Scottish Hospitals Inquiry

Witness Statement of Questions and Responses

Pamela Joannidis

This statement was produced by the process of sending the witness a questionnaire with an introduction followed by a series of questions and spaces for answers. The introduction, questions and answers are produced within the statement.

Professional History

1. Please list your professional qualifications, with dates.

A Registered General Nurse (RGN) March 1988; Registered Children's Nurse (RSCN) July 1992; Diploma Infection Control Nursing October 1996; MSc. Infection Control 2006.

2. Please give your chronological professional history. This should include roles held where and when. Please also provide an up-to-date CV if you have one.

A St Mary's School of Nursing, London, Student nurse, 1985-88. Belvidere Hospital, Glasgow, Staff Nurse, 1988 – 1990. Royal Hospital of Sick Children (RHSC), Yorkhill, Student nurse 1990–1992. RHSC, Staff Nurse 1992 – 1994. RHSC, Yorkhill, Infection Control Nurse (ICN), 1994-1998; RHSC, Yorkhill, Senior Nurse Infection Control 1998 – 2007; South Sector, NHS Greater Glasgow and Clyde (NHSGGC), 2007 – January 2013. Lead Infection Prevention and Control Nurse (LIPCN); covering RHSC, Victoria Infirmary, Southern General Hospital, Mearnskirk Hospital and Mansion House Hospital NHS GGC, January 2013 – March 2019 Nurse Consultant IPC (NC); Between October 2015 – March 2017 I was asked to set up a new paediatric IPC team for the Royal hospital for Children (RHC). This I did part-time. I returned to my NC duties in March 2017. In March 2019 I was seconded into a post to support the Associate Director of Nursing, IPC, who would be undertaking Infection control manager duties. I was acting Associate Director of Nursing from March 2019 – March 2022. In March 2022 I retired from NHS GGC. In September 2022 – current , part time post as a Professional Nurse Advisor IPC(PNA), for the HAI Policy and Adult Social Care Units, Scottish Government.

3. What specialist interest / expertise / qualifications in any area of Infection control do you hold? E.g., hospital ventilation, water Legionella control and infection control related to the built environment, and epidemiology and outbreak management.

A I do not hold any specialist qualifications in area of IPC other than my diploma and Masters degree. I have an interest in quality improvement in clinical practice.

Infection Control Team

4. Please explain your role in the management of infections at QEUH/RHC and in the IMT structure from January 2015 to date. Please also identify to whom you reported and who reported to you at all points from January 2015 to date. In effect we need a mini CV covering this period role by role

A January 2015 – October 2015 – I held the post of NC reporting to Sandra Devin. With regards management of incidents of infection, I would attend to support the local IPCT at the request of the ICM/ICD/ANDIPC to undertake investigations to support hypotheses as required by the IMT and within my scope of clinical practice. October 2015 – March 2017 NC/Lead IPCN Paediatric Team reporting to Sandra Devine. As Lead IPCN, I would work closely with the ICD and IPCNs to identify and manage incidents of infection. I would support PAG/IMT meetings by attending in person or supporting a member of the team to attend. The nursing team would undertake the initial investigation into new patients, working with clinical and microbiology colleagues to gather data to present to PAGs/IMTs. I would ensure that actions requested for the IPC nursing team by the IMT would be completed. March 2017 – March 2019 NC reporting to Sandra Devine. When a full time LIPCN was appointed to the paediatric team, I returned to my role of NC. At this time I was asked to support the new Lead IPCN in the paediatric team, Susie Dodd. At some point I was asked to be line manager to Susie (sorry I don't remember the date). I did this until she moved on secondment to ARHAI. My role of NC was as previously described. In March 2019, I was asked to take on enhanced duties to support the AND IPC. This included line manager for the LIPCNs and

attendance at PAGs and IMTs as directed by the ICM to support investigation into incidents and outbreaks. I would also ensure that the IPC nursing team had enough support during investigation of incidents. In March 2022 I retired from NHS GGC.

5. Can you explain the respective roles within the infection control framework of:

- the Microbiology department
- Estates and Facilities.
- Public Health; and
- external experts (i.e., Public Health England).

A The Microbiology department works in partnership with the IPCT, ensuring provision of microbiology advice, i.e. appropriate specimens, reporting results and advising on antibiotic treatment. Some Consultant microbiologists and clinical scientists have IPC duties in their job descriptions. Infection Control Doctors (IPCD) are generally lab based consultant microbiologists, either full time or part-time. The IPCD is a member of the IPCT and liaises daily in the management of any incidents. They will usually make the decision to call a PAG or IMT and will on most occasions be the chair. The Estates and Facilities are responsible for maintaining the built healthcare environment. This includes cleaning, maintenance, repair and monitoring. The estates and facilities team will be members of the IMT, undertaking investigations and providing advice on the health care built environment at the request of the IMT to support hypotheses. They provide audit reports on cleaning and estates issues to the IMT as required. They organise water and air sampling, annual validation for ventilation systems and provide assurance to the board with regards aspects of ventilation and water quality. Public Health teams are employed by a health board and are responsible for providing advice during outbreaks of infection in the community including care homes. They have a statutory role to provide advice under the Public Health Act for incidents and outbreaks. They provide support and advice to health boards during higher prevalence of organisms such as Influenza in the community. They will work closely with IPC and microbiology teams as members of the IMT where an incident crosses between

both hospital and community. Depending on the type of incident, a Consultant in Public Health Medicine may be asked to chair an IMT.

6 What were your impressions of the GGC infection control team in 2015. Were you aware of any of the following:

- existing tensions?
- lack of clarity around roles and decision making?
- relationships (i.e., between ICM and ICD)?
- record keeping- did AR or LI take part in this?
- culture and bullying;
- attitude of senior management and board to infection control issues?

A In 2015 I was not aware of any existing tensions nor do I recall a lack of clarity around roles and responsibilities. There were good working relationships between LIPCNs who met weekly to provide support to each other. The LIPCNs did not report any instances of tension or bullying that I recall. I believe the ICM and the LICD had a good working relationship. I think AR and LI were working in ARHAI in 2015 and I am not aware of any role they had in record keeping in NHS GGC at that time. I understood IPC to be high on senior management and board agenda with IPC tabled at board and governance meetings. The Vale of Leven report had been published in 2014 and the recommendations were a priority for the board.

Involvement with QEUH prior to opening

7 Please describe any involvement you had prior to the opening of the hospital in June 2015 in each of the following stages. For each stage , a) When were you first consulted b) Who consulted you? c) What advice did you provide from an infection control perspective and d) Was it followed?

a) Planning/ design stage

A I was invited by Annette Rankin (AR) (my line manager at that time) to attend preliminary 1 in 200 planning meetings with a number of adult clinical teams

and the new hospital senior project team. Preliminary schematic drawings were reviewed which showed layout for each adult clinical area. These meetings were primarily to discuss the general layout and space / square footage each service would get. I noted that provision had been made to accommodate clean and dirty utility rooms and linen and waste holds. It was not possible for me to attend all the meetings requested by the project team and I stepped back to continue in my full-time post as a LIPCN for the south sector. A full time nurse consultant was appointed from my nursing team to join the senior hospital project team. This was Jackie Barmanroy and she joined the project team full time for 2 to 3 years. I cant recall the exact dates.

b) Construction stage

A I had no formal role at this stage (other than as described above)

c) Commissioning and Handover stage.

A I had no formal role in the commissioning or handover stage.

8 In particular were you asked for information/ advice about vulnerable patients, such as the immunocompromised?

A I don't recall being asked formally to advise on vulnerable patients.

9 With regard to ventilation in particular, were you consulted or briefed about the specifications of the ventilation system of the hospital before it opened?

A I remember a meeting where I was asked how many mechanically ventilated isolation rooms (for children with infection) in each of the children's ward there should be. Alan Seaborne, Dr Hague, Dr Williams and Annette Rankin were in attendance. There would not be an infectious diseases unit in the new children's hospital. We agreed on at least 2 rooms in each ward for infectious diseases. This was not based on any data we had. At this time the children's hospital was to be 100% single room accommodation. I did not sign any final plans on this. I attended an Operations group just before the new children's hospital opened. The role of this group was to discuss operational issues in moving to the new hospital and which included planning the transfer of patients. I was asked if the

theatre ventilation would be commissioned and ready to use at transfer. I asked a member of the hospital project team and was advised that all commissioning would be undertaken and completed prior to patient transfer. I relayed this to the senior IPCT and to the Operations group chair.

10 Were you shown any plans/ specifications for particular wards?

A I was shown a number of plans at the meetings I attended at the early planning stages. I was also asked to consider the location of sinks by the hand hygiene coordinator who was working with the project team on sink location and placement of liquid soap and paper towel dispensers.

11 Did you undertake any site visits prior to the hospital opening? For what purpose?

A I was invited on site during construction to consider the IPS panels at back of hand wash sinks and what should go on them i.e. paper towel and soap dispensers. I was asked by Sandra Devine to undertake a site visit of the RHC with Lead Nurse Maureen Taylor. The wards were still under a considerable amount of construction therefore we both agreed it was too soon as I was not able to view several areas. I relayed this to the LIPCN for the south sector team. I also recall that group tours were provided by the project Team during construction and I did a few of these.

12 Were you required to sign off any design matters? If so please give details

A I don't recall signing off on any design matters.

13 Were you involved in transferring patients from the old site(s) into QEUH? If so please describe your involvement.

A Yes. The Operations group described their plans to move immunocompromised and infected patients in single individual ambulances. I agreed with this.

a) Did you encounter any problems? If so what were they?

A I was not involved in the actual transfer of patients and am not aware of any problems.

14 What was your first impression of the hospital when it was first opened? Did you have any concerns from an infection control perspective? If so what were they?

A It took me some time to work out where the adult and children's services where in relation to each other. My first reaction was that it was very big and the foot fall enormous. It looked new, clean and modern.

a) Are you aware of any ICPT colleagues who had concerns? If so what were they?

A At the point of opening the new hospitals I do not recall being made aware of any concerns with the new hospitals other than the snagging issues identified by the IPC nursing teams such as chipped or damaged work surfaces and cupboard doors. These were on a list to be replaced.

15 From an infection control perspective, do you have a view on whether the proximity of the hospital to sewage works causes a risk to patients? Please give reasons for your answer.

A I don't know of any risk linked to the sewage works. I know that concerns had been raised when the site was proposed for the new hospitals. I was told that a feasibility study took into account this fact and that the risk was from the occasional unpleasant smell only.

Infection Control in General

16 What do you understand by the term HAI? What is the distinction between Hospital Acquired Infection and Healthcare Associated Infection? Is the distinction always made?

A HAI is the acronym for Hospital acquired infection. It refers to colonisation or infection by most organisms acquired by a patient not present on admission to hospital. It is usually considered to be 48 hours (ARHAI guidance) or more after admission. Healthcare associated infection is colonisation or infection associated with receiving healthcare whether in hospital or not.

17 To what extent is infection – whether endogenous or arising from the environment - always a risk for certain sorts of patient? Is there a limit to what can be done to prevent this? Are there certain sorts of infection that can be expected to arise no matter the level of care taken in relation to IPC/hygiene?

A Certain patient groups are at a higher risk of acquiring an infection due to either their condition e.g. auto-immune disease, prematurity, as a result of medical procedures, or associated with medication such as antibiotics, steroids, chemotherapy. Some patients have long-term invasive medical devices in situ which can act as a door way to otherwise sterile sites in the body such as intravascular devices or urinary indwelling catheters. The application of good basic infection control as advised in the National Infection prevention and Control Manual (NIPCM) such as hand hygiene, clean environment and medical devices and wearing of appropriate personal protective equipment can reduce the risk of acquiring an infection. Some patients are given prophylactic antimicrobial medication as a protective measure.

The most vulnerable patients can be protected further by controlling the environment in which they are cared for. This can include mechanically ventilated accommodation in hospital where only highly filtered air is introduced in to the bedroom such as that provided for transplant patients. While this will greatly reduce the risk of infection it will not remove the risk completely. The reason for this is that the air, while highly filtered is not sterile, the equipment, laundry, food, personal belongings and people (and their clothes) coming in and out of the room are not sterile. Where the patient receives care as an out-patient, or where the patient is out-on pass during their in-patient stay the environmental risks posed by being out of a healthcare environment cannot be controlled.

18 Can you describe the procedure for monitoring and reporting HAIs within NHS GGC and escalation to HPS and the Scottish Government.

A Organisms from specimens are reported to the IPCNs either directly by a consultant microbiologist or via an IT system called ICNet. The IPCN, ICD or Consultant microbiologist will give advice to the ward if the patient requires to be isolated in a single room with additional precautions in place. The IPCT will determine if the patient has been admitted with this organism or acquired since admission by looking at date of admission, date of specimen and symptoms and also by looking at past specimen results. If likely since admission, the IPCT will consider a source and be on general alert for further cases.

The ICD will decide on the need for a PAG (problem assessment group) to discuss actions. Depending on the organism, 2 or more cases, a single case, or a number more than expected would constitute an outbreak and an IMT will be held. An assessment tool developed by HPS called the HIIAT (Hospital infection and incident tool) was used and initially those incidents assessed as Amber or Red were reported to HPS by completing a form called the HIIORT (Hospital Infection and Incident Reporting Template).

At each IMT, the assessment was undertaken and agreed by those in attendance and updates sent to HPS. In the last 10 years there have been further developments of these national assessment and reporting tools and reporting is via an electronic system. All incidents (whether assessed as Green, amber or red) are reported to ARHAI. It is my understanding that ARHAI could / can report incidents to the Scottish Government at any time. I cannot comment on what happens in NHS GGC currently.

b) The practical operation of the system within the QEUH, including barriers to reporting HAIs data collection for different types of infections – fungal, gram negative, gram positive, other; and the use of data sets for infections

A I am not aware of barriers to reporting HAIs. NHS GGC IPC team started to provide data as statistical process charts (SPC). HPS provided guidance on the creation of these charts. Where requested epidemiology reports were provided by HPs/ARHAI for IMTs. I don't recall the date but possibly post 2018 charts were created for Gram negative organisms in high-risk areas for Serratia, Acinetobacter, Pseudomonas and Stenotrophomonas (These organisms had been added to the NIPCM). SPC charts were also used to monitor Staphylococcus aureus bacteraemia and Clostrioides difficile. Data is provided as part of the mandatory surveillance programme, to ARHAI for production of quarterly and annual reports. I cannot comment on current practice in NHS GGC.

c) The involvement of HPS and the SG HAI Policy Unit, especially what level of oversight there is in practice. Also, what does the oversight look like- formal or informal, meetings, emails or phone calls etc?

A ARHAI are responsible for the provision of national IPC guidance in the National Infection Prevention and control manual (NIPCM). This includes guidance on the assessment, management and reporting of incidents. ARHAI can be invited to join an IMT where the members require support to manage an outbreak. That support is determined by the IMT and can be undertaking epidemiology of a specific pathogen, undertaking a literature review to provide latest evidence or to reach out to other health boards, nations etc to seek advice to provide to the

IMT. ARHAI may also provide advice from experience of supporting other similar incidents. ARHAI report all incidents assessed at Amber or Red automatically, to the SG HAI Policy Unit but can chose to report any Green incidents also. ARHAI provide assurance to the SG HAI Policy unit or may notify the unt if they have concerns. ARHAI also provide supporting materials contained with the NIPCM that will be used by IPCTs to assess , manage and report incidents.

d) What is your opinion on the adequacy of the system?

A The system for assessing and reporting incidents has been developed over the last 10 years. In 2015 the NIPCM contained guidance on Pseudomonas aeruginosa in high risk units and a water safety checklist. I do not recall there being national advice on the management or investigation into environmental organisms including fungi in the built environment. The HIIAT assessment tool was easier to use for incidents involving organisms where more was understood about source and route of transmission such as MRSA. The assessment criteria changed but I do not know when. In 2015 there was little or no advice on the management of water-borne infections in the NIPCM. Limited national guidance on water incidents became available (post 2018) with the publication of Chapter 3 of the NIPCM. Chapter 3 has been developed further and there is now a comprehensive section on managing and reporting incidents. ARHAI are developing a 4th chapter in the NIPCM which could provide guidance for IPCTs and health boards on strategies for reducing the risks of infection associated with water and ventilation.

e) How might it be improved?

A IPCTs require support with incidents linked to the built environment both in identification of source and also in actions to control transmission. There needs to be studies to aid the understanding of Gram negative organisms in patients who are at a higher risk of colonisation / infection. There needs to be guidance on screening samples in the environment and on actions to be taken when environmental samples are positive. For example, drains will have environmental organisms in them.

Therefore, guidance on if, when and how drain sampling should occur is required including what is normal. There needs to be agreement on actions to be taken that make the environment safe and still allow treatment to continue. I would expect there to be an expert body who would provide the best evidence and subject matter expertise on the built environment infection risks to support IMT members. An increasing number of patients receive their treatment either as out patients or at home. There will need to be further clarification on how to assess and manage incidents where exposure to environmental organisms can be in and out of hospital.

Concerns about infection

15 Do you have any specific concerns about amounts, locations, clusters or types of infection within the hospital from the time of its opening to date? If so, please elaborate?

A In 2018, there was an increase in Gram negative blood stream infections reported from paediatric patients in ward 2a/b. An IMT was established and ARHAI invited to attend. This was a very vulnerable group of patients. When the service in Ward 2a in RHC was decanted to Ward 6a in adult QEUH there were further incidents. I was concerned as I would for any incident of infection. I knew that a huge number of actions were undertaken by clinical, estates, facilities and IPCTs to investigate these incidents including support from ARHAI and advice from other nations. I had no previous experience of Cryptococcus. I think that was the same for most of the IPC nurses. These organisms although not new, were new to us and the IMT was a learning experience for us.

16 Does the extent of infection observed in QEUH differ from what might have been expected before the hospital opened? Why/ why not?

A I would not have expected to see the rise in Gram negative infections in 2018. I thought a new building would pose fewer risks of infection from the environment compared to an old hospital building. I understood that all national guidance had been used in the design, planning and commissioning of the

hospitals. In terms of novel or rare organisms, I think they could happen whether its old or a new building.

17 Do you have concerns that patients are/ were at increased risk of infection from exposure to pathogens via the water supply or drainage system?

A Yes I had concerns. The increase in Gram negative environmental infections was discussed at a number of IMTs. While investigations were undertaken to discover and understand the source and route of transmission of these organisms, patients were at risk of infection. Actions were taken at every IMT to safeguard patients. I cannot comment on the current situation in NHS GGC.

18 Do you have concerns that patients are/ were at increased risk of infection from exposure to pathogens via the ventilation system?

A I know that patients in the Ward 4b (BMT) were moved back to the Beatson when concern was raised about the function and effectiveness of the ventilation system in the bedrooms. I am also aware that reports at IMTs described tears in duct work and problems with HEPA filters. This was a concern as the risk to patients was not immediately identifiable. Transplant patients are at increased risk of air borne infection and for this reason rely on specialised ventilation for protection in their rooms during parts of their treatment. I am not a subject matter expert on ventilation. I cannot comment on current risks.

Particular issues

This section deals with particular instances of infection with which you were directly involved in ; please refer to IMTs where appropriate

Early issues with Ventilation (Adult BMT Unit)

19 In respect of the BMT, when did the concern arise?

A I do not recall the exact time but not long after the service was transferred over.

a) What was your role in this- how were you involved?

A I'm sorry this was 9 years ago so I don't remember all the details. I was asked to attend a meeting to discuss the Adult BMT ventilation on behalf of Sandra Devine who was on annual leave. The Director of regional services chaired the meeting. Concerns were tabled at this meeting re the inadequacy of the ventilation system. Options were presented and those present agreed that the patient group should be transferred back to the BMT unit at the Beatson, Gartnavel site to facilitate remedial actions to the ventilation system.

b) What was the nature of the concern – specifically what was thought to be wrong with the building system in question?

A I don't recall the specific details of why the ventilation was considered to be inadequate but that it required adjustment. I think the adult BMT was not originally intended to be on the QEUH site.

c) What was the nature of the risk posed to patient safety and care?

A Patients undergoing bone marrow transplant are at risk of infection with all organisms but especially fungal infection due to having a weakened or no immune system.

d) What was your role in this? What actions did you take?

A I attended the meeting and agreed that patients required to be moved. I recall being asked to undertake a visual inspection of the rooms in the ward with a colleague but I don't recall the details of this.

e) In your view was the action taken sufficient to address the concern?

A I don't have enough information or knowledge of ventilation systems to answer this question.

f) You co-authored a summary report. Please explain how this came about- who asked you to prepare the report?

A I don't recall. I remember being asked to undertake a visual inspection of the single rooms which I did with one of the SIPCNs from the adult IPC team.

g) What were your findings?

A I don't recall and I don't have access to the report.

h) What did GGC do with the report? Please provide a copy if you are in a position to do so.

A I don't have access to the report.

20 During the emergence of issues in the adult BMTU, what consideration was given to the adequacy of the ventilation system in the paediatric BMTU?

A There was a request to consider the paediatric BMT in light of this concerns raised about the adult BMT. I recall discussions about air differentials and a review of seals around doors, windows and fittings to improve this. Rooms were vacated while work was undertaken.

Specific issues with the water system refer to IMTs

For each of these incidents please refer to the specific IMT

21 SERRATIA OUTBREAK IN NICU in 2015

a) When did the concern arise?

A I attended an IMT to discuss an increase in Serratia in October 2015. There had been previous cases as reported that year in the IMT minutes.

b) What was the nature of the concern – specifically what was thought to be wrong with the building system in question?

A The IMT considered a number of sources including sinks and taps and a range of equipment in the unit. A review was undertake of the cleaning provision in the unit also.

c) What was your role- what were you asked to do, if anything?

A I was asked to step in as the Lead IPCN for the Paediatric IPCT taking over from Clare Mitchel. I started in October 2015 and was part of the IMT from then on. I updated on patient cases at each IMT I attended. I was asked by the chair to undertake a number of agreed actions. Those included: drafting an information leaflet for parents / carers to provide written information to accompany what they were being told about the incident; to take swabs of reusable equipment in the unit and environmental swabs of sinks/taps; to undertake training on SICPs to support self-monitoring; to support a walk round of HPS staff to see the unit; to undertake SICPs audit and feedback and also to consider a proposal for a new tap. I am not an expert in taps or tap design so my action was limited to asking if it met the standards in SHTM 64.

d) What was the nature of the risk posed to patient safety and care?

A Patients with Serratia marcescens either colonisation or infection were presented at the IMT. Neonates can have Serratia colonising their gut. The hypothesis being investigated by the IMT was that the source was either patient or environment (or both). There was a focus on staff applying standard infection control precautions including hand hygiene, cleaning of the environment and of

reusable equipment. There was also extensive environmental swabbing including sinks, taps, equipment, keyboards weighing scales etc. Actions included a review of cleaning services to the unit and replacement taps. The severity of illness using the HIIAT tool was assessed as minor as none of the patients were giving cause for concern. Patients identified previously were discussed. Typing of all cases were compared. There was extensive environmental screening.

The HIIAT assessment was based on 4 criteria severity of illness, impact on service, public anxiety and risk to public health (since changed to risk of transmission). The IMT would have opportunity to reassess the HIIAT at each IMT (including if extra meetings were arranged) using each of the criteria.

e) Was any action taken sufficient to address the concern?

A Yes. There were a number of actions taken. These included training and monitoring of SICPs and a review of the cleaning service provided by the facilities team. HPS were invited to be members of the IMT to support the actions at each meeting. Taps were replaced. The IMT were able to bring the incident to a close with no new cases reported. The incident reflected how challenging this specialised environment is in terms of vulnerable patients and complex reusable medical equipment.

f) Can you comment on the effectiveness or otherwise of the IMT?

A The IMT followed the standard agenda for an IMT and invited HPS to advise at each meeting. The membership was inclusive of clinicians, estates, facilities and IPCT. The focus was on investigations to identify a potential source(s) and actions to control transmission. There was also focus on care of patients and communication to parents and staff. Actions were taken to provide support for proposed hypotheses. HPS provided advice and support.

VARIOUS INFECTION INCIDENTS IN 2018 – "Water Incident"

22 When did the concern arise?

A March 2018 Dr Inkster arranged an IMT to discuss patients with environmental organisms.

a) What was the nature of the concern – specifically what was thought to be wrong with the building system in question?

A The IMT took action to investigate a possible environmental source of Cupriavidus. Sampling identified multiple water sources with Cupriavidus, Pseudomonas and fungi. Water tanks were negative and it was hypothesised that the outlet was the source rather than the water supply. Taps were removed and disinfected. The taps had plastic flow straighteners in them to reduce splashing. These were removed as a potential reason for growth of organisms.

b) What was your role- what were you asked to do, if anything?

A I attended at least 1 of the IMTs for the Lead IPCN. I wasn't asked to action anything.

c) What was the nature of the risk posed to patient safety and care?

A The risk to patients was exposure to environmental Gram negative organisms from the water outlets. The risk of transmission was assessed at each IMT as major.

d) Was any action taken sufficient to address the concern?

A Actions were taken immediately to investigate a source to inform actions to control infection risk. Following identification of organisms, water outlets were immediately removed and patients supplied with alternative water supply for washing, drinking etc. Expert advice was sought from HPS, HFS and PH England. Consideration was given to other positive outlets and extensive water sampling across QEUH was undertaken. Point of use filters were placed on water outlets. Communication was provided to patients / parents. I think these actions supported identification and control of the source of these organisms.

e) Can you comment on the effectiveness or otherwise of the IMT?

A An IMT was arranged in March 2018 with appropriate membership. Additional expertise was requested as necessary (e.g. HFS and PH England). Investigations were appropriate to support the hypothesis of an environmental source and control measures were in place to protect patients. HIIAT tool was used at every meeting to assess the current situation and this reported to HPS and Scottish Government. The IMT agreed to more widespread sampling once results for Ward 2a were known. A number of actions were agreed at each IMT and reported at subsequent meetings. Actions included communication to staff and parents / patients Actions and outcomes were recorded on the IMT action plan.

23 Cryptococcus in 2019- refer to IMT

a) When did the concern arise?

A I don't recall the date of the patient cases but note from the provided minutes that the first IMT was on the 20th December 2018.

b) What was the nature of the concern – specifically what was thought to be wrong with the building system in question?

A Dr Inkster described an organism that was rare and found in pigeon droppings and soil. The concern was that potential route of transmission was following entry of these organisms into the building. The IMT chair described a hypothesis that the organism could have entered the building via the ventilation system.

c) What was your role- what were you asked to do, if anything?

A I attended some of the IMTs. I was asked by Sandra Devine to prepare an aide memoire for CDU staff to familiarise them with the rooms in ward 2a.

d) What was the nature of the risk posed to patient safety and care?

A The risk was infection with Cryptococcus neoformans in people whose were immunocompromised and therefore at risk of infection.

e) Was any action taken sufficient to address the concern?

A Following description of the known sources of this organism, the IMT focussed on the physical environment for evidence of pigeon droppings and potential routes of transmission from these to the cases. Microbiology testing was undertaken including air sampling in a number of areas including wards and plant rooms. Other actions included cleaning of all plant rooms, pest control actions to reduce the number of birds on the site, prophylaxis for haem-onc patients, clinician awareness for further cases and testing and advice from external experts on ventilation and possible mode of transmission.

The IMT hypothesis expanded to include not only Cryptococcus but also other fungus when air samples in wards in QEUH were positive. A plan was agreed to move patients from Ward 6a to CDU and CDU patients to Ward 2a. This would allow for remedial works to be undertaken in Ward 6a. The incident had been assessed using the HIIAT assessment tool and reported to HPS following the first and subsequent IMTs. HPS updated the Scottish Government after IMTs also.

f) Can you comment on the effectiveness or otherwise of the IMT?

A The IMT consulted an external expert to inform the investigations and action. The pathogen was new for most people on the IMT particularly those who were not microbiologists. There was new learning about the nature of this organism. There were many IMTs all chaired and undertaken as per standard agenda for an IMT. Experts were invited in to the IMT to provide additional information to support understanding of actions required. All actions agreed were undertaken. Extensive environmental sampling was undertaken. It is my understanding that Cryptococcus neoformans was not found in the environment but that Cryptococcus albidus was. Despite further samples positive for fungi including Cryptococcus I do not recall any further cases reported during this incident.

g) Prior to this incident, how many times had you come across Cryptococcus either in environmental testing or in a blood sample?

A I had never come across this organism before.

h) Other than the two cases already in the public domain ([redacted] and the paediatric patient) are you aware of any other patients with Cryptococcus in QEUH? If so please give details.

A I am not aware of any other patient in QEUH with this organism.

i) As you will be aware, a cryptococcus sub-group was set up to investigate the incident, culminating with the writing of a report by Dr John Hood. Have you read his report?

A I have not read the report.

j) If so, to what extent do you agree/ disagree with his findings?

A NA. It is my understanding that the investigations undertaken by Dr Hood were extensive. I do not have the expertise to comment on whether these were the right actions.

20 Gram Negative Bacteria in 2019 refer to IMTs

- When did the concern arise?
- What was the nature of the concern – specifically what was thought to be wrong with the building system in question?
- What was your role- what were you asked to do if anything?
- What was the nature of the risk posed to patient safety and care?
- Was any action taken sufficient to address the concern?
- Can you comment on the effectiveness or otherwise of the IMT?

A February 2019, NICU, Serratia incident. IMT was held to discuss new cases of Serratia colonisation in neonates. The membership included estates, facilities, clinicians and IPCT. The IMT used the standard agenda for incident meetings and HIIAT assessment was used. Action plan included hypotheses and extensive action plan to support investigations and ensure controls. Drain

swabs were positive and action was taken to disinfect drains. Plans included the use of hydrogen peroxide vapour which would facilitate cleaning of fixed and mobile complex reusable medical equipment. I attended some of the IMTs to support the IPCNs but was not asked to action anything. The HIIAT assessment was used at each IMT. The IMT closed the incident when no further cases reported and all actions completed.

June 2019, Ward 6a, Gram negative incident. I began attending the incident meetings in August 2019. The IMT met to discuss an increase in Gram negative blood cultures in paediatric haem-onc patients in Ward 6a. Membership was appropriate and as the incident progressed others were invited. This included Professor Craig Whyte and Lesley Shepherd from Scottish Government. There was also a change in chair. I was asked to undertake a root cause analysis of the patient cases to determine all possible sources and routes of transmission to inform actions and control measures. The data collection tool developed for this was approved by the IMT and HPS who had additional comments incorporated.

The clinician of each patient was interviewed as part of this process. The report was tabled at the IMT once completed. The IMT recommended a revision of Chapter 3 of the NIPCM in light of this incident. There were differing opinions on the source and nature of the risk to patients in the ward from microbiologists. This was discussed at the IMT. I think given the complexity of the incident, lack of experience in specialist environmental issues and lack of national guidance, a difference in opinion could be expected. All proposed actions were approved via the IMT process.

A number of measures were proposed to provide ongoing assurance to allow the incident to be stepped down. These included; all new single Gram-negative cases undergo a root cause analysis rather than waiting for 2 or more cases; weekly enhanced supervision ward rounds that included senior nursing staff, facilities and IPCT; SPC charts for positive blood cultures with trigger levels for early warning; an SOP with detail on routine environmental

sampling including water, air and chill beams (approved by HPS). I felt this incident was complex and required advice and expertise beyond the IPC nursing team in NHS GGC. I believe that everyone involved was invested in taking all actions and preventative measures necessary to reduce the risk to patients to allow services to continue. I think services (facilities, IPC, public health, estates, clinicians, press, HPS and Scottish Government) worked collaboratively to find a solution to a very challenging incident.

November 2019, PICU, Pseudomonas incident. IMT was held to discuss 2 cases of Pseudomonas aeruginosa in 2 PICU patients. The membership included estates, facilities, clinicians, HPS and IPCT The Scottish Government were kept informed and provided advice also. The IMT used the standard agenda for incident meetings and HIIAT assessment was used. Action plan included hypotheses and actions to support investigations and ensure controls.

Water samples were undertaken in the unit and also areas of the patients pathway including Th 8. All water samples were negative. I attended the IMT to support the new Lead IPCN for the paediatric team. I provided information to the clinical teams on a new product used in paediatric haem-onc patients which fitted on the end of central lines. The clinical team agreed to trial this product. The IMT considered previous reports of Gram negative organisms. There was discussion about the number of air changes in bedrooms of the two patients with Pseudomonas. HEPA filtered units had been mobilised for use in the ward. Dr Leonard considered the ventilation as part of the hypothesis.

I was asked to share the SOP on isolation rooms in the QEUH. This documented each of the mechanically ventilated tooms on the site and the type of ventilation they had e.g. PPVL , negative pressure. This SOP had been written by Dr Inkster and myself for approval through the board IPC committees and was provided to inform staff what each ventilated room was and which patients it could be used for. The HIIAT assessment was used at

each IMT. On the advice of the Scottish Government, the incident team considered all organisms reported collectively in one IMT and there was a retrospective look back to August 2019 for cases. Extensive environmental sampling was undertaken and 1 drain swab was positive for Serratia. Consideration was given to the fact that the patient had been previously colonised with Serratia therefore the significance of the drain being a source was unclear.

The IPC surveillance team created SPC charts for Gram negative organisms to support data collection and reporting. I supported the IPCN to undertake a case review for each of the 2 pseudomonas patients as part of the investigations using the same data collection tool created for the Ward 6a patient reviews. HPS were invited to the IMT. The Scottish Government were informed and the IMT followed the advice of both HPS and Scottish Government during the management if this incident. The incident was closed when there had no further cases reported and all actions completed.

21 Unusual pathogens in orthopaedics in 2021 refer to IMTs

a) When did the concern arise?

A I don't recall the specific dates when patient cases were identified. The IMT met in January 2021.

b) What was the nature of the concern – specifically what was thought to be wrong with the building system in question?

A This incident was not linked to a building system. The source of surgical site infection following orthopaedic surgery with environmental organisms was linked to Ballotini beads used in the surgical procedure. Samples taken from unused beads had the same organism as the patients. The company that produced the beads reported this finding themselves in early January. Sandra Devine notified HPS and asked that other IPCTs in Scotland are informed.

c) What was your role- what were you asked to do, if anything?

A I wasn't asked to participate in this IMT.

d) What was the nature of the risk posed to patient safety and care?

A The risk was infection associated with orthopaedic surgery where Ballotini beads from a specific batch were found to be contaminated at point of manufacture. Once these were withdrawn the risk to other patients was removed. Patient cases with infection were treated.

e) Was any action taken sufficient to address the concern?

A Beads from the specific batch were sent back to the company. Other health boards were informed via HPS.

f) Can you comment on the effectiveness or otherwise of the IMT?

A The IMT identified the source and took action to remove this. The IMT ensured that there was communication to other health boards of the risk from the contaminated batch of beads.

Water supply – General

22 Other than the particular issues described above, did you have any other concerns about the water supply since January 2015? In particular were you aware of any of the following?

a) Water temperature: problems with energy plants – hot water temperatures are not high enough to prevent/tackle bacterial growth.

A I don't recall problems with an energy plant and temperature control in water.

b) Thermal control design system.

A I was aware that estates were examining the thermal mixing valves and I think it was decided to change the tap design taking these out. I recall Dr Inkster sampling dismantled taps and reporting bacterial growth that was considered a potential source.

c) Flow straighteners / regulators / tap type

A I remember a group had met with HPS to discuss choice of taps for the new hospital. It was a potential hypothesis that the plastic flow straighteners were a risk for bacterial growth. This may also have had to do with the thermal mixing valves.

d) Debris in pipes

A I was asked to lead a group of IPCNs to look at all sink drains and describe if there was any obstruction to flow. This was a visible inspection. The data was collected and provided to estates. I recall raising a concern that there appeared to be putty-like material in the join between the sink outlet and the pipe. Estates explained that this was a spigot joint. I also recall reports of foreign bodies such as syringes and toys noted on inspection by other IPCNs.

e) Single room design – water outlets increased; flushing regimes; risk of stagnation.

A I was not involved in the design of the single rooms. Each bedroom had a clinical hand wash sink in the main room for staff to undertake hand hygiene. There was a second sink and shower in the ensuite. This was no different to the single rooms in the old RHSC. I was a member of the Board water safety group to provide clinical IPC advice. The group were responsible for the development of the Board water safety Policy and scheme. This document did include advice on flushing regimes for staff to undertake and a recording sheet.

f) Pipe size and storage volumes; encourages water stagnation

A None.

g) Wet rooms and floor levels

A While I was Lead IPCN for the Paediatric service I was asked to look at an ensuite room where the shower water had moved out of the ensuite into the bedroom. We spoke to estates who reviewed the room and determined it was clean water running out into the bedroom while using the shower due to the camber of the floor. Work was undertaken to remedy this.

h) Drainage system

A None.

23 Do you consider there to have been a risk of infection from the water supply? If so, explain why.

A Yes. Disinfection of the water supply with chlorine dioxide and also the use of point of use filters on all water outlets reduced the number of positive cases. This would indicate that there was a potential risk from either the water supply or contamination of the outlet itself.

a) What remedial measures were taken as a result? eg. room closure and cleaning; ward closure; investigative and remedial works?

A Where a patient had a positive blood culture, the patient was moved, the room closed and samples taken before decontamination of the room including drains. Where no positive results were identified the room would be put back in to use. Point of use filters were put on all water outlets, disinfection using chlorine dioxide and drain cleaning were actions taken. There was also extensive water sampling undertaken.

b) Do you consider the issues with the water system (including drainage) have been resolved, or do you still have concerns? Please give reasons.

A I am not in a position to answer this as I left in March 2022.

The ventilation system

24 Other than the initial problems with the BMT what concerns did you have about the ventilation system since January 2015?

A I am not a subject matter expert on ventilation. I was present at IMTs where ventilation issues were discussed. I was aware that remedial actions including decanting of patients to other wards as described above were undertaken. I know that work was undertaken to ward 2a/b to upgrade the ventilation.

25 In particular were you aware of any problems associated with any of the following:

a) Presence of HEPA Filters

A The condition of HEPA filters were discussed at IMTs where estates had been asked to review the function. I recall estates reporting to IMTs that some filters were either missing or not installed correctly.

b) Air Changes Per Hour (ACH)

A The IPCT were informed that the ACH in the bedrooms was 3 ACH and not 6. We were told this was due to there being chilled beam technology that did not require 6 ACH. I think Dr Inkster may have told us but I cannot be certain. I had no prior knowledge of chill beam technology.

c) Air Pressure Differentials

A I am aware that there were problems getting appropriate air balance between rooms and corridors in ward 2a. Rooms were vacated to allow for seals around windows, doors and light fittings / switches to be resealed.

d) Air pressure monitoring systems

A I am aware that gauges were placed outside of mechanically ventilated rooms. These were also present in BMT rooms in Schiehallion ward in the old RHSC.

e) Ward temperature issues;

A I was told by nursing staff that the bedrooms in ward 2a could be cold at night. I'm sure this was also an issue in Schiehallion ward in RHSC at times.

f) room ceilings, particularly in isolation rooms;

A Chill beams as above.

g) rooms seals for pressure retention;

A Some of the light fittings and switches were not sealed completely on inspection and reported back to IMTs. Estates took action to remedy this.

h) PPVL issues with rooms;

A I was told that there was concern raised about which rooms were PPVL and which were negative pressure. I was asked to work with Dr Inkster on developing an SOP which summarised all the mechanically ventilated room types in the 2 hospitals. We designed signs for each room as a visual aide memoire to inform staff in those areas. The information on the ventilation type were provided from estates. The information on which patients could use which rooms was provided by ICDs. As with all SOPs, this was tabled at the IPC committees for approval.

i) thermal wheels

A None

j) Chilled beams, usage in rooms designed for immunocompromised patients and leakage.

A I was asked to visit a ward with Dr Inkster to look at the chill beams. I was not aware of their function. They were dusty on top and appeared to drip condensation at times. A plan was agreed to undertake regular cleaning of these.

k) Any other particular features

A No.

26 Impacts from concerns with the ventilation system:

a) Do you consider there to have been a risk of infection from the ventilation system? If so, explain.

A I am not qualified to comment on ventilation other than what has been described in IMT minutes. I consider that where the ventilation is not installed as per the design specifications specifically for immunocompromised patients, this would be an infection risk.

b) Were there other impacts caused by the ventilation system: e.g. closure of facilities, transfer of patients, other remedial measures?

A Transfer of adult BMT from QEUH to Gartnavel and movement of paediatric patients out of Ward 2a to Ward 4b and 6a would raise concern from patients and families. At each IMT, communication with families was discussed. I understand that ventilation systems were revised in wards 4b, 6a and 2a/b. I do not know the detail of the work undertaken.

c) Do you consider that the issues with the ventilation system have been resolved, or do they still have concerns? Please give reasons for your answer.

A I cannot answer this as I have not worked in the IPCT since March 2022.

DMA CANYON Reports

27 When were you first made aware of the DMA Canyon reports? How did this come about?

A I don't recall the content of a DMA Canyon report.

a) Some witnesses (e.g., Christine Peters) have said that, had they had sight of the 2015 report at the time, they would not have allowed the hospital to open. Do you agree?

A I am not in a position to answer this.

Decant of Schiehallion Unit to Ward 6A

28 In 2018 the decision was taken to close Wards 2A and 2B and to decant the patients into wards 6A/4B. Were you involved in this decision to any extent? If so please describe your involvement.

A I was made aware of the decision and reasons.

a) Did you have any concerns about the decision? If so please elaborate.

A I was concerned that patients and families were moving out of the ward but understood the options for decanting patents was discussed and agreed at IMT for the safety of patients. This was bound to cause anxiety and raise questions. Given the technical nature of the incident this would be difficult information to process and understand. I was also concerned about staff who would have to move to a new premise and one that had not been designed for children and families. It is clear from minutes that this decision was taken after a thorough review of options.

b) In particular were you concerned about;

- the options assessment.
- suitability of the other wards (6A and 6B) for Schiehallion patients; and
- steps taken to prepare these wards to receive Schiehallion patients.

A An options appraisal had been undertaken jointly between management, clinicians, estates and the IPCT. I respected the decision taken as the best option at that time to safeguard children and their care.

c) What impact(s) did closure of 2A/B and the move to 6A/4B have upon 1) patients and 2) staff?

A I remember staff telling me that Ward 6a was bigger and had a better layout than ward 2a/b. With JRe and JR, I met with 1 family whose child did not have an infection linked to the environment . This family expressed their concern for other patients and families.

Short-term Decant from 6A

29 In 2019 as a result of a series of infections, patients were decanted from 6A. Were you involved in this decision to any extent? If so please describe your involvement.

A I attended some of the IMTs and was asked by my line manager to go to CDU to undertake a visual inspection of the unit which I did with the Senior Charge Nurse prior to patients being transferred. Susie Dodd and her team had already undertaken several visits to the unit and identified work to be undertaken as described in the minutes of the IMTs. I don't remember anything else of note.

a) Did you have any concerns about the decision? If so please elaborate.

A The IMT took the decision to decant low risk patients from Ward 6a to CDU until remedial works could be undertaken. This decision was taken with input from clinical, management and IPC. I did not have concerns about this decision.

b) In particular were you concerned about; teams.1 the options assessment. Suitability of the other wards (4B, 1, RHC and CDU) for Schiehallion patients and steps taken to prepare these wards to receive Schiehallion patient

A The options to move patients had been discussed at length between senior management and the clinical teams. The local IPC team, estates and facilities were involved in the risk assessment and plan to provide alternative options to be able to provide a service in the RHC. The pathways for patients had been identified and point of use filters placed on all water outlets. My understanding is that patients were risk assessed as to where they would be decanted. Ward 4b was the adult BMT and was able to provide a protective environment for children.

c) What impact(s) did the decant have upon 1) patients and 2) staff?

A I do not know what impact this had on patients or staff.

EVENTS IN 2019

30 Dr Inkster resigned in August 2019. What do you understand to be her reasons for doing so?

A I am aware that Dr Inkster resigned from her duties as lead ICD. She continued to be a Consultant microbiologist. I was not given specific reasons as to why she did this.

31 You were present at an IMT on 23 August 2019 at which Emilia Crighton was appointed as chair. Were you surprised by this? What was your opinion of her appointment? Please refer to IMT

A I was informed that Dr Inkster had stepped down from the IMT and that Dr Crighton would take her place as chair. I wasn't made aware of specific reasons for this but was told that Dr Crighton would step in. IMTs can be chaired by either ICDs or CPHMs. I did not know Dr Crighton well enough to form an opinion at the time of her appointment.

32 On 25th September 2019 there was a meeting to discuss staffing issues within ICPT. Are you aware of this meeting? If so, what was the outcome? Please refer to Minutes of meeting A41745856

A Minutes not provided. I do not recall a meeting to discuss staffing.

a) At this meeting the view was expressed by several witnesses that IC team was "IN Extremis" chronically under resourced and being undermined

A Minutes not provided. I do not recall a time when the whole IC team was in extremis.

b) To what extent do you agree with the sentiments being expressed?

A I do not recall the aforementioned meeting. However I can comment with respect to the IPC nursing service and do not remember a time where the nursing team would ever be described as 'IN Extremis'. We had 5 nursing teams across NHS GGC and staff would move to support each other where a team may have been short staffed on any particular day.

Interactions with the Independent Review, Oversight Board, Case Note Review

33 Can you describe any involvement you had with the Independent Review

A I was interviewed by Andrew Frazer and Brian Montgomery.

a) The Oversight Board

A I attended two meetings of the OB that I recall. I attended to provide information on the standard infection control precautions audit programme in NHS GGC. I don't recall details of any others.

b) The Case Note Review

A I was interviewed along with other lead IPCNs by Lesley Shepherd and Francis Lafferty. I was asked to describe the IPC audit programme and SOPs . I was also invited to demonstrate our IPC audit process and IPC web site to one of the audit review team. Sorry I cannot remember her name.

34 What recommendations for improvement came out of these reviews?

A The recommendations from each report are :

Independent Review

The Academy of Medical Royal Colleges and Faculties in Scotland and the UK, the Royal College of Nursing, together with the Royal Academy of Engineering, The Royal Incorporation of Architects in Scotland, Architecture and Design Scotland and those with interests in the environmental sciences were asked to examine ways to engender a community of practice and scholarship that enhances collaborative work in improving the healthcare built environment. The National Centre for Reducing Risk in the Healthcare Built Environment should facilitate this initiative with its UK counterparts.

The National Centre for Reducing Risk in the Healthcare Built Environment and local NHS Boards should encourage linkages, facilitate robust networks that are cross-disciplinary, build on experience and form part of career and professional development, anticipate the need for expertise in areas where construction projects and novel interventions are in the planning stages.

The National Centre and participants should recognise that lessons are often held in organisations at a distance from host institutions by the very nature of unusual occurrences and occasional projects, and that they should create a 'safe space' where experience that is reputationally sensitive can flow more freely.

Oversight board recommendations : as listed in this report.

Queen Elizabeth University Hospital/ NHS Greater Glasgow and Clyde Oversight Board: final report - gov.scot (www.gov.scot)

Case note review:

1. Overall Management of Gram-negative environmental infection in Paediatric Haematology Oncology

1.1 Every GNE bacteraemia occurring in a Paediatric Haematology Oncology patient at NHS GGC should be comprehensively investigated using RCA methodology, whether or not it is considered at the outset to be related to the hospital environment or thought to be part of a potential outbreak. This will ensure that future consideration of the underlying issues can be informed by consistent, comprehensive and prospectively collected data.

1.2 A multi-professional group, with a defined and consistent membership representing all appropriate skills and backgrounds, should be established with responsibility for continuing oversight of these data: for assessment of its quality, and completeness, and for its analysis and reporting. The intent is that this group, which should have external representation, will grow in collective expertise and knowledge; have a shared understanding of the history and challenges encountered since the opening of the new QEUH/RHC site; and will be able to define and guide the organisation's response to future concerns about environmentally acquired infection in this group of patients. The group should report directly to the IPC Manager and Lead Infection Control Doctor and its findings form a standard part of upward reporting of IPC issues within NHS GGC.

2. Demographic profile of patients

Given the unexplained but significant excess of female patients in the Case Note Review, the Paediatric Haematology Oncology service should audit all bacteraemias for a sufficient period either to reassure that there is no real gender effect, or to investigate further if this proves to be the case.

3. Environmental surveillance

3.1 The data systems used to document facilities maintenance activity in clinical areas need to consistently capture the exact location of the work done; the date(s) on which the work was actually done; and be accessible to inform the IPC process, including the investigation of clusters and outbreaks.

3.2 The frequency with which facilities maintenance activities occur in specific ward areas should be reported on a regular basis in a way that informs wider awareness of the vulnerability of the environment and tracks changes in the pattern of such activity.

3.3. The precise location of any swab or water sample taken for microbiological surveillance, and the date on which it was obtained, must be recorded and the results made accessible to inform the IPC process, including the investigation of clusters and outbreaks.

3.4 When a suspected infection outbreak is being investigated, the plans agreed for environmental sampling of the relevant area must demonstrate a systematic approach appropriate to the circumstances of the investigation.

3.5 When the Chair of an IMT (or similar future structure) identifies that environmental samples are required to inform an investigation, these should be taken, reported back promptly and evidenced in the IMT minutes.

4. Water testing

4.1 A systematic, fit for purpose, routine, microbiological water sampling and testing system is required to provide assurance going forwards. How the results from such sampling/testing are recorded, accessible and used to highlight concerns should be reviewed, including to ensure that investigations of possible links between clinical isolates and water/environment sources can be informed in a timely way. In addition, investigations of possible links

between clinical isolates and water/environment sources should consider whether (short or medium/long term) changes to the routine microbiological water sampling and testing system are required.

4.2 NHS GGC should ensure that the SOP for Minimising the Risk of Pseudomonas aeruginosa infection from water explicitly states whether this also applies to high risk areas other than adult and paediatric intensive care units and neonatal units.

5. Infection Prevention Control Practice and Audits

5.1 NHS GGC should review the current approach to IPC audit: a) to ensure that the component elements are addressed individually and that the RAG rating is not determined only by an overall score; and b) to show that the governance and assurance process relating to improvement action plans can demonstrate if interventions have been effective. Quality improvement methodology should be used to drive and sustain improvement.

5.2 The current status of IPC audit should form a routine and documented component of IMT assessment.

5.3 Greater effort should be made to ensure that deficits identified by IPC audits are remedied, re-audited, linked to measures of ongoing quality improvement/compliance, and clearly documented.

5.4 Greater attention should be paid to the evidence for benefit from Enhanced Supervision by demonstrating sustained improvement in standards where this approach is introduced to a clinical area.

5.5 The validity of Hand Hygiene audits should be strengthened by ensuring the staff sample audited is sufficiently representative in terms of numbers and types of staff; and that effectiveness of the interventions are monitored to demonstrate sustained improvement.

5.6 The frequency of Hand Hygiene audits should be increased when there are concerns about infection rates potentially related to the environment

6. Infection Prevention Control Communication

NHS GGC should ensure better communication between the Microbiology and IPC teams. We recommend a forum by which sharing of information and

actions occurs in real time to support and improve quality of care to patients, maintain progress and discuss action for any potential change in a patient's condition or linked infections.

7. ICNet Alerts

NHS GGC should review the ICNet alert organism list to ensure that, at a minimum, it reflects the advice in the Scottish NIPCM and to ensure that it is further updated to reflect experience with GNE bacteraemias.

8. Infection Incident and Outbreak Policy

8.1 NHS GGC should review its Standing Operating Procedure regarding the use of the term HAI to make it clear whether this includes all Healthcare Associated Infections. This is a specific issue in the context of patients who, like those in Paediatric Haematology Oncology, frequently and repeatedly attend the hospital as outpatients, day patients and inpatients and for whom the distinction between Hospital Acquired Infection (HAI) and Healthcare Associated Infection (HCAI) is unlikely to be useful.

8.2 NHS GGC should revisit how they will monitor and, if necessary, trigger concerns about future outbreaks of Gram-negative environmental infections. Reliance on SPC charts to determine if episodes of infection caused by unusual/uncommon microorganisms are significant should be re-evaluated. The process in place for much of the Review period appears to have been insensitive to identifying clusters that should have raised earlier concerns about potential for a common/environmental source of infection.

8.3 RCA methodology should become the standard approach to the investigation of serious infections in Paediatric Haematology Oncology patients.

8.4 NHS GGC should consider the further and consistent use of the RCA process across the organisation a) to identify evidence of common themes as a cause of infection over time; and b) what can be extracted from the RCA process for organisational learning and improvement.

8.5 NHS Scotland should consider if this approach should become a recommendation in the NIPCM.

9. IMT Process

9.1 The IPC Team should ensure IMT minutes are filed with all supporting papers so that a complete record of the discussions held, evidence presented, actions agreed and the overall report concluding the process, is available and accessible in a single place.

9.2 The IMT action log should be a continuous and evolving document throughout all meetings in an IMT series. The log should be reviewed and updated at each meeting so that there is a clear record of actions agreed, responsibility held and tasks completed. The IMT should not be closed if there are actions which have not been completed.

9.3 The absence of IMT reporting at the closure of an IMT sequence is a breach of NHS GGC's own policy. This should be remedied so that practice complies with policy.

9.4 In addition to confirming that due process has been followed in line with organisational policy, IMT and other IPC reports intended for upward reporting within the organisation should more fully describe the scale and significance of the incident that has been investigated from the patient perspective.

9.5 NHS GGC should assure that the governance of the IMT process, its reporting and escalation to Board level, is clearly defined and followed; and that an audit trail of all evidence related to any suspected or actual outbreak is clearly documented and fully reported.

10. Bacterial typing data / Reference laboratory reports

10.1 NHS GGC must (continue to) develop a comprehensive and searchable database that allows details of microbiology reference laboratory reports to be compared between samples of the same bacteria obtained from different patients or environmental sites.

10.2 The system for integrating microbiology reference laboratory reports into the patient microbiology record needs to be reviewed and strengthened. Similarly, the system for ensuring that microbiology reference laboratory information is available to and used by the IMT process, including the

investigation of clusters and outbreaks, needs to be reviewed and strengthened.

11. Patient Records

11.1 NHS GGC should undertake a review of the current effectiveness of the system for collating, storing and integrating both scanned hand written records and digitally recorded records and how this achieves an accurate, accessible and chronologically accurate health record for each patient.

11.2 NHS GGC should clarify their strategy for further evolution towards fully digital records

11.3 Consideration should be given to the integration of the microbiology recommendations regarding the diagnosis and management of infections, as currently documented in the Telepath patient notepad, into the patient clinical record.

12. Patient location coding

It should not be possible to code patient activity to a clinical area in which the patient was not present: this should be addressed.

13. Adverse Events

13.1 The Paediatric Haematology Oncology service should engage with regular reporting and analysis of adverse events. Admission to PICU is an obvious way of identifying, for audit purposes, the patients most likely to have the most serious (Category I) AE.

13.2 The PTT offers a useful tool to identify and monitor trends in the occurrence of adverse events that occur during care.

13.3 NHS GGC should assure and report consistent utilisation of the Datix system and audit the validity of the classification and risk categorisation given to incidents by its staff.

14. Central Venous Line Care

14.1 The Paediatric Haematology Oncology service should review the practice of ‘challenging’ central venous lines in line with evidence for its risks and benefits.
14.2 When it is agreed that a central line should be removed for optimal management of a patient’s infection, operating theatre and anaesthetic resources must be made available to ensure its prompt removal (within 24 hours).
14.3 The Paediatric Haematology Oncology service should ensure that a decision not to remove a central venous line contrary to the advice of the microbiologists is always documented in the medical record.

15. Other aspects of Clinical Care
15.1 The Paediatric Haematology Oncology service should ensure that Morbidity and Mortality reports are not restricted to a review of patients who die. Future GNE infections should be used as a trigger for an M&M review; to assess management and outcome; and with the inclusion of an action plan to identify approaches to reduce risk and improve care.
15.2 International consensus guidelines have recently been published for use of antibiotic prophylaxis in Paediatric Haematology Oncology. These should be reviewed by both the service and by the Managed Service Network, and local and network policy and practice should be amended accordingly.
15.3 The Paediatric Haematology Oncology service should audit the use of antibiotic prophylaxis against the new policy once implemented.
15.4 The Managed Service Network and NHS GGC should review any changes to the use of shared care that have evolved as a result of the service disruption experienced in recent years and ensure the structures and processes in place adequately address patient safety and staff support across the shared care network.

a) To what extent of these improvements been implemented?

A I am not able to comment on the extent of implementation currently.

Work culture at GGC

35 What were the staffing levels like in the ICP team while you were there? Were they appropriate to manage workload?

A I can only comment on the IPCN team with confidence. NHS GGC had a robust IPC nursing service with 5 teams across 5 sectors. Each team was structured the same with a lead IPCN and senior and infection control nurses predicated on the size of the sector covered. Nursing staff were able to cross cover when required and the NC was also able to support teams with nursing duties. There was also a surveillance nursing service that supported national surveillance programmes. I do recall when all the Consultant microbiologists with IC sessions at the QEUH site resigned at the same time those sessions this did cause a gap in the service immediately. Actions were taken by the senior management team to provide cover via consultant microbiologists who had not resigned heir IPC duties and ICDs from other teams.

a) Who was responsible for providing staffing and ensuring it was maintained at sufficient levels?

A The senior management team (ICM, ANDIPC and LICD)

b) Did you or anybody else ever raise concern regarding staffing levels?

A No. I am not aware of staffing levels raised as concern.

c) If levels were insufficient, why do you think this was?

A NA

d) Can you comment on the working environment while you were there? What issues, if any, did you have?

A I did not have any issues with my working environment. I felt we had a good working relationship with estates, facilities, pharmacy and clinical teams. I felt IPC was on the agenda at relevant groups including clinical governance and health and safety. The HAIRT report was tabled at Board meetings and published on the NHS GGC web pages.

e) Did you have concerns about the management style within GGC? If so what were they?

A None.

f) What were the effects of these issues on 1) staff and 2) patients and their families?

A NA

36 Did you report any of your concerns within your department? If so, to whom, and what was the outcome?

A NA

a) In the event of concerns, were there procedures to facilitate disclosure of this either to other GGC staff or to individuals external to GGC?

A I remember awareness of the Whistle blowing policy in the Core Brief. I cannot comment on whether there were procedures that facilitated disclosure.

b) When – and how – did you become aware of these procedures?

A The Whistleblowing Policy was promoted on Staff net and core brief as described. I do not remember the date.

c) Do you consider that these procedures are encouraged within GGC?

A There was a policy and it was advertised in the Core Brief. I have no experience to be able to answer this question.

d) Were you aware of GGCs whistleblowing policy? Was this something you considered? Please explain why/ why not.

A I wasn't aware of it before I was informed that it had been invoked by members of the microbiology department. I did not consider it. I do not remember a time when I considered this an action necessary for me to take.

e) Throughout 2018 there were ongoing Whistleblowing procedures involving several Microbiologists. Were you aware of this at the time? What was your perception of it?

A I was informed by my line manager that there had been reports of whistleblowing. I was not made aware of who these staff were nor their individual reasons for doing so.

CURRENT SITUATION

37 Are you still involved in Infection Control at QEUH. If so, how are things at QEUH now as compared to the period under investigation? Are you now seeing fewer BSIs, fewer unusual infections and /or fewer samples with multiple infections?

A No. I retired in March 2022.

38 Do you have any ongoing concerns as to the safety of the QEUH? If so, what are they?

A No. I retired in March 2022

39 Do you have any other observations regarding your time at QEUH/RHC?

A No.

Declaration

I believe that the response I have given to the questions I have been asked are matter of fact in this witness statement and true. I understand that proceedings for contempt of court may be brought against anyone who makes, or causes to be made, a false statement in a document verified by a statement of truth without an honest belief in its truth and also understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

The witness was provided the following Scottish Hospital Inquiry documents for reference when they completed their questionnaire statement.

Appendix A

A43255563 – Scottish Hospitals Inquiry - Bundle 1 – Incident Management Team Meeting Minutes (External Version)

The witness referenced the following documents to the Scottish Hospital Inquiry that they used when they completed their questionnaire statement.

Appendix B

Queen Elizabeth University Hospital/ NHS Greater Glasgow and Clyde Oversight Board: final report - gov.scot (www.gov.scot)