

IMT MINUTES

95. I wasn't a regular attendee of the IMT meetings. I was not part of the IMT group but I did attend from time to time. It was meant to be a closed or select number, but I think as the process became quite long, stretched, then there was a need for me to attend as a member of the clinical team when the member representative from Schiehallion wasn't able to attend because of their own clinical duties. I wasn't attending each and every meeting. I was there to represent a clinical team and raise concerns about infections that we were concerned about.
96. If Professor Brenda Gibson wasn't able to go, then she would delegate somebody else to go. I think at times it was the "consultant of the week", which was the on-call consultant, who would go, but I can't remember the exact circumstances. The IMTs took place quite often and there would be minutes of the meetings, but if you hadn't been to the previous meeting or hadn't had the chance to read the minutes, it was difficult to get a grasp of what the decisions were and how the risk assessment was being done etc.

97. We are a big team so each consultant is the “consultant of the week” (or on-call consultant) every 6 to 8 weeks. If you’re the on-call consultant then you need to know what is happening with the environment, what work is going on in the ward and what decisions have been taken at the IMT. As clinical link, Brenda Gibson had to communicate this information to the on-call consultant.
98. I did not receive all the IMT minutes. I can’t remember the exact process of how we received them. Perhaps I only got the minutes when I was added to the IMT email list but I’m not sure.
99. I can’t recall the exact conduct of these meetings because I wasn’t a regular attendee, but I think there were lots of issues that were discussed in the meeting: the Estates’ input, the water samples, the public health input and the spectrum of bugs that were seen.

IMT meeting – 13 September 2019

100. I attended an IMT meeting on 13 September 2019. I was the only clinician present. The discussions at the IMT related to the possible reopening of Ward 6A. At this meeting, I stressed that they needed to have separate meetings with us as clinicians. The IMT should not make any decisions based on what had been discussed at the meeting that day. I said it was important that the data should be presented to clinicians, and we should be given enough time to analyse the data rather than just being presented with conclusions. For example, they would present conclusions such as ‘the data shows this is not an outbreak’, but we wanted the opportunity to review the data ourselves and to discuss it with them. A separate meeting was arranged after this IMT for 16 September 2019 with the clinicians. I believe this meeting did happen but I can’t remember the details. It would have been minuted but I can’t remember seeing the minutes.

(A37993497 – Incident Management Meeting, dated 14 November 2019, relating to Gram Negative Blood Ward 6A, Bundle 1 page 402)

101. I have been provided with the minutes of this meeting. This related to the reopening of Ward 6A.
102. We were told by the management that the conclusions of the IMT following investigations and the report from Health Protection Scotland were reassuring and that the GGC site did not have an increased number of infections compared to other Scottish hospitals. The point we wanted to stress was that it was not about the number but the type of infections that concerned us. We still had anxieties and we were not entirely happy. We were being told that it was a pseudo-outbreak. I can't remember all the details. To reassure us, they did some analysis. There was a Professor of Microbiology from Glasgow University, Alistair Leanord, who did some genotyping as part of a scientific project, which suggested that these were all different sporadic infections rather than linked to the environment. We were not reassured and remained anxious.
103. We were trying to tell management that even though the Infection Control and Microbiology team were saying that it was okay now to reopen again, we still had some reservations. We were concerned that the real cause for the infections had not been found. The potential for infection within our patient population is high. We wanted to know what was going to happen when the next infection occurs. We wanted to know the Health Board's strategy to manage that. We felt that it was important to have a strategy in case of any future infections. So that's when we were assured that there would be an enhanced surveillance program and the Problem Assessment Group (PAG) was set up to arrange a root cause analysis for each case, which would be undertaken by the Infection Control team. We were saying that this needed to be in place before the ward shifted, rather than waiting for the infection to happen. We had reservations as no definite cause for infections was found and eliminated.

104. I think we were asking for external review at that point too. By external we meant someone out-with Scotland to come and review the whole situation.
105. I think the process got better as we were on 6A, because that's when we insisted that, as clinicians, somebody else needed to come in and talk to these families because they needed explanations which infection control were better placed to give. I remember the Infection Control doctor having discussions along with the clinicians with the families to tell them about what investigations were being undertaken and what was being done. So, the root cause analysis and the other things I mentioned above, started happening in 6A after the ward was reopened.

CLOSING COMMENTS

106. It is for the management and Health Board to give us a safe clinical environment. Infection Control are the specialists looking at the environment. We are responsible for giving optimum care to our patients in terms of treatment of their cancer.
107. Our outcomes are still as good as any other national benchmark, but it has all been a very stressful period.
108. Everything that happened made it hugely difficult for staff. We felt we were under scrutiny all the time. Sometimes the nurses were feeling too vulnerable to go alone into a room and so they would take another person to be a witness. Two nurses would go to make sure they could back each other up to say that they were doing all the right things and following the guidelines. You don't want to work in an environment where you're being watched all the time, and to feel that you are constantly under scrutiny.
109. It was all very stressful and we were the ones facing the patients. We were trying to raise our concerns to Microbiology and Infection Control, and it took a while for them acknowledge the problem. It was very, very demoralising and

stressful to face all this because we were hoping for a state-of-the-art hospital with no problems of this level. We lost so much time that we could have been spending on our science and research and publications, or on building teams and advancing the Glasgow brand. The time that has been spent on this would have been time that could have been spent on something else, on improving the science or improving the reputation of Glasgow. Similarly, my colleagues and I have spent a tremendous amount of time contributing to various investigations, including the Public Inquiry.

110. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Sarah-Jane McMillan

WITNESS DETAILS

1. My name is Sarah-Jane McMillan.
2. I am a Clinical Nurse Educator, which is a specialised role, within the Haematology and Oncology Unit at the Royal Hospital for Children (RHC) in Glasgow. I began this role in June 2020.
3. I am currently studying for a post graduate qualification in Academic Practice. Prior to this, I obtained a Bachelor Degree in Adult Nursing then completed a degree in Children's Nursing.

PROFESSIONAL BACKGROUND

4. In my current role as a Clinical Nurse Educator, I facilitate all the education within the Haematology and Oncology unit within ward 2A and ward 2B. If any new nursing practices or procedures are brought in then my role is to inform and train the staff, making sure everyone's training is up to date.
5. I also support staff clinically. If there are new staff nurses, I will arrange and support their training. I also deal with the annual training updates and ensure all the training is current.
6. My previous role was a Band 6 Nurse (Senior Staff Nurse) within ward 2A at the Royal Hospital for Children (RHC).
7. My current line manager is Catriona Riddell who is the Lead Nurse. Before that, in my last role, my line manager was Emma Somerville, who was the Senior

Charge Nurse for Ward 2A. Emma came into her post in 2017. Before Emma, I think it was Jean Kirkwood that was the senior charge nurse. I think it was 2009 that I joined the RHC, so I have been here for thirteen or fourteen years. It was around about June 2015 when we moved from Yorkhill to the RHC. When I first began on ward 2A I was a Band 5 nurse. I became a Band 6 Nurse in December 2015, then in June 2020 I progressed to my current role.

8. The Band 6 Nurse is Senior Staff Nurse, so my role is to support the Senior Charge Nurse. We would have patients, but we also look after the staff. On a day-to-day basis, if someone else was in charge that day, I would nurse the patients. If I was in charge, I would oversee the unit and be there to support the staff and the families.
9. I could be involved in anything general that was happening on the ward, for example, I would be on ward rounds, meeting with medics (doctors), making sure the nurses were kept up to date with what was happening on the ward round and ensuring that everything that should have happened for the patients did happen.
10. Also, if the Senior Charge Nurse wasn't in, anything that had to be done that the Senior Charge Nurse would usually do, I would step into that role also, which was the management side. This would include organising staff rotas. I also dealt with the staff holidays.

EVIDENCE FROM PATIENTS AND FAMILIES

11. In relation to the Public Inquiry, I did follow the evidence from the patients and families. There probably wasn't anything that was said that I wasn't aware of because I was working on the floor, and I was looking after these patients and families for a long time. If the families were unhappy about something or if they had any concerns and I was the nurse in charge on that day, I would be the person that they would be dealing with, so many of these things I had already heard before.

OVERVIEW

12. I worked in both the old Yorkhill hospital and transferred over to the new hospital with Yorkhill closed in 2015 and the Royal Hospital for Children (RHC) opened in 2015. I continue to work within the Haematology and Oncology Unit which is also known as the Schiehallion Unit. I was working in Ward 2A/2B when the ward closed and the patients and staff were decanted to Ward 6A of the Queen Elizabeth University Hospital (QEUEH) in September 2018. I worked in Ward 6A of the QEUEH and can speak to my experiences within the new hospital.

THE SCHIEHALLION UNIT (WARD 2A) RHC

DESCRIPTION OF WARD 2A

13. In 2015 we moved from Yorkhill to the RHC at the new Queen Elizabeth University Hospital (QEUEH) Campus. Ward 2A is an in-patient facility for patients who have haematology and oncology conditions. We are also the transplant unit and would also look after patients with non-haematology or oncology conditions.
14. Originally in Ward 2A when we moved to the Queen Elizabeth we were a 26 bedded unit. When we returned to the ward after the decant, we only had 24 beds. I understand the reason for this is because a playroom was added for the patients aged between eight and twelve years and extra facilities for our pharmacist services were also created. We have a Teenage Cancer Trust (TCT) Unit within the area too.
15. For a family coming in with a new diagnosis, we would have a consultation with their consultant and a nurse, who would then explain that this is where we treat children with cancer. The consultation would be with the consultant but a nurse is always present, so that if the family have any queries later and the consultant

is not available, then the nurse may be able to answer their questions and offer further support.

16. We would tell them about the work we do in the Unit such as administering stem cell and bone marrow transplants. We would also tell them that we deal with children with non-cancer conditions such as a blood disorders.
17. In the ward, when we first moved over to the new hospital, we had 26 beds so that would generally be the number of patients we would be dealing with, we would be full. We may also have had children who were boarded out into other areas, depending on how that patient was and what they needed.
18. If we were going to board a patient out, the consultant would have to assess certain factors such as who would be an appropriate patient for this. For example, we would not board a patient out if they needed chemotherapy, as all that is carried out by trained staff on the ward.
19. If a patient was only going to be in for another 24 hours and had an intravenous antibiotic which other nursing staff are capable to dealing with then we may consider them, so we would be ensuring that wherever the patient went, the nursing staff were equipped with the skills required to care for them properly.
20. The same protocols which apply to the patients in the Schiehallion ward would also follow the patients if they went elsewhere. For example, if a patient was boarded to another ward, nursing staff from Schiehallion would have a handover with the nursing staff on the other ward where they would be given a full overview of the patient, including their diagnosis, why they were with us, how long they had been in for and what care they require.
21. This would include factors such as which antibiotics they were on, how much they should be given and when etc. Once the patient is in another ward they would be reviewed daily by a medic from our unit and also the nurses. If there were any queries or concerns about the patient then staff from the other ward

will call the Senior Charge Nurse in our Unit or they could call me for any advice

22. Generally, our patients would come in via the Day Unit (Ward 2B). We could have a pre-booked patient coming in for chemotherapy or for treatment, but we could also have patients coming in as emergency patients who had been unwell at home and had to come to the hospital. They would go to the Day Unit first and then we would be told about them.
23. I would then liaise with the Bed Manager and they would tell me where there was a bed available. Where the patient may go would depend on why the patient was coming in. If they were coming in for chemotherapy, they would have to come to our unit as we have the only staff trained to administer that. For example, if a patient was post chemotherapy and at high risk of neutropenia or infection, then they would need to go into a room called a Positive Pressure Ventilated Lobby (PPVL) room, then they would have to go into a ward where there was a room with that facility.
24. When I was a Band 6 Nurse, I would work twelve and a half hour shifts, 07:30am until 19:00pm. I would usually be in early, around 07:00am to allocate the board. This meant that I would have to look at our patients and their workflows, then I would allocate the nurses to patients by looking at the skill mix. You would have to look at each nurses' skill and the patient needs, and you would have to allocate appropriately to ensure that the patient received the care they needed that day.
25. If the Senior Charge Nurse was off, I would oversee the other nurses. Depending on whether the ward was full and what patient workload involved, I would generally have staff nurses working and also support workers. I would also have housekeepers too.
26. Also, depending how the patient was clinically, for example if it was a transplant patient who was unwell, they would have one to one nursing. If you were with a

patient who needed chemotherapy or someone who had a high temperature requiring antibiotics, then you would have, in general, two and a half patients to one nurse. Some nurses, depending clinically how well the patient was, would maybe have two patients each.

27. During my time as a Band 6 Nurse, I didn't work within ward 2B, which was out-patient facilities, Ward 2B have their own staff.

FACILITIES IN WARD 2A

28. When we moved over to the RHC, it was lovely. It was a nice, fresh building and everything was new. The only thing that I would say was that whenever we were moving, we were told we'd have like for like, and by this, I mean that everything we had in Yorkhill I thought we would be getting the same or better. This was not the case.
29. In Ward 2A I would say that the facilities that they had for teenagers was brilliant. We had four beds that were off from the ward, and we had a big teenage room that had a big couch, TV with Sky, a computer with games, state of the art juke box and a pool table. The parents had the facilities in there to make them toast, there was a microwave and a kettle there.
30. We also had a parents' kitchen which wasn't that big. It was quite a small family room we had, if you were looking at it from a parent's point of view. We had the teenagers' facility, which included their own kitchen, the kitchen and we also had a playroom. Moving to Ward 2A after having what we had in Yorkhill, those facilities were quite small in the RHC. The play area was quite small.
31. Any children from 12 years upwards, could use the Teenage Cancer Trust (TCT) facilities but any children under that age had the playroom that parents and children could go into. Generally, children about eight years old wouldn't use it because the smaller children would be in, and it just wasn't attractive for them from that point of view. In Yorkhill the playroom was a lot bigger.

PARENTS ROOM

32. In Yorkhill we had two bedrooms which could be used for parents staying over, so they could spell parents with their children overnight. The two extra rooms are where, if we had an emergency coming in overnight and both parents came, one of them could go round and get some sleep. Or maybe if a parent was having a difficult night, they could go round to the room.
33. It was still within the Ward's area, but we could try and get them to go and have a couple of hours sleep while you then sat with their child to give them a rest, because obviously, if your parents are not sleeping, they're tired, and you need to support them also so they can support their child. These rooms were very beneficial because they helped the parents take a break out of the ward to get some sleep as it's very busy.
34. Also there was an area for the parents which included a kitchen and a sitting room. Again, this was away from the hustle and bustle of the ward and gave families a place to go for a break. Often parents had been with their ill child constantly for prolonged periods of time, or they'd had bad news and just needed somewhere quiet to go for a rest and a cup of tea. The parent area in Yorkhill was really good.
35. When we moved over to RHC we ended up with just one sitting room that was quite small and right in the middle of the ward. It was noisy and you could still hear buzzers, and all the hustle and bustle that was going on. Parents were not able to go and get away from the busy areas like they could in Yorkhill.
36. I don't feel the facilities for the families were moved over as like for like, as we now only have one room and parents' kitchen. It's down another side of the ward which you have to walk past, so if someone is in the teenage end of the ward, they would have to walk right down through the transplant side, which would take them past bedpans and bowls and things like that.

AREAS FOR STAFF

37. Again, in Ward 2A, another thing that I think was a difficulty is that there were two beds that were directly behind the nurses' station. In my opinion this made things quite difficult for whoever was in those beds, as the nurse's station is the central place for meeting up with other nurses. We would be chatting and discussing things there and doctors would also come there to speak with us. It was a generally busy area. It was just constant and there was just constant hustle and bustle.
38. I just felt it wasn't practical for two beds behind the nurses' station as it was very loud, parents could constantly hear all the noise from that area. This has changed since we moved back in, one of the beds is now the Tween Room and the other is the Pharmacy Room. These are the beds that we lost which I mentioned earlier.
39. Other than that, it was a nice, big unit. It was bright, it was big but we thought, how do we nurse in here? In Yorkhill we had a straight ward where we could see everything that was going on. In the new hospital, the corridors were oval shaped, and if you were in one section, you couldn't see what was going on in the other two.
40. In Yorkhill, we used to be allocated so many patients to individual nurses, however we had to change our tactics towards team nursing, we had to split up into three teams to cover the top, middle and bottom sections of the ward and patients would then be allocated to the teams.
41. Nurses have to do their handovers and catch ups in the middle area of the ward, as this is the safest place to discuss our patients. In the new hospital our staff room is actually off the ward, and we can't take nurses off the floor in case a buzzer goes off, so it's the only place we have to do that.

42. I've previously mentioned the team nursing, so because we were in teams we would be discussing who was going to do what in respect of the patients and it wasn't ideal as families could possibly hear what was being said, although it was more the workload you'd be discussing rather than personal things about patients. All our phone calls were made from there too so it was just a really busy area.
43. When we were in Yorkhill, we had a staff room which was just off the ward and beside the parents' suite. In the new hospital we didn't have a staff room that was on, or near to the ward. In fact, we had to leave the RHC and go through the link corridor to the canteen in the QEUH. I know it's only through a linked corridor, but in the event of any emergencies, if we were in there then we wouldn't know what was happening. In Yorkhill, if there had been an emergency, even though you were having your break, all staff could just come straight through and help.
44. The staff room was also an area where we could go if the ward was having a difficult morning or where staff could go to chat if something upsetting had happened. However, the big canteen in the QEUH is massive, open and loud and it's cold during the winter as the big double doors are open. It's just not a nice atmosphere to have your break in.
45. When the area you work in is so busy, you just want somewhere you can go for your break that's quiet and you can just rest or, if you want to, you can chat to a colleague who may be having the same type of day as you. You can't get that at the QEUH canteen which is in a big open space and next to the out-patient facilities and the shops below.
46. Some things have been changed after we asked for them to be put in. We already had our TCT room and the same playroom, but as well those rooms, we now we have a preteen room, or the Tween room, which was kindly donated by a family so that children that are aged eight to 12 years old have somewhere to play. However, when we had Covid, it couldn't be used freely as

time slots had to be booked. That has now returned to normal. The unit is much the same as it was before, however we now have a staff room.

LAYOUT OF WARD 2A

47. In ward 2A we have 8 beds which are in double-doored rooms. They had the ante-rooms, and they were just for transplant patients with positive pressure. We have the negative pressure ones too. It would depend on what type of transplant the patient had then it would depend on what type of room from an infection control point of view where they would be placed in those transplant rooms.
48. As far as I was aware, the other rooms on the ward were just the standard rooms we had when we moved from Yorkhill to ward 2A in the RHC.
49. As far as I was aware in Yorkhill, we had our double-doored rooms, these rooms had two doors on them to maintain an airlock. One set of doors has to be closed all the time so that air entering the room from outside is minimal, to protect the patient from anything from outside. We had other rooms for patients who were receiving their own cells back and different rooms for patients who were receiving their transplant from someone else. When we moved over, we did think we had like for like on that side of things.
50. From my understanding, the positive pressure rooms are where any air that comes in is blown out of the room so the room would stay clean basically. Patients who were receiving a transplant from somebody else, they would generally be the sicker of the transplant patients so they would go into these rooms.
51. My understanding of the negative pressure rooms is when nothing is blowing out. A lot of the time, patients maybe had flu for instance something that could be passed on to another patient for example, so it stops it coming out and infecting other children.

52. There are specialist facilities in our ward geared towards oncology and chemotherapy. Within RHC, we have lots of general wards, which have their own specialities. There is a Surgical Unit, a Renal Unit, an Orthopaedic Unit, and we also have a day surgery. All these wards have their own sort of specialities and facilities within their area.

COMPARISON WITH YORKHILL

53. I keep going back to Yorkhill but I worked there for a long time. The ward in Yorkhill was a straight ward. You walked in and down the ward. Bed one would start at the top and it went all the way down, right round and up. You could stand in the middle of the ward and see all of the rooms except for your four bedded bays, as they were to the side.
54. The families would maybe socialise in the areas where the children would play and they'd come out and there would be toys. You would maybe have a tractor going up and down the ward, they would see other kids, and the families would chat to each other because of the kids if they were out.
55. I feel that when we went to the RHC that changed, because the ward was so big and vast. It was a big horseshoe shaped ward so somebody could be up one end of the ward and another could be at the other end of the ward. Parents told me they felt a bit isolated because of the style of the ward compared to what it had been like over at Yorkhill.
56. For staff, if you were working in the transplant side and someone else was working in the teenage side, you maybe wouldn't see some of the staff all day because you would never have a reason to go up to the other side because it was so big.
57. My personal opinion is that I do not like the layout of the ward in the new hospital. Clinically, the patients we treat on the ward can become very ill very

quickly, so we have to be able to nurse one to one, we need to be able to see buzzers. For any kind of unit it's just not practical if you can't see the buzzers. If you were able to see them, you would know right away if patients needed you or staff needed assistance.

58. In Ward 2A, if patients are buzzing, you have to go to the control screen in the centre of the ward to check to see who was actually buzzing, unless you happen to walk past the activated buzzer on the way there. You could walk up and down the ward to see but it was a massive ward. In the grand scheme of things, it's not a massive issue, but it can create a slight delay in tending to the patients who need you.

SCHIEHALLION UNIT PROTOCOLS

59. Within ward 2A, we have our Standard Operating Procedures (SOPs), which we call SOPs. For our patients we have SOPs for pretty much everything we do with our patients. If we had a child who was in with a high temperature, we have a SOP that tells you what to do from when the patient comes in. It tells you when they should be reviewed, how long it should take for a medic to review the patient and how long it should take for them to get their antibiotics.
60. One of the things a SOP would cover, for instance, would be when you're taking blood cultures. All children who come in with a temperature get blood cultures taken which are then obviously sent for testing. For everything we do there is a SOP for us to follow.
61. Every ward will have their own SOPs for their patients. For example, intensive care will have SOPs for specific treatments that they do, and neonatal will have their own specific SOPs for their treatments. I think SOPs are standardised throughout the world. At the moment, I've been involved in a new service where I'm researching a unit in Canada where there's a SOP that's relevant, so I'm assuming everyone uses these.

62. We have our SOP which is standard for Infection Control. This includes hand hygiene, the putting on and off of aprons for going into the next room and for patient placements. There are infection control processes for everything. On everyone's desktop, there is an infection control folder that you can go to. If you have a child who comes in with a high temperature or D and V, you can go in and get the care plan for the management of that patient. There are infection control standards for everything.
63. For the administering of medication, there are NHSGGC guidelines in place for this. NHSGGC have their own, safe administering of medicine policy that we follow. This is GGC wide, not just specific to where I work. Medicine administration should be the same for everybody.
64. There are principles for administering medication, so when you're giving a child a medicine, you would check that patient's identification, you would check the prescription is correct and you need to check you have the right notes.
65. For paediatrics there are two nurses, we both check it is the correct patient, we check their identification band and we both ask for a verbal identification that the patient is the correct patient. The process should be the same throughout NHSGGC when checking medication.
66. No other areas give chemotherapy, so the administration of chemotherapy SOP will only be relevant for our area, but the principles are still the same for the safe administering of medicine. How you administer it and how you check you have the correct patient should be the same as the guide for the safe administering of medication.
67. If I am interacting with the patients and families on a non-clinical basis, for example, if I went into a room and the patient's family members starting talking to me, there is a nurses code of conduct that we need to follow. I remain professional at all times and I support my patients and their family. I would always go back to my code of conduct and ensure that I remained professional,

but also that I supported the families the best I could at that time and in that situation.

68. I had never heard of the term "Schiehallion Umbrella" that was used by the Patients and Families in their evidence, however I did hear families talk about the "Schiehallion family". Parents would say that because they were in for such a long time.
69. When their child is diagnosed with cancer, it's not a short journey, they're not just in hospital for a couple of days. Some of these children are being treated for up to three years, some of them relapse and come back.
70. Some of them have been with us for a long, long time and you build up relationships with these families and they're able to trust you and trust your judgement and trust your clinical abilities as a nurse. So, a lot of the families would say "we're back to our Schiehallion family."
71. I am aware that some of our SOPs won't be relevant to other areas of the hospital unless there are looking after our children. For example, in Schiehallion, if we have a child who has nausea and vomiting, generally, as soon as the child said they feel sick, a haemo-oncology nurse would get them some anti-emetics.
72. However, as a standard, that might not be the same thing that would happen in other wards if children with other conditions were feeling sick there, depending on the medical procedures they follow. In Schiehallion, we would automatically get the child intravenous anti-emetics, but maybe some of the other wards would give them oral anti-emetic first. I don't know this for certain though.
73. As a nurse in Schiehallion, there are more areas where we are trained as it's a very specific area. It's specialised, but if nurses in other areas aren't sure about how to deal with any patients that were boarded from our ward, then the procedure is that they should phone us.

74. If anti-emetics are given to children, they would generally be on our ward, 2A when they're getting chemo. If patients are moved to other areas, if they are boarded out, they are generally patients who are well and getting ready for discharge. Our patients are assessed for this before they are boarded out, but if they go to another ward, then the same Shiehallion SOPS and procedures apply to them. This is part of the handover with the staff when the patient is moved.
75. Once a patient is moved then nurses in other areas will look after them and clarify anything they need to do with us. These patients are chemo patients so if there is something the nursing staff are unsure about or want to clarify, then they would check either in the relevant SOP or by phoning us in the Ward.
76. Even though our nurses don't following the patients when they are boarded out, the doctor will follow them to the Ward and see them on their ward round so the doctor will always be the point of contact. It would never be the doctor from that other area, it will always be our doctors.
77. The only other process I can think of that may be different is the accessing of central lines. We always used a sterile procedure but have now changed to Aseptic Non-Touch Technique (ANTT). We changed our practice to reflect that non-touch-techniques in a sterile procedure. We have been using ANTT now for over five years now.
78. I can't tell you if it makes a difference to the number of infections the patients get. There will be other infections in patients, however from seeing the CLABSI figures. I know the practice is very good. Also, as the educator who looks at nurse's practices, what they do and how they implement practice into the clinical settings, then I know they are very effective in using the ANTT. I don't know the dates when we changed to ANTT but I think it was 2017, it was certainly after we moved to RHC.

79. The ANTT is a technique is not a sterile procedure, but it's an asepsis technique. The principles of asepsis are that when you are accessing a central line, you are not touching anything that is going to touch that central line. Basically, you can set up your tray that we set up for cleaning and you would set up your syringes so that you're ready. The key parts would be things like the end of the syringes, the end of the needles and the end of the line.
80. The ANTT would mean that you can be confident in touching your syringes, but you should never touch the ends of them. So anything that is meeting the end part of the central line should never touch hands or surfaces, and they should never be cross-contaminated. With a sterile technique, you're keeping everything contained, cleaned and in the one area where it will be sterile at all times, but with ANTT you can touch the syringe, although, you would have sterile gloves on.
81. There are two different techniques, but evidence has shown that ANTT is working and is not as long a process as the sterile procedure, where more things can go wrong too if things aren't cleaned properly. You would always make sure you are cleaning things properly. With ANTT you're not touching the key parts so it's a straightforward process.
82. ANTT was being developed down south and it's been in use for a long time down there. There's a website if you type in ANTT and it will give you all the information. For the majority of the roll out i was a Band 6 Nurse, and it was used when they were looking at the line infections and it was one of the different ways that was identified to help with infection.
83. I'm assuming that the decision to use ANTT would have been made by management. Like everything, they would have consulted infection control, they would have involved the ward, there would have been a full process involved prior to them identifying this was going to happen. I think it's management who make the decision but I wasn't in this role at the time and wasn't part of the decision making, so I don't know for sure.

84. If a Schiehallion patient was on another ward and needed a line accessed, it would be done the same way we would do it in the Schiehallion Unit. There is a general programme for central-line training or central device training, and it's the same programme throughout the hospital, so any nurse who is central device-trained has the exact same training as a Schiehallion nurse.
85. We all deliver the same training. I personally deliver it to the nurses within my area, but I work closely with the educator who delivers the general programme, so it's the same training that's delivered throughout.

THE NEW HOSPITAL – THE BUILT ENVIRONMENT

86. In my opinion the new hospital was not state of the art. I would have thought it should have at least what we had before in Yorkhill, or better. For me, for a hospital, we didn't have what we had before. If it's state of the art, then it should be better or at least the same.
87. I was aware that there were issues in the rooms on the wards where the TVs and the blinds wouldn't work.
88. The blinds in the bedrooms were in between two sheets of glass. At the outside of the window that faced into the patient's room there was a control, a wee knob at the side that you would twist to open and close the blinds, but sometimes it would stick. If that happened then the blinds wouldn't open or close, but it's my understanding that to fix it, the pane of glass would have to come out. This wasn't an easy job to do.
89. The TVs in general didn't work, but I don't know why this was.
90. If there was an issue in the bedroom, patients would tell you or, if you were the nurse in charge, some of the nurses would come to you. These are not issues

that we could fix ourselves. We would log any issues with Facilities and the appropriate person would be allocated the job of fixing the problem.

91. This could be frustrating, as we would often have engineers, joiners or electricians in rooms fixing blinds, TVs etc. and this could often involve them having to take things off the wall. This work could not be carried out whilst there were patients in the room. This was not an ideal situation if there was not an empty room to move the patient into whilst the work was being done and this meant that maybe sometimes the family wouldn't get it fixed while they were in but then it would be fixed for the next family.
92. If we couldn't get the TV fixed for the patient, then sometimes it was frustrating and I can see why parents would be annoyed. If you've got a small child and you're trying to keep them entertained, it could be really difficult. We would try and explain to the family why issues couldn't be fixed there and then. If you had a full unit, you couldn't just move someone out the room. If I was in charge and there was ever a problem on the ward and we had an empty room, I would offer to move the family into another room. If you have a full unit, you can't do this.
93. To get these issues fixed, you could phone the facilities manager and they would just direct you to the right person or area that would deal with it. You could also find out if someone was on their way up or if it was the next job or that someone was just coming up.
94. If it was something simple for example, if we had a patient coming into a room and the TV wasn't working, we would ask if we could get someone up. Generally, you would try and get somebody to fix things as soon as possible.
95. We sometimes had issues with the temperatures of the rooms. This is also something Facilities would deal with. We would get Facilities to try and put the temperature up or temperature down, whatever was needed.

96. They would then deal with that. Sometimes if it was too warm, they would put the temperature down then it would be too cold. It was sometimes a hard line to find the balance. When we put a request in, generally someone would have to come and check it.
97. I wasn't aware of any issue with a lack of plug points, or any issues with battery packs within the ward. When we have patients in the ward who are really sick, they require multiple infusions with a lot of different machines so sometimes the plug points were full, but it would be the equipment we would be using to ensure that the patient was getting all the treatment they needed so the plug points would be used appropriately. That's why plug points would probably be full, as they were being used for essential equipment.
98. If a parent said they needed to charge their phone and we had something plugged in, we would take it out for them for a few minutes. Generally, there were plugs available. There were four sockets at either side of the bed, so that gives eight sockets which would generally never always be full.
99. I was not aware of there being any issues with the park area outside the hospital. Our patients generally would be advised not to go outside where possible. If they were going out, it was usually because they were getting discharged. Generally, if our patients were in the hospital area, they were there for treatment. Sometimes they would get out on pass, but you wouldn't be wanting immunocompromised children going out to parks where there are other children.
100. One other thing that was apparent was the sewage smell at the hospital. It wasn't all the time, just at certain points, but this was a smell that anyone could pick up on if it was there, especially during the summer. It was quite strong, and we could smell it in Ward 2A. I don't know if it was obvious in other wards but it was a smell that, even if you were coming from the car park, it was strong.

101. We put it down to the nearby sewage facility because that was our understanding. You can still smell it now when you're getting out the car, especially in the summer. It's quite noticeable.
102. Patients going through chemotherapy can have quite severe nausea and vomiting because of the treatment and some of the children would say that the smell of sewage was making them feel sick. It was difficult to be certain if it was chemotherapy or the smell though. I'm not aware of any impact it had on staff, but it really wasn't nice.

CLADDING – 2017/2018

103. I was aware there were issues with the cladding on the building, but I was never involved in anything to do with it. I am aware that patients were asked to come in another door because they were doing work, but I wasn't involved in this and don't have any information.
104. Management didn't talk about it, it would maybe be the Senior Staff Nurse that would tell us anything. Usually if there was information, it would be put forward to staff by our lines manager at the time, that there was work going on. I'm sure they were doing work on the outside of the RHC and that's why patients had to use another door.
105. I can't remember exact dates or if it's correct, but there was a point where children were having to come through the adult doors, and this was an area where there was a lot of cigarette smoke due to the adult patients smoking outside there.
106. I can't remember if this was the same time as the cladding, I just remember they had to go through a different door and that the smell of smoke was bothering the patients and the families, especially if they had a post chemotherapy child who was feeling nauseous and vomiting.

107. The families raised this with the senior charge nurse who raised this with management. I know there was work done to try and move people away from the building as it should be a smoke free zone. It was escalated from my line manager to management.
108. I remember seeing emails at the time about how they could try and stop this from happening and the patients being affected by it. I think signs were put up asking families to use a different door after that so the families could come in another door, and they also tried to prevent the smoking in that area.

COMMUNICATION - CLADDING

109. (**A38845769 - Cladding briefing for inpatients dated 7 September 2018, Bundle 5, page 101**) is a letter to parents and carers giving information about ongoing cladding works. I remember seeing briefings like this. That was actually one of the letters we were given to give out to the families. If we were given letters like this, after having been given instructions and what information, we would go round each patient – the inpatients – give them the letter and explain what it was and why we were giving them the information.
110. At this time, some of our patients had just been started on anti-fungals and it was a consultancy session. So, the consultant looked at the patients who were high risk and they spoke to the families about it and gave them the information that they needed.
111. The decision to prescribe prophylaxis would have come from the IMT, so that would come from management. I was never involved in any of these discussions. Then it would be the consultant who would decide which patients would get the antibiotics.

GLAZING

112. I was aware that a few glazing panels had fallen out of the windows. There was a lot of talk around about it so I did hear about it, however this was something I heard about because of what people were talking about rather than actually seeing any briefings or information about.

FLOODING IN EN SUITES

113. I am aware of one occasion when one of our patient's bathrooms flooded. I was on shift, and we moved that patient from that room and got facilities to come up to fix the bathroom. I cleaned up the room and sent the Facilities Management (FM) report to get someone up to fix it.

114. I did think it was strange that as our washrooms were wet rooms, it really shouldn't be flooding, but I thought maybe it was a blockage. I know myself, when I'm washing, my hair falls out, so I assumed it was a blockage like that. I wasn't aware of it happening all the time.

115. We had the patient moved, and the work must have been done when I was off, as it was fixed when I came back in for my next shift. Because we work shifts, I only worked 3 days a week. Because of this, if there were things happening, you might not be the person who's following them up, it would be whatever nurse was on that day. By the time I came back for my shifts, the room was in use again and I wasn't aware of any other problems. I was aware there were problems with other bathrooms, but it wasn't common, it didn't happen all the time.

116. It was only that one occasion where I was directly involved with a flooding bathroom and I wasn't expecting anything major to be wrong so I just thought it was blocked. The rooms are constantly in use, so I didn't think it was unusual that it had become blocked. You're in a hospital so you weren't concerned about things like that as you expect things to be safe.

CONCERNS RELATING TO KEY BUILDING SYSTEMS**WARD 2A – THE WATER SUPPLY**

117. I never had any concerns about the water until we began using bottled water and portable sinks, which made me wonder why we couldn't use the water in the taps. This was around the time when the number of children getting line infections increased in ward 2A.
118. Whenever we have a child with a line infection, bloods would be taken that were then sent to lab. The lab would get the results and identify if there was any infection in the blood cultures. The labs would then tell Infection Control and Infection Control would then contact us to tell us there was an infection.
119. Although, as I heard at the Incident Management Meetings (IMTs) I attended, line infections were higher, it wasn't until there were different types of bacteria in the water that they wouldn't normally find that I was concerned. Normally we aren't told what the actual infections are, we're just told if it's a positive culture.
120. The principle is to ensure the patient gets the treatment they need, so if a doctor tells us there was a positive culture and we needed to administer certain antibiotics, then we would do that. I also heard a bit more at this time because I was going to IMTs, so I heard what was being discussed in those forums.
121. I was also given information by Jen Rodgers, who was the Senior Charge Nurse, and the senior team. Because all the line infections were happening then, everything else was being looked at as a potential possible cause. It was never actually confirmed that there was anything wrong with the water.
122. When we had our Ward Meetings, the Service Manager (Jamie Redfern) and our Chief Nurse (Jen Rodgers) would sometimes come and sit with the staff and ask if there were any questions about what was happening. When we asked if the ward was safe, they reassured us that it was.

123. We knew that Infection Control were looking into why the infections were so high and that they were looking at testing the water. There would be people turn up, test the water and take samples. In all honesty, I can't even recall exactly when we found out about the water, it was a very stressful time at that point as before this, everything else was being looked at.
124. For example, Infection Control were looking at the medics (the doctors) to see if they were doing their jobs properly. Then the nurses were going through weekly hand hygiene audits to see if they were doing their nursing practice properly and checks were being made to make that everybody washed their hands the way they should.
125. We also had enhanced supervision, where Infection Control would come in and monitor our Lead Nurse, the senior Charge Nurse of the Ward, check the facilities and look around to see if the ward was clean. We were very much under scrutiny from a nursing point of view. It felt as if we were scrutinised through audits for everything we were doing to make sure it wasn't us who were contaminating the patients' lines.
126. From being on the ward, I knew that they were looking at our ward, but I don't know if they were looking at other areas. We weren't thinking about other areas at that time, we were thinking of our own ward and our patients.

IMT MEETINGS IN 2018 – WATER INCIDENT

127. I was only at a handful of Incident Management Team (IMT) meetings. I know that within the meetings they would use the HIIATT scoring system to gauge whether the Public Perception scored high enough to put something out, for example if it was amber or red. Then they would get together and decide whether they needed to put something out or not. So they would look at

communication as part of the HIIATT process, but they did have a separate part of the meeting about communication also.

IMT – 29 MAY 2018

128. **(A36706508 29.05.2018 - IMT Minutes E cloacae 2A, Bundle 1, page 91)** I attended an IMT meeting on 29 May 2018. I remember hearing about the problems assessment group. It was called the PAG (Problem Assessment Group) and I remember Emma saying she was going to the PAG meeting, but I am not sure if they discussed anything in relation to Enterobacter. I can remember I think they would discuss the patients at them. My understanding was, they discussed the patients, and how they were doing, if any of them needed a line removed, everything like that. More from an infections point of view. There is a link between the PAG and the IMT meetings but I am unclear which comes first.
129. This was my first IMT. The Charge Nurse, Emma Somerville, was on leave at that time, so I went in place of her. As the band 6 nurse, part of my role would be to cover her when she was off. That was the first time I was involved in anything like that. My role was to provide any information from ward 2A from a nursing point of view in relation to in-patients. I was direct link to information from a nursing point of view.
130. The meeting was in relation to the enterobacter. I can't recall anything leading up to this meeting. I can remember sitting at the meeting when I'm reading the minutes, but I can't remember anything.
131. When looking through the minutes, there's nothing that I have picked up on. If I had noticed at the time that something wasn't right, I would have picked up on it at the time.
132. I remember the meeting being very formal, having never been involved in anything like it before. The IMTs were all very matter of fact but from my

perspective, I remember being very emotionally involved, so at the time I didn't understand how they could just be so matter of fact.

133. I understand now, why they had to be that way. They were looking at things and looking how to make things better, but I remember at the time being emotional about what was happening.
134. At this IMT there is discussion of the 48-hour rule. This is the time period given regarding how long patients were without infection after admission into the hospital. When you are looking at any HAI's in the hospital then you would be looking at whether it is bacterial, viral or fungal.
135. My understanding would be that the patient had maybe come in with a temperature and had blood cultures done and it was picked up straight away rather than the patient having been an in-patient in the ward, and it being linked to the ward.
136. We would look to see if the patient has been an inpatient or if they have been in hospital for a period of time, like a 48 hour period, then we would decide if any infection was HAI or community acquired. Any results would be included in a chart showing types of infections, time limits and durations of any infections.
137. I can't remember the impact on the new patient regarding the enterobacter. There are so many patients I have nursed.
138. I don't think I have the infection control leaflets. I can't even recall if they were designed the same way as the ones that were sent out by management.
139. In general, anything that we do, as a principle, so if I was writing any information or any guidelines, I'd have to put it to our governance group to, like, ensure that all the information that was in it was correct, accurate, evidence based. It all had to be checked for. I'm assuming, I don't know; but that's the same. That committee that's mentioned is their governance group or similar.

140. The main point of concern was the increase in the gram-negative infections so that would have been the enterobacter so that's why this meeting would have been called, as they were concerned about the increase in this family of infection. I can't recall what the solution proposed at this meeting was.
141. So, staff morale was low, we were under intense scrutiny and like myself, we were trying to do the job to the best of our ability but at the time it felt like we were being blamed for the increase in the infections. Maybe not blamed directly, but that was the perception as our practises were under such scrutiny. I can't recall a resolution but support wise the senior team would come and speak to staff.

COMMUNICATION - WATER SUPPLY

142. I know there was always communication that came round after the IMTs. Staff would be told, then the families would receive communication, but I can't remember what that was or when. I don't know when the communications started but Emma was always very open about what she knew.
143. I don't know at what point management would come to the unit. I can't remember if it was Jamie Redfern, the Service Manager at the time who would come to the ward and have discussions with the staff but I can't remember when that was or how far into what was happening that it was. I know Emma had asked for the nurses to be informed about what was going on as she wanted us to be kept in the loop.
144. We would get a bit of A4 paper with the information on it. There would be one for the staff then one for the patients and families. It would be the same information we were given that the patients and families were given. I think this information came from the Health Board.

145. I think the only change to it would be the heading. I have them here. If you were on the floor, you would receive one and also give the patients and families ones out to the families. They would give information about what had happened at the time.
146. We weren't told what to tell patients and families that I recall. We were only given the information a short period before the families got it. When we were going round to see the patients and families, the Senior Nurse and the Chief Nurse would come up to explain what was happening to the families depending on the information going out.
147. The Chief Nurse at the time was Jennifer Rogers, Emma Somerville was the Senior Charge Nurse. There are two different Lead Nurses, we started with Melanie Hutton and then we had Kathleen Thomson in ward 2A. Claire Hall was the Lead Nurse in ward 6A.
148. We would try and visit the families: Emma would go with Chief Nurse and the Lead Nurse to see some, and a band 6 Nurse would go with the Lead Nurse to see some of the other families. We would explain the communication that came out, giving them a copy of it, depending what was going on at the time, and we would explain what was going on.
149. Usually after an IMT meeting or if there had been something in the newspapers, then we would receive some communication. It wasn't a regular occurrence; it just happened a handful of times. Obviously, we know that the newspapers exaggerate and it's easier now to look at the newspaper articles and see how it linked into what we knew at certain points.
150. However, we had never been exposed to media attention like that before or how it can all be embellished; it was a very difficult time. The families were worried about their children, which was completely understandable, and they were looking for answers. There was a lot of staff anxiety and very low staff morale.

151. I'm not aware of anything else that would have gone to families from management. From a ward point of view though, the Charge Nurse was always available to speak to, to alleviate anxieties or concerns. Emma would always be around to speak to the families about the information that we knew. If we needed to, we could have contacted our lead nurses, they would also speak to the families and give them reassurance.
152. I knew there were circumstances where the Lead Nurse came up and the Chief Nurse and whatever the title was of the person in Facilities, they all came to speak to families. I can't remember when, but I do remember they spoke to families or individuals when required.
153. I would only know about things once the communication came out unless I had been at an IMT. However, information I heard at the IMT was wasn't information I could share at ward level at that point, as often the discussions were speculation about what the problems could be – but certain actions often needed to be completed before any factual results were obtained. There would be things said but they would be actions to look at first before anyone came back with information.
154. From a ward point of view, we tried to be as open and transparent as we could, but sometimes the patients and families thought we knew more before they did and we didn't. We would have to say we don't know. I felt this broke some of the trust that we had built up with the families. I would then speak to Emma trying to get better communication for the families. Sometimes it was a case of waiting on results, so they didn't have the answer at that time either.
155. I am aware that there were meetings held with patients and families, but I don't know if they were about the water. I only worked three days so wasn't always there. I would sometimes hear that there had been a meeting and I would be told what was said, but I can't remember what was said specifically or at what point in time they would have been.

156. **(A39123924 - Email from Angela Johnson to all senior staff nurses subject: Water Incident update 28.03.18 dated 28 March 2018, Bundle 5, page 132)** is an email from Angela Johnson to senior charge nurses dated 28th March 2018. I am not copied into the list but nurses from Wards 2A and 2B are. The subject of the email is, "Water Incident Update." I can remember this; we are looking at types of good practice which were brought in. These emails would have been sent to the charge nurses, and Emma would then have put anything we needed to know on to the safety brief.
157. I understand it now looking back and doing the role I'm in just now, but I don't think I had a full understanding back then. It feels as if it's all rolled into one and I can't remember what happened and when.
158. I know Emma Sommerville came to the staff with the information she had been given. She was my Senior Charge Nurse and was transparent with all the information she knew. Generally, we would get the same communication that the parents and families would get just before the parents were given it. It would be the same information.
159. I felt that that us getting the same information at the same time as or just before the parents did broke down some of the relationships with the families because we weren't able to answer their questions, because we were getting the information at the same time. That was the biggest concern I had, the relationships with the families, because they felt we knew more than we did, and in actual fact, we didn't.
160. When we started to use portable sinks and bottled water in Ward 2A, by that time I was concerned about what was wrong with the water. I did ask at one of the meetings, though I can't remember much more about when or where it was. I was told the IMT were looking at the water, they found certain bacteria in the water that was uncommon to this area. That's why we weren't using it at that point.

161. The filters were then put on. I was always told it was safe to use the water at all the meetings we had with Jamie Redfern and Jennifer Rodgers, so although I can't remember exactly when that meeting was, I know they are the people I would be having the meeting with.
162. As a Band 6, staff would come to you in general and raise concerns because we were being told to use bottled water and the portable sinks. I was never told when asking, that the water was unsafe. I was told by management when they came to the meeting to talk to us.
163. At both meetings, the Chief Nurse at the time and I think it was the Service Manager at the time attended and they were there for reassurance. We had staff meetings and if we needed more support or had concerns, the Senior Charge Nurse would then ask for someone to come up and give reassurance.
164. If she had information, she would share it with us but then she wasn't able to offer the reassurance that staff required at that point in time because they were using bottled water and portable sinks so there were concerns.
165. I think it was management who explained that the bacteria that was uncommon to this area, so they were looking at that and they were dousing the sinks and drainage system and that's why we were using those sinks.
166. I remember at one of those meetings, a clinical member of staff asked if the water was safe to use. This was when we were still using the water from the taps. The uncommon bacteria that was found was never mentioned at those meetings, it was only from a Band 6 Nurse position that I knew about that.
167. Those type of meetings were a chance for staff to ask questions, for example, 'are the patients safe in the unit?' and, 'are we safe to use the water?'
168. I think it was at one of those meetings near the end when we were told about the bacteria. It was before they turned off the water and started dousing and

people were asking if the water was safe. I can't say for sure when we were told about the bacteria because I wasn't at a lot of those meetings as I wasn't on every shift.

169. Just to be clear, we were never told there was anything wrong with the water. There were some meetings when we were told bacteria had been found, but we were told it was normal to have bacteria in water and we could find it anywhere.
170. Staff were going in and having conversations about their concerns as to how sick their patients were not knowing about the bacteria. They were asking why the water was switched off and why we were using portable sinks when there was supposed to be nothing wrong with the water, but we were told everything was fine. That was why staff were concerned though, why were they using bottled water and portable sinks if there was nothing wrong with the water?
171. I can't remember what was said about the bottled water as I wasn't at all the meetings, I only know that they were swabbing drains because I attended an IMT meeting.
172. I can't say for sure that it was the water that was the problem. I just know there was an increase in positive cultures to what there was before. That's where my concerns originally came from as there was an increase in line infections, and we were looking at other parts from a nursing point of view.
173. It was only when I started going to IMT that there was stuff, like the gram negatives, bacteria being discussed. There were different bacteria, one of the patients had serratia in their blood which was one that was really uncommon and that was found in the water.
174. I'm not a microbiologist but we were told it was uncommon to find this in water, but it was seen in our water. They were dousing the water to make sure it was clear I think, and it was done every week and the drains too. They are still doing this.

CONTROL MEASURES

175. From a nursing point of view, we did not have to change our approach as we were already doing everything we could, including the infection control type of work that we were aware of. I do not know exactly when but eventually they started putting filters on the taps. It's not normal to have filters on the taps, well it wasn't then but it is now. They were put on so that the water would be purified. This didn't impact on our ability to do our job; they were just a bit bulky but generally the basins were quite big anyway.
176. I am aware that there were cleaning measures introduced to try and help the situation. They introduced sink cleaning which involved the dousing of the sinks with chloride dioxide in ward 2A. I think they did this weekly. Initially the IMT thought they would have to move patients out of the rooms to do this chemical dousing, but in fact, they didn't have to do this.

HPV CLEANING

177. The IMT also introduced Hydrogen Peroxide Cleaning (HPV). This was a spray and patients did have to be moved out of their rooms for this to be done. This had an impact on patients as they were having to move all their stuff out of their room. This could be frustrating as some of the patients and families had been in their room a long time and had a lot of stuff, so it was a bit like moving house for them.
178. This process also had an impact on staff as it would increase our workload. This was particularly true for the healthcare support workers. They had to move all the furniture on top of all their other tasks so that the nurses could continue their clinical role with the patients, for example, administering medication and chemotherapy.
179. Everything had to be moved out of the rooms for the cleaning. I had to move patients and explain to the families that I was moving them to get the room

cleaned. I explained what was happening and that they would be moving and which room they would be moving to.

180. We would have to go in and help them pack up all their stuff, take the furniture out and help them move rooms. Rooms had to be empty for them to be cleaned then once it was cleaned you would have to move all the furniture back in. We had 26 rooms to do so this took a long time.
181. As nurses, we would be told when the HPV cleaning was being done and then we would have to organise which patients were being moved where to allow that to be done. The Band 6 Nurse or possibly a Charge Nurse, whoever was on shift, would then look at all the patients and how they were clinically. We would maybe have some patients that were too sick to be moved.
182. If the patient was able to be moved, we would have to look at what rooms were empty and what rooms were appropriate for the patient to go in to. We would have to look at the clinical demand for each patient as you wouldn't want to put all the sick patients into one area because that could spread the nursing teams out too thinly.
183. We had to spread the workload out so that the patients were getting the care that they required. We didn't have to liaise with Infection Control to do this as they wouldn't know what rooms were suitable for which patients however, if we were unsure if a patient could go into a certain room, we would ask them for advice. This would maybe apply if a patient needed to go into isolation.
184. If one of these patients needed boarded out, they would be boarded to a ward who were properly equipped to look after someone with their condition.
185. I was only involved in this process once, so I don't know how many times it happened. I'm sure there was communication put out to the families about the HPV cleaning, so that they knew what was happening and why it was happening. It was another reminder to staff, whose morale was already very

low, what our patients were having to endure. They're in this hospital and we're having to go in and tell families that they were moving. It was demoralising for staff.

186. Although it did impact on staff and patient morale, there was never any impact on patient safety and care. The patients would always be in a clinical room where they could be nursed appropriately so I'm not aware it would ever impact on how we cared for the patients.
187. Most parents were understanding, and most families knew we were just doing our job. Some weren't happy with the upheaval, I totally understood that. They have this sick child and on top of that they're having to move. It really was like moving house. Some were frustrated but most understood. People were frustrated but nobody ever said they weren't moving. They were understanding with staff. They understood it was difficult for staff to do and a lot of work for them too.
188. Then when we moved to ward 6A, they started cleaning the chill-beams every six weeks. I think this started after the incident with the Cryptococcus which was the pigeon droppings. So much has happened so I can't remember exactly when things did happen.
189. I'm not aware of any issues now and we've moved back to ward 2A. We've been told it's safe to be there. There was some anxiety about moving back but we've been told the water is safe to use. The taps still have the filters on, and we've started cleaning the chill beams again. We've carried on with this. There's no portable sinks and they weren't used on ward 6A either.
190. **(A39123885 - Update for parents on ward dated 6 June 2018, Bundle 5, page 142)** This is an update for parents in Wards 2A and 2B, dated 7th June 2018. I remember this, we would have just received the same information probably just before the parents. We would have received this around the time all these things were going on. This is similar to other updates we received for

parents and families around that time. If there was any information for parents and families, they would always get that information from the nurse in charge and the senior charge nurse.

191. I can't remember patients being on prophylaxis at that time. I can remember our patients getting cetaprocticin but I can't remember if it was at this point or if it was another point in time.
192. **(A38662234 - Update for parents on cleaning dated 13 June 2018, Bundle 5, page 144)**. This is information for parents about the HPV cleaning in Ward 2A. I can remember seeing this the letter, or at least, I can remember a letter going out about the HPV cleaning but it's quite a while since I've seen anything like this. There was a letter like this which was given out to parents about it .Again, the Senior Charge Nurse would go around the parents and hand them the information while they were in the hospital. They were like handouts rather than letters which would be sent to people's homes. I'm not sure how it worked for the outpatients as obviously we would only be looking after the inpatient side of it. I'm not sure how it worked for the outpatient side, but I know when they were inpatients, that's what we would do, we would go round each patient.

IMPACT OF HPV CLEANING/MOVING ROOMS

193. The HPV cleaning had a substantial impact on everyone. Again we were having to explain about why we were doing everything, whilst the families were already worried about their children who were sick inpatients and had a lot of anxiety.
194. For staff, it did increase their workload when, on top of their duties for the day, then they're having then to move patients from room to room. They have to empty the rooms, the health care support workers or your nurses on the floor are having to move all the furniture as well which also increases their workload.
195. Then obviously it impacts on the nurses in the ward as well, or your nurse in charge who will then have to co-ordinate all the rooms. They have to make sure

that rooms are available, they have to make sure that they're moving patients to appropriate areas within the ward, appropriate rooms.

196. You have to look at whether patients can go off isolation, you have to look at how sick your patients are, if they require a transplant room. Maybe the night before if I knew I was coming in in the morning, I would try and have a plan in my head for that next day, but you could then come in the next morning and everything will have changed, for example, we could have a patient who had been really sick overnight.

IMPACT OF WATER ISSUES – WARD 2A

197. I can't remember when it happened, but sometime after we moved to ward 2A we started using bottled water to wash our hands and then there were portable sinks. I was also hearing that there was bacteria in the water. I can't remember what came first, the information about bacteria, or the bottled water and portable sinks. I don't know when all this happened as it all merges together, but I do know that I was concerned that the water was contaminated.
198. I have never been told there was anything wrong with the water. As far as I'm aware, it has never been confirmed that there is actually anything wrong with the water. We were moved out of our unit. They had taken out sinks and changed some of them and they changed other stuff, but we were told they were upgrading the unit.
199. When we were using bottled water to wash our hands, two people needed to be involved. One would wash and the other would pour the water. It wasn't a normal occurrence, that's what we had to use for hand hygiene, cold bottled water. I know myself and my colleagues were ensuring we washed our hands. We ensured we were doing hand hygiene the way it was supposed to be done and we knew we were doing patient care the way it should be done.

200. I also recall that there was a very difficult period of time where we were dealing with portable wash hand basins in patients' rooms. They were foot operated to allow us to maintain hand wash standards. In practical terms they were quite easy to use, but they were a change from our normal processes, so we had all the families asking us why we were using them, and we didn't have the information available to reassure the families ourselves.
201. There was also a period of time when water was switched off over night. Staff had to use portable toilets outside. I can't remember when this was, but I know that water was switched off. I don't know if it was only one night or if it was over a period of time.
202. There was only one night that I was working and the water was switched off. I can't remember if we were told why the water was off I can't remember if it was because they were dousing the water, that is, putting chemicals in it. I don't know if that's 100% correct though
203. At that time, I think the bathrooms were still working in the Adult Hospital, so we had to go there to use the toilet. I didn't use the portable toilets. My understanding was that they were on hospital grounds, but I can't tell you where. We didn't use them as they were outside. They didn't let us go outside in uniform, the uniform policy is that you should not go outside in uniform due to infection control purposes.
204. I am not aware that there was any increase in patients being put in isolation during the water investigations, even with the patients who had positive blood cultures. There were two types of isolation, one is source isolation. This would be used if a child had something like diarrhoea and vomiting that could be spread around.
205. We would put them into source to protect other patients. Then we had strict isolation. This would be used for a transplant patient or a very immuno-

compromised patient because they are so at risk of infection. We would put them in strict isolation to protect them.

206. We would only every put patients into isolation if they fell under those two categories. We never put them in isolation unnecessarily unless they required it as these families are already isolated. If a patient had a positive blood culture, they didn't have to go into isolation as the infection was contained within the blood and couldn't be passed on to another patient. They would only be put in source if there was a risk they had something they would pass on to other patients.

SIGNAGE ABOUT WATER SYSTEMS

207. There was the concern that families were putting things down the sinks, or handwashing basins and leaving things around the sinks. We put a sign up to say, "Please don't put anything down the sink," we would take it away, cups of tea for example, anything we saw that could be put down the sink, we would remove it.
208. As you can imagine, when you have sick small children, anything can get put down the sinks, toy cars for example. So, the signage was there to stop people putting things down the sinks and to let them know that we would remove anything.
209. Because they were classed as hand washing sinks, then nothing should ever be going down it, things like food or drinks, or anything like sugary drinks that could maybe grow bacteria if they were sitting there. I think this was done because of advice from Infection Control.
210. What was put in place was a communication from Emma, and I think she maybe worked with Infection Control to develop a leaflet and a sign that was put up at the hand washing sinks to explain why things should not be put down there.

211. **(A39123918 - CWH8 Poster, Bundle 5, page 143)** is a sign telling us that this basin is for Hand Wash Only. I recognise this. At the time, there was a concern that people were putting stuff down the sink that was causing bacteria, this could potentially be the cause of the bacteria growing, or bacteria growing in the sink or making it worse. I think these signs were put up to discourage people from putting things down the sink.

IMT – 5 SEPTEMBER 2018

212. **(A36629284 05.09.2018 IMT minutes FINAL, Bundle 1, page 149)** I attended an IMT on 5 September 2018. I think was from the gram-negative event. There were organisms that were identified from the drain samples that were also identified in the blood cultures, so I think that's why this meeting had been called.

213. I don't recall picking up on anything that was inaccurate, but I do remember being at this one because the Senior Charge Nurse was about to go off on annual leave. I went there with her so that when she was on leave, there was a senior nurse within that ward that knew what was going on. If anything was missing from the minutes, I would have picked up on this at the time.

214. I don't know why if they were HAI by the 48-hour rule. If they were healthcare associated, I'm assuming that it's because their lines have been accessed as they would have been in hospital. Healthcare associated would have been, I think, when the line has been accessed by a healthcare professional at some point. I don't know if it maybe means that the 48-hour rule wasn't applied?

215. The patients that had the same pathogen in their blood that was found in the drains, I would have had to have looked at the patients notes as there's been so many patients over a long period of time.

216. I would have to see how it affected each patient, to be able to tell you how they differed in support. Each patient is different so, although these patients one could have been well and maybe one wouldn't have been so well, I can't recall the exact impact on each patient.
217. HCSW staff are Healthcare Support Workers, so they're our band 2, 3 and 4 staff. If other areas in the hospital were short staffed and we have our quota of staff, they would maybe take staff from us to staff another area. There would maybe be a concern that there would be a drop in standards as you wouldn't have the healthcare support workers to help the nursing staff with the cleaning.
218. I don't know for sure if there was a general shortage of staff across the hospital at that time but if staff are pulled off another area, then there must have been a shortage in the other areas.
219. It could maybe have been because we had maybe 3 support workers on shift and another area had no help from a support worker so they would have to weigh up the risk if we had three and the other areas had none. It's not at our level that makes those decisions, it's made at management level.
220. I mentioned earlier about signage being put up telling people not to put things down the sinks. This was an action from a previous meeting, they found the drains to be harbouring the different bacteria that was unusual.
221. They then acted to ensure that was nothing was being put down, so we would put up signs. But we would also explain to the families why we ask them to do that, so that would be what we would do as a general rule, we would explain it was infection control.
222. I can't remember what we were told about elaborating on infection control standards, but if a parent asked me to elaborate, I would then tell them that putting anything down the sink might cause it to stick to the drain and ask them

not to. Generally, people were very obliging if we were asking them not to do it. Most people were fine with it.

223. We were educating the parents, and this was in the form of giving them information about the hand-wash basins only being there for hand washing and that no other substance should be going down it. Then there was the process that was put up at the hand-wash basins and the families were informed that they shouldn't be putting things down the sinks.
224. I'm not sure if there was any view at this point as to whether there was a connection between the increased rate of infections and the parents, families and visitors. I can't remember if that was looked at.
225. **(A39123933 - Parent poster dated 6 September 2018, Bundle 5, page 147)** is titled "Keeping your child safe from Infection". This looks like a kind of general information one, I remember seeing this. They were up in the patient areas. They would go up in all the patient rooms like a poster, and then, obviously, communication has also been given out for our staff which would be handed over at each shift.

IMT – 10 SEPTEMBER 2018

226. **(A36629302 10.09.2018 Minutes Ward 2A IMT, Bundle 1, page 154)** I attended an IMT on 10 September 2018. From looking back at the minute, I knew families that had gram negative infections and I think due to the number of cases in that period of time, that was why the IMT was called.
227. I had raised that the new method of cleaning would cause a lot of disruption clinically as the ward was currently full, so it was suggested there was a meeting to plan the logistics of that. I can't remember if it was myself or if it was some of the other band 6s, but the cleaning just went ahead.

228. I think what the issue was that they needed the cleaning to be done but because we were full, I can't move a patient to a room where there's no room. That was my point, I can't put a patient in a corridor. I think eventually what came back from that was that in actual fact the drain cleaning didn't mean the patients being removed from the ward.
229. They would do the drain cleaning without the patients being moved from the room, so it did manage to go ahead. There was no impact on the patients, or the care given as it was basically just a substance that was put down the drains. The Chill Beam cleaning, HPV and drains, we would organise the logistics of that ourselves.
230. There were four rooms to be validated. These rooms were closed but I can't remember why they were closed. They were getting work done on them and the validation process just means that they were fixing the rooms, and once they were validated, once they were ready, then they would be put back into circulation.
231. There were staff concerns and questions about the drain cleaning which was referenced as an incident in IMT. I'm sure at that point someone came down to speak to staff regarding it, I think it was the next day. I can't remember what the response was but they did come and speak to us, they were aware we had concerns.
232. I can't remember what communications that were handed out about the cladding. I can't remember the information that would give to families. As I said before, a lot of the information we would get, would be the same the families would get.
233. It was continually raised that there were staff concerns because there was just a continued emphasis on gram negative cultures. There were a lot of positive blood cultures.

IMT – 13 SEPTEMBER 2018

234. **(A36629307 13.09.2018 Minutes Ward 2A IMT, Bundle 1, page 160)** I attended an IMT Meeting on 13 September 2018, I think this is the last one I went to about events at that time. It was about the serratia which was very uncommon, and I personally had not heard of it before.
235. In the minutes it states, 'Sarah-Jane said staff in the area are very concerned about the ward ad if it's safe for patients.' This was near the time of moving, and I think staff were just a bit flat. There were whispers going around that we were going to be moving out of the unit and staff are just concerned why are they moving out of the unit; could it be the unit wasn't safe? So my remarks were made about the concerns of the staff for the safety of the patients. was round about the safety for their patients.
236. There was a meeting with Jamie Redfern, Teresa Inkster and Jen Rodgers in the Medi-cinema which I attended. Kevin Hill, who, at that point, was the Director of Nursing. I can't remember his title exactly. Kevin Hill, I think, talked about reassurance and about the ward move.
237. I can't recall everything that he said at the meeting, it was quite a long time ago. There was quite a lot of staff there but not ward level, they would have still been looking after their patients so you would have had had all your management side there, Angela the lead nurse, the consultants, all of those kinds of people.
238. I put this on a safety brief. The safety brief is what we use to communicate with staff as we have over 70 members of staff that work in the in-patient unit. For communication you would put it in a safety briefing which is read out at every hand over, anything that staff need to know about is put on the safety brief. This would be read to the morning and night shift and was how we relayed information to staff.

239. I don't think I had increased concerns regarding safety, I just remember being concerned about the moving from the unit and that they were picking up on things that were never picked up on before. I just remember wondering what was going on, that was my thought process. I was wondering if it was safe for us to be in the unit which is why I asked this question, as I knew a lot of the staff felt the same way.
240. That was my role; I'm not only an advocate for the patients, when you're a charge nurse, you're an advocate for your staff too. You're the senior person there to advocate for your staff, to support your staff and they were coming to me with these questions, and I had to put them forward.

CLOSURE OF WARD 2A/2B AND MOVE TO WARD 6A/4B – September 2018

241. I think the reason for ward 2A and ward 2B closing was to upgrade the ventilation system and the drains and drainage. We were only just told that it was drains that they were looking at, sinks and drainage. We had identified black marks on the sinks around the plug holes, so they were checking plug holes and the piping around the back too.
242. The sinks in the hospital are quite different to your home sinks where you have a plug that you can fit in, there's no plug that you can put in to stop things, they're kind of open. and I think that's where the liquid dowsing and things came in.
243. I think it may also have been to do with moulds that were found in the bathrooms. There was mould found around there, but all the bathrooms are shower rooms, so the showers are open, you know, they are like open bathrooms, wet rooms. Some mould had been found around about where the showers were coming down, because of where the lino had kind of connected to the flash wall, I think that's what it's called.

244. Then the Microbiology team would come and swab to see what that was, they were generally checking everything, asking sure there was nothing causing a build-up. If I was in charge of the unit and then I would be told when have to then obviously facilitate, to make sure they could get access to these areas.
245. I can't remember how we were told the ward was moving. I would imagine there was a meeting for staff that were on the ward that day then the Senior Charge Nurse would advise everybody that was happening – but I can't confirm that as I don't remember being at one. I don't know if there was a communication put out but again, I would imagine something would have gone out from senior management.
246. I can't say for sure as it was so long ago. Sometimes communications came out in the form of emails and if you weren't at work, you would see them when you came back. I did both dayshifts and nightshifts, so some things were sent out when I wasn't at work.
247. All I knew was that it was a senior management that would be responsible for making a decision about moving the ward, not from a nursing point of view but higher management who I have never met before, names that I didn't recognise. I can't remember when we were told. I think it was September 2018 that we moved. There wasn't a lot of time between moving and being told.
248. I was at an IMT where there was discussion about moving, but in my mind at the IMT, they would have to go away and action things before the communication came out. None of the staff in the unit had any say about the move and none of our opinions were sought from what I can remember.
249. I think risks would have been looked at for the move. I remember, from one of the IMTS I attended, there was a gentleman, I can't remember his name, who was working in the project side for the move, and he was looking for an appropriate place that would have been safe. There was some discussion at the IMT but my opinion wasn't sought regarding a move.

250. As far as I'm aware, everything appropriate would have been done in terms of risk assessing any move. You don't do anything without risk assessing first. I wasn't involved in carrying out any risk assessments myself. We don't do anything major without doing a risk assessment of what we're doing. What I was involved in was moving the patients; so I was involved in setting up the schedule of who we would move and how we did it.
251. I'm not aware of any concerns about moving. There was anxiety around the fact we were moving to an adult hospital, but we were told by Jamie Redfern and Jennifer Rodgers that it was the safest thing to do for our patients. As a nurse, I'm going to do what I'm asked if it's the safest thing for our patients.
252. Our anxieties were just around general things like the set-up of the unit. In a paediatric unit, you have got the facilities, play areas, all the appropriate facilities for children like the televisions. Ward 6A was an adult ward design and looked like an adult ward. This is different to a paediatric ward which is set up for children, it's more child friendly and colourful. I think at that point there had been so much happened in ward 2A that I think we all had anxieties about moving.
253. We went over to have a look at the unit as we had been informed we would be moving there. As well as being in Ward 6A, we were in 4B too, so overall we were split over the two areas with transplant patients in 4B, which is an adult transplant unit, and the other patients in 6A
254. As I've said, ward 6A was not child friendly but we still had single beds, everything was pretty much the same, single beds for safety, there was wall art, they made a parent's area, but it wasn't open for long because of covid.
255. They had a parent's kitchen that used to be the bathroom and eventually we got a room for staff. We did change some things in the ward, anything we asked for, they changed it for the children. Our main concern was to adapt the

rooms appropriately for the patients. We also had to encompass our day unit within the one area, whereas we were split over two areas at the time.

256. We are one unit, but in 2A/2B children stay across from us, but in 6A both the inpatients and outpatients were together, so we had to work out how the same unit was going to fit into the ward. In the process we also had to try and make it as child friendly as possible. As you can imagine, it's a very different in an adult setting, whereas we were used to being in much brighter, more child appropriate surroundings.
257. When we moved, there were concerns that, if there was an emergency, how long in terms of care would it take to get to the unit. If you have an emergency, you need a paediatric resuscitation team to attend.
258. Our paediatric resuscitation team is based within in the children's hospital, so the intensive care comes from the first floor or even the second floor, so if a patient became unwell, the response time would be longer, although I don't think it was a long, long time, but it would be longer than what we would generally expect.
259. So, rather than having to travel one floor, they would be coming from one hospital to another, and then they're having to come up to the sixth floor as well. Ward 2A in the children's hospital would be where we were based for our Paediatric intensive care unit, on the first floor in this children's hospital, but then to get to the adult hospital they have to get to the lift and get up to the sixth floor.
260. If they were bringing equipment, they can't carry the equipment up the stairs, so it's about co-ordinating how they were going to get the lift and get the lift quickly and looking at sign posting and the quickest way of them coming. I wasn't involved in any of the processes that took place to look at that concern.

261. There were also concerns about the move itself, the transferring of the patients to the adult hospital from paediatrics if the patient was immunocompromised as we had concerns around going through areas the general public used. They did allocate an area that was only used by our patients, this was at the time of the move, around one of the lift areas and included one of the lifts which was the core lift at the time.
262. It was signposted at Ward 2A that we had moved to the adult hospital. There was nurse there that was just allocated to our area, and it was sign posted so that the team knew they had to come to Ward 6A.
263. There was a run carried out to see how long it would take to get to the emergency unit or to get equipment up to the patient. I was not involved in the test run. I don't know who carried out the test moves but they would have been from a senior point of view. We weren't involved in any of that.
264. In ward 6A, we ended up with the day unit and in-patient facilities in the same ward. We had one treatment room which was quite small. The prep room, where we would prep our drugs was small and we had two units, inpatients, and outpatients, within that area.
265. I think what happened was that we ended up with staff for both areas. If there were any emergencies, we were all together and there were more staff members there. There was capacity in the treatment room for both areas so you could go to both, whereas in the RHC, we were two separate areas.

COMMUNICATION AROUND THE MOVE TO WARD 6A – September 2018

266. **(A38662124 - Press statement from NHS GGC on decision to move patients dated 17 September 2018, Bundle 5, page 148)**. This is information about drains testing and the decision to move patients out of Wards 2A and 2B at that time. Generally, the way we would get information like this is we would get the paper copy and give it to the families. We would go round the families in

the Inpatient Unit and give them the information, if we've got a paper copy we would give them a copy. So, we would just leave it with them and let them ask any questions they might have.

267. **(A38662124 - Press statement from NHS GGC on decision to move patients dated 17 September 2018, Bundle 5, page 148)**. This a Core Brief dated 18th September 2018 and is a statement from NHSGGC about the water supply and drains in Wards 2A and 2B of the RHC. I will have read it because I do read them all but I don't specifically remember this particular one, however I know the information that's in it because I was there when it was happening.
268. I personally feel that the communications about the move from ward 2A to ward 6A between management and staff, could have been a bit quicker in light of the situation.
269. The staff found out around the same time as the families, and we felt a bit blind-sided. The families would ask us questions and I just sometimes felt that maybe we weren't as prepared as we could have been if we had a bit more knowledge before that.
270. However, I also understand that at the time of the IMT, maybe there were other factors involved that were maybe still to come out or be clarified so that's maybe why they couldn't tell families any more at that point. It would take maybe a couple of days from the IMT happening for the information to come out.
271. It was often the scenario where, for example, they would be looking at three possibilities or factors for something, but how they were going to identify it or fix it, and then they would want to put the communication out once they had answers to what they were doing and why they were doing it.
272. My point is, staff were getting the same information as the families, but they were just getting it maybe just a few minutes before the families were.

273. Obviously, if I hadn't been involved in the IMT, I maybe wouldn't have understood that, but because I had information from the IMT I had an idea of what was going on. However, it could be frustrating for the staff who didn't understand the process of what was happening at the IMT. We knew management were looking into this and Infection Control were looking into this, and then once they have answers they would get back to us.
274. If staff had been given the information earlier, I think there may have been less stress for staff. As a nurse you want to do everything you can to look after the children who are your patients. You want to be able to do everything for them and look after them 100 percent of your ability and for me, not having that information to be able to give to them, I felt that I was somehow doing them an injustice because I couldn't give them what they were wanting.
275. I wanted to try and be as open and honest as possibly with the families. That's the only way we are going to be able to give support to the families and it's the only way we can help them get through their journey. When we were getting the information just before them, you weren't really prepared.
276. A lot of the time, what was in the media, was inaccurate, they would get basic information and they would elaborate on it. I can only tell you what the information was that I got and what was shared with the families at the time. I don't know what information could have been given out, so maybe it was the case that we were all told everything.
277. If, in their communications they had said that was all the available information, I think that would have helped. Sometimes we would get more in-depth information and some of it was just reassurance around the unit. If there was anything that had happened, they would give us reassurance and tell us they were looking into it, or trying to look at what can be done.

278. Regarding media statements again, I think for us, there could be an article that would come out and then staff would come in on their shift. It would be really quite upsetting for them to come into work having seen some of the things in the press, they were never positive, it was always very negative. So, as I've said, the worst part was that all the anxiety was very high and staff morale was already very low.
279. It just probably made them feel a bit more anxious about what was going on and worry more, as that's first and foremost with our patients, and making sure that they are safe here. The media coverage definitely had a negative impact on the staff and the families. If I was going in to be in charge and I saw an article in the media such as the ones that were being printed, I would then try to prepare myself for lots of questions, because you knew you would be asked about it.
280. I would have nurses telling me families had seen the article and were asking questions and asking me if I would speak to them, which I would, but a lot of the time I didn't have any more information. That was frustrating for families, because I think sometimes they thought you were hiding information from them, however, in actual fact you didn't have any more information than they did. It was about trying to reassure them that I would then go and see somebody higher up than myself and try to find out. It was very frustrating.
281. I think because of the nature of our patient group, we look after these families for such a long time, we always find we've had really good relationships with our families because one of the biggest things for us is trust. I think that kind of broke down a bit then, because they felt that we weren't answering their questions, so they assumed we must be hiding something. But a lot at the time we didn't know any more than they did.

IMPACTS OF MOVE FROM WARDS 2A/2B to WARDS 6A/4B – September 2018

282. In relation to the move from ward 2A to ward 6A, there was general anxiety and concern about going to the adult unit amongst the families. I can't remember exactly what was said but they were anxious and understandably so; they had sick children in hospital, and they're concerned about everything that was happening.
283. The newspapers got hold of what was going on and it was sensationalised all over the media, in social media, in television and in the newspapers and I think people were scared. They were anxious, worried, and concerned for their children. I can't say anything about the impact on patients when they moved from ward 6A to CDU as I wasn't there.
284. There was also a clinical impact when we moved to ward 6A. We were still administering chemotherapy, but we weren't taking any new admissions. I think this was in relation to the move to CDU. Patients had to go to Edinburgh or other centres to a shared care centre to get their treatment for a few weeks.
285. I think this was after the Cryptococcus event in December 2018 that we were closed to new admissions. At that point we were transferring chemotherapy patients to other areas who could take them and administer their chemotherapy.

THE MOVE TO THE CLINICAL DECISION UNIT (CDU) – January 2019

286. There was a meeting I was at where we were being told that we would be moved from Ward 6A to the CDU. I can remember being anxious around what we were being told. The question was raised that, if it's safe, then why are we being moved? A lot of factors involved in us moving were discussed at the time. I think the meeting would have been taken by Jamie Redfern and the Chief Nurse, Jennifer Rodgers. The Lead Nurse Catherine Thomson was also there. I

also think a lot of our consultants were at the meeting too, as well as people from the IMT. I believe there was another meeting the next week, however I wasn't at that one, and I wasn't there when move happened, I was on leave, but when I came back, they had already moved.

287. We moved out of Ward 6A to the Clinical Decision Unit (CDU) in January 2019. I remember being at a meeting about that. Emma was on leave at the time, so I had gone to the meeting, and then I was going off on leave when Emma was coming back. I can remember telling Emma that looked as if we were going to be moving again.

288. There were no different medical protocols for the patients when they were moved wards but I think it was frustrating for them having to be moved. If you have patients who have been admitted, the first admission could be for six months, and it was quite a lot of movement for them.

289. However, in a clinical sense, everything we would have done in 2A would have been done in 6A. How we would have treated the patients, how the care would have been delivered would have been the same.

ISSUES IN WARD 6A

290. I can't think of anything that I was aware of regarding the environment in ward 6A other than it being an adult ward with adult settings. There was a door at the back of the ward that people could just walk in and out of. Anybody could just walk into our unit so we asked for this to be closed due to the type of patients we had. I can't think of anything else.

291. When we first moved over, I wasn't aware of any issues with mould. I think there was mould identified in the bathrooms. Some of the patients had identified that they had seen mould in the shower or they had found it in the bathrooms. I think what happened was to do with the linoleum.

292. In your house you would just have the linoleum on the floor but I think on the ward it came up the walls so the mould was gathering at the skirting boards. I don't think anybody spoke to myself about it. If anyone ever raised it, I would have moved them out the room. I would not have put a patient in the room until facilities had been up and had sorted it. That's what I would have done, I can't actually remember ever being involved in this though.
293. **(A39123898 - Update Briefing for Parents dated 6 September 2019, Bundle 5, page 345)**. This is a letter giving information to parents and carers about work being done in Ward and unusual infections. It doesn't mention what ward its in relation to but I see from the date its from September 2019 when we were in Ward 6A. It looks very familiar to what they all look like. I maybe wasn't on shift; it would have been one of the other girls that would have received the information and they would have taken it into the parents. I think there might have been a few like that where they were just giving them an update, that there had been an IMT and that they would get information through after that. This would have been the same way of passing information out to the staff as all the other sheets.
294. When you're a Band 6, there's just been a charge nurse and with or without your chief nurse or lead nurse on the ward, they would sometimes they would come up also and go round with you if you were handing stuff out to the patients.
295. **(A39123903/A41501454 - Letter to parents on ward 6A dated 12 November 2019, Bundle 5, page 382)** This is a letter from Kevin Hill, the Director of the Women and Children's Directorate. It is dated 12 November 2019. It's an update on investigations into unusual infections on Ward 6A. I remember seeing this letter. The process for handing these out to patients were the same as all the other pieces of information.
296. **(A39123935 – Letter Haemato-Oncology Unit 6A dated 14 November 2019, Bundle 5, page 383)**. This is a letter from Jane Grant about a meeting which

was held on 2nd November 2018. The letter is dated 14 November 2019. I remember this, I think we had done a nurse day to set up our meetings at the time this was going. I can't remember where the meeting was and don't know what form it took because I wasn't at the meeting, I wasn't involved in it. I can only remember there was a meeting in the main hospital with that letter coming out afterwards.

297. When we went to ward 6A, there was a problem with Cryptococcus which was the pigeon poo. I think we had communication about that, but I'm afraid I can't remember who told me or how we were told. It may have been through one of the communications that went out or it might have been one of the set things that was focussed on when we had discussions with the Service manager at the time, or it may have happened when I was off duty or been on a day off as I worked shifts – but I was aware of it.

IMT 18 JANUARY 2019 - CRYPTOCOCCUS

298. **(A36690595 - IMT Cryptococcus 18 January 2019, Bundle 1, page 274)**

There was a Cryptococcus incident management meeting on Friday 18 January 2019, this was the one after the Cryptococcus had been identified. I can't remember much about it. Staff morale at this meeting was really bad though.

299. Morale had started to pick up, but by then it had been so low for such a long time for the staff in the unit while all of this was going on. We did have a large group of new staff that weren't involved when all of this was going on, but for the staff who were involved, morale was quite low and they thought well, we are going back to things getting better and then this.
300. This is at the point where we were moved to Ward 6A, because it was safe to be there and in actual fact, they found out that there were Cryptococcus issues. They had concerns around that and any information that they had seen.

301. There were lots of concerns about the Cryptococcus and the families, it was another factor that was presented to us on top of everything else that had happened to us on ward 2A. It was another aspect of anxieties for parents, families and staff.
302. We have what's called a core brief and this is sent out to all the staff. We get core briefs all the time with information updates on them. I can't remember if it's sent out by Jane Grant but she would send out updates on anything. They're sent out by email, and you get them every time there's an information update. The Core Brief is generic information that would go to everybody across GGC whereas the Safety Brief was only for our area.
303. Staff on ward 6A had requested more information about the Cryptococcus as they were only given the same information as the families were. They wanted to get a better insight to what was happening, why it was happening and to get a better understanding of what was going on.
304. We had already had all the infections in ward 2A so now to get this in Ward 6A, it's not the same thing but it was similar as our patients had infections. I can't remember how much information was given.
305. I think there was talk about Cryptococcus in the ventilation and it was causing issues for people with respiratory conditions. It was definitely a concern when you're being told that there's something in the ventilation that could cause skin rashes and respiratory problems, and that it can be detrimental to pregnant women too, so of course staff were concerned.
306. We and we were told pigeons had gotten into one of the ventilation plants and contaminated it, it was everywhere basically. That's why the ward had problems with Cryptococcus in our patient group in ward 6A. In ward 2A, this was never a concern, but in 6A, I believe this was when it was an issue.

307. Regarding Gram Negative Infections, we had the CLABSI group who were always monitoring line infections, so I knew from my job as a Band 6 Nurse that there was always concern about line infections and that they were always being monitored.
308. I knew that the HEPA filters were installed because of the ventilation. I think this happened around December time because I remember it being around Christmas time 2019 and we were having to set the HEPA filters up.
309. [REDACTED] had the Cryptococcus infection so I was aware that a patient had been affected. I wasn't aware of any risk of infection relating to the ventilation in 6A in relation to the Cryptococcus before we had been told about it. My understanding of the ventilation work being done at this time was that it was being upgraded, this was in relation to Ward 2A.
310. When we moved to ward 6A, it was an adult ward and it wasn't built for haematology oncology. It wasn't an area that was specifically designed for our patients so there were HEPA filters placed in the patients' rooms and on the ward to filter the air appropriately as it should be within the unit. That was my understanding of the HEPA filters and also what we were told.
311. I'm not aware of any issues relating to the HEPA filters. I know sometimes the families would switch the HEPA filters off; they are very loud. If you can imagine being in an aeroplane, they sound like that. They were kept at certain levels in the rooms and at higher levels in the wards because of the noise.
312. I'm sure they were checked to see what levels they had to be at because the rooms are smaller but sometimes you would maybe go in the rooms, and they would be switched off or turned up or down but I can't think of any other issues with them.
313. In ward 6A, I wasn't aware of more isolation cases due to the ventilation. I'm not aware of any patient being into isolation that wasn't an appropriate isolation.

314. Then when we moved to ward 6A, they started cleaning the chill-beams every six weeks. I think this started after the incident with the Cryptococcus which was the pigeon droppings. So much has happened so I can't remember exactly when things did happen.
315. We did the chill-beam cleans for which I think were 6 weekly. We were cleaning them but by the end, we were just replacing them. They had stuff coming out of them and I remember being on shift and seeing they were quite dirty looking. There was condensation coming out of the plastics tube that comes out of the vent, so it was to prevent that.
316. The process for this was that Estates would come and replace them, but our role would be to move the patients out of the room. The room would have to be emptied and, as the nurse in charge, you would have to co-ordinate who could be moved and identify where it was safe for them.
317. This is because, you have to think about it in terms of, if you have a sick patient, you don't want them to be far away from the nurse's station. So, you had to think about patient placement, but then you also had to co-ordinate staff because our staff would have to move them.
318. So, it would be staff on the floor, on top of their job they would then have to also move the patient's room. Then our staff would have to come and clean the room. Similarly, after the cleaning crew came in and done the deep cleaning, we would have to clean all the equipment and put all the patients into the room, and we would have to move all the setup. So, all the bays, the cabinets, everything had to come out of the room, nothing could be in the room that wasn't cleaned.
319. There would have been some communication came around relating to that but I couldn't tell you how often or how much as it was that long ago.

320. We had been moved to 6A because of the increase in infections in 2A, then we had patients who had Cryptococcus infections, so again, the nurses were under a lot of scrutiny. We were worried for the patients and their families.
321. Whilst we were in Ward 6A, we were initially told that they weren't sure where the Cryptococcus was coming from. But then we were told it was in the plant rooms, that it could have been due to the pigeons that had been getting access to the plant room.
322. I researched Cryptococcus and pigeons myself, but I was never involved in any of the hospital investigations into it. We also had line infections at the time so there were different types of infections and different types of bacteria in our patient groups.
323. I've looked back at the information that we were given at that time as I can't remember it all. I know that Cryptococcus was identified and that it was due to the pigeons. We ended up being moved out of ward 6A to the CDU, but I can't remember for certain 100% if it was all due to that.
324. I'm sure we were moved to CDU because of the issues with the pigeons and the only reason I remember that is because when we went to CDU, I remember there being pictures of birds on the walls. I heard they had removed the bird pictures.
325. I was on annual leave when they were discussing moving so I wasn't involved in that. I think it was only for four to six weeks that we moved. We went to the clinical decision unit (CDU) and the patients that were there were moved to ward 2A as they hadn't started the building work on the ward yet.
326. We were then going back to RHC, and it upset our oncology unit having to move again. I think we were told it was only going to be for a couple of weeks that we were moving for. We moved to ward 6A in September 2018 and then we moved to CDU in February 2019 and that was for a couple of weeks.

327. I don't recall being told it was CDU that we were moving to initially, I just remember being told we were moving. I wasn't aware of any risk assessment being carried out for the move to CDU or why CDU was chosen. CDU is where RHC patients come through via the emergency department in the RHC. They might be stable but need observation then there's a decision made as to whether they can go home are kept in.
328. As far as I'm aware, since we have moved back, all the rooms now have positive pressure. We now have a lock system on the door too.

THE VENTILATION SYSTEM – WARD 2A

329. I can't recall being aware of any issues with the ventilation when we were on ward 2A. From a ventilation point of view, I understand it's to do with the air changes in the unit and they were upgrading the ventilation to ensure we were matching the recommended air changes. The ventilation system we had before had air changes lower than the standard.
330. My awareness of ventilation was that you are supposed to have so many air changes and it filters the air clean for our patients, so that would have been my understanding. I've never really had to think about the ventilation. As a nurse, I didn't have to consider it and never had any views on it, so my understanding was that the ventilation was how it should have been.
331. When we first moved over, I think now, looking back, I think my understanding was that all of the rooms should have had positive or negative ventilation. Now that we've moved back into 2A, we have positive ventilation in all the rooms, one room with negative ventilation, although there may be more, I'm not working in that area now so I'm not sure, as I'm no longer involved in the running of the Ward.

332. Looking back, I don't think they weren't ventilated rooms, it could just be my understanding, but it's now changed regarding the way the rooms look. They now have long letter boxes at the top of the doors that let the air out.
333. I can't remember having any concerns about ventilation when we moved in 2015. I went in early, and I would look after my patients to the best of my abilities. I rely on the people that are experts in ventilation to keep that part as it should be, and I do my job. I've never thought about the ventilation.
334. I can recall when we moved to Ward 6A we were told it was because of the ventilation as the number of air changes within the rooms done were lower than they should be. I can't remember if I had any concerns about ventilation before that.
335. From what we were being told by senior management, they were upgrading the ventilation system. They told us this at a meeting we had at the time, I can't remember when this was. I'm sure it was at one of the meetings when we were moving and why we were moving to Ward 6A.
336. That was when we were told they were upgrading the ventilation system, so we were out of the ward. It wasn't a meeting as such, it was where the Chief Nurse and I'm not sure what the other one's title was but they would come up and explain to staff what was happening. It was more a communication meeting. I cannot remember how frequent these meetings were.
337. Again, any communication that was given out regarding the ventilation system, we would get from the communications team. My understanding was that the communications team would put together all the information and it would be passed down through management to ourselves.
338. We would have the information then the parents would get it. There wasn't a great deal of time between us getting the information and the parents getting it, but again, the Chief Nurse and Lead Nurse would come up and we would go to

the families with the information and the piece of paper which the information was written on.

339. There was no communication about how we told the families anything, we were just given the information we needed to pass to them. The information we were given was all we knew too, so we couldn't tell them anything further, as that was all we had.
340. There is a Facebook page for parents but I was never involved in it so I don't have any access to it, it so I can't tell you what was on the Facebook page. I do know it was set up so that communication could be given more widely wider to families.
341. There were the families that could be in for a longer term, and there would be inpatients, also patients who were getting outpatient treatment, so they wouldn't technically be in hospital and would not be getting the same comms the inpatients would be getting. So, I think the Facebook page was created for management to share more information more openly with the families who maybe weren't inpatients at the time.

HOSPITAL ACQUIRED INFECTIONS (HAI)

342. A hospital-acquired infection is also known as a healthcare-associated infection. When you're looking at your infection system, you associate it with any care that's delivered within a hospital setting or care setting.
343. So if you're acquiring a healthcare hospital system infection, then it's within a hospital setting, but also it can mean that a patient could come in that has maybe been outside the hospital for 40 hours. So technically doesn't mean it's been hospital-acquired or healthcare-acquired, but it's been identified as in a hospital setting.

344. In the sense of our patients, they are immunocompromised so for instance, if they catch the common cold, they are more susceptible because they have no immune system it can also make them pretty poorly. They also have objects, central lines which are channels into the patients' chest, into their heart.
345. These are tubes going straight into the bloodstream, so they are more susceptible to infection. They're at higher risk of getting an infection and need to be handled appropriately. There's always a risk of infection in this patient group and the whole point of infection control and all the policies and principles that we have in place is to try and prevent them. But they are not always preventable.
346. There are things that I talked about earlier such as accessing the line and wearing PPE and decontamination that we do to try and limit the risk of infection.
347. I'm not an infection control expert so I don't know if infection numbers can rise even though we do everything can. For our patients we've always seen infections of the central line/devices. These are plastic lines leading into their chests, so we've always seen infections in these. What had happened when we moved to RHC was that there was an increase in infections. I wouldn't say there's always a risk, I'm not confident enough.
348. When we were in ward 2A, we did see an increase in our line infections, so if that's why I think at the start, all our staff group practices were being closely scrutinised to see why the numbers of infections were so high.

CENTRAL LINES

349. There are different types of central access devices that we use. You may have heard them being called other things. A central line, or Hickman Line as you may have heard of, is essentially the same thing. We would have port-a-caths

which is a central device as well. We would also have PICC lines, dialysis lines and then we have peripheral lines that we put in.

350. These are not inserted into the heart, they are not going in centrally, they are going in peripherally and you would also have cannulas. A peripheral line is a line that goes into a vein, a central or Hickman line would be inserted into the heart. These lines would all be used for our patient group.
351. The central line is a tube that goes into the chest and there's a bit that constantly hangs out so as you can imagine, there can be infection round the skin that can then contaminate the line. You can have an infection through the bloodstream. If you have got a port-a-cath, which is a chamber inserted under the skin that you access with a needle.
352. You would insert the needle into the skin then into the chamber, then the skin can get contaminated. There are different ways it can get contaminated. You would try to mitigate infection risk by making sure you are using appropriate decontamination procedure for the skin and the central line.
353. The end of the line is covered at all times with a port protector. Any device that our children have in situ, we would put a protector on the end of it. So, any device, anything that's a device, even a peripheral camera, they all have a protector on the end at all times.
354. There is alcohol in the port protectors and when you're working with the line it's decontaminated with a solution that is made up of 70 per cent alcohol and 2 per cent chlorhexidine. There is also a solution in a stick that we use to clean the skin. This is also made up of 70 per cent alcohol and 2 per cent chlorhexidine. There is also an SOP to follow on how you should clean the skin.
355. If we suspect a patient has a suspected line infection, there are protocols that we follow. If the patient has a temperature, we will take blood cultures. This is automatically what we do and when the results come back, we are able to

identify if the patient had an infection in the line. We would then decide what antibiotics the patient should be started on.

356. We would get in touch with microbiology to decide what antibiotics were required to treat the line infection. The antibiotics may change from the ones the patient had been started on once the infection was confirmed and identified.
357. The microbiologists would discuss with the doctors which antibiotics should be given to patients with a line infection. Infection control are more to do with the preventing of infection rather than the treating of them. If there is an infection, infection control will be involved to see how we stop it and moving forward, prevent it. That's my understanding of how they work.
358. When we take the blood cultures, we send them over to the lab and they analyse the blood. I don't know exactly what they do as I've never worked in microbiology, but I think they take the sample and put it under heat. I think they then leave this for 48 hours to see if anything grows. Sometimes something grows quicker, but they leave it for a certain period of time so that people are able to identify the infection or bacteria.
359. If a patient has an infection and they become really unwell, or would require antibiotics, sometimes we would give them through the line. Sometimes the patient, if they have an infection, may not be bothered by it at all, they might just have a temperature, but some can be really unwell and require more care.
360. The body can shut down meaning they may become dehydrated, and they may require more antibiotics and their line removed. If we have to remove the line, there may be an impact on the patient receiving their chemotherapy.

MONITORING OF AND INVESTIGATION OF INFECTIONS

361. When I joined the unit, I wasn't aware how the hospital monitors, investigates or acts upon infections being found but now I'm aware of a working group that

looks at all the data from infections. I know infections are monitored by microbiology from a medical point of view.

362. We have a working group, Central Line Associated Blood Stream Infections (CLABSI) that was up and running when I joined this role. I'm not sure when or why it was set up as it was established when I joined.
363. The group consists of surgeons, advanced practitioners, consultants, myself, and the senior charge nurse so it's quite a big group. Microbiology are involved in this as well. We look at the data every month at what infections we have. The CLASBI look at all the different infections within the lines on our ward.
364. The Chief Nurse gets given the information from the group and escalates it to Management. It's the Advanced Nurse Practitioner who collates it all. My side is from a communications point of view. Anything that comes out of the group, I take from an education point of view so I don't do any of the management of the process. The purpose is to understand line infections.
365. When we look at the data, we look at all the different types of cultures that have been identified and we put it on to a database that we are looking at. We look at how many lines that they have, how infections they have within a specific group may and what the different type of infections that have been identified on these cultures then all of that is reported.
366. Before being part of the CLASBI group, I knew there was a group that looked at the line infection data as they used to share the information in the wards. I'm not sure if they do the same thing hospital wide. The data they look at is obviously the type of line infection the patient has. They look at the different types of line infections, how many line infections the patient might get, and each patient is looked at and each infection is looked at, if that makes sense.
367. If they get positive cultures back for patients, they look at whether the line needs to be removed, and then whether the patient needs to get another line.

All the staff would get to see the information on the chart on the wall. It would show information about the different infections.

368. I'm not sure if our data is shared round the hospital or other wards. I think other areas may see our data, but I don't know what they do with it. We look at gold standard which is used throughout the world so we can see where we're sitting and how our infections are gold standard throughout the world. We only look at our own patient group.
369. When there was an increase of line infections on ward 2A, we started to look at our practices. Our children have always been sick naturally due to the type of patients they were, but more patients were getting sicker and it would be discovered that they had line infections.
370. It seemed that there were a lot of line infections and because of this, they started looking at our nursing practices as they wanted to ensure the nurses weren't doing anything that was causing an infection. It was demoralising for the nursing staff as our practices haven't changed for a long time and we still work that way. They were checking everything that we were doing.
371. As I've said before we did see patients that had positive cultures in Yorkhill. Unfortunately, it's the nature of putting a line in a child's chest that they do hold a risk of line infection, but it just felt there were more patients in ward 2A.
372. When you are on the floor, you are just told that the child has positive cultures and need antibiotics. As a Band 5 Nurse, you would be aware that maybe a child had an infection so the doctor would need to speak to microbiology because of what they found in the blood cultures.
373. As a Band 6 Nurse I would hear more information in the hand overs, about gram negative blood stream infections and they would go into all the different types of bacteria that would maybe be found in these.

374. I didn't have any specific concerns at this point, it was more around the fact that the patients were more sick than usual. They were coming in with line infections and we were seeing children that were sicker than they had previously been. That's maybe just how we were seeing it. It maybe wasn't the case, but it was how we felt.

IMPACT OF INFECTIONS ON PATIENTS

375. The impact of an infection on the patient would be that they maybe have longer in-patient stays, or need lines removed, those were the kind of things we were seeing. If a patient had an infection and needed a line to be removed, we would have to go in through the chest and remove the line surgically. The patient would require an anaesthetic, and then the surgeons would remove it.

376. Also if it maybe took a lot longer for the infection to come out, then the patient would maybe need different types of antibiotics.

INFECTION CONTROL

377. Before the increase in line infections, we would always be in contact with infection control if we had patients who had been identified as having something. Even it was someone we had sent a stool sample for who had been in isolation.

378. Infection control would call us and tell us what the patient had, and then ask if they were still in isolation or if they still had symptoms. We would keep them in isolation for 48 hours to see if the symptoms stopped. I think it's been since all of this started that infection control are more present on the ward, but I can't remember exactly when it started.

379. Now someone comes in and does a hand hygiene audit, I think these are done every month. They would stand in the middle of the ward and watch people wash their hands. I was never asked for my opinion about these, and I think the

results are reported back to the nurse in charge, but they may also speak to individuals.

380. Morale wasn't good, this was the time when we were still in Ward 2A I'm referring to. We still have these audits to this day although they aren't so frequent now. What happens during the audit is someone comes and watches everyone washing their hands, they note whether you're washing them appropriately and at appropriate times and ensuring you don't have any long sleeves on or watches, or if you're going into patient rooms, that they've been removed.
381. If you gel your hands, they check you are gelling them appropriately for the appropriate time. That still happens to this day. I didn't have a role in carrying out the audits.
382. There's also enhanced supervision I think, but I'm not completely certain, because in the role I'm doing just now, I'm not directly on the ward. I think the enhanced supervision is every six weeks, but it was every one to two weeks at one point. This is where the senior charge nurse, infection control, facilities and the chief nurse come up to do a walk around of the ward. They check all the areas.
383. Infection Control look at everything and check everything to make sure there is no dirt, and that the cleaning is being done correctly. The senior charge nurse walks round with them so they'll report back to that person on the ward and anything they find will be actioned straight away. For example, if there's dirt or dust that needs cleaned, it's done straight away.
384. There's also a report which comes out and the senior charge nurse will sign it when actions have been completed. It's stressful because we're under continuous scrutiny and we always do everything right. Those are the interactions we would have with Infection Control on top of the normal day to day stuff, for example, if your patient took ill or a positive sample was returned.

385. In Yorkhill, we didn't have the same involvement with infection control. We wouldn't interact with them unless there was a patient that came in with diarrhoea and vomiting but the cultures were negative, and we were trying to work out what to do with the patient. We would ask infection control for advice but that would be the only interaction we would have.
386. I have taken advice from infection control before at Yorkhill and have received the normal communications from them that all staff have had. I'm not aware of any other actions from infection control at that time. We would always work in conjunction with Infection Control.
387. If we had a patient that we maybe had concerns about, or we just wanted general advice, for example, if we see a patients come in with vomiting, but they are also on chemotherapy, we could just phone Infection Control and ask them for advice, we've always been able to do that. We've always been able to work closely with them and ask them for advice.
388. Although we have the enhanced supervision, I think our wards are always very clean and we had very high standards because of the patients' group that we have but they were looking at the high infection rates and it was the nurses that were being looked at.
389. We had very, very high standards for our patients just in general. All of our staff work very hard to process a patient's room. Even before everything happened, our ward has always been very clean.
390. We have schedules of what needs to be cleaned, if we finish using equipment, it should always be cleaned afterwards. So, we're always taking care to ensure that everything is as clean as possible, and we are working to the standards that we are supposed to keep our patients safe. So that's what I mean by that, it's always something that we particularly pay attention to for our patient group,

because it's important that the patients who are immunocompromised are in the safest environment possible.

391. I don't think any of our cleanliness or hygiene procedures have changed since I was at Yorkhill. As far as I'm aware, we followed the same processes. There are separate processes for cleaning different things, so there are some that have been added. For example, we now clean the chilled beams, that has been added since we moved to the RHC, but when we first moved, it was all the same processes. There were also different things put in place when Covid happened too.
392. I don't really have any observations of other areas in the hospital. I don't have any patients anywhere else in the hospital so I don't need to go anywhere else or work in another area. If patients are boarded out to other areas of the hospital, then the nursing staff in that area look after them under direction from us.
393. When we first moved to ward 6A, it was clean and empty. We followed our processes and kept the wards clean. It was the same in CDU. Our healthcare workers had very high standards and were doing most of the cleaning and they did a good job in keeping it clean.
394. They still audit our hand hygiene, and they audit our ANTT process. That's a peer review so they would come in and look at processes. Auditing is standard in the RHC for ANTT now and it's being rolled out to other areas, but I don't know how long it's been getting rolled out for. I'm not aware of anything else that's going on to look into other areas.
395. I wasn't involved in auditing as such. Infection control would do the hand hygiene and the enhanced supervision that would be fed back. Microbiology would be doing tests on the drains, but I wouldn't have received feedback from that.

396. There were measures brought in to try and assist with the rate of infections. They changed our practice for accessing the central lines as I mentioned earlier. Also, we have the port protectors that I also mentioned earlier which are capped on the end of the line. They introduced taurolock into the line. They used to block the line with a ketrine based substance that stopped the line from blocking, but they changed to stat lock which is microbial. It's an antimicrobial, and it has an anticoagulant effect to stop the lines from blocking the line, so they don't get infections. This was whilst I was on Ward 6A.
397. These are the same things as the green caps. The green caps are port protectors, but we've changed over to blue ones now. The children were able to move the green ones, so we moved to a different company.
398. I think the caps were introduced as part of the measures for decontaminating the line. The previous lines would have nothing on them. Children would touch them so port protectors were placed at the end of the line, so they were protected all the time.
399. There was no further advice that I can remember when this was going on to manage infection. Probably because the type of unit that we were in, as part of our training, we are trained to treat these children that are immunocompromised. You're trained to make sure they don't get an infection.
400. I was only at a couple of the IMT meetings and I can't recall there being any further information to give to families that raised concerns about the infections.
401. However, we wouldn't be managing these patients; we would be nursing them. Management of the patients would come from medical staff, microbiology and infection control for treating that infection. From a nursing point of view, we nursed on the advice we were given from the Infection Control team, the medical team and microbiology.

402. At the staff meetings that were held for our assurance, I was only at a couple of them so I can't remember who it was that would give us the information about the infections, whether it was microbiology or the medics.
403. I think there was information given out and articles given to us but I can't remember who gave us them. We were given an article when the Cryptococcus was found, for example.

UNCOMMON INFECTIONS IN PATIENTS

404. I can only remember the Cryptococcus. I was aware of a case where someone had suffered an infection that was linked to the hospital environment, and it was the Cryptococcus.
405. I discussed earlier that we were given the information at the time but I can't remember whether it was through a communication or if it was a subject discussed with the Service manager – or even if it was passed to us when I was either days off or on leave, but I do remember being aware. I only remember Cryptococcus as it was one patient.
406. We were given information round about what it was and what caused it and then we were given advice on the treatment that should be given to the patient and how to give the treatment. We wouldn't be managing these patients though; we would be nursing them. The management side would come from the medical staff and microbiologists that were treating the infection so from a nursing point of view, we would nurse that patient from the advice we were given from the medical team and microbiology.
407. I can't remember who gave us the information about the type of infection it was, but I do remember it was the Cryptococcus and that it was the pigeons that had caused it.

408. I wasn't aware of the Cryptococcus being related to the water or anything; as I've said earlier on, I was never told there was anything wrong with the water. I had a basic understanding that it was caused by pigeon droppings. There was information in relation to it and evidence round it being caused by pigeon droppings, but I can't recall how it was brought to my attention. I can't comment on the impact the infection had on the patient.

COMMUNICATION – CORE BRIEFS

409. Core Briefs are daily briefings from the go out to everyone from the GGC via their emails. It's a general briefing or newsletter type document, if you read through it, there might be something to do with the adult hospital and then it'll go to the paediatrics, or it'll be used to promote something like wellbeing. A lot of information comes out in the Core Briefings, so if any major work was being done in the hospital there would have been something about that, although it would most likely be general information, not a detailed breakdown.

410. As an example, at the moment they're doing some more work in the hospital, so there is information in the Core Briefs about guidelines the hospital has been given which has led to the work being done. However, there are often articles about promoting things such as wellbeing sessions. They will also have articles about financial difficulties and will guide you to places that can give help or support.

411. There probably wouldn't be anything in the Core Briefs about outbreaks of infection if they were limited to a specific area. However, if there is anything changing in respect of protocols or procedures, there may be something about that.

412. For example, just now we are changing one of our leukemic protocols, but it's only for paediatrics, so I wouldn't expect to see that sort of thing on the Core Briefs. Once the details have been finalised, I would find the details out from the Cancer Network rather than through the Core Briefs.

413. For something like that, I will work within our unit with the Pharmacy Consultant, and we will look at the protocol before it starts so that we can educate the practitioners, but that's not going to be hospital-wide. If it's going to impact the hospital, then it would be on the hospital guidelines website.
414. So I think the Core Briefs, or the ones I have read, tend to be more for positive news items, saying 'well done,' or telling us what we've achieved, or telling us about work that's being done to make things better for the patients or ourselves, all with emphasis on the more positive stuff.

COMMUNICATION WITH STAFF – HUDDLES

415. We have Huddles twice a day in the RHC, in the morning and then in the afternoon. Basically, all the wards will attend these, they will be led by a co-ordinator, the Lead Nurse who's on for that day, the Hospital Co-Ordinator, and your Bed Manager. I've been away from doing Huddles for a long time, however what happens is they will ask staff to look at patient numbers, acuity of patients, whether the patients are 'Watchers' (i.e. requiring close monitoring), any high dependency patients and what their acuity is, etc.
416. This helps our Intensive Care Unit, who are represented there, as they can make notes of the higher acuity patients in case they end up having to look after them. They will also look at staffing on for each shift, what the numbers are like, whether numbers are short, and they will ask you to identify whether you are safe or not safe in terms of staffing levels.

IMPACT ON SELF

417. Everything that happened during this time had a massive impact on me. I was concerned about the patients, and I was also in charge of staff at the time, dealing with their concerns too. During this time there was a lot of change,

there were a lot of things happening, it was very unsettling, very stressful. Also, because the floor staff morale was very low, that concerned the patients too.

418. Being in hospital is always a very stressful time for these patients and families anyway, and I think we always try to have really good relationships with our families, and we always have done that very well, but there were some occasions where we felt that trust was at risk, such as when the families thought we knew more than they did. It was a difficult time for everyone.

419. I have struggled a lot with it all. I ended up having to put a lot of time in at work, and I ended up having to book some time off from work also. It was just quite a lot to take. I think us nurses were very well at just doing what we had to do at the time and making sure our patients were safe at the time, but this took its toll.

420. When all this was happening, we just kept going, and kept going, and kept going. I think we had all kept going as best we could for as long as we could. All we could do was to make sure we looked after our patients to the best of our ability, we just gave them the best care that we possibly could under the circumstances.

421. Now, looking back and actually having time to think about it, because I'm now out of it all, this is probably when it has hit me the most. When I do think about it all, I do still get quite emotional.

422. I believe that the facts stated in this witness statement are true, that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Witness Statement of

Dr Dermot Murphy

Witness Details

1. My name is Dermot Matthew Murphy. I am a Consultant Paediatric Oncologist at the Royal Hospital for Children (RHC), Glasgow. My employer is NHS Greater Glasgow and Clyde.

Background, General and Overview

2. I have worked in the RHC in Glasgow since January 2003, both at Yorkhill and since the hospital moved to the Queen Elizabeth University Hospital (QEUH) Campus in 2015. Previously, between 1989 and 2003, I worked in various hospitals in England and Australia, including in training posts in Paediatric Haematology and Oncology.
3. In addition to my current Consultant role, since 2020 I have been an Honorary Clinical Associate Professor at the University of Glasgow, College of Medical, Veterinary and Life Sciences and, since late 2021, I have been National Clinical Director for the Managed Service Network for Children and Young People with Cancer.
4. My professional qualifications gained between 1988 and 2007, including an MBBS degree, which is Bachelor of Medicine, Bachelor of Surgery, from the University of London, Imperial College, which at the time was Charing Cross and Westminster Medical School. I have a membership of the Royal College of Physicians of London, I have a fellowship of the Royal College of Paediatrics and Child Health and I have a Master of Science in Epidemiology from The London School of Hygiene and Tropical Medicine and a Diploma from the London School of Hygiene and Tropical Medicine.

Professional Background

5. I have held consultant posts in paediatric oncology for over 19 years. During this time, I have consolidated my interests in neuroblastoma and palliative care. I sat on the United Kingdom Children's Cancer Study Group (UKCCSG) Neuroblastoma Subgroup and was vice chair of the group as the organisation evolved into the Children's Cancer and Leukaemia Group (CCLG).
6. I spearheaded the provision of a therapeutic radio-nucleotide service in the RHC and established the Scottish Molecular Radiotherapy Service (SMaRT), one of only three in the British Isles and only one of five in Western Europe. I am the Clinical Director of the Scottish Molecular Radiotherapy Service for Children and Young Adults (SMaRT Kids)
7. I am very actively involved in the Innovative Therapies for Children with Cancer (ITCC) phase I/II unit in Glasgow and am currently and have been Principal Investigator on numerous phase I/II/III trials, and a co-investigator on many more.
8. I advised the UK Government on the use of cannabis related medical products as an author of the recently published National Institute for Health and Care Excellence (NICE) review.
9. I am part of the Relapsed Neuroblastoma (BEACON) Working Group of the International Society of Paediatric Oncology (SIOP) Neuroblastoma subgroup (SIOPEN). We design and implement salvage strategies for children with relapsed Neuroblastoma and ensure these are delivered within a trial framework.
10. I also have extensive Palliative Care Experience and have recently finished my rotation on the executive of the Association of Paediatric Palliative Medicine (APPM). I was treasurer for 3 years. This organisation represents doctors working in paediatric palliative care across all settings in the UK and Republic of

Ireland. It is responsible for a whole host of resources including the Paediatric Palliative Care Master Formulary and for providing advice to the Royal Colleges and General Medical Council on matters pertaining to Paediatric Palliative Care. We work closely with Together for Short Lives and hold an annual educational meeting as well as organising the annual Palliative Care session at the Royal College of Paediatrics and Child Health meeting. Prior to joining the APPM executive I chaired the Children's Cancer and Leukaemia Group Palliative Care subgroup.

11. I was Co-Chair (with the chief executive of CHAS) of The Scottish Children and Young Peoples Palliative Care Executive (SCYPPEX). I was a founder member of this group and central to writing the Scottish Government Framework for Paediatric Palliative Care Document which was launched with a Chief Executives' Letter in December 2012.

Overview of Role in RHC

12. The role of a Consultant Paediatric Oncologist is essentially a children's doctor who has subspeciality training in solid tumour malignancy, so I look after children and young adults who have a malignant diagnosis of their solid organs, including the brain. At the weekends and at nights, I cover the children who have a malignant diagnosis within their blood – that's leukaemia and lymphoma patients. Prior to the formation of the Paediatric Palliative Medicine department within RHC I also had a role as the lead practitioner for palliative medicine within the hospital and a greater role outwith the hospital at a strategic level. I currently have a greater strategic role outwith the hospital as the National Clinical Director for Children and Young People with Cancer.
13. My clinical role is unchanged since moving to the RHC in 2015 but, on the strategic side, I dropped the palliative care/palliative medicine role about three or four years ago. I took on the National Clinical Director role last year.
14. In my consultant role, I work with a group of four colleagues, equating to about three and a half full time equivalents, and we have a system whereby for a week

you are completely front facing, so you accept all referrals for children who have either got cancer that you know about or referrals from colleagues or from primary care to see if children have a malignancy. That would involve being on the ward. On a normal day, I would start with a ward handover at 9am. I would round with my junior colleagues. Round means that I go round and see the patients and we go through their results, examining and discussing them and making decisions. That normally takes two or three hours. Then I will normally go over to day care and see children who don't need to be in hospital but need to have some review. I should also clarify that "Junior" is a very pejorative phrase. "Junior" in the health service just means anybody who's not a consultant, so a bit like Junior Counsel. You could be a very experienced lawyer and still be called "Junior," so these are experienced children's doctors or some of them are still in their training stages. I'll round with them.

15. Potentially, in the afternoon, you are then going off to wards around the hospital to see children who may or may not have cancers, to aid the team in working them up as part of a diagnostic process. It may be that the team are as sure as they can be that they have a child who's got cancer and they would refer them over to me. In those circumstances, I would see the child in my own unit – again, normally on day care – to facilitate that diagnostic process. We take calls from colleagues around Scotland, either from district general hospitals with referrals or from one of the other two Principal Treatment Centres, in Edinburgh and Aberdeen, for advice and discussion. We have some fixed sessions, so Wednesday afternoon is my clinic, for instance, where I see follow-up patients. On Mondays at midday, we have a neuro-oncology meeting, which is where we discuss all the new referrals with neurological tumours – this is a multidisciplinary team (MDT) meeting. On Wednesday afternoon have what we call a Tumour Board, which is another MDT discussion of all new patients and all patients that are currently undergoing therapy who have had imaging or pathology to review, and we would have colleagues who would refer into that tumour board. Again, that's about ensuring diagnosis and that the correct treatment plan is being instigated and you get peer input into your decision making and peer approval of that decision making.

16. Other fixed commitments are a Monday afternoon meeting, where every patient who has either a solid tumour, brain tumour or central nervous system tumour - so spinal cord as well – is discussed. “Solid tumour” is any tumour that isn't in your blood, so it is in a bit of your body. In most of these meetings, there will be nurses, physiotherapists, occupational therapists, every colleague that you can imagine working in a hospital, present so that the patient is at the middle of everything, and you don't forget anything. For instance, I won't focus on what their home needs are, but their social worker certainly will. I won't be thinking too much about their gait, but their physiotherapist will. I won't be thinking too much about their weight, but their dietician will. You therefore need all those folk who are chipping in to ensure that each child has every potential need addressed. That's a typical kind of service week, it's extremely busy.
17. The week after your service week, you are mainly picking up on the new referrals you've taken during the week prior, because they'll need working up. For instance, a child comes in with a lump in their stomach will need to have blood tests done, urine tests and potentially biopsies too. They'll need to have lines put in, bone marrow done, lumbar punctures and all kinds of various procedures. In your week after you've seen the patient, you're either setting those things up or you're getting the results of the things that you've set up previously. Then you will be working out a treatment plan, and obviously that means meeting the patient and the families because not only do you need to talk to your colleagues, there is also the direct communication with the patients and families.
18. The third week is mainly about doing all the paperwork you should've been doing in the last two weeks, but you couldn't do because you were doing all the clinical work.
19. That's a very broad summary of the cycle. I've left out the academic work we do because paediatric haemato-oncology is very evidence driven subject. We are constantly updating ourselves, we're constantly part of a clinical trial process, we have a big clinical trials team, and we meet up with them weekly. From that, again we'll be meeting up with the families as well as sending samples off

around the UK, occasionally to Europe and the USA, to get further opinions about the tests done. All this needs to be co-ordinated and discussed with the wider clinical team. My working week is probably summed up as about 80 per cent clinical, 10 per cent strategic and 10 per cent clinical research.

20. Clinical in this context means anything directly related to patient care. That might not be front facing. I might not be therefore spending 80 per cent of my time with children and families, but I will be spending 80 per cent of my time doing nothing but working on children with cancer and communicating with their families. So, the big clinical meetings that I described, like the Tumour Boards and the neuro-oncology sessions, are absolutely vital to (a) diagnosis and (b) providing a robust, transparent treatment pathway and delivering that treatment pathway.
21. Attendance at Incident Management Team meetings (IMTs) would not be in the 80% as I wouldn't call that clinical work, they're extraordinary so, at least prior to the problems at the hospital, a typical week would not have an IMT in it. In fact, I think if you went to any other hospital in the country and said, "Do you have an IMT?" they would have no concept of what an IMT was. IMTs would not form part of our routine clinical practice up until the problems started.
22. We do conduct root cause analysis with every infection that comes up, so that now becomes part of my general clinical role. When I'm on service, I will be liaising with my microbiology and infection control colleagues about bugs that have come up in blood or in sputum or wherever they've been found and whether it is a routine type of infection or not. That is routine for us.

Function of Department

23. We are a haematology and an oncology department. Oncology is relatively simple to define; that is the management of children and young adults with solid and central nervous system tumours, so, essentially, anything that isn't a leukaemia, or a lymphoma is looked after by us. Our haematology colleagues look after blood malignancy, so that's leukaemia and lymphoma, but they also

have a wide non-malignant haematology practice. This includes things like clotting disorders, sickle cell disease, haemophilia. They also have a laboratory remit; all the key haematology blood tests that get done in the RHC come under them, so they have a lab role as well as a clinical role.

24. We also have a bone marrow transplant or stem cell transplant service which is embedded within the haemato-oncology department, and that is operated jointly between the oncologists and the haematologists, though mainly driven by the haematologists.

Reporting Structure

25. The named lead for the stem cell transplant service is Professor Brenda Gibson. She is our clinical lead. Though the clinical lead is your immediate line manager, it's a bit of a misnomer as they have very little in terms of managerial responsibility for you. They certainly have very little in terms of clinical responsibility for what you do; that's your peers. There are three and a half whole time equivalent oncologists, and there were five and a half haematologists who spend various amounts of time doing different things, for instance one of them spends most of the time at the university; one of them spends most of his time doing non-malignant haematology and one spends most of her time doing transplant. One has a remit for teenagers and young adults and one for leukaemia and lymphoma. They had differing roles, but they looked after that service together. So, we are a single department, essentially looking after children with malignancy of all sorts, plus the laboratory haematology, and the non-malignant haematology patients.
26. Along with Brenda Gibson as our clinical lead, the manager for sub-specialties within the RHC is Dr Philip Davis. Again, we have very little to do with Phil, beyond routine tasks such as signing off job plans." Our next line manager is Mr Alan Mathers, who is the Clinical Director for Women's and Children's Services. If we had any major concern about clinical services, we would usually go straight to Alan. Alan will then report up into the GGC clinical managerial

structure, and the chain goes up to Dr Jennifer Armstrong, Medical Director of GG&C and Ms Jane Grant Chief Executive of GG&C.

27. On the non-clinical managerial side of things, it's now Jamie Redfern who is the Director, Women's and Children's Services in Glasgow. Kevin Hill was his immediate predecessor and in charge during most of the infections period but Jamie has always been the conduit of most of our discussions, even when he was one rung below. Now, with Jamie in Kevin's post, he is still my go-to person. He then feeds up again into the GGC managerial hierarchy described above.
28. If I need to escalate an issue, the route depends on what the issue is. If it is an issue relating to departmental clinical concerns, then I would go to Brenda Gibson or Phil Davis and ultimately to Alan Mathers. If it were a non-clinical issue it would also go via service management colleagues and ultimately to Jamie Redfern, or prior to his promotion, Kevin Hill.

Management of Children's Cancer

29. We deal in very rare diagnoses. Nearly everything I deal with in a normal day, while common and routine for me - is extremely rare and I can't over-emphasise just how rare children's cancer is, which is why it's regionalised as it is. There are only 20 centres within the British Isles that do children's cancer, including three in Scotland. When I see a patient with a diagnosis that I only see once every five years or ten years, I will be phoning my colleagues, emailing my contacts around Scotland, the United Kingdom, Europe, and worldwide. Location doesn't matter because our world is so small, we know who the absolute experts are. It's fairly common for me to email to three or four colleagues, in different parts of the world to say, "I am looking after a child with an incredibly rare diagnosis, or a clinical picture that doesn't quite add up. This is what our local discussions have been. This is what our discussions within the UK clinical community have been. Have you seen something similar? What would your take on this situation be? Would you propose a similar treatment plan, or can you offer something we can't offer in the UK"?

30. I would define this as clinical activity and it takes a lot of time. You have to synthesise all the information and evidence. So clinical work isn't patient facing the whole time, but the synthesis of all that their information is. You then have to go and talk to the patient to say, "Do you remember I was telling you that I would be talking to whoever in Germany or whoever in France or The USA or Australia or Italy? Well, I emailed three of them and we've got three slightly different answers here and this is how we've synthesised all those three answers together."
31. We have good engagement with the other centres in Scotland and we have a very tight network with them. We have a very close working relationship with Grampian. Grampian – which is Aberdeen - join our Tumour Board and our neuro-oncology meetings, which means that they have their discussions about patient management with us. They send all their children who are going to require intensive care after surgery, which is the vast majority of children who require surgery, to us to have their surgery done in the RHC. They also send us all their brain tumours for surgery and all patients that require radiotherapy or stem cell transplant.

National and International Forums

32. In Scotland, we have something called the Managed Service Network for Children and Young People with Cancer, to which I referred earlier, and that has all kinds of network functions, mainly strategic but some clinical. The MSN organises joint education sessions and has a couple of annual meetings. It has a governance board, ensuring the MSN functions and delivers in an appropriate manner. However, the network that GG&C has with Grampian, is clinical. All patients in Scotland who require a stem cell transplant or a bone marrow transplant – it's a double name – come to Glasgow to have that done because there's a national bone marrow transplant service here. Edinburgh still do their own autografts which are stem cell transplants using the same person's cells, but Edinburgh send over their complicated transplants (allografts) which are transplants using donor stem cells. Any patient that requires intensive renal

support comes to Glasgow, as does any patient who requires cardiothoracic surgery or ECMO. There are very tightly defined pathways and clinical communication pathways across Scotland.

33. Across the British Isles we have the Children's Cancer and Leukaemia Group, (CCLG) which is an organisation that produces guidelines and policy, talks to government in England and Wales (but not directly in Scotland or Northern Ireland), and acts as an umbrella organisation for the UK and Irish children's cancer centres. Outwith the major treatment centres, what we call the PTCs, (Principal Treatment Centres) we have shared care units. These are district general hospitals or, in some cases, large teaching hospitals that don't have paediatric oncology as part of their portfolio but will look after children who are being treated for cancer, who have things like infection. Some of them we'll give push chemotherapy but only a few give infusional chemotherapy, illustrating the different levels of shared care. Again, that's all networked up.
34. Then within Europe we have an organisation called SIOP, which is Société Internationale D'oncologie Pédiatrique, the International Society of Paediatric Oncology, which is our major trial organisation now. When children's cancer first became a recognised speciality, about 35 years ago, in the UK we could do the kind of clinical trials we needed to do to improve outcomes. On a population of 50-70 million, you could do that, because at that time, the outcomes were so poor, to demonstrate an improvement, you didn't need a big population. Because we have got much better at treating children with cancer, you now need much bigger numbers in each trial arm to be able to prove something. We can't do that within the United Kingdom, so we do that mainly on a European basis.
35. There is a similar organisation in the United States called the COG, the Children's Oncology Group, and they are a trial-based organisation producing guidelines. For instance, every child who has a diagnosis of a more common children's cancer, such as Hodgkin's lymphoma, neuroblastoma, or Wilm's tumour, they will be treated the same in Glasgow as they will in Ghent or Gdansk. There is a European approach to that, but we now work very closely

with our American colleagues so that our trials interdigitate. For example, the Americans will answer a set of questions that the Europeans aren't asking, and then the next European trial will answer questions that are either brought up by that American trial or that American trial hasn't addressed. You are not in competition with one another, you're building on one another to move forward. Those two organisations work very closely together. The Americans have become much more integrated into SIOP, so COG and SIOP work most closely together and that gives you a much bigger international network with whom you can discuss clinical questions. There are some trials that open in both the USA and Europe but that is rare.

36. Though these groups meet regularly, with SIOP, for instance, meeting every year, very rarely do you go and see someone else's facility. If the meeting was in Glasgow, we may offer that delegates can come and have a look at the RHC, but frankly it's not a great use of your time. You're there to network and to learn. While seeing a children's hospital is interesting, and you can go "Oh, look at that, they do that better than us," you don't learn very much. Also, you don't want loads of people traipsing through your children's cancer unit for many reasons, such as infection or privacy. In fact, I've been a consultant for almost 20 years now, going to these meetings for about 25-30 years, but I can only ever remember visiting a facility once, and that was a children's hospice, not a children's cancer unit, just to see what they had set up in Vancouver.
37. If I'm across meeting colleagues in Aberdeen or in Edinburgh and they have a patient on the ward with a diagnosis I have a particular interest in, and they say, "Oh, whilst you're here can we just go, and can you just give some advice on that?" I may say, "Let's go and see the child or their family" and that way I get to see their unit, but again, most of the time, we would either be sitting in their education suite or sitting in their office – we wouldn't necessarily be going onto the ward.

Involvement in Design of RHC

38. In the journey to being a consultant it is very rare that you only work in one hospital. I've lost count of the number of hospitals I've worked in, so you take all that with you, and if you visit a colleague for a clinical meeting or any other reason, you might be asked to go and see a patient that they've got because it's a particular interest of yours, so you get to know what other Children's Hospitals look like.
39. My experience has therefore helped me compare different provision of facilities. When the process of building the New Children's Hospital started, we were told that not only would the old services be replicated, the new facility would enable us to improve our services. So, the bare minimum was that what we had in Yorkhill would be replicated or improved upon, from the number of beds, the type of bed, (for instance the number of bone marrow transplant specific beds) and an improvement would be a molecular radiotherapy suite. We would have pharmacy in the same place, we would have same amount of children's play areas, same amount of parents' accommodation. It didn't turn out to be that way, but that was our starting point.
40. Lots of design is actually dictated by either UK Government or Scottish Government policy, so there'll be a document that says "A room for a child in a hospital has to be a minimum size. It has to have a bathroom. It has to have x, y and z". There are Health Technical Manuals and outside of those, there are also other manuals that define what these facilities should be. The Facilities team will be able to comment on design and technical issues.
41. For instance, we couldn't have said, "For that particular group of patients, they don't need that much space." Things like minimum space requirements were laid down. Aspects that we could control or try to control were things like the number of beds that we had, what those beds would be used for, and we thought we were in control of things like playroom space, parental and kitchen space.

42. I can't recall precisely when we were told that the Children's Hospital was going to be built and that our input would be required. It was maybe four or five years before the opening and probably three years before construction started.
43. Before the Children's Hospital was built, there was a Clinical Director of the new Children's Hospital who was the ex-Clinical Director of Yorkhill. He had a design team underneath him of architects, architectural technicians – I'm not sure of the background for a lot of these folk – and they would sit with you and say, "Okay, tell us what you want, and we will go away and design your unit for you." Then they'd come back and they'd say, "What do you think about this? So that level of discussion was being had and, in some ways, we got lost in the minutia and did not focus as well as we should that vital colleagues were not to be housed in the new unit: pharmacy, the CLIC Sergeant social workers, the outreach nurses. I think we failed to provide medical leadership and the voice of the department was not heard.
44. On how we input to the design: there were meetings of the Yorkhill Medical Staff Association, YMSA, which was the consultant body, to get their input into the design of the Children's Hospital as a whole. That's where things like, "Why are we building next to sewage works?", were brought up. Total number of beds how was the out-patients going to work – all those kinds of things. Then, each individual department was assigned a design team and you had departmental meetings with that team. I'm sure that my nursing and managerial colleagues would have had similar YMSA-type meetings for their staff groups, but what they were, I don't know. Within the department, we had the architect design team come and visit us, so we would have meetings in our seminar room – which wasn't replicated in the new hospital- and in attendance would be nursing colleagues, Allied Health Professionals (AHPs) and junior colleagues, discussing what was important. I think we might also have had some form of parental involvement. I can't remember how we engaged with them, but we had input from past parents into what they would like from the ward.

45. I can remember sitting in a planning group very early on and looking at bed numbers and, having a training in epidemiology, I thought that the size of proposed Children's Hospital was not going to be big enough. There was that kind of very early engagement on big-picture issues. How many beds are we going to need, how many out-patients, etc. Then there was some consultation on design, which was about how many beds do we need on the unit and physically where would they be and where would our office space be, etc. We had input into that but within a prescribed envelope. For instance, the shape of the building, we had no input into. The racetrack design, that was an architectural feature, we had no input into that.
46. We did have input into what's called adjacencies, so where the nursing station should be in relationship to the high-risk patients. We had input into soft facilities, so patients' kitchens, bedrooms, play areas and things like that. We had input into where the pharmacy should be.
47. However, having input and being listened to – having our input reflected in the outcomes – were two different things. For instance, we had a pharmacy on the ward in the old Yorkhill, where they did prep and made medicines up. There was a pharmacist's office there and we clearly said, "This is actually vital to what we do because we work so very closely with our pharmacy colleagues," We were very clearly told, "Well, that's just not going to happen." so what we could ask for – bearing in mind that that initial premise of, "You will get, as a base minimum, what you have in Yorkhill,"- and what was provided were certainly not the same thing.
48. In terms of input into design of the RHC, I would summarise by saying that while we had input, our input was listened to but not acted upon. Others may take a different view.
49. What we wanted, very clearly, was to have at least the same facilities we had in Yorkhill. That included the size and accessibility for the children's playroom, which we thought was really important. A classroom – it was called a school but essentially a classroom - we thought that was really important too. We thought

that having the pharmacists on the ward was really important, we thought it important to have the CLIC Sargent, (now called Young Lives V Cancer) social work department within the fabric of the unit. There was a separate parent bedroom in the old facility at Yorkhill – we thought that was important and it was really liked by families. The other thing we thought was really, really important was to have a meeting room/education room where we would go to do all those various meetings that I described earlier, a single focal point that we could go to and use. We had that in Yorkhill, where it was called the Schiehallion seminar room. We thought that was vital for the functioning of the unit, it provided central physical hub, but more importantly it made for easy communication between staff and was vital for cohesive team working.

50. We did have some internal disagreements about design, which is to be expected: some of my colleagues thought it was important to keep our office space on the ward. Personally, I thought it was important that we didn't have our office space on the ward because I thought we were too accessible, and anybody could knock on your door any time. However, while there would have been differences of opinion about design elements there was unanimity of opinion, about what was vital, which are the things I have described.
51. In terms of services like water and ventilation, etc, which were to become problems, we had no discussion outwith our clinical expertise. This was the domain of technical experts. Having clean water and safe and effective ventilation is a given in any children's hospital and would not even have been thought an issue by clinicians.
52. With regard to the QEUH, I had no dealings at all with the adult hospital, at least in terms in terms of design and build. When we first moved onto the site, our only engagement was that we had shared office space and we had shared laboratory facilities. The two hospitals are physically linked, so we walk through the adult hospital to get to the Children's Hospital, but in terms of design or room layout, or what we would be given, we had absolutely no idea. The only thing that we were insistent on was that we didn't move into the Children's Hospital until the adult hospital was finished, because whenever there's building work,

you throw up fungi into the air. For immuno-compromised patients, there was very well-established literature that, once you started building around immunocompromised patients, there was an increase in the number of fungal infections these patients get, whether they were children or adults. We were clear that we couldn't move into the site until the majority of the build, if not all the build, had been done, because that would increase the risk of what's called aspergillosis, particularly in our population. That's the only input we had regarding the adult hospital site.

Proximity to Sewage Works and Odour

53. One thing that everybody was concerned about was the proximity to the sewage works and we were very, very disappointed that the Southern General site was chosen over the Gartnavel site, partly because of the huge sewage works there. You still get the smell of sewage coming into the building, but we were told not to worry and that it would all be sorted. I think that remains a concern for lots of people. This is where your specialism can only take you so far. We certainly asked the question because it seems very obvious, very axiomatic, that you shouldn't build a major hospital next to a sewage works. We were told, that although our concerns were valid the advice was that, from an infection perspective, it was not an issue. Furthermore, we were reassured that the whole thing was to be made smell-proof. To be frank, the Southern General was on the site, and no one was jumping up and down saying there's a huge increase in infections in the Southern General compared with the Victoria or with the Royal or Western or anywhere else.
54. Would I have chosen to have put Europe's biggest hospital next to a sewage work? No, not in the slightest. Do I still think it's a crazy idea? Yes, I do, but that's not about increase in infection. I don't believe the sewage works has any bearing on any infections in the Southern site or the QE site. Am I qualified to say that? Absolutely not, but I suspect that that's the case. But, from a comfort/worker/visitor/patient perspective, do you really want to go to a hospital that smells of sewage? No, of course you don't. It would have been nice if that wasn't the case. Nobody ever thought that we would run up against the

problems that were to follow, and therefore no clinicians thought we needed to have a mitigation strategy for sewage-based infection. You just assume that when you have a team building a hospital, they know all this stuff and they do it right.

55. The earlier concerns about the smell proved well founded after the new building opened. It couldn't be ignored. However, I would say that the smell impacted comfort rather than safety. It is certainly unpleasant and although the smell wasn't as bad in the hospital because you can't open the windows, getting out of your car and going into the building, or walking across from the office blocks into the hospital was, and remains, horrible.
56. I can certainly recall patients and their parents complaining about the smell. I cannot specifically recall patients and families raising safety concerns about the smells, but I suspect that some of them would have asked questions. I would have felt safe reassuring them because that's very clearly that the whole of the campus was being given. It wasn't something that was exclusive to us and the smell covered the whole campus. When we started getting a higher number of gut-associated infections, so Gram-negative infections, certainly we were asking, "Is this anything to do with the smell from the sewage works?" It seemed an obvious question. But the windows didn't open and we would naturally have assumed that the ventilation spec did not allow infections to be brought in. Additionally, we were reassured by our infectious diseases and control of infection colleagues that these were not the kind of infections that you would see as a direct consequence of being close to a sewage works. I would have no reason to disbelieve them.

Sign Off Process for New Schiehallion Unit

57. Formally, I think it fell to Prof Gibson, as the "link clinician"- to sign off that we were content with the building plans for the new Schiehallion in the new Children's Hospital, but I don't think there were clear terms of reference about who could and who could not sign off the plans. It would have been a very

powerful thing for managerial colleagues if they had managed to get a consultant to sign it off, regardless of which consultant it was, and they would have regarded the sign-off as being on behalf of the department. In my view, only Prof Gibson would have been able to sign off for the whole department.

58. In terms of the sign off process, we were approached by one of the “Design Assistants” in the new Children’s Hospital development team, who I think had a senior role in the managerial structure. I can’t recall her name. She had been talking to us about what was possible and what wasn’t possible. She would have gone to Prof Gibson first to say “Here’s the completed plan. Can you sign this off?” and Prof Gibson quite correctly said “No.” We would have had discussion about that informally amongst ourselves.
59. This was while we were still in the old Yorkhill, so my office was about two metres from Prof Gibson’s office and the totality of the consultants’ offices were all next to one another in a row and opposite one another. There would have been an informal discussion among us in one of those offices and we also had formal discussions about it within our governance group.
60. I would say there was a degree of pressure from the New Children’s Hospital team to sign this off. I can’t recall specifically who was pushing, and I wouldn’t say it was undue pressure, (it didn’t come with any threats or anything like that if the things weren’t signed off) but there was clearly a strong desire from them to get sign-off.
61. I can recall long meetings very early on Friday mornings, with plans, 3D models etc. I was doing up my house at the time, so I was used to looking at plans, but it had taken me a long time to get familiar with building plans and it was clear that lots of colleagues were on a similar learning curve. There were debates like, “Isn’t the room laid out this way or that way? I don’t think there was a formal constitution to those meetings. What I do know is that those thoughts were taken away, distilled, and brought back to us, and as a group of clinicians it was very clear that we weren’t getting what we asked for, and it was very clear to us that we weren’t getting at least as good as we were leaving.

62. There were some very obvious improvements like the size of the rooms, the fact that most of them were single cubicles, so the “hotel facilities”, if you like, were a vast improvement on what we had in Yorkhill. What was not as good was the play space there was for children, the education space there was for children, the ability for our outreach nursing colleagues to have office space, the ability for our pharmacy colleagues to be sitting with us on the ward. The absence of any space for social work colleagues was also a mis-step. The lack of a seminar room was dreadful for us. Simple things like not having enough toilets meant that you had to leave the ward to go use the facilities. There were many, many design features about the unit that we were not happy with. What we were completely unaware of, and never, ever thought that we needed be aware of, was the integral build quality and safety of the thing that was being handed over to us. We thought, I think not unreasonably, that it would be a very safe environment to work in, and to be frank, probably a better environment than a crumbling 1970s hospital.
63. Did these things impact on patient care or safety? That’s a difficult one. Take the toilet issue. Does that impact on patient care? I think it probably does. Could you demonstrate that? No. Does it impact on morale? Absolutely, yes, it does. Does that impact on patient care? Yes, very probably it does. I think not having pharmacy on the ward has a big impact on patient care. I think not having a seminar room that we can all go to – that, actually, in terms of ward cohesion, has a very clear impact on patient care. Not having a nurse’s common room where you can go and have a cup of tea and have the safe space to offload frustrations very clearly has an impact on cohesion. Now, if you were to say, has that changed our survival rate for children with cancer in Scotland? No, it hasn’t. Has it changed the decision-making process or the outcomes of decision-making process? No, it probably hasn’t. But health is not all about “Are you cured or are you not cured?” health is about how do you feel whilst you are being cured, otherwise we wouldn’t have moved off the Yorkhill site; we’d all still be there now. Do I think it impacted on our families? Hugely. Do I think it impacted on our staff? Hugely. Did it impact on our ability to cure patients with cancer? No, probably not.

64. When we were told what we were going to get, I think by the liaison person for the new Children's Hospital, we made clear that we were not happy, but we were told: "That's what you're getting." There was obviously an awful lot of toing and froing and promises of further discussion but the bottom line was you'll get what you're given, and this is what you're being given – which is why none of us would sign off on it at the end because none of us wanted to accept responsibility for the compromise that was given to us. Every single one of us thought that we were getting less than we had been promised and less than we had negotiated for.
65. Perhaps, if you were on the other side of the table, there would have been thoughts like "These guys are asking for way too much and they're asking for stuff they know we can't deliver, and so we're just going to have to tell them." But we didn't feel we were asking for too much or anything extraordinary compared with either what we had or what we knew was in place in other hospitals. So, when we ended up with what was very clearly, on a plan, not what we had in Yorkhill, no one was going to sign that plan off. We were still in Yorkhill at the time, so omissions, like the playroom or the seminar room, were obvious.
66. Very clearly, we were being offered a building that would allow us to maintain our same cure rates, but that's very different from what we hoped we would be getting, which was a 21st century environment for children and young people who have got cancer, and for the people who are looking after them. Those are two very different things.
67. Why did we not get what we wanted? Clearly there was a cost element. We looked at other facilities in the new hospital, like the Emergency Room, or the Intensive Care Unit, for instance, and they had facilities for them: so staff rooms and seminar rooms for their exclusive use that were not replicated in in the paediatric haemato-oncology department. We've no idea why different departments got different infrastructure. So, we may be looking very jealously at the team in ITU or colleagues in emergency medicine thinking, "Well, how come

they got that and we didn't?" and there may be very, very good planning reasons and ergonomic reasons for them to have those things and for us not having them. But when you haven't got them, it's difficult to believe it's anything other than cost.

68. There was a lot of rigid thinking going on. There was no ability to see that anything deemed non-clinical should be within the fabric of the department. It's difficult to argue that a children's playroom is a clinical space. So, we were very clearly told, "No, you can't have that." In my estimation, it shows a paucity of thinking, but that's me as a clinician, not as an accountant or a hospital builder.
69. In terms of priorities, it's impossible to say what was top of our wish list; it's like choosing between your children. They're all different, but all really important. If you're a pharmacist, you'd campaign to have the pharmacy in the ward environment. If you're an outreach nurse, you'd ask to get your office in the ward environment. And rightly so, because (a) you value your own profession, and (b) you value your proximity to your other professionals. But if you had to stand outside and say which of these is the most important, it's impossible; as they're all vital.
70. I have a very holistic view of the management of children with cancer, and I would have loved to have had the CLIC Sargent social workers in the same as us, as they had at Yorkhill because it meant that the parents could just literally walk from their child's bedside and go and see their social worker. This meant that all the worries about finances, because having children with cancer is an extremely expensive business –and emotional concerns could be allayed, and the parents could then focus on their child again. One can also take the view that, for example from a neurodevelopmental perspective, it's important that we have a play space so that the children who've had brain tumours and operations can get down on their knees and wander around, and they're doing their own physio just by rolling around in the play space. It is a false dichotomy to have to choose between these two things.

71. I can't recall whether, at the time, I thought any one particular thing or all these things were going to have a massive clinical impact. It comes back to how you define "clinical impact." Had I thought that any of the changes might have affected the ultimate cure rate or our ability to safely deliver anti-cancer therapy, I would have been jumping up and down. I would have been making representations to my line management; I would have been demanding to see the Board; I would have been going to Board meetings in open forum and saying that this was a terrible thing. So, I would conclude that I have no concerns that my ability to safely cure children with cancer was going to be compromised by moving to the new Children's Hospital. However, I had grave concerns that the physical and emotional well-being of my patients and their families was being very negatively impacted by a move away from the old Schiehallion. I also had grave concerns that the camaraderie of the team was going to take a huge hit.
72. When it came to signing off the plan, none of the clinicians would sign it off – not because we thought that the air changes or the air conditioning or the water were going to cause problems, but we didn't think that it was what we'd been promised.
73. The bottom line is that no-one in my department signed it off – neither Prof Gibson, nor me or any of my colleagues. To this day, I don't think any of us know who signed off on the Schiehallion part of the new Children's Hospital. I am absolutely clear that none our clinicians signed it off.

Period 2015 – 2018

74. Moving to the new hospital in 2015, the wards were called 2A and 2B. They were where the unit was based. We were told we weren't allowed to call it Schiehallion, but everybody did. Schiehallion ward, Schiehallion day care and the Schiehallion unit, and they are now officially called those things.
75. My early impressions of the new RHC were that we had a bigger footprint, though smaller number of beds, and better hotel accommodation for patients

and children. That was everything from the size of the rooms to the en-suites to wi-fi accessibility to having access to TV and things like that. All those things were better from a patient perspective. From a design perspective, what we discovered immediately was that the sight lines were terrible and that meant that you couldn't actually see who was on the ward. For instance, if I wanted to find a registrar colleague, I couldn't look down the ward and see where he/she was, or any other member of staff for that matter, so you spent a long time tracking backwards and forwards trying to find folk. An inevitable consequence of having more private rooms is that even if you were in the right area of the ward, you still didn't know where colleagues were because they would be in patients' rooms. So, it was a more challenging place to work.

76. We were given what we call "deg" phones, which are like mobile phones, because it was easier to phone someone on the ward to ask them where they were than it was to track them down. That was unexpected. I know it is easy in retrospect, but if you had actually mocked up a floor in a hangar somewhere and got people to physically move around and model looking after some patients, you might realise that your design doesn't work. The immediate impression was that while it felt great for the families, it was very difficult for professionals to work in. Nursing colleagues can't see one another so, again, they needed deg phones so that one end of the ward could talk to the other end of the ward and the middle of the ward.
77. The lack of a playroom was immediately obvious. I used to say that one of the unintended consequences of having the rooms so comfortable and lack of a playroom was that rehab seemed to be taking longer. For instance, if you're very comfy in bed and you're in a really nice room, you don't get out of bed. Whereas if you're marginally uncomfortable in bed in a small room and there's a playroom you go into the playroom. On the old Schiehallion, we had tractors and trucks and all kinds of pedal cars, and you were forever having your ankles bashed into by a small child on one of those things. Their parents would be behind them, pushing a drip stand, but they were going up and down the ward. That didn't happen anymore. There was nowhere for the patients to go, so I felt that patients were taking longer to rehab. One of the things I thought

about until all the subsequent problems took occurred was that we were actually going to look at lengths of stay in hospital to see if this impression could be verified.

78. The other immediate impression we had was that trying to get hold of pharmacy colleagues was much more difficult. We weren't sure where they were; as a group they were scattered. We were no longer making medications up on the ward, so that meant that our flexibility around delivery of chemotherapy was much, much tighter. Previously, if a parent came up and said, "Listen, it would be easier for us if we could start the chemotherapy a day earlier or a day later," I could very easily go into pharmacy, find somebody and ask, "Is that technically possible?" This was no longer possible.
79. Another thing that was really obvious from the start was an absence of natural light. It may strike you as a bit odd, but Yorkhill had big windows, light came in, it was built in a different way, a different shape, so we had much more natural light and that made it a much more pleasant place to be.
80. There were some upsides. Very clearly, the patients preferred it – no question about that – because the room was bigger, the parental pull-down bed was better, the en-suite bathroom, all of that was so much better. But it was a much more difficult place to work.
81. There were the other first impressions. We were acutely aware that we would lose the adjacency benefits. So not having POONS (Paediatric Oncology Outreach Nurse Specialists) immediately to hand, not having CLIC Sargent to hand, that was very clear. Our offices are a seven/eight-minute walk away from the ward, so that was new. Not necessarily a bad thing, but it very much changed the dynamic of the way that we worked. It sounds crazy but, for instance, when I was in the old Schiehallion, my office was between the ward and day care. Nursing colleagues would very often phone me to say, "Can you just pop across because this parent wants to see you?" I'd go across and actually what the child wanted to do was give you a thank you card, or the parents just had a very brief question about something minor. You were

thirty seconds from their bed. If you've walked seven minutes to get there and then you're walking seven minutes back, that's 15 minutes of your day. It's always nice getting thanks or being able to confirm that a concern was minor, but if it's a 15 minutes round trip and it happens three or four or five times a day, which it does, then that's a significant chunk of your day where you're just walking back and forth.

82. New ways of working needed to be learnt, that's not necessarily a bad thing but it is not always easy. The culture of being instantly available to families still hasn't disappeared entirely. Even if you're not on service – which I described earlier – you still get lots and lots of phone calls from families who would like to see you. Though colleagues know that you're not physically going to be immediately available, they don't know where you are because you could be on the ward next door. In fact, you could be on the same ward, and they just can't see you, so they'll phone you to say, "Can you come?" That then puts the onus on you to say, "Well, no, I can't come, or do I need to come?" which is a very negative way of responding to a phone call. All that kind of soft interaction was immediately obviously much more difficult.
83. The line-of-sight issues were challenging, both because of the curved corridors and also as a result of the single room design. You can see about two doors along before the ward curves. On the old ward, even if colleagues were in a patient's room, the note trolley would be outside the door and you could see the note trolley, so you would know that they would be there. But you can't see the note trolley, so there's no visual cue to you to say that's where they are. Again, is that going to materially affect your likelihood of curing a child with cancer? No, of course it's not. Is it an inconvenience? Absolutely, yes, it is.
84. While sightlines are unchangeable, some things were able to be improved upon. I've already described purchasing deg phones so that we could phone one another rather than see one another. My ability to go and stick my head around a pharmacy colleague's door is not there anymore, but since we've moved back on this final refurbishment, some of those issues have been addressed, although at the cost of decreasing the total amount of rooms available. We now

have pharmacy colleagues on the ward, for instance, which we didn't have before and there is now a play area for younger children, which we didn't have before. That was replicating stuff we had previously, though we have nothing for toddlers and the under sixes. But, again, that has come at the cost of the clinical space. The knock-on of that will be that, in winter, we will have more patients (what we call outliers) on other wards around the hospital because we've given up physical clinical space to have those staff groups on the ward. Those things are ongoing. There is now a ward staff room which is just off the ward, interestingly in a seminar room that we were told we couldn't have as a seminar room because it was a shared space.

Protocols and Ways of Working in New Schiehallion

85. The move to the new hospital meant infrastructure change, along with more incremental behavioural and culture change and there have been workarounds that improve things to some degree. There has been some much more prosaic change with our final move back a few months ago. I suspect that that was done because colleagues in the managerial chain couldn't have parents or staff groups openly complaining about the move back. After the millions that had been invested on that ward, the last thing they needed was the Daily Record talking about disgruntled Schiehallion staff. So, spaces became available that we were previously told was impossible, but we still don't have what we had in Yorkhill.
86. In terms of the Schiehallion protocols, "protocol" means something very specific to someone who works in paediatric haematology oncology. A protocol for us is normally a treatment plan. If you have leukaemia, there will be a protocol that dictates how your leukaemia should be treated. Those are either clinical trial protocols, which is where the name comes from, or they're clinical guidelines, which are derived from the protocol from the last open clinical trial. That's unchanged.
87. The way those protocols are stored is different because it's much more electronic now and we don't have space to keep paper copies. That's a direct

consequence of the move, so there's no space in our research nurses' offices for as many paper copies. I used to have a paper copy of every protocol that I was using in my office. There is no space in my office for that, so they're now all online, which makes the ability to flip through them more difficult than, for example flipping through a 300/400-page document, which is much easier to do with a physical copy than digitally.

88. Protocols are tailored for each individual diagnosis. Within each diagnosis, you will have potentially a different way of being treated. For instance, in a rhabdomyosarcoma protocol – that's another type of children's cancer – there will be nine or ten different subdivisions with different treatment plans going along there depending on how big your primary is, where it is, is it metastatic, where is it metastatic to? All of those things change the way that you look after the patient. Other protocols will have only one or two different ways of treating the patient because there's much less variance in the way that those particular diseases present. They can be very, very complicated or they can be much less complicated. If the move had imperilled the way that we deliver the protocol, we would have just been saying, "We're not going. You're putting us in an impossible position," because these are nationally or internationally derived ways of treating children's cancer, they're evidentially based. These are what are considered best practice.
89. We also have Standard Operating Procedures (SOPs), a lot of which will have been changed because they're dependent on the physical environment. Those are all kept online on a system called Q-Pulse that's looked after by Prof Gibson's PA. Those kinds of things changed as we moved across, and nursing colleagues in particular had a huge amount of work to do to change them to reflect the new environment we were working in.
90. I can't remember quite how the SOPs changed for the move to the new hospital. I can remember us all having to input hugely into SOP writing, and if we weren't writing, then reading them and signing them off because each SOP would need a nurse sign-off, a doctor sign-off, and then going through the

governance group. Children's cancer wasn't alone in that every paediatric subspeciality would have been doing exactly the same thing as they moved across. If you change your physical environment then that might change the way that you go from, for example, an operating theatre back to the ward. In Yorkhill, theatres were on the same level as our ward, so we didn't have to have anything in your SOP about what to do to get into the lift or if the lift doesn't work when you get in there. All that needs to be reviewed and adjusted when you move your physical environment.

Initial Impressions of New Hospital Environment

91. It is fair to say the new ward environment impacted on the amount of time it took to do our job. It took longer to do what we needed to do. We did feed this back, but we had to make it work. The feedback mechanism would have been a formal one through our own governance procedures, a less formal one through the Medical Staff Association and a quite informal one of meeting managerial colleagues or nurse managing colleagues in the in the lunch queue.
92. I am aware that, at that time, the building was obviously heralded as a state-of-the-art facility. In my view it was certainly very glossy. It was very shiny, very big – again, not in terms of bed numbers, but in terms of space. So, there were some definite advantages. Yorkhill stack had eight storeys to it, and I have many, many colleagues who could not walk up the stairs with me, so they were getting the rickety old lifts. So only going up to the second floor in the new hospital was good.
93. I think that some of the challenges were because of the physical and built environment of the new Children's Hospital. In my view, there is no question that the new Children's Hospital was built on the cheap. We spent £150 million on a new Children's Hospital and I'm not even sure how that was costed, but if you compare that to the new Children's Hospital in Dublin, for instance, that's now costing billions of euros, you can begin to understand the differences.

94. Whether the new Glasgow Children's hospital was "state-of-the-art" is subjective, but it was absolutely fit for purpose. Could it have been more fit for purpose or differently fit for purpose? I believe so, but I certainly had no concerns that it was an unsafe environment that wasn't allowing me to deliver the kind of care that I want to deliver. It wasn't always as easy as Yorkhill, but it was doable.
95. I was aware of some of the issues raised by families at last year's hearings, such as the temperature of the rooms, the blinds, TVs not working, the wi-fi dropping and plug point positions. Having just done a huge building project myself, I was probably a bit more tolerant of those kinds of issues. There are always things you maybe didn't think through beforehand, such as locations of plugs, that you then need to retrofit, and I can understand the families' frustrations. At the same time, many of the families hadn't experienced the old Yorkhill, where not everyone had TVs and those tellies that were there were pretty ancient anyway. Wi-fi in the old Yorkhill was grindingly slow and very, very intermittent, which impacted the staff more than families, given that most of our communication was done through wi-fi enabled deg phones. The phone signal was appalling so keeping in touch was not always easy at Yorkhill either.
96. In terms of the rooms, there were toilet leaks and sink overflow in those early days, but these might have been just seen as part of the snagging. Whether they actually occurred during the formal snagging period or not, I can't recall but it was obvious from fairly early on that water was backing up on the floors, for instance, from the showers.
97. There were a number of things that weren't ideal in the new RHC but it's difficult to say how they impacted on the relationship between clinicians and patients. We certainly had positive feedback from many patients from the old Yorkhill who'd come across with us because they had a comparator. I think that, at the time, everybody wanted the new building to succeed; no one wanted it to fail even if they would prefer to have stayed in the old Yorkhill.

98. With regard to leaks in the bathrooms and some flooding in the en-suites, I did not see that in the realms of safety concerns at that early stage. Whenever you move into a new build, you expect there to be snagging issues, whether that's leaky sinks or lights that don't come on. That's what we had when we started, and it wasn't ringing alarm bells at that point.
99. Generally, I was coming from a perspective where these kinds of things were not as good as they should be and weren't as good in the Children's Hospital as they were in my own home, but they were better than they were in the old Yorkhill. It sometimes felt like the building was designed by people who grew up in the 1960s, where things like downloading movies or internet speeds were not an issue, whereas our young patients were understandably expecting the kind of environment they were used to at home.
100. The parents were bringing to our attention things that could be better. Patient would tell staff nurse, staff nurse would tell nurse in charge for the day, he or she would say to the nurse manager of the ward who would then funnel it up the nursing hierarchy. These kinds of things would have been discussed in the governance meeting. We would have managerial representation at the governance meeting, so that would have been directly heard there or would be raised there on our behalf. Coral Brady, was I think the managerial link, or at least the person with direct managerial responsibility for the unit. With the initial snagging, we were very keen to get that done because there was a handover period within which all the snagging needed to be collated and acted upon.

Feeding Back Regarding New Environment

101. The formal mechanism to air these kinds of issues was through the governance procedures. We have a staff governance group, so we had endless discussions in there about going back to managerial colleagues saying, "We've tried this, and we've put this solution in place, that solution is in place, and this is still not working." We would then push that up the managerial tree either on the nursing side or on the medical side or on the allied health professionals' side because each professional group had a different management hierarchy. For a nurses'

common room, for instance, it's pointless going to medical management saying, "We need space for our nurses to eat," because they say, "I've got no control over that. You need to go to the nursing hierarchy, or you need to go through Jamie Redfern because he's got control over building use." That was the way it was fed back. I think that the YMSA might have met two or three times as well but it's hard to recall and a lot of those regular meetings have disappeared since Covid.

102. There was a definite push from managerial colleagues to highlight snagging issues in those early days. Once that was done, the building was handed over and GGC became responsible then for the fabric of the building. After that, there seemed to be much less interest in what might have been regarded as snagging issues and it felt that there was a difference in approach depending on the time that the issues were raised up.

Staff Governance Group

103. The staff governance group was carried over from Yorkhill. For a while Prof Gibson chaired it as the clinical lead. Dr Jairam Sastry currently chairs it as Prof Gibson has delegated that to him. That's the process now. If neither of them is there, then they will depute one of us. I've chaired it, other colleagues have chaired it. There is a standing agenda and you run through the items.
104. The function of the governance group is ultimately to ensure patient safety and that we're delivering the best care that is possible to deliver. For instance, if we are told that without employing two more nurses, we can't safely deliver a therapy, we would then go to the nursing management group and say, "We need a couple more nurses." If our pharmacists are reporting "It's impossible for us to work because it's too noisy where we are," then the department needs to go and talk to their manager or representatives to say that the pharmacists' current accommodation is impacting on their ability to deliver safe pharmaceuticals. We would routinely discuss other safety considerations such as near-misses, drug errors and all patient complaints. The whole focus is on improving the experience of patients and their families.

105. Although ultimately, the group was all about patient safety, issues like staff morale were also considered, so part of the function the group was as a listener. I think individuals were aware that that group had a limited ability to deliver the solutions that they wanted. It is therefore a difficult balancing act to get to be an effective group because we, as physicians, for instance, could be saying, "Absolutely, nursing colleagues, we hear that you don't have enough toilets and you'd like somewhere to eat your lunch. We totally agree with you, and we think that's a fine and noble aim, but actually we can't deliver that, however we will go and talk to nursing managerial colleagues again and support you". Colleagues were aware that they were able to offload, but not necessarily that, by offloading, anything concrete would occur from that. We were all aware how little power resided within the department to change what the department was given.
106. Building or room issues were normally escalated to Estates through their attendance at the staff governance group. Either we would ask them to come, or we would feed back to them and then ask them to come to meeting the following time, or for them to feed back to their managerial colleague who would feed back to us. Part of the staff governance group function was to engage with Estates.
107. Nursing colleagues would have taken much more of the brunt of problems on the wards because they're in the room as it happens, and patients are frustrated. It's really difficult to unpick whether that impinged then on the greater clinician-patient relationship, whether that's a doctor, nurse, or pharmacist, because if a patient is unhappy about something it taints the whole of the clinical relationship. However, we are professional communicators, and we are trained to try overcome these things. On a daily basis we have to have the very worst conversations you can imagine, because I'm telling parents that their child has got a life-threatening disease or unfortunately, I can't cure their child. That is obviously going to be difficult. But are those conversations easier if the physical environment is to everybody's liking? Of course, they are. They're never, ever

easy, but they are easier. If a family is already annoyed with the team because they feel their concerns about leaking showers or malfunctioning Wi-Fi are not being listened to, quite naturally they are concerned that their worries about their child's health are also not being listened to.

The Water Supply

108. My initial concerns, fairly early on, about the water supply were because we were getting environmental Gram-negative infections that are waterborne. If that happens, you automatically think, "Are they in the water?" I can't remember whether because we had a rise in environmental infections we said, "You need to look at the environment," or because of that the microbiology team and the infection control team said, "We'd better look at your environment for you" I don't know. It might have been organic, for example: sitting down, having a conversation with our microbiology colleagues saying, "We've got another pseudomonas, we've got another stentrophomonas. It's a bit odd, isn't it?" Who is then responsible for saying, "We've got to check the water"? It's the outcome of a conversation rather than an individual.
109. We had weekly meetings with the infection control colleagues. They used to come to our big Friday lunchtime handover and also to our daily lunchtime handover. Our concerns would have fed into those discussions and evolved over time, and then that would have led into a more formal process which generated the IMTs. These regular daily and weekly clinical meetings would have allowed conversations to occur, and they would have built over time.
110. We all understood that these were environmental Gram-negative infections. There were different theories as to how they were getting into the patients for instance, the cleaning staff came under scrutiny for the order and manner of their technique. There were other theories, such as poor hand hygiene implying that the staff were transferring the infections from the environment into the patients.

111. Of course, all those possibilities and more need to be looked at whenever you have an infection outbreak. You need to look at how lines are handled, how drugs are drawn up, because no one should be exempt from scrutiny. We do know that in many cases of line infection, staff are involved in some way and it's about staff practice rather than about the environment. It's not unfounded, but it did seem to be that the focus outwith the clinical teams was that there was a rise in environmental infections, and this was a human problem rather than a building problem.
112. The worrying rates of infection seemed to be contained within the haemato-oncology patient group, mainly seen in wards 2A/2B. We did also have patients who were nursed in other areas of the RHC, and I don't know what the infection patterns in those other areas of the hospital were or are. But a phrase that I used to use a lot, was that our patients are like the canaries in the mine, so they will tell you if you've got a problem with your building. You or I won't because we have an immune system. If there's a level of infection within the water that is dangerous for people who are immunocompromised, it won't show for us because we're not immunocompromised. You need to put an immunocompromised patient in that environment for that knowledge to become obvious.
113. I can't comment really on the build safety of other areas of the hospital because our patients weren't there very often. However, what I can say is that some of our patients will have got their infections when they were not necessarily on our wards. They may well have come in over winter, for instance, been put on a general paediatric ward and they may have got an infection or shown signs of their infection at that point. That doesn't mean they got their infection from that ward environment. They could have got it from being on our day care the day before or the fact that they were discharged from our ward 48 hours earlier where they picked up the infection.
114. This does make trying to localise where the issue is very difficult because patients are not all seen in the same place at the same time. They might also

have gone home and one of the issues we had a lot was where colleagues would say, "Well, they were at home when they spiked their fever, so it can't be that they got their infection in the hospital. They got their infection at home." But if you looked at where the patient had been for the past two months, they've maybe spent 50 days of the last 60 in the hospital environment, so it's impossible to be definitive about that if the patient is not in the same place the whole time.

115. What we were seeing, from a clinician's perspective, was an increasing number of very unusual infections. We became used to hearing things like *Stenotrophomonas* and *Elizabethkingia* and *Mycobacterium chelonae*. But if you were to talk to my colleagues around the UK and you said, "Have you ever treated *Elizabethkingia*?" they would think you were talking about a patient, not about a bacterium. What is common for us now and we don't even think about, anybody else would be saying, "What?" You've got to remember that we were at that, "What?" stage in 2015, so it was a combination of organisms we'd never heard of or had only ever heard of in post-graduate exams, an increasing number of them, coupled with what was going beyond snagging. So you saw a leak in the shower and then to get to the pipework you had to take a panel down and behind the panel there was a whole heap of fungus growing there, when you saw the chilled beam is dripping water onto you as you do your ward round, all of those things combined make you think, "There's something going on here."
116. I would repeat though, that our training is not about buildings or even infection control. There are experts who specialise in that. We did focus a lot on the chilled beam, and we did think that the whole hospital had been shoddily built, but we didn't at that point put the two and two together. We were anxious that this was contributing, but we were certainly searching our souls to make sure that we were washing our own hands, that we were accessing the lines in the prescribed way, that we were using the correct connectors and that our practice was beyond reproach. Many things were happening at the same time, so no one was saying, "It's definitely all the hospital and it's nothing to do with our

approach to lines.” It was, “We’ve got to try everything to get our infection rates down.”

117. As clinicians, we weren’t at the start saying, “This must, must, be the hospital.” That evolved as the number of infections evolved, as the type of infections continued to be very unusual and then added to the mix were the things like chilled beams dripping on you and fungus growing in the shower. Some of it seemed basic. For example, we were absolutely reassured that the contractors had followed what was in their plans in using stuff like water-proof plasterboard behind showers for instance, yet we found out it was not waterproofed. We knew that because the workers doing remediation would say to us, “That’s just standard plasterboard they’ve put in there. It’s the wrong thing.” Then you think, “Well, if it’s the wrong thing in that bathroom, what about the one next door? Is it a single room issue, or is it systemic? Is every panel like that?”
118. We as clinicians were asking questions about the water, whether the problems stemmed from the water quality coming into the hospital itself or the infrastructure that brought it into the wards. I know that the water coming into the campus was checked and I know that the water supply to 2A/2B was able to be isolated, which is why we were able to have contained water management within the department without shutting out the water to the whole of the hospital. We did ask the question, “Is it the water coming into the estate? Is there contamination happening at that the point of supply to the department. Is it because of the fixtures and fittings? If it is because of the fixtures and fittings, which one of the fixtures and fittings?”
119. At one point, after they’d done two or three flushes to the pipes, they changed something in the base units of the sink. Then there was the installation of the point-of-use filters on the taps in the sinks and I think we changed the shower heads too at some point, although I think that was much later on. All of these were raising questions and understandable concerns about the water.

120. In terms of communicating the issues about the water supply, there would generally be agreement at the end of IMT meetings about the messaging to go to staff. Understandably, patients and families would ask questions when they saw filters on taps or when they were asked to use bottled water instead of that from the taps. I can't recall specific instructions to staff but clearly the actions being taken were mainly to tackle the infections and minimise the risk to patients. Staff handover meetings would cover any measures that were in place to ensure consistent messaging to patients and families. Staff were as much in the dark as everyone else about the causes of the infections that resulted in the precautions being taken with the water, but they would have been clear on why the steps were being taken.
121. I believe that there would have been information about the precautions given in writing to patients and families though I am not sure who would have drafted these, but I believe that clinicians would have been consulted about the wording. As far as I recall, there was not an individual signatory on these communications. I know that people like Jamie Redfern and Jen Rodgers would often walk the wards to answer questions from patients and families and to try to offer reassurance. I know that the hospital's Facebook channel would also be used to communicate the information.
122. I would not support any claims that staff concealed or withheld information from patients and families. The reality is that we simply didn't know the answers to some of the questions that they were asking, hence the need to move patients from ward 2A. Nursing colleagues, who were the initial point of contact for most patients did a fantastic job communicating with families and they involved other clinical or managerial colleagues if there were questions, they could not answer.
123. Clearly the issues with the water posed a potential infection risk to our patients. As I suggested earlier, children in the cancer ward were like the canaries in the coal mine. They were susceptible to infections that others would not be. We knew that some of the infections that had been reported were water borne, so the concerns were real. The work involved in moving patients to another ward in

the hospital could not be over-estimated and the fact that there were moves to CDU as well as the move to 6A and 4B highlights the level of concern that existed.

124. I believe there was a problem with the water supply. Or to be more accurate, I believe there was a problem with the water and the water distribution. I don't know whether it was the componentry in the taps, the water, the pipes the water was going in. That, I don't know.
125. Do I believe that we had water-borne infections as a consequence of our built environment? Yes, I do. I should emphasise I am not an engineer nor a control of infection professional and this is not an absolute rigidly held belief. I'm a doctor who spends a lot of time evaluating evidence and so if someone can come up with an alternate hypothesis that explains what we saw, then I would be prepared to listen to that and to change my view. I have yet to hear one that convinces me.

Incident Management Team Meetings Relating to Water

Incident Management Meeting Minute, dated 6 March 2018, relating to Water Contamination in Ward 2A (A36690471 – 06.03.2018, IMT Minutes Water Incident Ward 2A RHC, Bundle 1, page 56)

126. I attended an IMT on 6 March 2018 where there was a discussion about aspergillus cases that had been found. Aspergillus is potentially an airborne invasive fungal infection. The IMT minute describes Prof Gibson and me querying whether the aspergillus cases may have been acquired as a result of fungi in the outlets. We had documented aspergillus infections and needed to know where it was coming from and if there was potential for these aspergillus infections to be environmental.
127. There are direct and indirect measures of aspergillus infection. You can do a blood test that will tell you that it is likely that you have an aspergillus. It's

actually really, really difficult to isolate aspergillus from patients who you are almost a hundred percent sure that they've got an aspergillus infection.

128. I believe it is this inherent difficulty that explains why Teresa Inkster is saying what is recorded in the minute. She's saying it's impossible to answer because it's yet to be identified. That's very common. We can have blood tests that tell you it's really likely, but you never actually grow it in the blood culture. Teresa wasn't actually disagreeing with us, she was just saying that she couldn't be 100 per cent categoric. She was very supportive of this question being asked and in essence saying "You are completely correct to bring this up, we need to find the source of this because if its environmental we need to stop other patients from getting infected".
129. Aspergillus classically is associated with building work. For example, if you dig soil up you get spore formation. There was a concern that if those organisms are confirmed and they are in your patients, then are they present in the environment?
130. On the Cupriavidus references, Dr Inkster would have a much more detailed knowledge of disease epidemiology than I would. It's a very rare infection and not one that my training would equip me to talk about in detail. I had no concerns about Dr Inkster's reasoning.
131. The minute reports Prof Gibson and me querying if the concerns of the clinical teams relating to the environmental risks in 2A had been communicated higher. We wanted the formal minute to reflect that the questions had been asked, of whom they had been asked and what the response to the concerns about environmental risk were.
132. In terms of clinicians being encouraged to raise concerns with the Senior Management team, my recollection was that we initially tried to raise them locally, with RHC senior colleagues, as is appropriate, rather than with GGC senior colleagues.

133. The minute also notes Prof Gibson and my concerns that senior management and the Board were made aware of the serious implications of fungus as well as Gram-negative bacteria being present in the water system. Our main concern was that we were unaware of what the Board were being told and what the response was. We thought it was important that we put on record that we had seen life-threatening infections in our population with two very different bugs and that made us concerned that there may be major problems with the infrastructure within the children's hospital. Gram negative infections and fungal infections make clinicians working with immunocompromised patients very concerned. It is important that the GGC Board were made aware of these clinical concerns.
134. We were talking about aspergillus at this point, which is a potentially life-threatening fungus. What we're raising there is that we are seeing unusual things that are dangerous at the same time, in the same patient group. That was concerning and uncommon.
135. We genuinely didn't know if the bacteria or fungi were connected to the infrastructure. What we were raising was the concern that there may be major problems with the infrastructure, but we don't know that, and we felt it needed to be investigated.
136. The minute goes on to note my querying if there was any activity on social media amongst parents. I raised this because we knew that the parents had a Facebook group. We knew that that was a toxic environment and so we wanted to know what the current state of that environment was.

Incident Management Meeting Minute, dated 12 March 2018, relating to Water Contamination in Ward 2A (A36690457 – 12.03.2018, IMT Minutes Water Incident Ward 2A RHC, Bundle 1, page 63)

137. I attended the IMT on 12 March 2018, which included reference to *Stenotrophomonas* being a significant pathogen particularly within the patient group in Ward 2A. The word significant was used because *stenotrophomonas* is a potentially fatal, environmental Gram-negative infection.
138. There was also a discussion about the source of transmission of organisms. We suspected, strongly, that we had waterborne infections. Absolutely, it was correct for Teresa to be concerned that handwashing or room cleaning was not what it should be.
139. I wasn't concerned that Teresa was saying this could be transmitted by human touch and not the water supply. My concern was we've got infections here that are living in the water; how are we going to make sure that we get rid of those infections? The concern was: are these bugs in the water supply? If so, how did they get there, how do we get rid of them and how are we going to stop them getting there in the future.
140. I was not surprised that people low down in the hierarchy were being targeted because that's exactly what one would expect. They were talking about the hygiene of the cleaners. The reason I was dubious about that was hand hygiene varies from unit to unit, but it doesn't vary that much. To have such a disproportionate number of Gram-negative infections in our patient population would mean we were monumentally poor at hand hygiene. I hadn't seen any evidence that we were better than, or worse than, any other unit that I've worked in.
141. Of course, you have to investigate and ask, are we using cleaning techniques that are unique to our department, but there was nothing immediately obvious to a non-Infection Control person that we were any better or any worse in terms of our line technique or our hand washing than any other unit I've worked in. I understood that those things needed to be ruled out, but I was sceptical that we would eventually find out that those were the cause of the issue.

Incident Management Meeting Minute, dated 16 March 2018, relating to Water Contamination in Ward 2A (A36690507 – 16.03.2018, IMT Minutes Water Incident Ward 2A RHC, Bundle 1, page 66)

142. I attended the IMT meeting on 16 March 2018 where there was a discussion about the use of Ciprofloxacin prophylaxis as a precautionary measure. Various questions were discussed, including why was this brought in as a control measure at this point, what would the impact be on patients and how it would be communicated to patients? The minute at records that there was a formal process to address the questions. The piece that says, "If any patient inquires about receiving ciprofloxacin they are to say it's just a precaution due to issues with the water supply," I think is probably clumsy drafting of the minute as "just a precaution" implies damping down the situation, but I can assure you that if any of our Management or Infectious Diseases colleagues had suggested to us that we ought to pooh-pooh this and damp it all down, I would have objected strongly and probably left the meeting at that point. We routinely told the parents what bug their child had, how we were going to treat that, what the implications were for their child, in terms of how well or unwell were they likely to be, and then invite the parents to come back with questions at that point.

Ventilation

143. If you are at risk of infection, you want your room to have a positive pressure within it, so you are not sucking dirty air in from the outside into your patient. Conversely, if you have a contagious virus you want to have negative pressure ventilation because you don't want them pushing that virus back out into the main ward. So, air flow works both ways. The pressure in the room depends on whether you are infectious or you are at risk of an infection.
144. There are two distinct populations on ward 2A: transplant patients and haemato-oncology patients. The transplant patients are the ones who are most at risk and the ones for whom you need to have really rigorous air filtration methodologies. There are, as far as I'm aware, no technical guidelines for a standard haemato-oncology room in terms of ventilation, but there are very clear

guidelines for the transplant population. I don't know the details, but the Technical and Estates teams should be able to tell you about the specification you need to have for transplantation rooms.

Specialist Ventilation

145. In paediatric oncology units, we do have special ventilation for bone marrow transplant patients, and we were very clear that that needed to be encompassed within the new Children's Hospital. We were told that of course that would happen because there are the technical manuals about what a bone marrow transplant cubicle has to have. So, if a patient needs a transplant room, I would know that there is something laid down that defines what the transplant room minimum specification is, including the air pressures and number of air changes that go on in terms of room ventilation. But if you had said to me or indeed said to many of my colleagues around the UK, what's the internal pressure of a bone marrow transplant unit ward compared to the outside, how many air circulations should there be, I doubt that would be common knowledge. The important thing is a clinician knows that there is a specification for a transplant cubicle and that the Health Board has a team that can build and maintain the cubicle to that specification.

146. In terms of the internal air supply to the unit, there'll be a transplant patient in that room for which there are specific technical manuals. That's the only thing we would have insisted on. For the non-transplant patients, there are – as far as I'm aware – no technical manuals with a minimum standard for rooms. That's why, for instance, in winter, when we have too many patients for our beds, we can put them into beds in the rest of the hospital because they can safely go into a standard hospital ward.

HEPA Filters

147. There were considerations about HEPA filtration. The purpose of the HEPA filtration system is to remove airborne organisms and viruses that may give an

unpleasant or life-threatening respiratory infection in patients who are massively immunocompromised.

148. Aside from the transplant patients, my patients weren't at risk of that kind of respiratory infection and, as I've alluded to earlier, if you go into other paediatric oncology units elsewhere in Scotland or indeed Europe or the rest of the world, you have oncology patients who are not in HEPA filtered rooms. In that sense I didn't see the need for HEPA filtration across the whole ward. I wasn't convinced that if we had a problem a ventilatory system that wasn't actually working in the ward, that portable HEPA filters were actually going to make much difference. However, there were no medical downsides to trying them and I am not an expert in ventilation systems.
149. I can't remember when or why the portable HEPA filters were put into ward 6A after the temporary move there. It's well documented we had an awful lot of infections up on 6A and we had an awful lot of environmental issues on 6A. As a ward, it was probably fine for standard adult patients. As soon as you put our very at-risk population in there, then you started to discover what the problems were within the built environment.
150. We do know that the day before we were due to move into Ward 2A when the hospital was opening, there were no HEPA filters in place, and we had to fly them over from Ireland. It was only because Prof Gibson walked around with Alanna McVeigh, one of the Transplant Department's Administrators, on the day before that that was recognized. I mention this because I think it highlights the level of knowledge of the builders who were fitting out the hospital and the approach to detail that was being taken when it was built.
151. When my colleagues from the UK or from Europe come to me and say, "We're just refurbishing our ward, we're moving on to a new ward, we know you've got a new children's hospital, what were the lessons you learnt?", I say to them, "Well, one of the lessons I learnt was, make sure you've got HEPA filters in your

HEPA filtration suites.” They look at you as if you are joking. I would have had the same reaction, but that was the level of build quality.

152. In addition, there were the portable HEPA filters that were put into every patient's room in ward 6A and I think in some ward 2A rooms too before we moved. At that point, I think that the only bits of the ward 2A that were HEPA filtered were the BMT rooms. Angela Howat, the Day Care sister, would be able to confirm that. The rationale for that was that if you only put the filters into transplant patients' rooms, and then another patient got a respiratory infection, then the question, quite rightly, would be asked, “Why did you not HEPA filter the whole of the unit if you were concerned about a bit of the unit?” Quite why they were put in and whose decision it was, I have no idea, but I presume that this information would be in an IMT minute. The portable units were not popular with patients because they were noisy.
153. Our current environment in ward 2A is completely HEPA filtered, that is over requirement but shows the level of concern that the refurbished 2A/B was going to provide an environment that was beyond reproach.
154. I can remember when we were looking at the specifications for what's called the molecular radiotherapy room, I was directly asked, “Does that room need to be HEPA filtered?” and I said, “No, it does not need to be HEPA filtered” but a decision was taken to make it a filtered space. I mention this because it shows you the reflection of senior colleagues in the build side of the hospital and senior managerial colleagues that they were trying to ensure the refitted unit was as highly specified as possible.
155. If you were to ask me, do I think that patients who are non-transplant patients need to be in a HEPA filtered room, I'd say no, because the vast majority of the patients in the United Kingdom aren't in a HEPA filtered room. Does it bother me that my patients are? No, not in the slightest. It's nice to have, but not necessarily needed.

156. In essence, the original spec caused concern because there were no filters in the HEPA filtration system. Hepa filtration is a pre-requisite for the transplant patients, but in my view, it is not necessarily needed beyond that.
157. I can't remember if there was a single thing that raised questions about the ventilation. I can certainly say we did not have an increased number of unusual respiratory infections. We did see cryptococcus and atypical mycobacterium chelonae, but it is impossible to say that this represents an increase in infections outwith normality for a paediatric haemato-oncology ward. For example, in the transplant unit and for the patients in the rest of the unit who were at risk, we weren't seeing huge numbers of unexpected pneumonias in those who were in the non-HEPA-filtered rooms. I don't know if it was a single trigger or number of variables all combined that made us start to look at the ventilation. It could well have been, for instance, a spore count, so we'd put plates down to see how affected the ventilation was. Again, I can't remember whether we started to do that because we were concerned that we had problems with the ventilation or if that was the thing that highlighted the fact that the ventilation wasn't doing all we thought it should be doing. It's a bit chicken and egg and I just can't recall.
158. Teresa Inkster was our initial infection control lead, but I don't think I realised at the time that there was a difference between microbiology and infection control. If you had asked at the time, "Do you have a link microbiologist?" we would have said, "Yes, we do," and there are a couple of medical microbiologists who took a particular interest in children's cancer. We also had a couple of very highly trained (PhD level) lab scientists, who would come to our lunchtime and Friday handover meetings. So, we knew who our microbiology colleagues were. I didn't realise there was a separation between infection control and microbiology until much later down the track.
159. In terms of communication about the ventilation issues, it was pretty similar to what I have said about the water issues. It began to evolve through informal discussion, so at the daily catchups and Friday meetings but eventually it escalated to the IMT process. But even at the start of that process, although there was some formality around it, there was no clarity around which clinician

would attend IMTs that from a haemato-oncology perspective. There was very clear requirement for attendance from the unit and, for instance, from Infection Control and Estates but there was much less clarity about who from our unit should attend an IMT.

160. The concept of chilled beams isn't something that would necessarily have caused me to have any concerns because if you went to any medical or nursing professional outside of RHC Glasgow and said, "What's a chilled beam?" they would have no idea. Nobody learns about chilled beams and alternative climate technology in medical school or nursing school. That was part of the difficulty that we had, that we were being asked to comment on things that we had absolutely no idea about. "Is that condensation or a leak?" and "Is that important?" and "What's a chilled beam?" – how would we know? We do not have the training to be able to answer those questions, so we would need to refer back to colleagues in Estates and question if water coming off the beam was really how it was designed to work. The introductions of chilled beams I presumed was simply a technical innovation. It was not in any way connected to the types of patients we were looking after.
161. All we were told was that the unit would be air conditioned or would have temperature controlled in a modern way in keeping with this brand-new building. We were given lots of assurances and there was no reason to have any concerns.
162. I couldn't tell you when we first raised concerns about the chilled beams, but it was towards the beginning of the process because the chilled beams were removed after we had moved.
163. We highlighted that there was water coming down from the chilled beams. Workers would come and put trays underneath to collect the water that was dripping down. Again, there were all kinds of questions about, "Is the water condensing on the outside of these beams and dripping down or are the beams themselves leaking?" I can certainly remember similar questions being

discussed at IMT meetings. We were becoming concerned about the chilled beam as a potential vector of infection.

164. There were concerns from day one that it was an ineffective way of maintaining the temperature in the ward because it just didn't work. It was sold to us as a brand-new piece of kit that was a green way of temperature control, avoiding the more traditional air conditioning units that might have been used, but there were rooms that we knew were hot and the parents always used to complain about, asking not to be put in those rooms.
165. Had a chilled beam simply been dripping water down onto the floor, there would have been a concern that there was a water leak and just like in your house, if you've got a water leak, that's a vehicle for infection. But it is a more significant concern when the environment is the one in which I work, an environment in which we are placing patients.
166. We knew that some patients experienced water dripping on them. This would be reported. I'm not sure what would have been said, but we would have reported the fact that there was water coming off the chilled beam. It would be addressed quickly, so it's not the case that puddles were forming. There were trays I mentioned placed under the beams to collect the drips. I am not aware whether the water being collected was simply to avoid puddles or if it was the infection control saying that they needed the water to be collected so that they could check for infection. The IMT minutes might give answers on that point.
167. For staff who are sitting there, and the water is dripping down in front of them as they're working, it is clear that you have this piece of kit that isn't right. I think that was the genesis of the concerns. We were not necessarily thinking that it was going to have an effect on the number of environmental infections we would get but that kind concern gained momentum over time.
168. Mitigations around airborne infections are a bit more difficult to introduce. If you have problems with the air that's coming in, the only way of sorting that out is to filter it in some way. If what you have put in for your temperature control, for

example a chilled beam, is making the problem worse rather than better, then you're in trouble.

169. I'm not aware that it was ever established whether the water coming from those beams, was leaking from inside the beam or from condensation outside. From my perspective, the net effect was the same in terms of increasing the infection risk to my patients, as well as practical issues such as having to close off beds because of leaks onto them.
170. I don't know if Schiehallion was the only bit of the children's hospital that had chilled beam technology in it, so I think the chilled beams are in place all across the children's hospital. I don't know what they did in the adult hospital. This would be easy to discover from Estates.
171. With the chilled beams now removed, our temperature is controlled by a massive air conditioning systems. The chilled beam does remain in ward 2B.
172. I attended the IMT meeting on 6 September 2019, Incident Management Meeting Minute, dated 6 September 2019, relating to Gram-Negative Bacteraemia (**A36591637 – 06.09.2019, IMT Gram Negative Blood Ward 6A, Bundle 1, page 354**) during which there was a discussion about chilled beams. By this time, Teresa Inkster was no longer chairing the meetings. The atmosphere was not good. The new chair took a stance that was in many ways diametrically opposite to the previous chair. She did not appear to believe there was an outbreak of any sort. The pressure from the chair was to close the incident down and move on. That didn't make for a very effective meeting.
173. The minute gives you a flavour. The Chair's view was that chilled beams were acceptable, and this was in Scottish Government guidelines. I am noted as saying that the guidance was not explicit that they were acceptable in areas treating neutropenic patients. Tom Steele is noted as supporting that view.

174. On the discussion about chilled beams, my recollection was that Tom Steele initially found it difficult to accept there was a problem, but this may be because he was not presented the information in a timely fashion. He must have changed his view because the chill beams were removed from the ward.
175. The "Patient report" that is summarised in the minute reflects my concern that the type of organisms and the mixture of organisms we were seeing in individual patients were unusual. Normally, even with these unusual infections, there would be one only one organism grown in, for example, a *Stenotrophomonas* septicaemia or an *Elizabethkingia* septicaemia.
176. Very occasionally you would see maybe a Gram-positive or a Gram-negative in the same bottle and then you might have a conversation about did the Gram-positive come from the hand of the person who took the blood or from the person who was plating it out in the lab? You would think about all possibilities. It's not particularly unusual to see two bugs in a blood culture, but it would always raise further questions. To see three organisms in the same culture is highly unusual. To see five, is a once in a working lifetime event.
177. There were suggestions that because patients had been in and out of hospital, at home some of the time, it couldn't be said that these were all hospital acquired infections. I accept that there is the potential for getting infections outside the hospital. Indeed, most infections in immunocompromised children are endogenous, this means they are organisms that normally live on the skin or in the gut and escape into the blood stream. However, these are not environmental organisms. What I find difficult to accept is that a single patient can grow 5 organisms, some of which are known environmental organisms and these all come from the family environment. In my view, it defies credibility that this wasn't a hospital acquired infection.

Closure of Wards 2A and 2B

178. The sequence of moves, out of 2A and 2B, to CDU, 6A and 4B is difficult for me to be precise about without seeing a timeline. I don't recall issues in 4B or environmental concerns for the paediatric transplant patients there; I had very little to do with 4B because I just don't interact that much with the transplant patients but I'm sure that my transplant colleagues would be able to give you much better detail about numbers of patients transplanted over that time that and if they had any infections that were unusual in that patient cohort.
179. The specifics of the temporary closure of Ward 2A in 2018 I can't remember; beyond the fact we moved and attempts at remediation were made.
180. By the point when we were decanted from 6A to CDU, I'm sure that I had concerns about the CDU environment too. By this time, which I understand is January 2019, I would have concerns about anywhere on the QE site because every clinical area we had been in was proved to have defective build issues.
181. I really can't recall the timelines around the longer-term closure of wards 2A and 2B, but I know that the dates will be well documented. What I do remember is that we had sustained and continued unusual infections in our patient population despite remedial measures being put in place and despite the categorical reassurances that these remedial efforts were going to be effective. There came a point where there was a loss of confidence in the physical environment.
182. My understanding is that the moves out of ward 2A and 2B was in part because of our concern about the rate of infections and the possible link with the water supply to the ward, rather than because of specific concerns about the rate of respiratory infections. There were growing concerns about the water supply was because we had an increase in unusual Gram-negative infections. Some of these we knew were environmental infections that could be spread in a water supply.
183. There was unanimity of opinion amongst the clinical staff that we wanted to be off the unit. Prof Gibson, as our link with managerial colleagues, may be better

aware of what was going on and I'd have thought it would be documented at IMTs.

184. I had remarked to managerial colleagues, "I have friends who are military physicians, and they could build you a hospital literally right underneath where we are by that back door within a week. You would have a separate water supply. You would have filtered air. They would do that for you in 24 hours. Why don't you do that?" I understand what the media impact of that would have been and can understand that this would have been seen as a solution of last resort.
185. I do understand that getting the military involved would have been politically contentious. However, I think it shows the anxiety I had at the time and my willingness to embrace any solution.
186. I think there was a period where we knew that we were not going to be on 2A, 2B, possibly in the next week or so, and it was not yet decided where the decant would be to, nor whether that was going to be a stepping stone to somewhere else or a permanent solution.
187. The transplant team would have stipulated that the transplant patients needed to be in a transplant environment, so that was 4B. We were very clear that if the transplants were to stay in Scotland, they would have to go to the Adult Transplant Unit. There was a very clear decision to take: do they decide that Scottish children requiring transplants should be transplanted out with Scotland or are they going to transplant them in Scotland? If they're going to transplant them in Scotland, there is only one place that that can happen and that's ward 4B because that's the national transplant centre for adults in Scotland. We had that degree of input into decision-making about decant locations, but we had, as far as I'm aware, no input into whether we were going to be in another ward in the children's hospital or moving to the adult hospital.

Experience in Ward 6A

188. Again, I can't recall when the move to 6A happened, but I think that the fact that it was available was probably the most attractive thing about it. There needed to be a minimum number of beds. It would have to have had a minimum number of rooms for the doctors, nurses and pharmacists and everybody else to go into. Clearly, we had far less accommodation than we had on 2A, so it was a minimum requirement as opposed to what you actually need to run a functioning unit. Those kinds of factors would have limited the options and, once the transplant patients were removed, then, standard haemato-oncology patients could generally be in any hospital environment.
189. Once in ward 6A, we would notice things that we didn't have in 2A/B both good and for bad. Much of the built environment was exactly the same, so the bedrooms were the same size, the huge bathrooms were the same size and all of that was standard. In fact, the layout of 6A was better because it wasn't on a racetrack curve so you could actually see where people were. Where our day care went was not great for the day care staff because the facilities were much worse than 2B and there was little divide between day care and the ward, but it was a spectacular glass-fronted room that gave you views over the hills and allowed natural light to flood into that part of the unit.
190. In retrospect it is not surprising, but we rapidly found similar problems on 6A with build quality. We had fungus growing behind the walls in the showers as plaster board rather than water-resistant board had been used. Such fundamental flaws were disappointing to say the least, in what was supposed to be Scotland's flagship hospital. Furthermore, physically being away from the children's hospital meant that there was perceived difficulty with being away from support. That wasn't just us, it was for those who were providing support. For instance, we were physically further away from the Intensive Care Unit, so if our children became unwell rapidly, we were physically, further away on 6A than we were on 2A. The reality was that no child was put at excess risk because you were further away from a PICU. But that was of no reassurance at all to particularly my nursing colleagues or my clinical colleagues, nor was it reassuring to my ITU colleagues who felt that they were being pulled out to a part of the hospital they didn't know.

191. Concerns began to rise in 6A because infections were continuing, the rates weren't going down and then you just saw rotations of rooms being blocked off and put out of use. You'd ask what was going on and the nurse in charge would say, "Oh yes, there was a problem with the filters overnight" or "The sink burst open" or "The toilet fell off the wall", and these things just became endemic. We were becoming concerned that the physical environment we were in was probably no better than the physical environment we had moved out of.
192. There was a very real disconnect, emotional and physical, from the children's hospital. Again, that contributed to staff turnover, and it contributed to a degree of staff absenteeism, so there were some very major downsides to being physically separate from the children's hospital and some that you wouldn't have thought of. For example, in a children's hospital you bump into paediatricians the whole time, so you can have a corridor conversation, just routine chats but opportunities to talk about cases or pick colleagues' brains. All of that stops when we lose the integration with the children's hospital and, while that can't necessarily be quantified in an outcome's metric, I'm in no doubt that it directly impinges upon day-to-day working.
193. Overall, I think it probably took longer to get our jobs done in ward 6A. It was about the physical space that staff had, so trying to find room for pharmacy colleagues, trying to find a treatment room that could take the right number of nurses, trying to find a doctor's office that allowed staff to just not get in one another's way, trying to find a room where you could take parents to break bad news. You would be waiting for rooms to become available so that you could then go on and do your task. It was a more inefficient way of working.
194. I don't recall being told anything specific about the likely duration of the decant. I don't actually know how long we ended out for, but it was a lot longer that we had imagined. As far as I can remember, what we were told was pretty much along the lines of "You'll be up on 6A until we fix the problems on 2A and that shouldn't take too long." I don't remember anything specific in terms of number

of weeks and I doubt that any manager would have enough information to commit to a time frame. The underlying feeling was we will be off the ward for as long as it takes to fix the problem, but it shouldn't take huge amounts of time.

195. Had we known at the outset that had we would be out of ward 2A as long as we were then I suspect I'd have been knocking on Jane Grant's door saying: "You need to build us a new Children's Cancer Unit," That's what we said to her in a face to face meeting when she came over to the Children's Hospital, to talk to senior clinical staff in our area. I believe it would have taken a much shorter time to build a new unit from scratch than it would have been to complete what they retrofitted.
196. There would have been the softer concerns around a decant to the adult hospital too. It would have been nice to stay in a children's hospital for instance. Logistically, getting adult staff who may be coming through the ward to be Disclosure Scotland trained would have mitigated against going into the adult hospital. But we acknowledged that those considerations were obviously outweighed by the availability of space.
197. As clinicians, our main concern was to get off Ward 2A/B and into anywhere our patients would be safe. That is why there were huge amounts of frustrations when 6A had all the problems that it did, but honestly, I think whatever ward we went to, there would have been similar issues If you put a vulnerable group into a building, you will stress that building and you'll find out whether it's fit for purpose or not.
198. In terms of the Schiehallion protocols for the more vulnerable patients, we were confident that they could be implemented in a new environment. While we had very little input to the choice of new location, we were very clear that the environment that we went into had to be safe for our patient population. There had to be an understanding that where they were being moved to was clinically safe and clinically appropriate, but beyond that, there were no specific stipulations.

Concerns about Infections

199. The concern was not only that there were environmental Gram-negative line infections, because some Gram-negative infections are inevitable when you are dealing with the patient population that I deal with, but it was the number of them and their various types and then we were informed that the new, unusual organisms were associated with water. I should emphasise that saw gram negative infections in the old Yorkhill, but not in such high numbers nor with such a preponderance of environmental organisms. The concerns were arising within months of moving into the new hospital in 2015. One organism that's associated with water doesn't immediately make you think, "I've got a contaminated water supply," but when you get numerous organisms that are associated with water, that you have not heard of previously, then you start to get concerned.
200. There was a reflection that we had environmental Gram-negative infection rates that were unusual even by our standards and you've got to remember we are used to dealing with unusual bugs, so if we don't recognise them then they are pretty unusual. They increased in number, and they increased in either rarity or complexity and when you face that situation you will always be asking, "Where is that coming from?" That's not just you as an individual or you as a clinical group. There will be a discussion amongst the wider multidisciplinary team as to why are we getting so many infections and what can we do about it.
201. The kind of organisms we were coming across and were causing us concerns were things like Elizabeth Kingia, the stenotrophomonas, so the wider pseudomonas family. Our concerns were echoed and possibly by microbiology colleagues who joined us weekly.
202. We obviously saw cryptococcus in 2018, and one infection is one too many, but we weren't seeing the kind of high numbers of unpleasant respiratory infections that we were seeing compared with the high numbers of environmental Gram-negatives. We were certainly seeing an increase in counts, (mainly fungal counts) that the Infection Control team were doing. The number of

environmental Gram-negative infections in our patient population was greater than was being seen anywhere else, with organisms that we, as individual clinicians, had never previously heard of but got to know incredibly well. That, combined with known problems with the water and the fixtures and fittings on 2A, I think led to the move.

203. It is difficult to unpick the sequence of that or whether one issue was more important than the other. For us as clinicians, the overriding priority was infection. We were seeing a huge number of environmental Gram-negative infections which we didn't understand. We didn't have the skill set to determine if the problems were as a result of a tap or a shower or a drain or from air conditioning. That's not a clinicians' job. What is for us to highlight is that we're seeing these very unusual infections and to seek assurances that the environment is safe. For us to carry on doing what we do, we have to have absolute confidence that our environment is safe, so the move was a response to all these concerns.
204. You cannot underestimate the potential lethality and the very real increase in hospital in-patient days, ITU inpatient days, that these gram-negative infections potentially had (and were having) in our patients. Our patients were at high risk because they were getting these infections. So, as clinicians, doctors, nurses, microbiologists, our duty of care was to our patients and to ask, "Why are our patients getting these very unusual infections? Is it something we're doing? We need to look at our own practice," which we did.
205. Once you've taken that out of the equation, then you've got to say to yourself, "Well, if it's not practice, where is it coming from?" That's when you start to question if it is coming from the environment and colleagues from Infection Control and microbiology were also becoming very anxious about the number of infections being detected. They would have been escalating it up their managerial chains. From our perspective, it was the environmental Gram-negative infections, things like *Stenotrophomonas*, all the *Pseudomonas* and the other unusual water borne infections that caused concern about the environment.

206. All the patients in whom we isolated those environmental infections would have been admitted as inpatients. It wasn't the case that the patients were coming to day care, we were taking blood from them and two days later you got a result that says they've got a Gram-negative infection. These are children who are on the ward because they have either been admitted with fever or they develop fever on the ward and you are taking blood cultures, urine cultures, stool cultures from them.
207. Part of the difficulty was trying to explore whether these were hospital-acquired infections or possibly water infections from another environment, for example from the patient's home or their school. Clearly, water is everywhere, so a lot of reflection we were getting from Infection Control and senior managerial colleagues was, "Well, these patients were outside hospital before they came in with fever, so you can't say that they picked up their bug in hospital." That's very true, obviously. If you've come in from outside, there's always the possibility that the water-borne infection can come from outside and therefore that's absolutely a reasonable line to take. I think the concern was that these bugs were so unusual in our population, so if they were being picked up at home, why had we not seen that five years ago and 10 years ago? These bugs weren't suddenly appearing in the wider Glasgow water supply. Or if they were suddenly appearing in the Glasgow water supply, why were they not being seen in other people?
208. When we asked our colleagues around the rest of the United Kingdom, "Are you having problems with these kinds of organisms?" They weren't, so it was very obviously a problem with the area within which our population lived. On the one hand you can say, "Well, they were out of hospital for some of these infections, therefore you can't say it's in hospital." On the other hand, the only commonality you have between a child who, say, lives in Mull, one who lives in Glasgow and one who lives in Dumfries and Galloway, is that they've all been in our hospital. There are two sides to the coin and the longer it went on, the more you get concerned that it's the commonality that's the issue here, not the patient's water supply in their own home or their own school.

209. Though the issues were specific to Ward 2A the vast majority of the time, it is fair to recognise that potentially some of these children would have been admitted to other wards in the hospital. Much like it could be argued that the children could have picked up the organisms from outside the hospital, you could say they picked up infections from other wards in the hospital. However, my understanding was that there was extensive work done and no other source of infection was found in any other ward in the hospital and no other children who were immunocompromised, say for instance because they have a congenital problem that caused them to be immunocompromised or they had, for example, HIV were seeing the infections.
210. Within our hospital there are many children who are prone to infections for all kinds of reasons and as far as I'm aware they weren't seeing an increase in infection in those populations. Our concern at that point was that the problems seemed to be specific to the area of ward 2A.
211. Our concerns were discussed at our Friday lunchtime meetings, at our weekly grand round, attended by the microbiologists, and we would discuss the infections seen in our current inpatient population, whether they were on 2A or wherever they were in the hospital. The discussion at that stage was recognising that a child had an unusual infection and that we had seen a similar infection previously in a different child. We would discuss possible sources of infection. Initially the discussions were not particularly formal, but the Infection Control teams certainly became involved, and I think the mechanism for that was the microbiologists going to them, though I would say that the distinction between the microbiologists and Infection Control wasn't clear at the start of all of this.
212. We had colleagues from the hospital Facilities team coming along doing things like purges on the pipes and other kinds of physical interventions.

213. I can't recall when they began to fit tap filters, but we were told that these were ways of trying to minimise transmission and that if there were organisms in the water supply then these things would help filter them out. I was not privy to the decision-making process that led to their installation.
214. With the passage of time, it is difficult to remember the other steps that were being taken but there was a major focus on hand hygiene and line technique at the same time. The shower heads, I think, were also changed and I can't remember at that point if we were having a look behind the walls to look at fungus. There were the tap filters and taps put out of use at times and bottled water used but without a timeline I can't remember the order in which these things happened.
215. I think it is fair to say that while it may not have been confirmed that the water was the issue, the genuine concern at that stage was that it could be the water, hence the precautions and the measures being taken.
216. I'm not sure what was going on behind the scenes in those early stages but, as far as I can recall, I wasn't involved in any formal processes to escalate the concerns. I was certainly involved in clinical discussions. I remember wondering if it might be to do with the delivery of water to the hospital, whether it was to do with the local sewage farm, whether it was to do with the componentry in the taps, or the componentry of the sinks. I think that all mainly evolved rather than there being a clear distinction between one to the other.

Potential Causes of Infections

217. In terms of the nature of the infections that were being seen, we believed that they pointed towards water potentially being the issue. There were plenty of other postulates knocking around, ranging from "This is nothing to do with the hospital, this is all to do with water supply" to, "The families are exposed outwith the hospital." There were the theories that questioned the personal hygiene of patients and there were the theories that questioned the personal hygiene of

staff. Once all these things had been looked at and addressed and infection rates weren't changing, then in a way you just whittle away all the other possibilities and what you're left with is the likely cause. It was probably a couple of years in that the issues were being addressed more formally, probably at the stage where they became matters that were being discussed at the IMT meetings. We did become aware of formal meetings when they were purging the pipes.

HAIs

218. I'm not sure of the textbook definition of the terms "hospital-acquired infections" and "healthcare-associated infections," or their differences. I'd say "hospital-acquired" means very clearly that you acquired it within the hospital. "Healthcare-associated" means an infection that is seen in patients who have had a wider healthcare connection. There may well be a clear difference between those two things but, as a clinician, I don't have the training to answer that question.

Communications about Early Infections and Actions

219. I certainly think the communication increased and probably improved over time. There was a process where the on-call consultant and the on-call senior manager of the hospital, usually Jen Rodgers and Jamie Redfern went round and spoke to the staff who were present on the ward, went and knocked on the doors of every individual patient and parent who was there and made themselves available to families who wanted to come along and have further conversations and there was a very clearly defined procedure on how you gave information out to staff colleagues who weren't on duty at that time. That evolved over time. I think there was a realisation that communication needed to improve.
220. What we were being told as clinicians probably came from our discussions in the department. Again, the Friday meeting is the big clinical meeting of the week. It planned for anything that was happening over the weekend. For

instance, a lot of the attempts to clean out the water supply happened at the weekend, so that was always very clearly detailed because you had to know when the water was going to be turned on, turned off and what we would be saying to families whilst that was happening. That would have been a formal process, but there would also have been discussions at the lunchtime handovers every day and it's perfectly possible that Prof Gibson, or whoever had been at the last IMT, would have at that point said, "At the last IMT they said if we get another one of these infections the following things are going to happen, so we need to get back to them to say we've had another infection."

221. At the start, it was all pretty informal and there was no communication strategy of which I was aware. By the end, communication around what was happening and when it was happening was much more formalised, so a strategy was in place. A lot of that was driven by the clinicians, prompted by the families, or prompted by the knowledge that if we didn't have a communication strategy with the families, then it was going to make the ward round the following day much more difficult because you would be explaining to every parent what was going on and potentially between gaining knowledge and imparting knowledge patients would have gone home. We were therefore very keen to get a clear communication strategy, but that's probably because we'd learned from experience that what we thought was not important to communicate, actually turned out to be very important to communicate.
222. In terms of the communication strategy that was present at the end, there was agreement within the IMT about what we were going to tell external agencies. Earlier in the process the ward-based clinicians had a clearly stated desire for a more robust communication strategy. The importance of this became clearer to other colleagues within the IMT later and the standard of communication improved dramatically over time.
223. We had a formal process around external press releases, and we had a formal process around agreeing what our position was and how we were going to communicate that with the families and what that communication would say. I

think that we even rehearsed questions: “If someone asks this question, what's the response to that going to be?” and so we pre-empted those kinds of concerns. So, yes, very much at the end, there was a formal communication strategy, but that was certainly not the case at the beginning.

224. In terms of internal communications, I don't believe that there was a different strategy when communicating with staff than when communicating with patients and families. From a clinical perspective, there was no hiding the information we were getting from Infection Control or managerial colleagues and there was no hiding the information that we would then relay to the families. Individual infections were discussed with individual families, along with information about what was being done to tackle the infection and to stop it recurring. We had no evidence as to the causes of the environmental infections, so it would have been unhelpful to speculate, but we were clear when talking to families about why measures were being taken, for example bottled water being used as a precaution because that there was at least a possibility that the reported infections were as a result of the water supply. The core content of the messaging would have been common, but how we conveyed that would obviously be adjusted to meet the needs of individual families. As with the external communications, the process to develop the messaging evolved over time. At the beginning, it would not have been clear that we needed to develop a process, so it was quite informal. However, as the problems continued, the need for effective and consistent communication with the families about what was going on became increasingly important.

225. We also set up an “official” Schiehallion Facebook group. We were aware that the families had their own closed Facebook pages, and we had concerns that it was not always accurate or helpful. We also knew that some staff had been named and criticised in some postings. Rather than trying to get involved in that conversation, it was decided that the best thing to do was to set up a separate Facebook group where you could put, essentially, an agreed line of communication, an agreed strategy, without it descending into the kind of unpleasantness that social media can descend into.

226. I was not involved with the hospital's Facebook pages or any of its content, but it was intended to provide a more factual discourse of what was going on.
227. To sum up my views on communications, it was poor at the beginning, with no strategy. It evolved as a strategy, and by the end of the outbreak communication was well thought out and robust. It was well delivered to individual patients by senior clinical and managerial teams. However, that strategy should have been in place much earlier.

Views on IMT Process

228. To this day I'm still not clear what my role was within the IMTs and whether I was there as an individual or to represent Prof Gibson or to represent my department. There didn't seem to be any formal process about which of the Haemato-Oncology clinicians were to be at the IMT. It evolved into the consultant of the week who was on call going to the IMT. The consultant of the week title refers to the individual who is on call for the ward during the week, so the consultant who is on for seven days on the trot, covering any patient who comes under the service of ward 2A, 2B, regardless of where the patient is in the hospital or even outside the hospital.
229. At the start of the process, we all assumed that Prof Gibson was representing us, but I don't know how many she attended. I have no idea what the terms of reference were for the IMTs, for example if it was quorate if there wasn't a member of the Haemato-Oncology team present and I don't know what proportion of the IMTs had a member of our team present.
230. When I did attend, my understanding was that I was there as the consultant of the week and my views were the views of a member of the Haemato-Oncology team. It was never made clear that I was representing the team as a whole. I'm not sure who issued invites to the IMT or how they were conveyed. It was a bit like, "Are you going to the IMT today? Who's going to the IMT today? Is there an IMT today?" All the standard meeting stuff that you might expect to have,

like minutes and agenda prior to meeting, quite often that was given to me when I arrived.

231. I was concerned about the IMT process, or lack thereof. When was I going to be invited? When should I be invited? Who was I representing? What group was I representing? Where's the minutes of the previous meetings? Why is there no constant narrative? In other words, if I'm brought in every four months or every six weeks, what's happened in the intervening period? Why am I not involved in that process? Maybe the greater IMT thought so long as there was representation from a clinical group that that then meant that the whole of the narrative arc was known to the whole of the clinical group. I can't recall the frequency or how I was invited. Certainly, by the end, the IMTs were convened if there was another environmental Gram-negative infection, but early on, when they were trying to work out whether there was an outbreak and if so, what the cause the outbreak was, they were certainly more frequent than that, but I don't know precisely how frequent they were.
232. I don't recall any specific incidents at IMTs that I would raise as particularly noteworthy. Very clearly, when Teresa Inkster was removed from the chair and she was replaced the tenor of the meeting changed from, "Let's try and find out why this outbreak is occurring," to "We do not have an outbreak and we need to stop all this talk of there being an outbreak." It felt like the new chair was trying to shut the process down. That is why we asked at the final but one IMT, "Please be clear with us. Do you believe that there is an outbreak of environmental Gram-negative infections in this hospital?" This was when it was being described as a pseudo-outbreak.
233. The response was obfuscation. We pushed the point and I'm sure that the minutes will confirm that, but there was no clear message that, "Yes we have an outbreak here and we need to do something to fix it." The result of this obfuscation was frustration on all sides.

Infection

234. Infection, whether endogenous or arising from the environment, in or out of hospital, is always a risk for children with cancer. There is a limit to what can be done to prevent it because some of these infections are endogenous, so the bulk of infections that our children get, they get it from either their own gut or their own skin. The rest of them, if they're in a safe environment, they will get from contacts, for instance friends, parents, or staff.
235. For instance, in the 1970s children with cancer were isolated, they were placed in very sterile environments and there was no decrease the number of hospitalisations they had, or the number of ITU admissions or deaths compared with children who were not rigidly isolated. What that shows us is that immunocompromised children are at risk from their own organisms and at risk from infections, such as respiratory viruses that all contacts have. There is only so much you can do to mitigate those things.

Central Lines

236. There are essentially two different types of tunnelled line. There's an implanted line which is called a port-a-cath, so the whole of the line is implanted and there is a different type of line, where the bit where you take blood or give fluid is externalised. That's called a Hickman Line or a Broviac. PICC Lines are similar but not tunnelled.
237. There's either a line that is completely covered by skin and you access that by pressing a needle through into a reservoir or a chamber that you've implanted into the child, or there is a line without a reservoir and externalised access.
238. The advantage of the one that's wholly underneath the skin, called a port-a-cath, is that they're easier to look after, the child can swim and bath and wash with much less problem. They're obviously much less easy to pull out. The disadvantage to them is that every time you access them you have to go

through skin. For the child that means a potentially painful procedure, but you numb the skin first.

239. Conversely, with a Hickman Line, which has the lines actually coming out of the child, the advantage to those is from the child's perspective in that it's not painful when you access the line. The disadvantage to them is they are much easier to pull out, they're more of a pain to dress and cover and they potentially hurt if you are having childhood rough-and-tumble, and someone bashes into them. They have a very slightly higher infection rate.
240. So, the big distinction is your line is either completely internalised or it has an externalised component.
241. We have very clear SOPs around how you access the different types of line about how often they are flushed. Again, there are different SOPs on how they're dressed. So, there are very clearly documented ways of how you look after both the line itself and the child in whom the line is placed.
242. The Hickman Line has a little spongy-type surround that encourages the skin to heal up over the line. Obviously with a port-a-cath it's below the skin, so the risk from infection on the port-a-cath is as you puncture through the skin to get into the line itself. The risk from a Hickman type line is that you have an opening in the skin where the line goes into the patient.
243. Any line has potential to cause an infection because it's foreign to the body and its plastic. Your body will naturally try and reject it. It also acts as what's called a portal of entry, because you have broken down skin where that line is, so you try and minimise that. Most line infections will be what are called Gram-positive bacterial infections because those are the kind of organisms that live on your skin and therefore either crawl in through the potential gap with a Hickman or are pushed in when you when you insert a needle into a port. They can also enter the blood stream directly through dry, broken skin and secondarily infect the line.

244. You can also get Gram-negative infections and those are mainly gut associated. You can get those because the gut is leaking and the organisms get from the gut into the bloodstream, and then from the bloodstream into the line, and then from the line back into the bloodstream. Or you can get them because children are children, and they have their hands down their trousers or nappy and then they take their hands off and play with their lines. Adults are adults too. They might have a quick toilet visit and forget to wash their hands.
245. The majority of line infections are Gram-positives, most commonly Staphs and streps. They tend to make the child unwell, and we treat all fever as if they've got a line infection. Though they tend to make the child unwell, they generally don't make them really, really unwell. In contrast, Gram-negative infections have the ability to make you really, really unwell. Not all of them do. In fact, the vast majority of them don't, but if you were to leave a Gram-negative infection, that would be very, very serious. For instance, if you are going to ITU or you die from a line infection, it's much more likely to be a Gram-negative line infection than a Gram-positive line infection.
246. You can also have fungal infections in your bloodstream. It is most likely that the fungus has got in from their gut (from their mouth down to their anus) and then got into the bloodstream and then got into the line, as opposed to the fungus being on the skin and getting into the line, but we never know.

Monitoring of Infections

247. All positive infections are notified to us by microbiology colleagues and automated systems. I've no idea how Microbiology and Infection Control communicate between themselves, but I know that they do and I know that's changed as a result of the whole process that led up to what we're talking about. For instance, we have what's called a run-through chart where we look at our number of infections over time. We have our own internal audit processes. We have a line database, but the institutional control is with Microbiology and Infection Control.

248. We had very real concerns about the number and type, particularly of Gram-negative infections, we were seeing. At the time, we didn't know what the aetiology of this increased number of Gram-negative infections were. As I mentioned earlier, knowing what I know now, I believe that, on the balance of probability, they were environmentally driven.
249. Infection Control is different now to how it was when we first moved across in 2015, or at least it feels different. We always had a very good working relationship with our Microbiology department. We probably had limited awareness of the difference between Microbiology and Infection Control. We certainly knew there was an infection control nurse colleague, but in terms of the kind of separation of powers within the microbiologist world, we weren't aware of that. We were just aware that we told our colleagues in Microbiology and they would take whatever infection control actions were needed.
250. Our early concerns about infections in the Schiehallion unit were echoed by our Microbiology colleagues, so Teresa Inkster, for instance, who at the time was Infection Control lead, I think. Had you have asked me at the time how Infection Control operated, I would have acknowledged that, frankly, I didn't even know we had an Infection Control lead.
251. I had had regular dealings with Teresa Inkster for many years. I saw her as a microbiologist, which was simply a reflection on my own limited understanding of the difference between Infection Control and Microbiology. I certainly knew that there was an entity of Infection Control because we used to talk about the Infection Control police coming to the ward, to make sure you wash your hands and take your rings and watch off and that kind of thing. That was very much at a practical level. I never needed to give thought to a systemic Infection Control overview or a strategic Infection Control body. It was obviously there, but if you don't have a problem, you don't notice it.
252. I had very little involvement in any investigations in relation to the origin of infection or infection risk. Our job as clinicians was to highlight if we had

concerns, which we did, and it was to attend the IMT when invited. There were a couple of occasions where you went because you were concerned that things weren't necessarily highlighted to colleagues on an IMT and you wanted them highlighted. That was our input into the process.

253. We saw very much our job was to recognise the unusual within our patient population and reflect that to our colleagues in Infection Control and Microbiology. After that it is for them then to work out why these things are happening. Our job is to present the issue to them for them to do the investigative work behind it.
254. Having said that, we were very clear that we were concerned that there was an environmental component to the bacterial infections being reported and it was very clear that that was not a message that people wanted to hear. There will be minutes of IMTs very late on in the process, where we ask very clearly, "Do you believe that there is an environmental problem within the children's hospital, because the message we're getting is you think this is a pseudo-outbreak." I don't think we ever got a straight answer from the new IMT chair if they believed that this was a true outbreak or a true environmental problem and that was frustrating.
255. Sometimes there was pushback was from Estates colleagues. It's understandable that they know far more about boilers and air conditioning circuits and chilled beams than I do, so many of the questions that I would have been asking, or statements that I might have been making, may well have been nonsensical to someone who was a professional in those areas. They might have been a bit put out by that. I was aware that Infection Control colleagues were very concerned that the infections that we were seeing were linked to the hospital environment. I don't think they were eager to prove they were. I think they were as eager to prove they were not. What they were eager to do was to say, "These infections that we are seeing in this population may be directly attributable to the environment in which they are looked after, and we need to exclude that." That was their starting point.

Medical Safeguards to Mitigate Infection Risks

256. In terms of clinical measures to try to reduce the infections, we looked at the way we approached accessing our lines, from the second they were put in in the operating theatre all the way through to how colleagues accessed those lines to either take blood or give drugs and the whole of that process was reviewed. We did also institute prophylactic measures to try and decrease the number of infections at the request of our colleagues in Infection Control.
257. Those were the two big areas. One was looking at lines and how they were placed right from the decision to place a line through to how did that then physically happen in the operating theatre. Then what happened to them after they had left the operating theatre? What happened to the child when they came back onto the ward? Then how did we routinely access the lines? The technique of accessing and flushing lines was looked at in minute detail.
258. The green caps were introduced as a direct consequence of the infection concerns. It was an easy step to take, and it is an additional safeguard. I think there were changes in the way the lines were organised, in terms of trying to get them all done on a single list rather than being done out of hours on an emergency list. Whether there were changes to the skin prep, in other words, the chemical used to wash the skin down prior, I don't know. It was certainly looked at. Nursing colleagues would be able to tell you much more about that than I can.
259. What I would say about all these things is that what we have seen is a huge diminution in our number of environmentally associated infections. Our difficulty is that we don't know which of the many, many changes that we instituted have made that effect. Whether it's some of them or the sequencing of some of them. It's just impossible to unpick multiple changes.
260. Most of the measures, such as the green caps, are still in use. They wouldn't do any harm as additional precautions but there are also cost implication. There was also a downside to using oral prophylaxis with quinolones and that's why

we stopped doing that and swapped over to a different approach to prophylaxis. Again, you can argue whether there's any evidence base to prophylaxis being effective, but it's very difficult to stop doing something when the whole of your process has produced a massive change that results in world beating low numbers of infections, as we have now.

261. Advice was given to clinicians around the management of infection or infection risk. This was always the case and we worked very closely with our Microbiology colleagues about that. We also have Wednesday afternoon educational meetings where we would have regular discussions, say, of a paper around management of infection in children who are immunocompromised. The education sessions are unit based and staff from all disciplines attend. We will either have an Infection Control person there as a guest speaker or we will get them along to comment on something that's being presented by a member of the team. Microbiology and infection control colleagues attend every day at our lunchtime handover, and they have an expanded role on the Friday handover. We now collect weekly data on how many line infections we have had in the previous week, and that is presented and recorded: a bit like on a building site, "It's 10 days since there was an accident on this site" I think we did that after Mike Stevens' review. We also have a review of our run charts every three months. So now there is a lot more formalised approach to looking at our line infection rates, this has been good for staff moral as we can now see how well we compare with other units across the world. It is a source of pride we now have world beating low incidence of infections.

262. Overall, I would certainly say that I and my clinical colleagues have a very positive relationship with Infection Control colleagues and the kind of education and the advice process that flows between us.

Infections and Environment

263. There are certainly cases where, in my view, there is a link between patient infections and the hospital environment, and those infections had a significant

impact. For example, we certainly put patients into the Intensive Care Unit with environmental Gram-negative infections. They were very seriously unwell and needed to be ventilated. I could not say precise numbers, but those details will be recorded somewhere.

264. A caveat I'd add is that a proportion of patients with Gram-negative infections will go to the Intensive Care Unit. A significant proportion of those will require ventilation or pressors, which are drugs to maintain your blood pressure, on an Intensive Care Unit and, very rarely, some of those patients will die. There is, therefore, an accepted risk of overwhelming Gram-negative sepsis with chemotherapy (to the point that the latest CRUK consent forms for chemotherapy explicitly state a risk of going into the Intensive Care Unit and dying) The likelihood of that risk is very, very low. However, in our population we saw a high number of Gram-negative infections and we saw a proportion of those patients go to the Intensive Care Unit and we saw a proportion of those patients in the Intensive Care Unit get very unwell.
265. As I mentioned before, it's very difficult on an individual basis to directly ascribe their particular infection to the environment. But what you certainly can do is step back and look at the number of unusual infections we saw in our patient population, and I was very concerned that we had a problem related to our environment
266. I can only talk about solid and brain tumours, because I discuss those every week with my solid and brain tumour colleagues. I can remember that there were patients who got overwhelming infections, in this group. Some had their treatment delayed as a direct result of infection. Among these were patients where the infection meant we had to put a longer gap than you would normally have between chemotherapy agents.
267. I can't remember any patient's treatment being changed but I'd have to have a look at each individual patient. The reason I'm being slightly cautious here is because there are many, many patients who, towards the end of their chemotherapy regimens, you would stop earlier than the protocol might say

because they would just get so many infections. That's because essentially their body has taken a very large hit from the chemotherapy. Therefore, it's very difficult, in relation to an individual patient, to say whether the frequency of the infections they are getting is as a result of the treatment protocol they are on, or if it is as a direct effect of the environment that they are within. Certainly, when we tried prophylaxing with what we call the quinolone antibiotics, we saw side effects from that, that impacted our ability to deliver therapy, but then we stopped the quinolone antibiotic rather than stopped the therapy.

Source Isolation

268. Absolutely more patients were isolated. Isolation meant that they wouldn't have been allowed out of their rooms and the people coming into their rooms would have to adopt certain behaviours. That might include increased hand washing, whether that's putting on a pinny, washing more times as you leave, the direction of flow on their HEPA filter, all of those kinds of things. All of that would have come into their isolation status. Whether there was more source isolation or not, I don't know, but there was certainly more isolation and I'm sure that there will be figures recorded somewhere that back this up.

Cleanliness and Hygiene

269. When we first moved over in 2015, obviously it was brand new building and it gleamed. However, it very quickly became clear that Royal Hospital for Children was a very difficult place to keep clean. If you think about all those pods that stick out, how are you going to clean those roof surfaces? There were roof spaces that you could see off the corridors and they were literally thick with dust.

270. In the first year or two after we moved across, I would routinely get hold of my senior manager or colleagues and say, "This is a mess." I would send them photos of the dust, and they would agree to send someone to clean it off. To me, it illustrates that when architects design hospitals, bizarrely, they don't think about cleaning them. They think about the statement they're trying to make,

they think about the underlying ethos, they may well think about the environment, but surprisingly little attention seems to be given to how we're going to physically keep this infrastructure clean.

271. It was therefore very obvious that there were difficulties with keeping the hospital clean of dust. I used to regularly point out to colleagues that dust contained human cells. There seemed to be little investment in cleaning. In areas like back stairs, that were very rarely used by patients but frequently used by clinicians, you would see discarded sweet wrappers or chewing gum and it was there for months.
272. Each individual cleaner worked really, really hard, but the question was whether there was enough of them, were they were given the right kit to do the job, and were they sent to the right places to do the job? Was anyone overseeing their efforts?

Incident Management Team Meetings Regarding Infections

Incident Management Meeting Minute, dated 28 January 2019, relating to Cryptococcus in Ward 6A (A36690584 – 28.01.2019, IMT Cryptococcus, Bundle 1, page 295)

273. I attended the IMT meeting on 28 January at which cryptococcus was discussed and I made reference to the challenging work environment with patients being cared for over 3 separate areas. The situation was that we had day care on one site, bone marrow transplant on another site and inpatients on another site. For instance if you've got a patient coming in for chemotherapy on the Day Care Unit and then they've got to go across to a different place to come into a different hospital to come for their inpatient therapy, in terms of Nursing colleagues, it's a really inefficient way of nursing a unit because you've got to have a minimum number of nurses for each of those patients in those areas and if you split those areas up then you increase the number of nurses you're going to need in total.

274. Similarly, for the medics. For instance, when the transplant patients are on the Paediatric Ward, if the transplant patients aren't acutely unwell then the transplant doctors don't need to be physically present on the ward and they can see patients in day care or they can go and see their haematology patients, as well as their transplant patients. Because these were children being treated in an adult environment, the adult colleagues, not surprisingly, insisted on there being paediatric nurses always present and a paediatric doctor being present at all times. Again, that's just an inefficient use of staff.
275. There's also a knock-on because it means if you're there, you are not in other places doing work. So those other doctors and nurses in those other places must work harder to cover. It was a challenging environment.

Incident Management Meeting Minute, dated 14 August 2019, relating to Gram-negative Bacteraemia in Ward 6A (A36591626 – 14.08.2019, IMT Gram Negative Blood Ward 6A, Bundle 1, page 343)

276. I attended the IMT on 14 August 2019. I cannot recall the specific meeting and my attendance was pretty ad-hoc, but I think it was the last to be chaired by Teresa Inkster. I am not sure what other IMTs I may have attended around this period, but that information should be recorded somewhere.
277. The minute indicates that it was called because of another Gram-negative infection. I think we had IMTs every time there was another infection.
278. The case definition referred to in the minute is about determining the type of infection, for example a bacterial infection and, if so, whether Gram-negative or Gram-positive infection, if Gram-negative infection, is it environmental Gram-negative, that kind of thing. The IMTs were around Gram-negative bacteraemia.
279. There were sometimes differences in views on what would be encompassed as case definition. Sometimes, some of the microbiologists were querying whether things like E. coli, so that's a Gram-negative infection but not one that's thought to be environmental, should be reported into the IMT. Differences of view were

actually fairly amicably resolved. It was around, "Let's all be very clear about what we're discussing: environmental Gram-negative infections, does it either help us or hinder us if we include other Gram-negative infections that none of us think are going to be related to the building." On the one hand you might say, "Well, it's helpful to include them" because if it is, for instance, poor hand hygiene, you'll see lots of other infections other than environmental Gram-negative infections, because soap doesn't just pick off environmental Gram-negatives. In that case we ought to be looking at the total burden of infection on the ward. Or you could argue, "No, we absolutely just want to focus on things that may point us towards an environmental problem with the hospital and everything else is extraneous." Both of those are perfectly reasonable positions to take.

280. My perspective on all of this is that if you are sitting as the Chair, you are responsible for chairing that meeting. If there is a discussion around case definition or anything else, the chair ultimately has to decide what that meeting has agreed. Then at the following meeting when you go through the minutes if you disagree about what the case definition is, that's where you say, "I disagree with that. I never agreed that should be the case definition." I guess that there would have been an escalation route if differences could not be resolved, but I'm not aware if that was ever tested.
281. The minute notes discussion about the numbers of bacteraemia having not increased. My concern at that time was not that infections were increasing; I was concerned that they weren't decreasing. The fact that they weren't going away was enough to continue to cause concern, because they are atypical infections, not standard run-of-the-mill Gram-negative infections.
282. I can't remember who Chris Deighan is, who is quoted in the discussion. I do remember Ian Kennedy. Ian is an epidemiologist. Epidemiologists are very focused and who are rigid, correctly rigid, about things like case definition because that allows comparison of like with like. Their focus is what's called "population health", for example how do we get rid of malaria in a country, how do we reduce the numbers of COVID infections in a country? They're not

interested in, “How do I cure this individual of his malaria?” it's, “How do I decrease the amount of malaria in this patient's population” They have a different remit to clinicians, so when Ian Kennedy puts together an epidemiology report, he will have been given a task and he will have completed his task in the way his task was defined. It's how you interpret those numbers that is important and that's where you might have differences of opinion.

283. On the difference of opinion about the infections, I wasn't taking issue with the fact that Dr Deighan said that they were not increasing. My point was that it was ignoring not only were we sitting on very high number of infections, the nature of the infections themselves was extremely unusual and potentially very serious.

Incident Management Meeting Minute, dated 5 November 2019, relating to Gram-Negative Bacteraemia in Ward 6A (A36591709 – 05.11.2019 - IMT Gram Negative Blood Ward 6A, Bundle 1, page 392)

284. I attended the IMT meeting on 5 November 2019, which included the presentation by Prof Alistair Leanord about the sequencing results of the Enterobacter blood stream infections from the RHC. including the 3 samples from 2019.
285. Prof Leonard had been asked to do a piece of work and I think he did what was asked of him. I just think he was wrong in the generalisation of his results to the wider paediatric oncology population in Glasgow. I agree with Professor Steven's report in this regard.

Prophylaxis

286. There is a standard prophylaxis of some haemato-oncology patients against something called pneumocystis carinii or pneumocystis pneumonia. The short form of that is PCP though it's now got a new name, Pneumocystis Jirovecii, but everyone still calls it PCP. It is commonly known because it is the lung infection that people with HIV died of when we were unable to treat AIDS. I mention that

because it shows how potentially devastating getting a PCP infection is. Again, for context, pretty much all of us carry PCP within our lung. It's not that you are getting it from somebody else, it's that you already have it.

287. There are certain chemotherapy regimens, especially those which are called lympho-depleting, which increase your risk of pneumocystis pneumonia. For instance, all the leukaemia patients get prophylaxed against PCP. Some of the solid tumour patients get prophylaxed against PCP and that depends on the type of the chemotherapy regimen they're getting. The choice of whether to prophylax or not is normally dictated by the protocol they're on. Usually, they will say either patients should have pneumocystis prophylaxis, or they will say pneumocystis prophylaxis is at the discretion of the treating institution or they'll say pneumocystis prophylaxis is not required. So, the concept of prophylaxis in paediatric haemato-oncology is standard. It's not something that is alien to us and many, many of our patients will be standardly prophylaxed because of this organism that we carry in our lungs.
288. There are variants of the prophylaxis, but the vast majority of patients get something called septrin.
289. For some of our patients, the prophylaxis is 100 per cent planned. For others, for instance where there are chemotherapy regimens that are intermediate risk, that you might have a slightly increased risk of pneumocystis on, the protocol may say, "at institutional discretion." You might therefore choose not to use prophylaxis in those cases, but if they then subsequently went on to get pneumocystis pneumonia, you would very likely then prophylax them at the end of that.
290. PCP prophylaxis tends to be prescribed for the duration of therapy, plus about 100 days, three months, from the end of therapy. For children who are going to require prophylaxis, most of those children will either have lymphoma or leukaemia, so the duration of therapy could be anything from six months to three years.

291. PCP prophylaxis isn't contentious. It is used because you are trying to prevent a very unpleasant lung infection that could be life-threatening. As I said, we have some very well-defined subgroups in whom it's absolutely mandatory. There are others in whom the evidence base is less robust and others in whom you just wouldn't do it. That can reflect the different way the chemotherapy agents work and so therefore the different side effects that they have.
292. Like any drug, there is a risk. There is no such thing as a risk-free drug, but the risk-benefit in patients with a likelihood of pneumocystis pneumonia is huge because if you get PCP, you may well end up in the Intensive Care Unit. It may kill you. Having to take a tablet two or three times a week that tastes vaguely unpleasant is therefore a relatively inconsequential.
293. Where prophylaxis is being administered, this should be communicated to patients and families. For those patients who are going onto PCP prophylaxis, we would tell the families that that was occurring. We have a very clear consent form for the chemotherapy agents. We didn't used to have a pre-printed consent form for pneumocystis prophylaxis, however we do now. We need to be aware that we're telling parents about prophylaxis at the same time we're telling them their child's got cancer and they're going to get surgery and chemotherapy and potentially radiotherapy. Many families cannot take in any of that conversation apart from, "Your child's got cancer." It therefore would not be a surprise to me at all if a family said that they were not told about prophylaxis because they're just not in a state to be able to remember that.

Use of Prophylaxis in RHC

294. I am aware that ciprofloxacin has been administered in the RCH, as well as septrin. There are also routine prophylaxes for some of the patients against fungus. These would be either fluconazole or AmBisome and the choice between the two would depend on their drug-drug interactions. For instance, we've got a chemotherapy drug called vincristine that interacts with the azole group, which is present in many antifungal agents. If you're getting a vincristine-

- heavy protocol, it makes no sense to give an azole as fungal prophylaxis, therefore those patients, well get AmBisome. For the patients who are at risk of fungus this is well-recognised, is well-defined, and that's non-controversial.
295. Posaconazole may be used as a prophylaxis rather than fluconazole, depending on the fungus being prophylaxed.
 296. When septrin and the azoles are used in the RHC, they are effective and I have no doubts that they achieved their purpose, which was to prevent the PCP and fungal infections.
 297. It is fair to say that the degree of concern about invasive fungal infection throughout the whole of the QE campus at one point was extremely high and so we certainly did look at whether should we be prophylaxing patients, and if so, which patients should we be prophylaxing. I cannot remember which patient groups we ended up prophylaxing with azoles.
 298. We did use prophylaxis against environmental gram-negative infections, using ciprofloxacin. It was given to all patients, which was very, very unusual and no one else did that. That was a direct suggestion of Teresa Inkster and on the understanding that there was absolutely no evidence base to it, that there were theoretical reasons why it may work and theoretical reasons why it may not work. Therefore, we did have a time when we used ciprofloxacin prophylaxis against Gram-negative infections in our patients, but we had a lot of what were called "drug-drug interactions." These interactions became too big a burden and we moved to a physical prophylaxis using a line lock (TauroLock)
 299. The blanket administering of ciprofloxacin was linked to concerns about the number of what seemed to be environmentally driven Gram-negative infections, particularly water borne infections.
 300. For an individual patient, the writing of the prescription would have been at the instigation of the consultant in charge of the case and that prescription may well

have been written by the day care staff or what we pejoratively call our junior colleagues, our speciality colleagues, However, the decision to institute that prophylactic policy was taken by our Infection Control colleagues, by Teresa Inkster and her team (presumably through the IMT process) Although we would have had input into that discussion, the ultimate responsibility for that lies with Infection Control colleagues.

301. The ultimate responsibility for the totality of the management of the patient lies with that patient's consultant, but if, for instance, I've got a patient who requires chemotherapy, radiotherapy and surgery, I will be responsible for them overall and the chemotherapy bit. I am responsible for saying, "You need surgery" and for organising surgery, but the responsibility for the surgery itself and doing the surgery lies with the consultant surgeon.
302. Similarly, the radiotherapy and the consequences of the radiotherapy lies with the consultant radiotherapist. With regard to a decision about something like prophylaxis of your individual patient or prophylaxis of a group of patients, that is a decision taken by Infection Control colleagues. As the patient's individual consultant, you could choose to ignore that advice, but that would be highly unusual, and you would have to have good reason to do so.
303. While Teresa Inkster and the Infection Control team drove the decision about using ciprofloxacin for all patients, I would not wish to give the impression that this was imposed on us. There was discussion with clinicians, but we were very clearly told, "We think this is the best way to try and ensure your patients don't get infection" and this was at a time when none of us knew what the aetiology, or the underlying cause of those infections were.
304. We instigated that policy and when we saw that it was interacting with an awful lot of drugs and medicines, we stopped it and we introduced the TauroLock prophylaxis, which is a bit like a disinfectant that you leave in the line. It's bactericidal. In other words, it kills bacteria. It doesn't enter the patient. The whole point is it sits in the line. We introduced that as an alternative to the ciprofloxacin.

305. With the ciprofloxacin prophylaxis there was much discussion about dosages. That was because there is no established use of that medicine in a prophylactic situation. If you look at septrin, you can go to one of our standard drug books called the BNF and it says, "prophylactic dose" and that's what you give. If you go to the same book and you look at ciprofloxacin, there is no prophylactic dose. So there would have been a discussion about how much should we give and how often, but once that was formulated, then everybody got what was agreed.
306. The concern we were trying to mitigate was that the patients were at increased risk of environmental Gram-negative infection, so we were doing everything we could to try and minimise that risk. I don't recall a particular spike at that stage, it was more that the worryingly high rates of infection were continuing, despite the water flushes, the changes of shower heads and all the other steps that had been taken. We still had the problem – what else could we do?
307. Once the decision had been taken to administer the ciprofloxacin it became routine, but against a backdrop that it was a highly unusual step and certainly not the kind of approach I had ever seen taken elsewhere in the UK.
308. Ciprofloxacin prophylaxis may be seen as controversial, if it's not done in any other paediatric centre. But if you've taken every single physical measure, you can to your environment and your infection rates aren't going down and you don't do something else, that's equally controversial. Was it a recognised approach to the management of environmental Gram-negative infections? No, but there is no standard approach because this was such an unusual situation and there was no literature to guide us.
309. In terms side effects of prescribing the ciprofloxacin across the board, the first thing to think about is actually the whole of the hospital. These are the drugs that you really want to restrict the use of because they're very good at killing resistant infections, but they're also very, very good at breeding out resistant bugs. The potential problem that you have is that you are breeding out a whole

bunch of organisms you will then have difficulty treating in the future. Essentially, if you have widespread use of antibiotics then you will potentially grow organisms that are resistant to standard antibiotics. These quinolone antibiotics, of which this is one, are very well-known for inducing resistance in Gram-negatives. That's why, in this country, you can only get it on prescription.

310. These are drugs that you therefore really do not want to be prescribing without a lot of forethought. It was not a decision taken lightly.
311. Then the second issue is the side effects that individual patients get. Quinolones have an awful lot of side effects. They're all there in the books to read about. The major one we saw was that it increased what's called the QT interval on the ECG, which is a way of saying your heart becomes more at risk of having an abnormal rhythm. It doesn't mean that the child will have an abnormal rhythm, it means that they're more at risk of that.
312. We saw prolonged QT syndrome in many of our patients. We would then stop their antibiotics, which then of course meant they were potentially unprotected because they weren't getting prophylaxis. We also saw an increase in interactions with other medicines, so you had to put the doses of the other medicines up or down. We had so much of that going on that we just said we couldn't continue. Quinolone prophylaxis was a reasonable idea, but what we had managed to prove was quinolone prophylaxis was not possible in our patient population.
313. I can't remember any of our patients physically coming to harm from their prophylaxis, but we did have to play around with their other medicines because of those drug-drug interactions and we did see changes in their ECG which, if we hadn't stopped the medicine, may then have precipitated problems with their heart rhythms.

314. There may have been some who had an allergic reaction because anybody can have an allergic reaction to a drug. They could have said, "I felt sick with it," but then they were getting chemotherapy at the same time, so I can't categorically say that no one had a side effect from the quinolone prophylaxis, what I don't remember is anybody within my patient cohort having a serious side effect or serious allergic reaction from that.

Communications about Prophylaxes

315. In terms of communication about the ciprofloxacin, we would have told every single member of staff because the nurses would have to give this information to the patients. I can't remember precisely what we said to the patients. As a bare minimum we would have told them that we were giving the patients this medicine because of all the concerns around the Gram-negative infections and said something like "You know we've moved to 6A and this is part of the process of moving to 6A which is about trying to reduce all of the infections, and this is another way of trying to do that." That was the kind of broad framework that we'd have used.

316. I guess that ultimate responsibility for the communication strategy would have sat with managerial colleagues. Certainly, the ward nursing staff would have been at the forefront of giving the information out, but they wouldn't have been part of the process of making the information up. They would have been very clear and very vocal that they needed to have some form of communication to talk to families. I honestly can't remember whether it was all verbal or whether we had a written communication to families around the decision to give the children cipro.

317. I suspect that at the time the decision was made, there may well have been a written communication to the families on the ward at the time. Then subsequently when families came in, they would have been told that, "Just like we moved to 6A, this is part of trying to reduce the Gram-negative infections." Those patients may not have been given written communication. I can see that having possibly been the case.

318. One thing I am sure of is that parents were certainly informed of the cipro decision. I'm confident about this because I've been dealing with parents and children for over 30 years as a paediatrician. You cannot give a child a drug without the parent what is it for. It just doesn't happen. If a family was to say, "We never had a discussion about this," my reflection on that would be, that I was sorry that I had not communicated effectively, there was a discussion about this, but I had not done that in a way that was understandable. It's axiomatic to the way we work. You can't give drugs to children without explaining why you're giving a drug to a child. All parents ask questions whenever there is new medication, and quite rightly too.
319. I would refute any suggestion that information about the prescription or use of prophylactic medication was withheld from parents. That is the antithesis of what we do. There were occasions where we simply didn't know the answers to questions that were asked, but this is very different from withholding information.

Communication about Ward Closures and Moves

320. In terms of communication in relation to the closure of 2A and 2B and the move to 6A and 4B I'd describe communication between management and clinical staff as okay. I think it's tricky in retrospect. I think at the time they did as good a job as they could. I think they do it differently now. I'd say likewise in terms of instructions from management to clinical staff about what patients and their families should be told. Do I think whatever formal approach there was could have been done better? Yes, I do. It evolved into something that was satisfactory, but it took a lot of time to get there.

Communication and Whistleblowing

321. The duty to communicate effectively with patients generally and with paediatric haemato-oncology patients specifically can be explained quite simply. It is all

about honesty and openness, which are the absolute foundation of what we do. The reason for that is the parents do not trust you if you are not really honest and open with them. We say to them at the start, "We are going to be really honest with you and we're going to be open with you and that means you may well hear things you would rather not hear, but the reason for that is that if we're going to have conversations about life changing decisions, you need to be sure that you can trust me and the only way you can trust me is if I tell you everything that is happening to your child." That's the way we work.

322. It's a professional norm. In terms of codification, I think the duty of candour is probably the only legal framework around that and I believe that Scotland is ahead of England and Wales in that respect.
323. Certainly, within your professional approach, if you weren't open and honest with your patients, for instance if you were to lie to your patients, you would get struck off for that. The GMC governs professional norms over which you can't step and those are very clearly defined.
324. When communicating with adult haemato-oncology patients, if they say to you out loud, "I do not want you to tell me about my chance of being cured" or "I don't want you to use the word 'cancer'," you have to respect that. So there is a difference of approach: adult patients may well not be as verbally obvious as that, but if you start talking to them and they immediately pick up their paper or put their headphones on or say, "Oh, excuse me, doctor, I've got to go to the toilet," it suddenly becomes very clear that every time you broach a subject, it's not to be discussed. Then it would be remiss of you to pursue that area of conversation when it's very clearly not one that adult wishes to have.
325. In paediatrics, it's slightly inverted because there's a duty of care to the child and a duty of care to the adults. We cannot treat children unless we have got a totally open approach to looking after them because you're coming at them with a big needle or you're giving them medicine that's going to make them sick. They will just refuse to have investigations done or to take medicines, unless they completely trust the team and, they can only trust us if their parents

trust us. The only way that their parents are going to trust us is if we are clear and honest with them from the start.

326. We frequently have conversations with parents where they say, "Please don't tell my child they've got cancer because that will destroy them mentally," which is understandable, and we say "Well I absolutely get where you're coming from, but the thing is that they're on the Schiehallion Ward and on every single notice board there's something from the Teenage Cancer Trust or the Leukaemia Foundation or the Children's Cancer Scotland Award and if you don't tell them they're going to rapidly work it out."
327. If you don't tell them, they're going to be really frightened because if you're not telling them that, what else are you not telling them? If you don't tell them, you can be absolutely sure all of their pals at school are going to be telling them and they're going to go on to Google and if they put in "Schiehallion Ward, Glasgow Children's Hospital" the first thing that's going to come up is that it is a children's cancer ward.

Communication about Infections

328. I would say it is a very similar approach, possibly with a slightly different emphasis, when communicating to patients about infections. If a child comes in and they've got RSV or flu, or even if they've got COVID, you'll be very clear about why they are in hospital, where they will be treated and what with. For example, you may say: You have a fever, we don't know what's causing it yet, but we are investigating that. In the meantime, we are going to commence antibiotics because that's the safe thing to do. You are going to go into a side room and we're not going to give you chemotherapy until you've recovered from your infection" or when it comes to COVID, when the COVID meds came in, "You've fulfilled the criteria for this particular COVID medicine, you're going to get that." That's the approach one would take. You wouldn't say, "You've got an RSV infection, that's a really common paediatric infection, but a proportion of children with this go to the Intensive Care Units, some of them need a chest drain, some of them go on and die." You must be proportionate.

329. Of course, I might have a different view of risk than the parent does. But you absolutely have a duty of candour to say, "You've got an infection." You've got a duty of candour if you then grow the infection to tell the family that you've grown that infection. All of that absolutely needs to be told. If a patient has an infection, no one is going to say, "Don't tell them that, they don't need to know."
330. The same principle applies where something has gone wrong during care or treatment, you need to go and tell the child and the family that something has gone wrong, why it's gone wrong, what are you doing about it to fix it, and to make sure it doesn't happen to somebody else. That then needs to be very clearly documented in the notes.
331. The overriding principle of the duty of candour is that you are fully open and honest about what is happening to a patient, either in terms of their disease process or what you are going to do to ameliorate their disease process or what has happened as a consequence of their stay under your care.
332. I am aware that there is a process to facilitate disclosure of wrongdoing, failure, or inadequacy. There is a process in any hospital for escalation of that kind of concern and I would be very surprised if anybody who worked in any major institution didn't understand how to escalate a concern. That in itself would be concerning.
333. Whether such disclosure is encouraged is a different question, but I don't believe the culture in any hospital in the United Kingdom is as good as it should be. I don't believe whistleblowing is seen to be a positive thing. Individual clinicians or managers may truly believe that, but organisations are Darwinian and will look to protect themselves by targeting the weakest individuals. That's the way of the world.
334. Communication regarding concern about infections and links to the hospital environment, improved at all levels at the end of the process but perhaps

because we were having to also address a very negative or concerning counter narrative. It evolved into something which I thought was effective, but from a slow start, particularly in terms of external communications.

335. In relation to communications to patients from management and from clinical staff, the clinical staff, I think, communicated clearly to the patients and their parents what they knew. Professor Stevens in his report was critical of the way we communicated to families in terms of the degree of description that we would give of the infections that they had. I would disagree with Mike on that. I'd agree with him on pretty much everything apart from his desire that there was more detailed communication with families about the particular type of infections that they got. I think we did that as well as any other Paediatric Oncology Unit in the United Kingdom. I think that there is a huge danger in, essentially, giving unexpurgated versions of a clinical story to a family without an explanation. You're going to burden them with information they don't understand. It is a judgement call, which is why Mike was right to make the point, but I would disagree with him on that minor issue.
336. I don't recall instructions from management to clinical staff regarding what and how to communicate with patients, but I contend that we are well able to manage such conversations, given the nature of our roles. I think that it is incumbent upon managerial colleagues to give me any information that families should know. It's not up to the management to tell clinicians how communication is to be done.
337. By the end, the IMT was the major vehicle that drove a communication strategy. Obviously, the Friday meetings were still happening, and lunchtime handovers were still happening. Jamie Redfern and Jen Rodgers with clinical colleagues were doing rounds to speak to families, and we would exchange views. I'm sure that something must have been given to the parents leading up to the move, but others may be better placed to comment on that.
338. In terms of communication from management to patients, my knowledge of that would be from the night-time walk around after an IMT with managerial

colleagues. Jamie Redfern would do this with a senior nursing colleague. Jamie is not a clinician, but he saw this as his responsibility, despite opening himself up to criticism. Whenever I accompanied management colleagues on the ward, they were open and honest with the families. When that formal, post IMT round started, I thought their communication was good.

339. On GGC's communication with the media, I think that it was appalling, in contrast with the direct communication with families on the ward, which I think was pretty good. I was surprised at how GGC thought they could manage the media and that they didn't seem to think forward about scenario planning. What are we going to say if X happens, what are we going to say if Y happens? How are we going to respond? The GGC interaction with the media, to me, was always reactive.
340. At the time of the BBC Disclosure programme, at that point there was so much press about the hospital, it all merged into one, as far as I was concerned. Colleagues might say, "Oh, did you see the news last night?" and, "We're on the front page of The Sun today" or "It's The Record tomorrow." I don't recall any particular lines going to staff about the Disclosure programme, but that's not to say that it didn't happen. It might just have been lost in the noise.
341. On communication between management and external bodies, we had no idea, officially, what conversations were going on. There was no obvious communication strategy with external agencies. Even when the Scottish Government was put GG&C into level four measures.
342. Could all of the communication have been improved? Absolutely, but I come from a background where I think whenever you have communicated with someone, if you reflect on what you've done, you can always think of ways you could have done it better.

Impact on Patients and Families

343. In terms of children and their families, we certainly had children who had more inpatient stays, we had children who became very unwell with Gram-negative infections, and we had children who went to the Intensive Care Unit with Gram-negative infections.
344. Could it be said for an individual child that their individual Gram-negative infection was directly as a result of the water supply? I think that would be very tricky if you were to apply a level of evidence that would be required in a criminal court. Do I think for an individual that you could do it in a civil court? I haven't done the kind of detailed case review that would be required to give an opinion. But do I think on the balance of probabilities, for the whole group affected that there was a problem with the water supply to the ward? Yes, in my view, that burden of proof is reached and breached for the population. For an individual patient, you'd have to look at each individual case and do a root cause analysis.
345. You cannot overestimate the negative impact of all that went on. No matter how much the families trusted the individual nurse or the doctor, porter or cleaner in front of them, if those professionals are working in an environment that has been closed for safety reasons and it's all over the press, you are not going to be saying to yourself, "I'm really glad I'm being treated here." It sows distrust amongst the parental community. For all those reasons it just made life very tricky. And when you have those kinds of impacts on the patients and families, it's only natural that that makes the jobs of the clinicians and nursing staff all the more challenging.

Impact on Staff

346. The various measures impacted on the nursing staff, who took the brunt of this because they're the coalface workers. They are in with the families, face-to-face, 24 hours a day. They could see the impact of the water supply issues on children and on their families and the families were not shy in sharing that impact. So, we had a huge amount of distress, we had a huge amount of staff

turnover and we had a huge amount of staff sickness. Nursing colleagues certainly had the most obvious hit.

347. The medical staff, partly because of training and partly because they are further devolved away from coalface working and partly because they see themselves in a leadership position, would have not been so open about the impact it was having on them, but it certainly had an impact on medical staff. It had an impact on morale, it had an impact on the way that we work, and we are still dealing with that now. Interpersonal relationships fell apart, working styles changed, so there was undoubtedly an impact on the Haemato-Oncology medical staff. There was a huge impact on Microbiology and Infection Control colleagues and I'm sure that's very well documented.
348. Part of the frustration was that there was no end date in sight and there seemed to be lots of delays. We were as enlightened, or unenlightened, as the families but like any build process, you do understand that as you start to rip things apart you'll find stuff that you weren't expecting to find, but you were thinking, "It will just be another couple of months, it'll just be another couple of months, it'll just be another couple of months"; that was the kind of iterative process that went on. I think the parental reflection was probably impacted by what they were being told by staff because that's what the staff themselves were being told. Clearly, the nursing staff would be exposed to the frustrations of the families and I'm sure that this would have been reported at IMT meetings.
349. So, the impact on staff was enormous. I think that does affect the way that you can deliver care to patients because if you've got a stressed, anxious, concerned workforce that has got a high degree of sickness and staff turnover, that's not a model one would posit for the best care of children with cancer.
350. It was a difficult time. Attendance at IMTs did take me away from core business, no question about that. And attendance at things that spun out of IMTs also took me away from core business, no question about that either.

351. It had a huge impact on my service, an enormous impact on my service and I don't think you can walk away from that. My day-to-day job was just way, way, more difficult than it needed to be. The interaction with colleagues was irrevocably damaged. There was an awful lot of stress when the press reporting was at its peak. Even if you weren't yourself directly mentioned, or it was not personally intrusive, colleagues may well have been easy to identify and that was burdensome. We certainly talked about it an awful lot, so it had a huge, huge impact on our department and the way our colleagues interact with us across the hospital. The personal cost to me has been large. The whole process has been enormously stressful, and I have deliberately altered my lifestyle to cope with the stress, but I have not become unwell. That I have not become unwell should not diminish the real and tangible stress I felt and the impact that has had on me. The personal cost to lots of my colleagues has been enormous and we are professionals, who by definition, have one of the most stressful careers in medicine.

Views on Various External Proceedings

352. There is no doubt that all the different external investigations had an impact on everyone, both in terms of time taken to be involved and in the publicity around them, which affected morale. It was difficult keeping up with which Inquiry was which, whether the Mike Stevens review, the independent Review, the HSE investigations, the Public Inquiry and police proceedings too. We would say, "Which inquiry is this one? Who are you talking to today?"

353. The Stevens inquiry was interesting. We were very glad that Mike came to review what was going on but very disappointed when he reported the difficulties, he had getting information from GGC and, to a degree, from the Scottish Government. The bulk of his report I thought was incredibly fair. He did criticise us for not disclosing well enough around infections that our patients had. I would just disagree with him on that particular very small area of his report, but everything else I think he got pretty much spot on.

354. But we were peeved, and I was peeved, that we were told by Professor Stevens, and the GGC Board, that individual clinician decision-making wasn't going to be investigated, whereas in fact it was. We said at the beginning, "If you pick up rocks you will find creepy-crawlies" and, of course, he picked up rocks and found creepy-crawlies, as was inevitable. You can't do an investigation without doing a lot of digging and digging, by definition, creates an awful lot of damage, even if it's unintentional and not the focus of the investigation.
355. I am aware of the SBAR that was conducted in late 2019 by Andrew Murray, who I believe was appointed as a result of GGC being put into Level 4 special measures. When he came in, he would have been seeing all the work that had already been undertaken so I would not disagree with his conclusions that the water and environment were safe by that time and I have no issue with his other recommendations.
356. I would say that the recommendations in the Murray SBAR were in fact already in hand or about to be put in place. For example. at the time of the SBAR, we had already taken steps to replace ciprofloxacin with Taurolock, or T-lock he refers to it, as a prophylaxis. It is bactericidal and doesn't enter the patient, so it was being used as an additional safeguard and not because we had any ongoing concerns. While the T-lock was originally introduced to try to minimise the impact of any exogenous infections and to bring down the CLABSI line infection rate, the reason we kept going with T-lock was because of the huge success we have had in bringing down the infection rate. It was a one of several measures that had been taken and it was impossible to isolate the individual interventions that made most difference. It therefore made sense to continue the T-lock, which is still used in the RHC today. While its use is not widespread in other hospitals, our infection rates in the RHC are now so low that other paediatric oncology units in the UK are now asking to see our Taurolock protocol. We have demonstrated that, with the many other changes we have made, Taurolock has contributed to our line infection rates dramatically decreasing. We now have line infection rates even lower than the rates at a Cincinnati hospital that is seen as the gold standard in this field.

357. The exchange recorded in the **Minutes of Clinical Review Group, 17th February 2020 (A36591648 - Bundle 8, page TBC)** relates the Standard Operating Procedure being devised for TauroLock. The exchanges refer to a combination of myself and Pharmacy and Nursing confirming that the SOP has been finalised and that we would implement it on 24 July, that we needed to have training to be able to roll this service out and we also had some documentation to show “What are the outcomes?” We were very clear we wanted this. If we're going to implement something new, we need to document (a) what we're doing and (b) has it changed anything? That's what that QI documentation is all about. It was about replacing the ciprofloxacin with TauroLock.
358. On the Public Inquiry, I remain of the view that it could have been better sequenced. The decision to allow patients and families to have their say without any immediate right of reply from those on the nursing and clinical side in order to provide balance was short sighted and extremely damaging for the staff involved. I appreciate that families will have their perspectives but some of the allegations that I understand were made were inaccurate, unfair and have had a significant impact on the hospital staff who work hard to help patients.

Events 2019 to date

359. I am content with the reconstructed the Schiehallion Unit and I think it's now a very safe place to be. I wouldn't say I was content with the process of getting the reconstruction done and I think it could have been done cheaper and more efficiently, but from an institutional or managerial chain perspective, I can see why decisions were taken at the time. However, as a safe place to treat patients, I don't think there's anywhere safer in the UK than the newly refurbished wards 2A and 2B. I still don't like the ward layout and we could have done with more space, but that's not really the issue. I have absolutely no concerns about the water or ventilation or overall safety in the refurbished wards.

360. I would describe the infection rates at the new Schiehallion as world class, a description that is supported by the run charts that we maintain. I think that we possibly have the lowest rates of line infections of any hospital that publishes its data, anywhere in the world. I have no concerns about the environment in the wards now, from an infection perspective.
361. Point of use filters are still present on taps and, as I explained earlier, we have a protocol for using T-lock prophylaxis, but these measures are additional safeguards and not in response to particular problems or concerns.

SBAR Dated 14 Nov 2019 by Jamie Redfern (A38694861 – SBAR,14/11/2019, Ward 6A, Gram Negative Bacteria, Bundle 4, page 202)

362. By the time of this SBAR in 2019, I was as content as I could be that there was no reason not to return to ward 2A. When you have been raising concerns for a very long time and has taken so long for them to be listened to and acted upon, it is only natural to have some scepticism when you are told that things are safe. But I was clear that major building works had taken place in wards 2A and 2B, there were downsides being situated in ward 6A so it seemed as good a time as any to move back. Jamie's has subsequently been proven to be correct that it was a safe environment to return to.
363. I believe that the facts stated in this witness statement are true. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry
Supplementary Witness Statement of
Dr Jairam Sastry

PERSONAL DETAILS

1. My name is Jairam Sastry. I am a Consultant Paediatric Oncologist at the Royal Hospital for Children (RHC) at the Queen Elizabeth University Hospital (QEUH) in Glasgow. I am employed by Greater Glasgow and Clyde (GGC) Health Board within the NHS.
2. I have previously provided a statement to the Inquiry.

OVERVIEW

3. In this statement I will provide answers to the clarification points raised following my initial statement to the Inquiry.

ISSUES RELATING TO WATER SYSTEMS

4. I have been asked by the Inquiry if I was told why access to water was being limited; if I was aware of what patients and families were being told about the reasons why access to water was restricted; and if I received any instructions about what I could and could not tell patients and families about the water supply, or any other aspect of concern about infections.
5. I did not attend many of the IMTs in 2018 when the water issues were being raised as I was not invited. I believe it was primarily my consultant colleagues, Dr Dermot Murphy and Professor Brenda Gibson who attended the IMTs at this time. They were feeding back to the consultants and other clinical staff in the team what they had been told in these meetings, rather than us hearing this directly from the IMT. We were being told that we should not be using the water for washing our hands as the water samples from Ward 2A had grown multiple organisms. I cannot expand on this as I did not receive the minutes

from these meetings due to not being a member of the IMT team. I do not recall what was told to the families or if there were any specific instructions given to staff about what to tell the families.

6. Within paragraph 112 of my initial statement I stated that staff felt that to some extent the environmental situation within the unit was underplayed to the patients and parents. I have been asked to expand on this. This original response related to 2018 as by 2019 the parents and patients were aware that the built environment was a problem. My colleagues and I within the unit felt that in 2018 the environment was being underplayed but that was a subjective feeling. The environmental situation related to contaminated water and issues with the drainage. The staff within the unit, including me, felt that what was being decided at the IMTs was not being communicated to parents who were unaware at that time that there were issues with the environment. I was not aware of any specific person directing that approach.

CLOSURE AND MOVEMENT OF WARDS

7. Within paragraph 129 of my initial statement I use the term 'management' several times and I have been asked who I mean by "management". Jamie Redfern and Jen Rodgers were the individuals representing management in the IMT meetings in 2018, prior to our move to Ward 6A. They were relaying to us that we should carry on treating patients on the Ward as there was no connection between the infections we were seeing and the environment, and that any issues with the environment were being addressed. In effect they were saying the environment was safe. My clinical colleagues and I were not happy with this due to the unusual types and increased numbers of infections we were seeing. Whilst the IMT suggested remedial action such as enhanced cleaning, bottled water and treatment to the drains it did not seem to be working. We were telling Jamie Redfern and Jen Rodgers that we did not want to continue treating patients in the Ward and asking where else we could move our patients instead.

INFECTIONS WITHIN THE HOSPITAL WARDS

8. Within paragraph 151 of my initial statement I highlight the decrease and increase of infections within Wards 6A and 4B in 2019. The reference to 2019 is correct. Whilst we were based in Ward 2A, the number of infections never decreased. In September 2018, we moved to Wards 6A and 4B. It was only then that we saw a decrease in the number of infections in our patients, temporarily, before it started to increase again.

INFECTION CONTROL MANAGEMENT WITHIN THE HOSPITAL WARD

9. Within paragraphs 163 to 173 of my initial statement I use the term IPC and state that I felt that their main intention was to tell us that the infections were nothing to do with the environment and that what we were seeing was a change in pattern of gram-negative infections. I have been asked by the Inquiry who the IPC are, and who was the individual intent on trying to disprove the link between infections and environment. The IPC is the Infection Prevention and Control Team for the Hospital. In 2019 the IPC lead had changed to Professor Alistair Leonard and the IMT Chair changed to Emilia Crighton. My recollection is that when Professor Leonard took over as IPC lead, he tried to take one organism at a time and show us that these strains were different/unconnected and unrelated to the infections we were seeing in our patients and those organisms growing from the environment. At that time it felt as though the IMT and IPC were trying to disprove there was a link between the infections and the environment.
10. Within paragraph 167 of my initial statement I said that in 2018 and 2019, in the context of the IMT meetings, clinicians were told that there was “absolutely no link” between the environment and infections. The Inquiry has asked me if I know who was responsible for telling clinicians this and if I can be more specific on the timeframe of this. As I have already stated, I did not attend many of the IMTs in 2018, it was primarily my consultant colleagues, Dr Dermot Murphy, and Professor Brenda Gibson who relayed the IMT

discussions to staff. Towards the latter half of 2019, I was often present at the IMT meetings and that is when I heard this information directly from the IPC lead, Professor Alistair Leonard, and the IMT Chair, Emilia Crighton.

USE OF PROPHYLACTIC MEDICATION

11. Within paragraph 187 of my initial statement where I discuss the use of prophylaxis, I gave my view that we should not be giving antifungal/antibiotic prophylaxis just because we have to continue to treat patients in an environment that is not suitable. The Inquiry has asked me to clarify if I believed prophylaxis was being prescribed because and only because of concerns about the built environment.
12. Most of our patients were receiving antibiotic or antifungal prophylaxis due to the treatment they were undergoing and provision of that was directed by their cancer treatment protocols and national guidelines. However in specific instances such as during the cladding works to the Hospital or when there were Cryptococcus concerns in Wards 6A and 4B in January 2019 the IMT asked us to prescribe antifungal prophylaxis to patients (in addition to those patients who required it as a result of the treatment they were undergoing). Whether patients were prescribed prophylaxis depended on the particular concerns at that time and was directed by microbiology through the IMT.

COMMUNICATION BETWEEN GGC HEALTH BOARD, CLINICAL STAFF AND PATIENTS ON INFECTIONS IN THE WARDS

13. Within paragraph 201 of my initial statement I stated that many of the IMT members probably still believe that there is no connection between the environment and the infections, which we clinicians do not agree with. My clinical colleagues and I believe that the number and type of infections we saw were unusual and that there was no compelling alternative explanation other than a connection to the built environment. In the face of what was

grown from water, drainage, condensation on the wall etc., we suspect the environment may have contributed to these infections.

MINUTES OF SPECIFIC IMT MEETINGS

14. Within paragraph 209 of my initial statement I use the term IPC and discuss a particular IMT meeting where the IPC told me that it was not standard practice to check for the organism *Mycobacterium chelonae* in water. Dr Teresa Inkster was still the Chair of the IMT at this point.

15. The Inquiry has asked me for clarification of paragraph 219 in my initial statement where I discuss the minutes of a particular IMT meeting. I state that on page four of those minutes it says, "This case has been classed as an HCAI as not an in-patient at the time of the sample." I think that must be a typo (not classified as HCAI) as that is not what they were saying in the meeting. The patient was an in-patient at the time so that is the opposite of what they were saying. It must have been an HCAI. There is some confusion about what was said at this IMT. My recollection is that the IMT did not consider this particular case to be a healthcare associated infection (HCAI), however I understand there has been a mistake in the way this was minuted. We, the consultants, were saying it should be an HCAI.

16. I have been asked by the Inquiry if I believed the culture was such that employees did not feel able to speak up about concerns. Whilst we had been able to express our views and these were taken account of in 2018, as matters moved on and we progressed into 2019, the IMT became less interested in clinicians' views. They plainly wanted to believe that they had found a solution to these issues or that the infections were not linked to the environment.

DOCUMENTS

17. I have been asked for my views/opinions on documents submitted to the Inquiry.
18. In respect of the document 'Briefings dated March 2018', Bundle 5, pages 108 and 109, the Inquiry have asked me for my views on the level of information provided in this briefing. I have been asked whether clinicians had been provided with any more information than is shown in these briefings. I had not seen this briefing before. The communications directed to patients and parents were not usually circulated to clinicians. It was usually the nurse in charge who would hand these communications out to patients. The clinicians were only told that the IMT was investigating a possible link between the infections in patients and the environment.
19. In respect of the document 'Series of media statements issued by GGC updating the media on the water incident,' Bundle 5, pages 136 to 139, the Inquiry have asked if I recall whether staff or patients and families were provided with a similar update. I do not recall any similar updates being distributed to staff or families in 2018 (at least in writing). The only information clinicians would receive from the IMT at that time was through our colleagues who attended these meetings. A consultant meeting would be arranged thereafter so our colleagues who attended the IMT could relay the discussions from the IMT.
20. In respect of the document 'A patient briefing dated 7 June 2018', Bundle 5, page 142, the Inquiry have asked my views on the level of information provided in this briefing and whether I recall if patients and families were told why these IPC steps were being taken. I do not recall what was told to the patients and families at this time. One of the issues was that only those who were inpatients at that time seemed to be receiving information. After the IMTs, somebody such as Jamie Redfern or Jen Rodgers would visit the ward, usually with Professor Gibson, to discuss the outcome of these meetings with

parents/carers. We became aware that those who were outpatients at that time were not getting the same information.

21. In respect of the document 'Press briefing dated 13 June 2018', Bundle 5, page 145, the Inquiry have asked if staff, patients, and families appreciated the distinction between the issues with the water supply and the drains. I have been asked what the state of awareness about the water supply was at this time. My recollection is that we were told that the water was safe as they had carried out Chlorine treatment and put filters on the taps. The staff understood the new issue to be the drains. I am not sure what the patients were told or understood to be the situation at that time.
22. In respect of the document 'Press briefing', Bundle 5, page 278, the Inquiry have asked to what extent I agreed with the statement made in January 2019 that '*our infection rates are lower than the Scottish average*'? I disagree with this statement made in January 2019 because at that time, as clinicians, we were seeing a higher number of unusual organisms in our patients. I suspect they were possibly referring to the Health Protection Scotland report dated December 2018 ('Summary of Incident and Findings of the NHS Greater Glasgow and Clyde: Queen Elizabeth University Hospital/Royal Hospital for Children water contamination incident and recommendations for NHS Scotland') around the incidence of infection but as clinicians that was not our experience and we were concerned about the rates and nature of infection we were seeing.
23. In respect of the document 'Press briefings,' Bundle 5, pages 279 to 280, and page 346, I have been asked by the Inquiry of my understanding as to whether patients could drink or use tap water in early 2019; whether there was clear communication about the safety of the water for Schiehallion patients; and whether those concerns about water were allayed at any stage.
24. In early 2019, we were being told that the patients could use tap water to wash their hands or shower. Filters had been added to taps and distilled water

and bottled water was given to patients for drinking. Water coolers/dispensers had been removed from most of the hospital premises including from wards, corridors, and canteens. Water coolers/dispensers were never intended for patient use, they were used by parents and staff. That is because in 2018 management knew the water was contaminated.

25. The water coolers/dispensers have not been returned and we still supply bottled water to our patients now. The filters on taps have been removed from all other areas except in areas for immunocompromised patients including Schiehallion. I understand from what the management is saying that in terms of the water quality levels the number of microbials growing in the water is now much lower than it should be so it is actually safe to drink (albeit they have not removed the tap filters).
26. In respect of the document 'GGC Press release about Mycobacterium Chelonae (21 June 2019), Bundle 5, page 319, the Inquiry have asked if I have any comment on the accuracy of GGC's response to the questions about Mycobacterium Chelonae and its source. I do not agree with the accuracy of that response as children with exposed central lines were having showers in contaminated water. My clinical colleagues agreed at the time. At some point in June 2019, the IMT advised that Mycobacterium chelonae had been identified in three showerheads on Ward 6A (although I do not know whether they understood that the strain of Mycobacteria identified from the water and from the patient were the same at the time of this press release).
27. In respect of the document 'Email from Professor Gibson to Jennifer Armstrong dated 8 January 2019 [22:16]', Bundle 6, page 43, the Inquiry have asked if I was aware that these concerns were being raised with Dr Armstrong at that time and whether these were the concerns of the combined 'consultant body'. I can confirm that I was aware these concerns were being raised with Dr Armstrong at that time and these were concerns of the combined consultant body.

28. Within that document/email Professor Gibson asks, *“Are all new patients to be told that the environment carries a risk to their child which will require prophylaxis, and that in itself may carry a risk...we are prophylaxing children without any agreement on what information should be given to the parents.”* The Inquiry have asked if I shared these same concerns, and I confirm that I did. As clinicians we come together and Professor Gibson was writing on the clinicians’ behalf as the lead clinician. I shared the concerns in the email as did my other clinical colleagues.
29. The Inquiry have asked what patients and parents were being told about the environment and the use of prophylaxis at the time. To my knowledge IMT members were meeting the parents at that time. I only attended these meetings with the parents a few times when one of my patients’ parents was being spoken to. Parents were told prophylactic antibiotic was given to their child only as a precaution due to environmental concerns although they have found no link between the environment and infection seen in patients. I do not think these concerns were resolved at the time.
30. In respect of the document ‘SBAR prepared by Mr Jamie Redfern dated 14 November 2019’, Bundle 4, page 202, the Inquiry have asked if I saw this document in 2019; and whether I was asked for any input to it. I do not recollect seeing this document however I do not agree with the footnotes which state there was no impact on PHOS day care, that transplant services continued as normal, and that the enterobacter infections were not linked to the hospital. Moving to Ward 6A had a significant impact on day care, inpatient care, space for staff and facilities for children on the Ward (like the playroom, school room and lack of waiting areas etc).
31. The Inquiry have asked me my views on the conclusion that none of the infections were linked to the environment and the reference to Professor Leonard’s report. It was technologically fascinating to see Professor Leonard’s work. However, as clinicians we were not satisfied with his findings as we did

not feel the report explained the increase in infections or demonstrated a lack of evidence that there was a link between the infections and the environment. We were used to seeing some infections in our patients from time to time, but not the number of infections or particular organisms we were dealing with here. As I had not seen the document before it was provided by the Inquiry I was not given an opportunity to raise any concerns. In any event, there was a significant drop in the number of infections on Ward 6A from the end of September 2019 which we, as clinicians, were happy with.

32. In respect of the document 'SBAR prepared by Mr Andrew Murray dated 12 December 2019', Bundle 6, page 12, the SBAR records "*Haemato-oncologists have provided confirmation that they are reassured regarding the safety of the water and the environment in 6A, based on evidence from a range of sources and the longstanding improvement approach to Infection Control*" I have been asked whether I was satisfied about the safety of the water system and environment in ward 6A? There was a significant drop in the number of infections on Ward 6A from the end of September 2019. The clinicians were happy with this. All the actions laid out by the IMT had been implemented on Ward 6A.
33. In respect of the above SBAR the Inquiry has asked me if I was asked for my views on these matters. I do not recall attending any meetings with Mr Murray to discuss the issues raised.
34. I have also been asked by the Inquiry if I was satisfied with the decision to cease prescribing Ciprofloxacin as a prophylactic antibiotic. Clinicians were only prescribing Ciprofloxacin on the recommendation of IMT/microbiology. It was therefore something we took advice on. We were not prescribing ciprofloxacin all the time; we were giving it to patients until the IMT/microbiology told us we could stop. It took a long time for them to say that, as unusual infections were still being seen and we had no explanation for that. I believe they told us to continue with the prescription until around September 2019 when infections significantly dropped. The clinicians were

happy to stop the prophylaxis because we were no longer seeing the same level of infection and we could see a justification for this advice.

35. In respect of the document 'IMT 14 August 2019 - A36591626 – IMT Gram Negative Blood Ward 6A', Bundle 1, page 343 which records an exchange about whether patterns of infections were different amongst this group of patients from the pattern previously experienced. I am asked whether I agreed with the views expressed by Teresa Inkster and Christine Peters who are noted to have emphasised that it was the nature of the infections that was the key concern. My colleagues and I were seeing unusual types of organisms at that time, different to the types we were used to seeing in our patients and I suspect that is what Teresa and Christine were referring to when they emphasised it was the nature of the infections (i.e., the nature of the bacteria) that was the key concern. If so, I held the same views at that time.
36. In respect of the document 'IMT 6 September 2019', Bundle 1, page 354, the Inquiry have asked whether I felt the message being given to patients or to the media fully reflected the concerns clinicians had at that time. The clinicians were concerned that we were seeing unusual infections which had increased in number and concerned that these may be linked to the hospital environment. The difficulty was that we as clinicians were not sure of the information being given to the media or patients as we did not see everything that was passed on to them. During the odd occasion when I saw patients and their families with management (for example, in cases of infections involving my own patients), I felt that the information given by management was vague and did not reflect everything discussed at the IMTs. For example, I do not recall them explaining how rare or unusual these organisms were or that the Board was considering a possible link between the infections and environment. They were suggesting that they did not know where the infection had come from but that they were investigating this.
37. In respect of the document 'SBAR 6A 7 October 2019', Bundle 4, page 180, I have been asked by the Inquiry whether I had sight of this document at the

time and whether I feel that the views set out in the SBAR were adequately dealt with. I am also asked whether I have identified any basis for rejecting the views of the microbiologists set out in the SBAR.

38. I had sight of this SBAR at the time as Teresa Inkster and Christine Peters provided the consultants in the Haematology and Oncology Unit with a copy of this during one of the IMT meetings. I cannot say that the IMT did not make attempts to deal with these concerns. There were hypotheses in 2018 and 2019 and the IMT did try to address these issues through remedial action, but it did not improve the type of bacteria or infection rate in our patient population.
39. I agree completely with the views set out by the microbiologists in the SBAR. Their findings had been backed up with evidence and the clinicians held the same views. The microbiologists recommended that the IMT investigate and also consider changing the criteria for HAI and what is classified as environmental bacteria, but I do not feel that the IMT ever acknowledged or addressed these concerns.
40. In respect of the document 'IMT 8 October 2019', Bundle 1, page 373, the Inquiry have asked whether I attended this IMT and whether the peer review of the microbiology data was ever obtained. The Haemato-oncologists asked the IMT to arrange for an external body to come in and investigate the infections, to see if there was something fundamental that we were missing. However, to my knowledge, the only review carried out was by Health Protection Scotland (HPS). I do not know the source of the data considered or whether this was ever peer reviewed.
41. Whilst the Haemato-oncologists thought it more appropriate that an independent body out with Scotland carried out the review, we could only make suggestions. I was disappointed that a review by a body external to Scotland was not instructed as I think it would have been helpful for somebody with no previous knowledge of the problems to carry out a review. I

do not know what the usual practice or process was in this kind of situation and the decisions around instructing reviews were the responsibility of management.

42. At this IMT I raised the point that there had been numerous incidents every week since moving to Ward 6A. The Inquiry have asked what I meant by that and whether my concerns were addressed.
43. My reference to the numerous incidents every week refers to problems with the building and estates such as mould in patient rooms, condensation on chilled beams, leaks, or problems with the drainage system. My concern was that it felt as though the building was falling apart and that there was a new issue on the ward every day, which meant moving patients from room to room. Estates were attending to these issues, trying to fix them, but these problems persisted and came up in other rooms. However I do feel that my concerns have now been met since moving to the newly refurbished ward. We have not experienced the same sorts of problems since we moved back to Ward 2A.
44. In respect of the document 'SBAR 6A 10 October 2019', Bundle 4, page 193, the Inquiry have asked whether I had had sight of this SBAR. I am also asked whether I felt that it dealt adequately with the point made about the unusual nature of the infections. I have previously had sight of this SBAR. The comment made in the SBAR about the current number of unusual infections being consistent with historical figures over time is applicable to September and October 2019 only when there was a significant decrease in the number of infections seen in our patients.
45. I have been asked by the Inquiry for my thoughts on reliance being placed on there being no identified link between infections and the environment. I personally felt that the IMT were trying to prove there was not a link, but the organisms grown in the water, drains, leaks etc. were similar to those being seen in our patients.

46. I have also been asked to clarify whether I was comfortable with the question of the existence of a link or risk being approached in this way. I was not comfortable with the approach to the link between the environment and the infections in patients, namely using genomic sequencing of one type of infection. I do not know whether genomic sequencing is a standard approach for proving or disproving links elsewhere in the world but we as clinicians did not know if this was a robust or evidence-based technique and we were not qualified to comment on this.
47. The IMT were producing hypotheses about how the environment may have contributed to the infections seen in our patients. They were suggesting remedial action as a result of these hypotheses. My concerns were that the organisms grown in the water, drains, condensation, leaks etc. were similar to those seen in our patients which is why I had concerns around whether there was a sufficient basis for saying there was no link between the infections and the built environment. However I do not have the relevant expertise in IPC to be able comment on whether the hypotheses and remedial action were suitably robust.

The Reopening of Ward 6A

48. I have been asked by the Inquiry if I was satisfied that it was safe to reopen Ward 6A to new patients and if so on what basis was I satisfied. From September/October 2019, the number of infections we were seeing had significantly reduced, even compared with national standards. I was therefore satisfied that it was safe to reopen Ward 6A to new patients.
49. I believe that the facts stated in this witness statement are true, that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Scottish Hospitals Inquiry

Supplementary Witness Statement of

Dr Anna Maria Ewins

Witness Details

1. My name is Anna Maria Ewins. I am an Associate Specialist in Paediatric Oncology at the Royal Hospital for Children (RHC) in Glasgow. I provided a statement to the Scottish Hospitals Inquiry on 31 March 2023. I have been asked to provide a supplementary statement to expand upon and clarify certain matters within that statement.

Vulnerability of patients to infection

2. I have been asked to expand upon my evidence relating to the vulnerability of patients to infection. I am a bone marrow transplant specialist. I treat patients with leukaemia and non-malignant blood conditions. Both categories of patient have the potential to be very susceptible to infection.
3. The first phase of treatment for patients with leukaemia is usually chemotherapy. The objective of this phase of treatment is to place the patient into remission, meaning that the disease is cleared from their system. If remission is not achieved, we might think about further chemotherapy combined with other targeted agents. If that fails, a bone marrow transplant may be considered.
4. Not all patients treated in Ward 2A will require a transplant. For those with Leukaemia (ALL or AML) there are two main routes which might lead to consideration of a transplant. Genetic analysis and molecular techniques can help predict the risk of relapse and indicate resistance to chemotherapy. We can, in turn, predict the likelihood that a patient will need a transplant in the future. In these circumstances, consideration might be given to performing an

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early transplant in order to reduce the need for multiple rounds of chemotherapy and other treatments, all of which have associated damage and risk.

5. The other route to transplant is when a patient has had treatment but subsequently relapses. If a relapse occurs soon after treatment, there is a high chance that a patient will require a transplant. Some later relapses will also lead to transplant if the patient does not respond well to chemotherapy.
6. Patients with cancer will experience different levels of vulnerability to infection over the course of their disease and treatment. As clinicians, we need to think about the levels of vulnerability associated with each stage of treatment. At the most vulnerable end of the scale are transplant patients with refractory disease. Refractory disease means that the disease is resistant to treatment. It is difficult to achieve and maintain remission.
7. Patients must be in remission in order to receive a transplant. For patients with refractory disease, this means that they may have endured multiple rounds of immune-suppressing treatment to get them to the stage of remission. They can be extremely immuno-suppressed at the time of their transplants. With these patients, we cannot be sure how long the remission will hold and so we have to move as quickly as possible to transplant.
8. Immuno-suppression means that a patient has a very low white cell count. Depending on the level of immuno-suppression, a patient can have a very weak immune system or an immune system that does not function at all. Levels of immuno-suppression vary over the course of treatment. Treatment is phased with the result that immune systems can go through multiple phases of being suppressed, recovering, and suppressed again. Neutropenia, for example, is a stage of immuno-suppression. Neutrophils can be thought of as the foot soldiers of the immune system: they are the first to appear at the site of the infection and do battle with the invading organism. This is extremely important for fighting bacterial infection. Patients who are post-transplant will move from being profoundly immuno-suppressed during the early neutropenic phase, to having some neutrophils but low numbers of other white blood cells called lymphocytes. Lymphocytes provide good protection from viruses and fungal

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infection. After transplant we suppress lymphocytes to protect against rejection and graft versus host disease.

9. Patients who face a transplant following relapse are in a very vulnerable position. They have often already been through years of treatment. Their immune systems will have reduced and recovered multiple times over that period. They may be on prophylactic medication. They will have a history of infections. Their organs may be damaged by previous treatments. In preparation for transplant, a patient's immune systems will be reduced dramatically. They are screened for bacterial and viral infection. A patient will only be taken to transplant once we are satisfied that there is no evidence of infection.
10. Patients with non-malignant blood disorders can be just as vulnerable. For example, patients with severe combined immunodeficiency (SCID) are considered to have lymphocyte- based immune system.
11. All patients who are being prepared for transplant are exquisitely vulnerable to infection. This vulnerability continues post-transplant. The first month post-transplant is a particularly dangerous time due to the suppression of the immune system. Patients are vulnerable in particular to bacterial and fungal infections. After the first month, viral infections are a particular problem.

Protective Environment

12. The risk of infection to these very vulnerable patients can be mitigated by housing them in a protective environment. It is necessary for clinicians to anticipate when those periods of immuno-suppression are likely to occur. This allows decisions to be made about the best environment for the patient. At less vulnerable stages of treatment, patients might be housed in standard cubicles or even permitted to return home for periods of time. However, in more vulnerable stages a protective environment is required.

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13. When the Schiehallion Unit was housed at Yorkhill, the whole unit was positively pressured. The ward had an airlock door system to minimise the transfer of air from the rest of the hospital to the ward. It also had a handful of dedicated BMT rooms with specialist ventilation. We were assured that Ward 2A would be like for like. On moving in, we discovered that Ward 2A was not like for like.
14. In 2015, Ward 2A had eight dedicated BMT rooms which was more than we had available at Yorkhill. That should have been a step up from Yorkhill. The flip side was that in Ward 2A, the rest of the unit was not positively pressured or filtered. The corridor was not positively pressured to the rest of the hospital and there was no airlock door system to seal the unit.
15. I had concerns about the results from air sampling in the corridor not long after we moved to the new hospital. I raised these concerns with Professor Craig Williams. He explained that because the corridor was not pressured and the unit not sealed, it was to be expected that there would be some background noise in the air sampling taken from the corridor. It meant there was more ambient air exposure in the ward areas.
16. I was reassured by the fact that although the base line specification of the ward was not as good as Yorkhill, there were what I believed to be eight high specification BMT rooms which in themselves appeared to be a step up from Yorkhill. I understood the rooms to be PPVL rooms. They were to have positive pressure and HEPA filtration. Shortly prior to the move, it was discovered that the HEPA filters were missing. They were installed before patients moved over.
17. Prior to the move to the new hospital, we planned the timing of transplants so that there would be no transplants within the first month or so. We anticipated that there would be the usual snagging issues that you would find in any new build and worked on the basis that they would be resolved shortly after moving in. We wanted a few weeks to make sure the HEPA filtration worked and to be satisfied that the rooms were suitable for transplant.

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18. We soon discovered that there were issues with the air quality in the BMT rooms themselves. The rooms were being tested for suitability for transplant. I had a patient scheduled for transplant who was extremely vulnerable and who needed a transplant on an urgent basis. [REDACTED]. Clinically, there was enormous pressure to proceed with the transplant.
19. I was not satisfied that the transplant could proceed safely in the Ward 2A environment. I was concerned that the BMT rooms were not suitable for transplant. Air sampling in the rooms showed raised counts. Smoke tests showed that the rooms were not properly sealed. The view from microbiology was that the rooms had to be sealed in order to improve the air quality. Remedial work was carried out to seal the rooms. We reached a stage where we were satisfied that two of the eight rooms had tolerable counts and that the transplant could go ahead, which it did.
20. I was placed in a position where, as a clinician, I had to weigh up the risks of missing a short window of opportunity to carry out a transplant on a very sick child against carrying out that transplant in a potentially unsafe environment. Fortunately, we got to a stage where I and my colleagues were satisfied that the environment was safe enough but that is not the sort of risk balancing exercise that we, as clinicians, should have to perform. We should be able to assume that the environment provided to us is as safe as it can be. We should have been in a position to make a decision about that transplant without having to factor in concerns about the environment.

Ventilation Requirements

21. I have been shown a document titled "SBAR: 2A Patient Accommodation and Risk of Invasive Fungal Disease" dated 30 October 2017 [Ref: Bundle 4; page 113]. I understand that the SBAR was prepared by two microbiologists carrying out a lookback review of issues involving the ventilation system in Ward 2A. Under the heading "Patients at risk of Invasive Fungal Disease", the authors list four categories of patients who are profoundly immune-compromised and at

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risk from fungal spores and a further three categories who are high risk but to a lesser degree. I agree broadly with these categories. However, there are stages during the treatment of these patients where they will be at less risk. Degree of vulnerability depends on the stage of treatment. For example, some ALL, neutropenic and solid organ transplant patients will attend local hospitals for aspects of their treatment. These local hospitals do not have HEPA filtration or positive pressure. Patients who are at home but who spike fevers due to neutropenia will attend their local hospitals. They do well there and do not require the highly specified protective environment. I would also note that there are some patients who have prolonged neutropenia for greater than 14 days following chemotherapy who are at home for spells during these episodes and do not necessarily require a specialised environment. However, the highly specified environment is required for transplant and SCIDS patients.

22. I have been directed to the section following the heading “Building requirements for Neutropenic/BMT patients”. The requirements listed accord with my understanding of what [was required for Neutropenic/BMT patients]: 10ACH, positive pressure at 10pa to the corridor, all air entering the room should be HEPA filtered and there should be continuous monitoring with alarms for failure.
23. The description of the ward under the heading “Current Provision” also accords with my understanding of the ventilation arrangements in Ward 2A at that time.
24. The fact that the ward itself was not HEPA filtered and positive pressured meant that we had to think carefully about the use of the eight BMT rooms which benefitted from specialist ventilation. We had to think about the stage that each of our patients was at in their treatment and think about which patients should have priority for those rooms. This was less of a concern at Yorkhill because the whole ward benefitted from some degree of protective environment. It was sealed via airlock doors and was positively pressured to the rest of the hospital.
25. I have been shown an IMT minute dated 7 March 2013 [Ref: bundle 1; page 35]. At section 4.2 there is a sentence which reads: “*Although there are 8 BMT rooms available in ward 2A with a higher specification of ventilation, these are*

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fully occupied by BMT patients which does not allow ALL patients to be nursed in these rooms". Although we did not require access to specialised ventilation for all of our ALL patients, there are some who would have benefitted from a positive pressured and HEPA filtered environment depending on the stage of their treatment.

26. When we moved to Ward 2A in 2015, I do not think we were prepared for the difference between it and the ward at Yorkhill. We had been told often that we were getting a like for like ward. This was not accurate. Not only was it not like for like in terms of provision but there were fundamental problems with the BMT rooms. I am used to having to make decisions about when is the best time to go for transplant but not having to balance that against the risk posed by the hospital environment. It was extremely stressful to have to balance the risks and make a judgment. I expected that as clinicians we would be provided with a safe environment in which to treat our patients.

Clarifications to statement

27. At paragraph 172 of my statement, I make reference to a patient who experienced infections after bathing. I would like to clarify that that paragraph is not intended to convey a concern that the water the child was bathed in caused infections. My concern at the time was that the infections were probably endogenous, by that I mean that the bath water may have contained this child's own gut flora, which in turn could gain access to the blood stream through immersion of the central line. When we stopped using the bath, we continued to wash the patient in hospital water.
28. At paragraph 174 of my statement, I refer to a request by the Schiehallion consultants for an external investigation into the possible links between a cluster of infections and the water supply. I say in my statement that it proved impossible to achieve. We wanted someone independent to tell us if there was a link between infections and the water supply. As a group, we thought there was a problem but were being advised that there was no problem. Against that, we were seeing infection control measures and escalation measures. It felt like

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a problem to us but no one was identifying if it was a real problem or not. I think that management did want to provide us with someone but my understanding from senior management was that they were unable to persuade anyone to help.

29. A further difficulty was the lack of information about the experience of units in other hospitals. We did not have information about gram negative or air borne infections in other units. We did not know if we were genuinely experiencing something unusual or if other units had the same experience and were not publicising concerns. We were unable to establish if what we were observing represented an outbreak or not.
30. At paragraph 276 of my statement, I say that the incidence of infection was lower after the move to Ward 6A. For clarification, the incidence of infection was lower on ward 6A only to begin with. An issue with infections presented itself again during 2019.
31. At paragraph 203, I explain that we had continued uncertainty about the safety of the environment. We were uncertain about what was causing the unusual pattern of infections. We have had no answer to that question, even now. I do not know what the outcome of the various investigations was. We have not been told that there was a problem, what the cause was or reassured that the situation is resolved. Equally, no one has said we do not think there was a problem at all. I am not aware of any communication from the Health Board to confirm the position one way or the other. We received a statement from the Health Board explaining how good the environment is in the new Ward 2A. But I still do not know if we had contaminated water, if we had a problem with the drains or if chilled beams were an issue. We have not been told if any of these things contributed to infections or if our patients were placed at increased risk by being in that building.
32. I know that some work was done with whole genome sequencing and understand that it did not appear to show a link between environmental bugs and patient infections. I recall that we received presentations about that. At

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some point we were told that there was no issue and that the change in infection pattern was a result of a change in the taxonomy of infections. I am not convinced that is correct.

33. It is possible that there are other communications out there but as far as I am aware, we, as clinicians, have been given no clear explanations for what happened.
34. At paragraph 242 of my statement, I say that we have to proceed on the basis that everything is fixed because a lot of time and money has been spent improving the facilities. We have been told that the ventilation in the new Ward 2A is superb. I have no reason to doubt that based on my experience in the ward so far. I suspect the ward is now better than any other unit in the UK. I have seen no evidence of unusual patterns of infection since we moved back to Ward 2A. We do still see fungal and bacterial infections but that is not unexpected for this patient cohort. There is no escaping the fact that infections can be the biggest killer of children who are prescribed cytotoxic drugs. We are very sensitive to the risk of infections. They are closely monitored and discussed regularly. I have seen nothing concerning since we moved back.
35. In closing, I think there is value in trying to find out what happened. The situation in 2015 was incredibly stressful. We were put in a position we should not have been in. A useful outcome would be a recommendation that when a change to a healthcare environment is planned, those in charge should sit down with the people involved in treating patients in that area to explore all of the potential problems. There should be checks before patients move in to make sure that what you expect to be in place is in place. Problems with the building should not be discovered as you go along, while patients are present.
36. I believe that the facts stated in this witness statement are true. This statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.



SCOTTISH HOSPITALS INQUIRY

Bundle of witness statements for the Oral hearing commencing on 12 June 2023

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