SCOTTISH HOSPITALS INQUIRY

Hearing Commencing 19th August 2024
Core Participants' Closing Submissions

Table of Contents

SCOTTISH HOSPITALS INQUIRY

Interim Closing Statement on behalf of Multiplex Construction Europe Limited

Hearing Diet: 19 August 2024 - Wednesday 13 November 2024 ("Glasgow III Hearing")

---

1 Introduction

1.1 This closing statement on behalf of Multiplex Construction Europe Limited ("Multiplex") is produced in response to the Closing Statement by Counsel to the Inquiry, dated 20 December 2024 ("the Closing Statement").

1.2 Multiplex explained its interest in the Glasgow III Hearing diet in its application to be given leave to appear at the hearings. In particular, Multiplex submitted to the Inquiry that in light of its role in designing and constructing the Queen Elizabeth University Hospital ("the Hospital") it had a direct and significant interest in evidence which relates to the Hospital's built environment. No witnesses from Multiplex were, however, asked to give evidence at the Glasgow III Hearings (or any prior hearing diets). This is because, as Multiplex understand it, it is the Inquiry's intention to examine the approach to the design, construction and commissioning of the Hospital at the hearings scheduled to commence later this year ("the Glasgow IV Hearings").

1.3 The Inquiry's approach is also reflected in the Key Questions for Glasgow III, which consider the condition of the water and ventilation systems from the point at which there were patients within the QEUH/RHC, i.e. following upon the design, construction and commissioning period and after Multiplex had handed over the Hospital to NHSGGC.

1.4 Given the Glasgow IV Hearings have not yet taken place, Multiplex does not consider it is possible, or proper, for the Chair to reach his final conclusions on all the Key Questions and all Terms of Reference ("TOR") referred to in the Closing Statement. Multiplex endorses the view expressed in the Closing Statement that final conclusions need to await the placing of the Glasgow III evidence in the context of the evidence to be heard at the Glasgow IV Hearings. Multiplex has addressed this further below, by reference to the points identified by the Inquiry at paragraph 2 of Direction 9 issued by the Chair on 27 November 2024 ("Direction 9").

2 Response to questions posed by the Chair in Direction 9

2.1 The Inquiry, and its experts, have not yet had the benefit of witness evidence regarding the design, construction and commissioning of the Hospital. The narrative and proposed findings are therefore based on an incomplete factual matrix insofar as events prior to handover of the Hospital are concerned.

In respect of each of Key Questions 1 to 4 as set out in Direction 5, Core Participants, in their written closing statements:

> *Specify whether they consider that the Inquiry has heard sufficient evidence for the Chair to answer the question;*

Key Question	Multiplex Response
(1) From the point at which there were patients within the QEUH/RHC was the water system (including drainage) in an unsafe condition, in the sense that it presented an additional risk of avoidable infection to patients?	The question of the safety of a system is not a matter Multiplex can properly comment on. Multiplex is, however, able to assist the Inquiry in understanding the technical background and factual condition of the systems at the time of handover. Multiplex considers it would not be possible for the Inquiry properly to answer Key Question 1 and 2 without the benefit of this evidence. Such evidence has not yet been heard by the Inquiry.
(2) From the point at which there were patients within the QEUH/RHC was the ventilation in an unsafe condition, in the sense that it presented an additional risk of avoidable infection to patients?	
(3) Are the water and ventilation systems no longer in an unsafe condition in the sense that they now present no additional avoidable risk of infection?	The current condition of the systems is not a matter Multiplex can comment on. Others are accordingly better placed to advise the Inquiry whether sufficient evidence has been heard in order to answer Key Question 3
(4) Is there a link, and if so in what way and to what extent, between patient infections and identified unsafe features of the water and ventilation systems?	This is not a matter Multiplex is able to comment on and so, as with Key Question 3, others are better placed to answer whether sufficient evidence has been heard in order to allow the Chair to answer the question posed.

Describe what additional evidence must be heard or considered by the Chair in order to answer each question, and explain why that is so.

2.1.1 In order to fulfil its Remit, the Inquiry requires to understand the approach to the design, construction and commissioning of the Hospital, including understanding *why* the Hospital was designed and constructed as it (ultimately) was. As the Inquiry will be aware, its Remit is as follows:

> *"The overarching aim of this Inquiry is to consider the planning, design, construction, commissioning and, where appropriate, maintenance of both the Queen Elizabeth University Hospital Campus (QEUH), Glasgow and the Royal Hospital for Children and Young People and Department of Clinical Neurosciences (RHCYP/DCN), Edinburgh. The Inquiry will determine how issues relating to adequacy of ventilation, water contamination and other matters adversely impacting on patient safety and care occurred; if these issues*

could have been prevented; the impacts of these issues on patients and their families; and whether the buildings provide a suitable environment for the delivery of safe, effective person-centred care. The Inquiry will make recommendations to ensure that any past mistakes are not repeated in future NHS infrastructure projects. The Inquiry will do this by fulfilling its Terms of Reference"

2.1.2 Against that general position, the Inquiry requires, in particular, to investigate what was requested and specified by NHSGGC in terms of the hospital that was to be constructed.

2.1.3 Further, without evidence regarding what took place in the period from 2009 to 2015 when the Hospital was being designed, constructed and commissioned, the Inquiry could only attempt to address Key Questions 1 and 2 (and the TORs) on the basis of its current (evidentially incomplete) understanding of the approach to design, construction, commissioning and the application of standards. In order properly to fulfil its Remit and TORs, the Inquiry requires to investigate and understand the circumstances in place at the time and the factors which led to the Hospital being designed and constructed as it was.

In respect of each of Terms of References 1, 7 and 8 or part thereof, core participants in their written closing statements:

Specify whether they consider that the Inquiry has heard sufficient evidence for the Chair to reach conclusions that address that Term of Reference or part thereof;

Term of Reference	**Multiplex Response**
1. To examine the issues in relation to adequacy of ventilation, water contamination and other matters adversely impacting on patient safety and care ***which arose in the construction and delivery*** *of the QEUH and RHCYP/DCN; and to identify whether and to what extent these issues were contributed to by key building systems which were defective in the sense of:* *A. Not achieving the outcomes or being capable of the function or purpose for which they were intended.* *B. Not conforming to relevant statutory regulation and other applicable*	Terms of Reference 1 sets out the Inquiry's intention to examine matters adversely impacting patient safety "*which arose in the delivery and construction"* of the Hospital. It is therefore not possible for the Chair to reach conclusions that address Terms of Reference 1 without being provided with evidence regarding the design and construction period, i.e. the period prior to handover. This is not a matter which has been addressed in hearings to date. Multiplex would therefore ask that the Chair refrain from reaching any conclusions on TOR1 in respect of the Hospital until after all relevant evidence has been made available.

recommendations, guidance, and good practice	
7. To examine what actions have been taken to remedy defects and the extent to which they have been adequate and effective	Others are better placed to assist the Inquiry on the actions taken to address alleged defects. Multiplex therefore does not express a view on whether the Inquiry has heard sufficient evidence to answer Terms of Reference 7, save to the extent that Multiplex would note that, given Terms of Reference 7 proceeds on the premise there are "defects", the Chair may consider he is unable to reach final conclusions on this matter until he has heard all evidence in relation to Terms of Reference 1.
8. To examine the physical, emotional and other effects of the issues identified on patients and their families (in particular in respect of environmental organisms linked to infections at the QEUH) and to determine whether communication with patients and their families supported and respected their rights to be informed and to participate in respect of matters bearing on treatment	This is not a matter Multiplex can assist the Inquiry with and would instead defer to those better placed to advise whether sufficient evidence has been provided.

Describe what additional evidence must be heard or considered by the Chair in order to reach conclusions that address each Term of Reference or part thereof, and explain why that is so

2.1.4 Reference is made to paragraph 2.1.1 and 2.1.2 above. As with Key Question 1 and 2, Multiplex considers final conclusions to TOR 1, and in turn TOR 7, cannot be reached until the Inquiry has heard evidence and fully investigated what occurred during the design, construction and commissioning of the Hospital, and why the Hospital was designed, constructed and commissioned as it was.

2.1.5 Multiplex remains committed to assisting the Inquiry in their future investigations in this regard and their preparations for the Glasgow IV Hearings.

2.2 Finally, for completeness, as is noted in Appendix A to Direction 5 issued by the Chair on 13 December 2023, the concept and definition of adequacy, defective and deficiency under the contracts which regulated the relationship between NHSGGC and the parties involved in the design, construction and commissioning of the Hospital are different from the concepts being addressed by the Inquiry. Multiplex's position remains that it has complied with its contractual obligations, this being reflected in the fact GGHB issued the Sectional Completion Certificate for Stage 3, certifying completion of the works on 26th January 2015.

Scottish Hospitals Inquiry

Closing Statement by IBI UK Limited to the Inquiry

following

The hearings from 19 August to 13 November 2024

"Glasgow III"

1. This is the written Closing Statement submitted on behalf of IBI UK Limited (IBI) following the conclusion of the Glasgow III hearing which ran from 19 August 2024 to 13 November 2024. In drafting this submission IBI has had regard to Direction 9 issued by the Chair on 27 November 2024.
2. Whilst IBI has considered the lengthy Closing Statement made by Counsel to the Inquiry, it does not propose in this Closing Statement to respond to the submissions made but simply to set out its position in a way, which it is hoped, will assist the Inquiry.
3. It is noted that, notwithstanding its length, the Closing Statement by Counsel to the Inquiry makes no reference to IBI (nor Nightingale Associates as it was known at the relevant time). In the circumstances, IBI does not consider it necessary, nor helpful to the Inquiry, to comment on conclusions reached by Counsel to the Inquiry, its interpretation of the evidence and answers to questions posed.
4. So far as Counsel to the Inquiry's Closing Statement addresses the Terms of Reference, and proposed conclusions on those Terns of Reference, IBI's only observation is that, ultimately, it is for the Chair and the Chair alone to reach conclusions and, with respect, those conclusions can only be properly be reached when the Inquiry has received and considered all relevant evidence.
5. Paragraph 4 of Direction 9 invites (at 4.1) Core Participants to identify all witnesses known to them from whom they consider it essential that the Inquiry hears from, either in oral evidence or written statements, or both, in order for the Chair to reach final conclusions that address the whole of the Remit and Terms of Reference and why they consider that each witness is essential. In accordance with that direction IBI has identified Emma White as such an individual. Ms White is the only person still within IBI who has any degree of personal knowledge and will be able to assist the Inquiry.

6. Direction 9 makes further provision as to identification of, and supply to the Inquiry, of relevant documentation. IBI has engaged throughout this process with the Inquiry and has previously supplied over four hundred documents. It is engaged in an ongoing dialogue with the Inquiry with a view to identifying any further relevant material in its possession and/or identifying potential sources of relevant documentation not held by IBI. That process has been ongoing since a meeting between IBI's legal team and Solicitors and Counsel to the Inquiry which took place on 11 November 2024.
7. IBI will continue, to the best of its ability, to assist the Inquiry in enabling it to fulfil its Terms of Reference.

29 January 2025

Murdo MacLeod KC

Womble Bond Dickinson (UK) LLP , Solicitors for IBI UK Limited

SCOTTISH HOSPITALS INQUIRY

GLASGOW III HEARING COMMENCING 19TH AUGUST 2024

CLOSING SUBMISSIONS ON BEHALF OF JOHN AND MOLLY CUDDIHY AND LISA AND EILIDH MACKAY

INTRODUCTION

Glasgow III heard a substantial amount of oral evidence and considered an even greater amount of written evidence and reports. Having been appointed shortly prior to Glasgow III, the team of Counsel to the Inquiry are to be commended for their hard work and dedication in becoming familiar with the evidential background to the Glasgow III hearing and their diligence and commitment in the conduct of that hearing. This approach is also evidenced in the written submissions by Counsel to the Inquiry which are incredibly detailed.

The role of Core Participants in this section of the Inquiry is outlined in Direction 9. This Direction requests that Core Participants address Key Questions 1 to 4 and Terms of Reference 1, 7 and 8 in their written closing statements. The Direction also directs that challenges to the submissions and content by Counsel to the Inquiry should be adequately referenced. We do not have such challenges to the content of Counsel to the Inquiry's submissions and agree with the observations made therein except for as commented upon herein.

Glasgow III

What can only be fairly described as an enormous amount of material was made available to assist core participants in the Glasgow III hearing including witness statements, seven principal and one supplementary expert reports, background papers referenced in reports, Provisional Position Papers and responses thereto by Core participants. Opportunity was given to Core Participants to raise specific issues

with expert witnesses in response to the Reports produced. In the course of the hearing, Greater Glasgow and Clyde Health Board sought to have their own expert report included within the evidence before the Inquiry. The refusal of this request led to an application for Judicial Review which, at the time of writing, remains undetermined.

Counsel to the Inquiry has indicated that the ambition was that at the conclusion of Glasgow III sufficient evidence, taken with evidence led in Glasgow I, and Glasgow II, all relevant Provisional Position Papers and also the evidence led in respect of ventilation principles and practice at hearings of the inquiry in respect of Royal Hospital for Children and Young People/Department of Clinical Neurosciences, in Edinburgh, would provide a basis to answer the following four Key Questions:

(1) From the point at which there were patients within the QEUH/RHC was the water system (including drainage) in an unsafe condition, in the sense that it presented an additional risk of avoidable infection to patients?
(2) From the point at which there were patients within the QEUH/RHC was the ventilation in an unsafe condition, in the sense that it presented an additional risk of avoidable infection to patients?
(3) Are the water and ventilation systems no longer in an unsafe condition in the sense that they now present no additional avoidable risk of infection?
(4) Is there a link, and if so in what way and to what extent, between patient infections and identified unsafe features of the water and ventilation systems?

In addition, Counsel to the Inquiry issued an Opening Note wherein he indicated that by the end of Glasgow III, the Chair would be equipped to reach his conclusions on Terms of Reference 1, 7 and 8.

Terms of Reference 1, 7 and 8 are in the following terms:

1. To examine the issues in relation to adequacy of ventilation, water contamination and other matters adversely impacting on patient safety and care which arose in the construction and delivery of the QEUH and RHCYP/DCN; and to identify whether and to what extent these issues were contributed to by key building systems which were defective in the sense of:

A. Not achieving the outcomes or being capable of the function or purpose for which they were intended.

B. Not conforming to relevant statutory regulation and other applicable recommendations, guidance, and good practice.

7. To examine what actions have been taken to remedy defects and the extent to which they have been adequate and effective;
8. To examine the physical, emotional and other effects of the issues identified on patients and their families (in particular in respect of environmental organisms linked to infections at the QEUH) and to determine whether communication with patients and their families supported and respected their rights to be informed and to participate in respect of matters bearing on treatment.

Prior to answering these specific questions some observations arising from the evidence heard and read will be made.

OBSERVATIONS

1. The evidence available to date demonstrates a litany of failures to ensure that the hospital that was built and delivered was fit to host immune-compromised patients and allow care to be delivered in a safe environment. Whilst this in itself is shocking, it is rendered more so by the evidence that shows that there was a disregard for the guidance and risk assessment that exist to prevent such an unsafe environment from being constructed and thereafter occupied by patients without inherent flaws being detected and acted upon. It is of concern that an inaccurate Timeline continues to be shown on the Scottish Government Website, despite evidence being presented to a variety of forums of its inaccuracies.

2. Without wishing to again rehearse the evidence we submit that the failure to involve IPC expertise to ensure that the design was compliant with SHTM-03-01 and SHTM-04-01 as well as other regulatory/guidance is the foundation of problems, particularly ventilation. Much evidence has been heard about the unique scale and complexity of this “State of the Art” hospital. Despite the accolades which were once associated with the “Super” hospital it is alarming

that so much was so wrong and went unnoticed or misunderstood for so long. We should be clear that the problems were not unnoticed by all parties. Examples of early alerts of non-compliance with existing guidance is found in email exchanges involving Dr Peters from the period 19th June 2015 to 1st July 2015 where she provides a checklist of the required specification for ventilation, the current state and action required, including access to the commissioning and validation data (Bundle 14, Vol 1, Document 15 pp327-328). Glasgow IV will focus more on these missed opportunities at commission and construction stage, but it is clear from the evidence in Glasgow III that problems did not end at handover.

3. In respect of the testing and knowledge that should have triggered concern around patient safety and action to protect them reference is made to the 2015 'high particle counts' found after testing. Similar evidence of reports of problems with water are found in the L8 risk assessments conducted by DMA Canyon in 2015 and 2017. The discovery of the 2015 and 2017 DMA Canyon Risk Assessments by HPS, and the rapid transmission of that information by Professor Steele to Ms Grant in late June 2018, was pure serendipity. Senior NHS GGC witnesses seemed very proud of the rapid response to the discovery. Such pride is misplaced. The NHS GGC water safety system had failed. The members of the Board Water Safety Group and key named people failed to do what they needed to do. It is undoubtably the case that the Estates team at the QEUH was too small and under-resourced to do its job in this large new hospital. That might well mitigate matters for those, like Mr Powrie, who have had the self- awareness to recognise that they 'dropped the ball", but it also raises serious questions about why the executive board members and senior managers thought the level of resource was sufficient for their new flagship hospital. The contrast between inaction prior to 2018, and the quiet methodical activity of Mr Kelly, Mr Clarkson and DMA Canyon in more recent years is clear. Given the conclusion to Key Question 1 discussed in Chapter 7.1 there can be no doubt that had the reports been acted on promptly, and escalated beyond a small group of estates staff, the growth of the biofilm would have been to some degree arrested, and the harm that it appears to have

caused to vulnerable immuno-compromised patients would have been less likely to have occurred.

4. The consequences of the failure of management and proper governance have been extensively narrated by Counsel to the Inquiry. These include failure to act in response to DMA Canyon L8 risk assessments; the failure to appoint authorising personnel and other individuals with experience, knowledge and responsibility for key facilities such as water and ventilation; properly identify, train and instruct staff to carry out safety testing; the decision to use Horne Optitherm taps in the Schiehallion and elsewhere despite the known risks and the failure to put in place the agreed mitigations of risk and failure to have effective PPM. What is perhaps of greatest alarm is that following unusual infection rates beginning, these failures were not identified or rectified for many years. Water testing did not begin until after the 2018 crisis.

5. The evidence presented in Glasgow III paints a picture of GGC Management as being more interested in preventing reputational damage than meeting their responsibilities to provide a safe environment for the treatment of patients and to rigorously investigate, resolve and apologise, when they failed to do this. The positions adopted by GGC are full of contradictions. For example, they state that the water in the hospital is wholesome whilst at the same time have raised an action in the Court of Session on the basis that contractors supplied a contaminated water system to the hospital. They state that the water is wholesome whilst dosing the system with chlorine dioxide and installing point of use filters across the hospital. In terms of communication with the general public and patients there was a lack of candour. One example is the press release on 7th July 2015 which made no reference to the fact that ward 4B had been identified as not complying with the ventilation requirements of BMT patients (Doc A40240308, Bundle 5 Communications Documents (Hearing 12th June 2023, Document 3, P.21). Instead, this press release stated, “Routine air quality monitoring has identified a higher particle count than is desirable in the Bone Marrow Transplant Unit…Bone Marrow Transplant services at the Royal

Hospital for Children Glasgow are separate and unaffected." Not only was this statement incorrect given that in the ongoing civil proceedings a multi-million-pound claim has been made in respect of the defective ventilation system in Ward 2A. Of even greater concern is first, the fact that the concerns raised around adult BMT and compliance with guidance leading to the decant did not trigger an immediate investigation into whether paediatric BMT was compliant, and this was the position of both management in GGC and also HPS. Second, immune compromised patients were decanted from Ward 2A into Ward 4B despite the identified issues with ventilation in ward 4B in June 2015.

6. As noted by Counsel to the Inquiry the evidence suggests that following a connection being made between the environment and patient infections the related IMTs were focused on investigating such a connection. Indeed, there appears to have been in the course of PAGs and IMTs acceptance of an environmental link to patient infections based on the patient, place and time approach. However, this was not to be tolerated by GGC and the removal of Dr Inkster as the IMT Chair and the introduction of a new narrative negating environmental link became the focus of GGC management. We agree with Counsel to the Inquiry comments on the appalling treatment of Drs Redding, Peters, and Inkster.

7. It was not only the microbiologists who received appalling treatment. The Inquiry heard evidence that Sandra Bustillo Director of Communications at GGC stated that Professor Cuddihy had "won the battle but won't win the war". During Ms. Bustillo's evidence she was unable to disguise her contempt for Professor Cuddihy which gave an alarming insight into the extent to which the relationship with parents and patients was far from based on respect and a duty of candour and instead toxic contempt. In addition, during her evidence Ms. Bustillo stated that she had apologised for what she had said although in truth, no such apology has ever been forthcoming to Professor Cuddihy or his family. It is striking to note that even when Professor Cuddihy enquired as to the circumstances following media exposure, he was advised that the matter was confidential. This lack of candour is further seen when instead of transparency around the need for a multi-million pound overhaul of the

Schiehallion failed ventilation system press releases refer to GGC taking the opportunity to upgrade ventilation.

8. This toxic environment and desire, at all costs, to deny that the defective hospital environment was the cause of infection amongst immune compromised patients is further evidenced in the response of GGC to the Case Note Review. It is striking that this is yet another example where extensive energy, effort and resources are invested in negating any link between the environment and patient infection rather than engaging positively to assist the CNR to expose any link and respond to that in a constructive manner.

9. Of additional concern is the failure of NHS GGC Systems to correctly record Molly Cuddihy's Mycobacterium Chelonae infections. We adopt the following submissions made by Counsel to the Inquiry:

"527. The Inquiry has discovered that the results of Ms Cuddihy's Mycobacterium Chelonae infections were not correctly recorded in NHS GGC systems. Her infections had been labelled in the system as "'Gram positive bacilli' and also "presumptive mycobacterium sp" not "Mycobacterium Chelonae" and this explains why external parties reviewing data supplied by NHS GGC (Oversight Board, CNR Expert Panel, the Inquiry's own experts) have missed this particular Mycobacterium Chelonae from their chronologies. This analysis was confirmed by Dr Inkster who reported that results from the reference laboratory would sometimes not get added to the electronic laboratory records leaving the original identification of the organism as the record. This was noted by the CNR who concluded that the Telepath system did not systematically offer the basis for recording the results of typing bacterial isolates (mainly derived from reports provided by the Public Health England reference laboratory at Colindale, London but some data also from the Scottish Microbiology Reference Laboratories), either by annotating the original specimen results page or within a patient's results at a later date (when the typing information was received).

528. It was accepted by Ms Rankin that the Mycobacterium Chelonae cases in 2016 and 2018 not being reported (only the 2019 case was formally reported and the 2018 on reported by email) challenges the efficacy of the reporting system because people are not reacting to unusual infections. Reliance is placed on the microbiologists in the laboratory reporting to the clinical team who will liaise with the Infection Control team to alert them. She conceded that the working relationship between the labs, clinicians and Infection Control team is very important as there needs to be a two-way dialogue."

Whilst investigating a bacterial outbreak in ward 7D, Dr Peters identified Mycobacteria Chelonae within a showerhead of a patient's room. Dr Peters escalated this on 13 October 2017 by email to Professor Jones, Jackie Balmonroy and Ms Joannidis. Dr Peters states that she received a response from Prof Jones that he and the ICN's would take this forward. However, no evidence has been presented that this was done. (Statement of Dr Christine Peters- Page 33)

KEY QUESTIONS 1 TO 4

In respect of each of Key Questions 1 to 4 as set out in Direction 5, Core Participants have been invited to:

1. Specify whether they consider that the Inquiry has heard sufficient evidence for the Chair to answer the question;
2. Set out proposed answers to each question along with reasoning to justify each proposed answer;
3. Or, alternatively, describe what additional evidence must be heard or considered by the Chair in order to answer each question, and explain why that is so.

The 4 Key Questions

1. **From the point at which there were patients within the QEUH/RHC was the water system (including drainage) in an unsafe condition, in the sense that it presented an additional risk of avoidable infection to patients?**

Yes. We agree with Counsel to the Inquiry that from 14 June 2015 the water system (including drainage) of the QEUH/RHC was in an unsafe condition, in the sense that it presented an additional risk of avoidable infection to patients. We also agree that the water system (including drainage) remained in that unsafe condition until NHS GGC began to actively respond to concerns about the safety of the water supply in the hospital in 2018.

We agree with Counsel to the Inquiry that there has been copious contemporaneous evidence, such as the L8 risk assessment by DMA Canyon in 2015 and thereafter. Whilst the Inquiry is examining the condition of the water and ventilation in the hospital from the point of occupation, it is evident that pre-occupation events played a significant role in a contaminated water system being in place at the point of handover including the pre-filling of the water system without appropriate maintenance and the likely creation of biofilm.

- Was the risk of infection avoidable?

Yes. We agree with Counsel to the Inquiry submission that the risk of infection was avoidable and that the myriad of factors that contributed to the risk of infection from contaminated water could have been avoided with action or inaction. As highlighted the most prominent issues are the pre-filling of the system and the failure to appoint appropriate personnel including an Authorised Engineer (Water). A major contributor to the water problems continuing and no doubt increasing until action began in 2018 was the failure of Estates staff and, in particular, Ian Powrie to make known the content of the 2015 DMA Canyon L8 Risk Assessment and for appropriate action in response to the reported findings to be triggered. Had the conclusions of the 2015 Report been made available even at the late stage of IMTs commencing in response to infections this would have assisted a quicker and more focussed response to the concerns being discussed. It should also be remembered that although the 2015 Report was lost there were repeated requests by Dr Peters in 2015 for access to results from such water testing. Such requests were made in writing via email and copied to numerous staff members within NHS GGC Estates management. (Evidence from Dr Peters/emails submitted to PI)

2. **From the point at which there were patients within the QEUH/RHC was the ventilation in an unsafe condition, in the sense that it presented an additional risk of avoidable infection to patients?**

Yes, the ventilation system was in an unsafe condition. The Inquiry has heard copious evidence of the failures to comply with SHTM-03-01. The various deficiencies in the system are set out in Chapter 7.2 of Counsel to the Inquiry submissions.

- Was the risk of infection avoidable?

In terms of whether the ventilation presented an additional risk of avoidable infection to patients, the answer is Yes. As noted by Counsel to the Inquiry, failure to follow SHTM-03-01 created an avoidable risk but further failures are noteworthy. Dr Redding provided evidence that she was involved in one meeting regarding ventilation planning which discussed the ventilation challenges that would arise in a sealed building. Her evidence was that following her resignation that both SHFN 30 and HAI Scribe make it clear that IPC should be involved at all stages of a project such as QEUH/RHC. In addition, there should have been external expert input as the people involved did not have the requisite knowledge and it was not appropriate that a project of this complexity was left to estates/facilities. Professor Williams opined that it was not for IPC but estates to ensure that the commissioning, building and monitoring of ventilation met the required standards. In addition to these omissions ventilation concerns were being reported in 2014/15 with air sampling showing isolated microorganisms including Mucor (which has up to an 80% mortality rate in children and recording of 3 ACH rather than 6ACH in general wards. Concerns were reported to Aileen McLennan but not escalated to the Medical Director Grant Archibald. This led to Dr Redding escalating to senior management and in 2017 to the outgoing and incumbent CEO. The inaction in response to her concerns led to Stage One Whistleblowing in September 2017.

Another example of knowledge of those deficiencies and whether risk of infection could be avoided, the finding of high particle counts (in the tens of thousands far exceeding the safe limit of 100 together with aspergillus being detected) on 30th June 2015 on Wards 4B and 2A, raised significant concerns about whether Ward 4B ventilation system provided a safe environment for patients. Testing established that

even when increased to maximum, no more than 6 ACH could be achieved and the decant back to the Beatson took place. Significantly, the finding of the high particle counts and aspergillus led to the return of adult BMT patients to the Beatson but it did not trigger further investigation in ward 2A nor did it prevent the decant of immune compromised patients from Ward 2A to 4B. A full record of all of the deficiencies in Ward 2A was not put together until Mr Lambert's report in 2018. Whilst Ward 2A's non-compliance with SHTM 03-01 was recognised by NHS GGC in an internal document in March 2017, it should have been recognised in 2015 by the finding of high particle counts. If that finding been followed up and/or concerns around ward 4B had triggered detailed consideration of paediatric bone marrow transplant patients and the immune compromised patients being treated in Ward 2A, this should have led to preventative action. Evidence of the lack of reaction to the events in June 2015 is found in the evidence of Annette Rankin which is reflected upon in paragraphs 164 and 285 of Counsel to the Inquiry's submissions.

So far as general wards are concerned, we agree with the submission by Counsel to the Inquiry that both an air change rate of 2.5-3 instead of 6 and the deployment of chilled beams present additional infection risks to patients. These were avoidable by not derogating from SHTM 03-01.

3. Are the water and ventilation systems no longer in an unsafe condition in the sense that they now present no avoidable risk of infection?

We agree with the submission of Counsel to the Inquiry that in respect of water, the answer is a qualified yes. We note and agree with Counsel to the Inquiry that many opportunities to respond to alerts of the water system being unsafe were missed. Whilst there is evidence of appropriate personnel in terms of authorised persons and engineers being in place and a testing regime, POUFS remain in place across the hospital. This has been a painful reminder to those that we represent of the water contamination that caused infection which along with antibiotic treatment resulted in the medical intervention that they are now undergoing. An understandable difficulty for these patients is to accept that the water defects that led to them contracting infection have been rectified when devices such as POUFS are highly visible.

In respect of ventilation, we agree that aside from Ward 2A, areas of the hospital remain non-compliant with SHTM-03-01 and the extent to which this now presents no avoidable risk of infection is unclear. The installed ventilation system lacks the capacity to comply with SHTM-03-01 which indicates that this risk is not avoidable but should have been had the design and installed ventilation system followed the clear and extensive guidance found not only in SHTM-03-01 but the numerous documents contained in Ventilation PPP in Bundle 16.

4. Is there a link, and if so in what way and to what extent, between patient infections and identified unsafe features of the water and ventilation systems?

We submit that the Inquiry has heard a very substantial amount of evidence from a range of witnesses be they treating clinicians, Infection Prevention and Control doctors, microbiologists, experts and the Case Note Review Panel that evidence a link between the unsafe features of the water and ventilation systems and patient infections. We adopt the submissions from Counsel to the Inquiry in paragraphs 6, 7, 8, 9, 10, 11 and 12. We invite the Chair to prefer this substantial body of persuasive evidence to that presented by NHS GGC which sought to undermine such a link by reliance on whole genome sequencing and failed to provide a cogent alternative explanation for the infections suffered by patients in the QEUH/RHC.

We note the following comments by Counsel to the Inquiry at p.537 of their submissions:

"49. The Inquiry team are grateful to Ms Cuddihy and her father for permitting us to ask specific questions in public about her infection. Ms Cuddihy contracted a Mycobacterium chelonae infection a few weeks after POUFs were fitted in Ward 2A. It seems likely that she came into contact with it from water that was not filtered by POUFs elsewhere in the hospital. The relatively slow process that seemed to be underway to fit a Chlorine Dioxide system would not have directly stopped Mycobacterium chelonae growing in the water supply, but there are two counterfactuals that require consideration. In light of the answers to Key Questions 1

and 4 set out in Chapter 7, it does seem reasonable to think that a hospital water system that was not subject to 'widespread' or 'systemic' contamination in 2015 would have been less likely to have grown a biofilm that contained Mycobacterium chelonae. Secondly, we now know that there was a Mycobacterium chelonae infection in Ward 2A in early 2016 that was not escalated to a PAG and was not reported to HPS. In our submission, had action been taken to prevent or respond to the 'widespread contamination' of the water system in 2015 and had the January 2016 Mycobacterium chelonae been subject to IPCT investigation, then the risk of infection to Ms Cuddihy and all the other patients impacted by infections connected to the water system as a whole, from the second half of 2016, would have been substantially less. As it was Ms Cuddihy did contract that infection and it was not until the following year, and a further Mycobacterium chelonae infection, that the time was taken to work out that it was in the pipework of Ward 2A before decant."

Similarly, had the high particle counts and aspergillus found in ward 2A on 30th June 2015 been linked to the ventilation system and action taken, as was with the ward 4B adult BMT patients, then Eilidh MacKay's aspergillus infection and those of subsequent patients could have been avoided.

TERMS OF REFERENCE

Terms of Reference 1

Term of Reference 1 requires the Inquiry to examine the issues in relation to adequacy of ventilation, water contamination and other matters adversely impacting on patient safety and care, which arose in the construction and delivery of the QEUH and RHC, and to identify whether and to what extent these issues were contributed to by key building systems which were defective in the sense of:

• Not achieving the outcomes for being capable of the function or purpose for which they were intended.

• Not conforming to relevant statutory regulation and other applicable recommendations, guidance, and good practice.

We submit that ventilation was and is not, in respect of QEUH adequate. It has the numerous deficiencies identified in Counsel to the Inquiry's submissions and within these submissions. The ventilation system itself was and is not capable of the function or purpose for which it was intended and it does not conform to SHTM-03-01 and other guidance such as Jacie and CDC. We note that whilst such deficiencies were evident in the RHC we understand that these have now been rectified.

In respect of water we agree that the system was, at least arguably, capable of delivering the function for which it was intended though note that the scale and complexity of the water system created additional challenges. We also agree that the delivery, operation and maintenance failures in relation to the water system led to the water system not performing correctly the function for which it was intended. As a result the water system should be described as not conforming to good practice or to the regulatory frameworks in which it should have operated, such as L8.

Term of Reference 7

Term of Reference 7 requires the Inquiry to examine what actions have been taken to remedy defects and the extent to which they have been adequate and effective. Reference is made to the submissions above at Key Question 3.

Term of Reference 8

Term of Reference 8 requires the Inquiry to examine the physical emotional and other effects of the issues identified on patients and their families (in particular in respect of environmental organisms linked to infections at the QEUH), and to determine whether communication with patients and their families supported and respected their rights to be informed and to participate in respect of matters bearing on treatment.

Here we consider impact on patients and families and then communications.

Impact

Core Participants have been asked in Direction 9 to identify if the Chair has heard sufficient evidence to reach conclusions on all or part of the Terms of Reference. In our respectful submission we believe that the Chair will benefit from additional

evidence around the impact on those that we represent. Both Professor Cuddihy and Mrs Mackay have intimated to the Inquiry that they are willing to provide evidence at Glasgow IV, however, in addition to that intimation we make the following submissions to assist the Chair.

We wish to highlight to the Inquiry that the impact of the infections contracted by Molly Cuddihy and Eilidh MacKay continue to impact their lives and will have ongoing impact for the remainder of their lives.

In 2016 Eilidh MacKay was diagnosed with Acute Lymphoblastic Leukemia (ALL) at the age of 14 years old. In May 2016, she was admitted to room 1 of Ward 2A of the Schiehallion Unit of RHC, Glasgow. Eilidh was taken to theatre to obtain a sample of her bone marrow. Following theatre, she was moved to room 6 in ward 2A. She was formally diagnosed with ALL on 2nd June 2016. She proceeded to receive chemotherapy on a daily basis as an in-patient. On or about Thursday 2nd June 2016, she had further surgery to harvest more bone marrow. She was fitted with a Hickman chest line. Chemotherapy continued but following pain and complications she was transferred to PICU on 26th June 2016. On or about 7th July 2016, lung bronchoscopy and washout was reported as positive for Aspergillus. Aspergillus was also cultured from pleural fluid. It was treated with a prolonged course of intravenous antifungal agents. Voriconazole was added to Ambisome. On or about 8th July 2016, Eilidh underwent an exploratory laparotomy with washout and insertion of abdominal drains. On or about 9th July 2016 a mouth swab was reported as positive for Pseudomonas. This organism was also subsequently cultured from blood cultures and pleural fluid. It was treated with a prolonged course of intravenous antibiotics. Vancomycin and tobramycin were added. Eilidh then developed septic shock secondary to worsening Candida and Pseudomonas sepsis. She had respiratory and renal failure, and duodenal perforation. She was intubated and ventilated. She had acute respiratory distress syndrome (ARDS) and paroxysms of atrial fibrillation, requiring electrolyte replacement. Multiple inotropic and vasopressor agents were administered. Her chemotherapy was interrupted but she remained as an inpatient having her healthcare acquired infections treated. On or about 5th August, due to the onset of flaccid limb paralysis, an MRI brain scan was performed. This showed multiple ring-enhancing lesions which were thought to be fungal in nature. Antifungal

treatment was continued. During further procedures Eilidh remained in severe pain, which was treated with Oramorph, an opiate analgesic. On or about 18th September repeat MRI imaging revealed brain lesions that were more amenable to biopsy. Eilidh's now improved clinical condition facilitated her undergoing right parieto-occipital craniotomy on or about 20th September 2016, with excision of one of the lesions. PCR testing of the histology material was positive for Aspergillus. Following surgical excision of one of her Aspergillus brain lesions, she was prescribed Keppra, an anti-epileptic agent, as seizure prophylaxis. Despite this she experienced and continues to be treated for seizures. These seizures are a post-neurosurgery complication. On or about 2nd of October 2016 Eilidh was moved back to Ward 2A, the Schiehallion Unit. The first time Eilidh was taken outside of the hospital, following her admission in May 2016, was in November 2016, when she was taken to the front entrance of the hospital. In December 2016, Eilidh was allowed to go home for the first time. She was in a wheelchair, was being fed via a nasal gastric tube, had a stoma bag and was taking heavy duty antibiotics. Eilidh re-commenced chemotherapy in January 2017 following cancer cells being detected. She remained in hospital receiving physiotherapy and medication. She was discharged on or about 5th May 2017. As a result of contracting Candidas, Pseudomonas Aeruginosa, Aspergillus and Neuro-Aspergillosis, Hospital Acquired Infections (HAI) Eilidh suffered extended hospitalization that was attributable to the infections; prolonged antibiotic therapy; admission to intensive care (PICU) and multiple surgical interventions, including to her brain, and the need to modify the planned delivery of her cancer treatment. Eilidh's prolonged admission to hospital was caused by the hospital acquired infections rather than her cancer treatment. Her protracted PICU stay caused her to experience critical illness polyneuropathy, manifesting as severe limb muscle weakness. She has not recovered her muscle strength and can only walk short distances. As a result of the HAI, Eilidh has experienced far greater psychological and physical injury and greater disruption to her education, family and social life than would have been the consequence of her cancer diagnosis. Eilidh continues to rely on a wheelchair for mobility and will live with lifelong consequences of her HAI. Additional stress has been caused by the failure of the hospital and Health Board to contact the MacKay family advising of further infections and the investigations which exposed the problems now being examined with the water and ventilation at the hospital.

Molly Cuddihy contracting Mycobacterium Chelonae and our belief that it is directly linked to the hospital has been set out both in the evidence of Professor and Molly Cuddihy and previous written and oral submissions to the Inquiry. Recent medical treatment has been necessary for Molly as a result of the damage cause to her liver and kidneys by the antibiotic medications she received in response to the environmentally linked infections suffered by her and other patients. These medicines resulted in renal failure and necessitated a renal implant form a matched donor. Molly continues to endure medical treatment and uncertainty for the future.

To assist the Inquiry in answering this Term of Reference, Professor John Cuddihy, Molly Cuddihy and Mrs Lisa MacKay have prepared short, updated impact statements. Whilst it will appear as unusual to include these in submissions, we respectfully invite the Chair to consider impact as not only being the experience whilst Eilidh and Molly were inpatients but the also the impact of the actions of NHS GGC thereafter and during this Public Inquiry.

Impact Statement by Molly Cuddihy

In October of 2021, I sat before the inquiry and gave evidence of my experience throughout my treatment. At that point I was in recovery from my first relapse of my original cancer diagnosis, as well as the two separate incidences of Mycobacterium Chelonae infection. I was 18 years old and truly believed that I had at that point suffered enough for a lifetime.

However, I did not get that lucky and over the past four years my health has only further deteriorated, in no small part due to the intensive antibiotic treatment. I realise that my sarcoma was always a life-threatening condition, but there is a large difference between that and the life-limiting conditions that I now have to contend with. It's not just a difference of treatments and learning new medications and the like, but the sheer difference psychologically is immense. There is now no end in sight, there is no day to look forward to a cure, and I'm very likely to have a much more limited lifespan than the majority of my peers. I understand life isn't fair, that I had already been diagnosed

with a rare, aggressive cancer that is more than likely to be terminal the majority of the time. But surely, at 22 years old, I should not be so resigned to such a future?

I'm under the regular care of renal, gastrointestinal, oncology, endocrinology, fertility and vascular specialists, with input often having to be given by pain teams and a whole host of others for my treatment. Many of my team are world-renowned in their own right, and every single one of them is incredible and are an exemplary show of our NHS. I'm so very grateful to them all, and in no way have I found the medical side of my healthcare treatment to be lacking.

The same cannot be said for the management of NHSGGC and I feel the evidence they have given only highlights that fact. Their utter contempt for the entire process has been clear and the total disregard they've shown for the patients and their families has been startling. I mention the physical impact, but it feels like there is no thought given to the psychological torment that patients have been and continue to be subjected to with this. In my own case, it's been the most challenging aspect of my care that has only compounded by my participation.

Now, do not misunderstand me, I have never once, nor will I ever regret participating in the Public Inquiry, but it continues to have an effect on my daily life and mental health, such that I've had to seek consistent help for over this time period. I've had to watch members of the management sit and not only contradict the immense amount of evidence to the contrary, but their very own written statements – they haven't even had the decency to check beforehand to match facts. It has never been any one individual's fault, and nothing has ever been done with ill intent – of that, I am sure. However, when faults began to show, when they were asked for information, when they were simply asked 'why?' – their actions from that point on were done with the knowledge of what was wrong. But, of course, in some opinions, we were cancer patients anyway, weren't we? It's 'alright' for us to get sick, it was going to happen anyway! Why not just write us off when we get the initial diagnosis if that is your thinking? If that is your attitude? For that, I will never ever be able to forgive.

This past year, I was so incredibly fortunate to receive a kidney donated to me from my older brother Daragh. I cannot quite articulate how much I love and am grateful to

him for that, for giving me a little of my life back. But it should never have had to be done, that risk should never have had to be taken. I should not have been terrified that not only was I risking myself staying in ward 4C, where whilst their care has been nothing short of exemplary, I knew fine well given the evidence on ward 4B, that the ventilation alone was not safe. I was also risking my big brother, my favourite person, when he was already giving up so much for me.

It's not just hospital stays though, its having showers, its staying on edge to make sure all my medications are always right, it's trying to simply sleep. It all terrifies me and is totally illogical and, in my opinion, frankly ridiculous because it's not exactly like I can avoid them, can I? Like I said before, the hospitals are such a huge part of my life.

The impact of it all has been so profound that it's even the little things that have changed, the big life decisions that have had to be made or have been completely taken away from me is remarkable. My priorities have entirely changed and the things I have been totally desensitised too genuinely frighten me. I am 22 years old, and I have totally lost count of the amount of times I've almost died, even accepted it as imminent at a few points. Like I said before – how is any of that *fair*?

I do however want to note that I am incredibly grateful to the professionalism, respect and genuine kindness that the inquiry team have shown throughout this process. I also want to note how delighted I am that we've progressed to the point of having a *safe* environment for the children of the oncology/haematology department at RHC. After working with the Glasgow Children's Hospital Charity, I've been lucky enough to make a fair few visits to Schiehallion and cannot emphasise the sheer delight and relief I feel whenever I see the children back where they belong, as safe and as happy as they can be whilst they go through their already tumultuous journey.

Impact Statement: A Parent's Journey Through Betrayal, Heartache, and Hope by Professor John Cuddihy

When a child is diagnosed with cancer, a parent's world is irrevocably changed. The role of protector, caregiver, and advocate takes on new dimensions as parents are

forced to relinquish their most sacred duty—the safety and wellbeing of their child—to medical professionals. These strangers, entrusted with life-altering decisions, become the lifeline families must rely on during this unimaginable journey. Yet, this transfer of responsibility comes at a cost: feelings of helplessness, fear, and guilt weigh heavily on parents as they place their trust in individuals and systems they know little about. The emotional toll is immense as parents navigate the fear of the unknown while striving to remain strong for their child.

In such circumstances, informed decision-making and transparent communication are critical. Parents depend on the expertise and guidance of healthcare providers to make sense of the complex and overwhelming world of cancer treatment. Open dialogue between clinicians, parents, and children builds trust and ensures collaborative decision-making. However, no amount of preparation can fully equip a parent for the anguish of witnessing the physical, emotional, and psychological toll that treatment takes on their child. Compassionate communication from healthcare providers is not just important—it is essential in helping families cope with the harsh realities of treatment.

The Duty of Candour—a statutory responsibility requiring openness and honesty when harm occurs or risks materialise—should serve as a safeguard in this journey. Its effective implementation builds trust between families and healthcare providers by ensuring transparency when incidents such as hospital-acquired infections (HAIs) arise.

For immunocompromised children undergoing cancer treatment, HAIs are an unfortunate but recognised risk. When these incidents occur, timely disclosure allows families to understand how they happened within existing safeguards and helps them make informed decisions about future care strategies. Even when the source of an infection is unknown, clear communication about this uncertainty can help minimise further emotional distress.

However, when trust is broken—when evidence reveals systemic failings that expose vulnerable children to unnecessary risks—the emotional devastation for families is unimaginable. To learn that critical failures in water systems and ventilation exposed immunosuppressed children to rare and harmful infections is deeply distressing. The

evidence presented to the Public Inquiry paints a harrowing picture: missed opportunities for intervention, a litany of failures stemming from a lack of professional curiosity or care for consequences, and a corporate culture that prioritised reputation over patient safety. For parents like me, whose child suffered as a result of these failings, it is impossible to reconcile how so many warning signs were ignored.

The stakes could not have been higher. For my daughter, exposure to Mycobacterium Chelonae, a rare and difficult-to-treat bacterium, resulted in prolonged antibiotic treatments typically reserved for leprosy patients—treatments so toxic they caused chronic liver disease, kidney failure, severe osteoporosis, and other life-limiting conditions. While her cancer has abated thanks to the skill and dedication of her clinical team, the legacy of these treatments has left her with lifelong physical trauma. The psychological toll on her—and on our family—cannot be overstated.

My son's selfless act of donating a kidney to his sister was an extraordinary gesture of love but one that should never have been necessary, had safeguards been properly implemented.

The emotional burden deepens when listening to evidence from executives who remain defiant in the face of overwhelming proof of systemic failings. Their refusal to acknowledge wrongdoing or accept responsibility adds insult to injury for families who have endured so much pain. To hear concerns raised by families dismissed as "a call to war" by senior leaders reveals a shocking disregard for accountability and compassion. This erosion of trust has left many families feeling betrayed by an institution they once relied upon to protect their children.

I do not believe any individual intentionally caused harm or that failure to act was malicious; however, the corporate response represents a catastrophic failure across multiple levels—leadership, infrastructure, crisis management, preventative maintenance, and most importantly, care for consequences. Even when infection prevention experts raised concerns with determination and resolve to protect patients, they were marginalised and ridiculed instead of being supported. The result was avoidable suffering for countless children who endured more than they ever should have.

There is no satisfaction in hearing "I told you so." There is no solace in seeing our NHS maligned because of these failures or in witnessing the findings of the Public Inquiry confirm what we already knew: our children were let down in ways that are both heartbreaking and unacceptable. Instead, there has been only grief—grief for lives lost too soon; grief for futures forever altered by preventable harm; grief for the unbearable sadness etched into the hearts of every family affected.

As parents who have lived through this nightmare, we carry an obligation to ensure that lessons are learned from these failures.

We hope that our voices contribute to meaningful change—but the cost has been far greater than anyone should ever bear. For some families, it has meant paying the ultimate price; for others like mine, it means living with a future defined by trauma and limitations that should never have existed.

The Public Inquiry has provided a platform allowing for evidence to be presented, expert opinion shared, opportunity for core participants to challenge and the exposure of alternative views to be considered, all with the intention of not apportioning blame, but learning lessons and improving patient care. I have watched the impact on witnesses, emotion expelled and recognition by some, that the 'collective' could have done better. The Public Inquiry team, under the Chair of Lord Brodie have had an extremely challenging job, have shown compassion, fairness and transparency ensuring integrity of process. It has been a challenging and at times deeply emotional journey to date. This is not lost on me or my family and we are truly, truly grateful to everyone involved.

The emotional burden on some witnesses has been visible and the outcomes both professional and personal of those labelled as 'whistleblowers' has been at a cost that I don't think I will truly appreciate—our thanks seems so futile but my admiration for each and every one of them is beyond comparison. They did their duty and some—they fulfilled their Hippocratic oath and when most may have buckled, they demonstrated a collective resolve and steely determination that we all should be proud

of. To have such professionals care so much is testament to all that is good about the NHS.

The greatest tragedy is that some still refuse to see these failings or accept responsibility for them. Without humility and acknowledgment of what went wrong, I fear history will repeat itself in another hospital with another group of vulnerable patients.

My hope—and my plea—is that those in positions of power will open their eyes and embrace change with sincerity. Patient safety must be demonstrably at the centre of everything they do moving forward. Only then can we honour those who have suffered so greatly—and ensure that no family ever endures this kind of pain again.

Impact Statement by Mrs Lisa MacKay

Impact: Essentially, it describes how something significantly alters or changes a person's life. In this instance the life is that of our daughter Eilidh's.

Fundamentally her life has been affected, altered and changed forever and it is she who has had to learn to accept and live with this.

Eilidh's diagnosis of ALL in 2016 at aged 14 was the start of a living nightmare for her and our family and nothing could have prepared us for the long bleak journey ahead filled with pain, uncertainty, worry and darkness. Light came however, in the form of all the wonderful medical professionals whom we have met along the way, and who with their expertise, professionalism, dedication and compassion have made it their life's mission to treat, guide, help and care for patients like Eilidh with the utmost love and respect.

Her ALL diagnosis had brought us to the RHC Glasgow, a state of the art, multi-million-pound hospital of less than a year old, a place of safety and the place where she would be treated and cared for. We felt relief, we felt trust, but above all we felt safe!

After diagnosis her treatment plan was arranged swiftly and efficiently and there was a clear plan moving forward. We all knew the plan, everyone stuck to the plan and the plan was implemented with trust, care and transparency. Eilidh knew she had a fight on her hands but with the love and support of us, her family and the dedicated medical staff she was ready to fight her ALL.

What was certainly not in the plan was that her ALL diagnosis and treatment, the reason we were in the RHC, became secondary to unusual infections and that the treatment of these infections would take precedence and these infections would be what threatened to end her life.

At no time during our 2016/2017 hospital stay of 338 days was Eilidh, or us, her parents, advised that her infections were connected to the hospital environment, ventilation system or water supply. It was not until October 2019 when we received a letter from NHS Greater Glasgow & Clyde advising that they were investigating infections at the hospital, which then led me to find online, a newspaper article dated May 2019. This article spoke of a child (Eilidh) on the cancer ward at the RHC being infected with Aspergillus in 2016 and how it was suspected to have come from mould in a ceiling void, which developed following a leak. That we became aware that the hospital environment was the source and cause of the infections she had contracted, contributing to the ongoing health difficulties she continues to suffer from. The environment we trusted, the hospital where we had felt safe!

It is very difficult to detail the impact on Eilidh. Her life has forever been altered. She has to work harder for everything she wants and will forever face barriers. She has had to learn to accept the far greater changes in her life, becoming a wheelchair user, being diagnosed with epilepsy, to name but a few. Her physical changes are evident but the severe psychological effects caused by these debilitating infections run far deeper than her visible scars. More so than would have been the consequence of her cancer diagnosis. Eilidh chooses not to revisit her dark days as it is a chapter of her life that she finds too traumatic. She prefers to concentrate on her recovery, moving forward with her life and her plans for the future.

Our family life has been impacted and changed forever. The shockwaves permeating from this have reeked devastation on us all and will reverberate for many, many years to come. We have been left in a state of stress, mistrust, disbelief, fear, worry and with an enormous sense of guilt. Guilty, for taking her to the RHC, in the first place, for treatment for her ALL diagnosis. A place that has become the vessel for the countless flaws, failings, consequences and misplaced actions. A place where she should have been made better, a place where she was meant to be safe, a place that has let her, us and countless others down.

I have accepted the baton on her behalf with an aim through the Scottish Hospital Inquiry to seek justice, accountability and clarity. Listening to the evidence of the Inquiry, the missed opportunities, the complete disregard, the countless flaws and failings, the monumental deficiencies, the negative culture, the mistrust and misgivings, the negativity and toxicity, feels like physical blows raining down on me. Our family will never recover from this and in our lifetime, we will never experience anything as traumatic again. But what we must all never lose sight of, is the reason why we are all here and doing what we are doing. The issue that is far bigger than all of us. The victims at the core of it all, the children. Our daughter Eilidh!

In this fight there are no winners, only victims seeking the truth!

Communications

We agree with submissions by Counsel to the Inquiry that NHS GGC communications have been extensively criticised and deservedly so. There was a complete absence of a patient centred approach and the impact of this on patients and families is ongoing. It is notable that NHS GGC wished the Inquiry to hear the evidence of Sandra Bustillo and Jennifer Haynes. Having heard that evidence it is difficult to envisage what damage limitation it was anticipated that these witnesses would provide. We agree with Counsel to the Inquiry that, if anything, their evidence reinforced criticisms.

In conclusion on TOR8, communications did not adequately respect patients' rights to be informed and to participate in matters relating to treatment.

CONCLUSION

The oral and written evidence that informed the Glasgow III hearing provides no reassurance or comfort to patient core participants. The impact statements above set out, in their own words, the views of the parents of two patients and one of the patients themselves. These families have borne the impact of the failures in NHS GGC to deliver a safe environment within which children could be treated for cancer. For these two patients the impact of the infections they contracted and the toxic antibiotics they were prescribed continue to have a daily impact on their lives. By their lives we mean every aspect from mobility, work, fulfilling ambitions, enduring invasive and painful medical procedures and living with an uncertain future both in terms of their health, their life span and what opportunities for treatment might be impacted should their cancer recur. It is inconceivable what the impact of that burden has on a young person. Yet, despite that being the position that Molly and Eilidh find themselves in NHS GGC have come to the Inquiry not with an apology but with arrogance and defiance whilst attempting to shore up their reputation by relying on flawed data, flawed science and flawed internal investigations that speak to the “yes men” rather than the expert microbiologists and other highly relevant parties. The reports produced by these flawed investigations are thereafter relied upon in determining which experts are relevant and instructed, which includes by the Inquiry. This is most clearly evidenced in the initial instructing of experts to only examine Gram Negative bacterium and infections.

We hope that going forward into Glasgow IV that there will be the opportunity to examine the appropriate use of NHS Support and intervention framework-escalation and de-escalation, the toxicity experienced by patients as a result of antibiotic treatment in response to environmental risks and infection and whether there has been an overuse of antibiotics such as Meropenem. Whilst we appreciate that some of these factors do not fall strictly into the remit envisaged for Glasgow IV, we appeal to the Inquiry to ensure that these important factors are considered.

Finally, we wish to thank the whole Inquiry team and the Chair for the hard work that informed Glasgow III proceedings. We wish to thank those witness, generally not at a senior level, who came and did their best to assist the Inquiry and to uncover the truth.

SCOTTISH HOSPITALS INQUIRY

SUBMISSIONS ON BEHALF OF

NHS GREATER GLASGOW AND CLYDE

FOLLOWING CONCLUSION OF EVIDENCE

IN GLASGOW III HEARINGS

1. Submissions are made on behalf of NHSGGC, following the conclusion of evidence in the Glasgow III hearings. The stated purpose of the Glasgow III hearings was to lead evidence to answer the four key questions which were posed in the Inquiry's Direction 5.

2. In terms of the Inquiry's Direction 9, core participants are requested to address in their submissions:
   (i) their position on the four key questions posed in Direction 5; and
   (ii) their position in relation to the Inquiry's Terms of Reference 1, 7 and 8.

3. In relation to both matters, core participants are invited to state whether, in particular, sufficient evidence has been heard to allow the four questions to be answered and to allow findings to be made on the relevant Terms of Reference.

4. The position of NHSGGC on the Direction 5 questions, and on the questions relative to Terms of Reference 1, 7, and 8, is set out below.

5. Prior to so doing, however, NHSGGC sets out its submission on the purpose of the Inquiry and its position on the overall approach taken by Counsel to the Inquiry in the Glasgow III hearing.

Purpose of Inquiry

6. The Inquiry was established under the Inquiries Act 2005 to consider the planning, design, construction, commissioning and maintenance of the QEUH. The Inquiry's terms of reference include to (1) examine the issues in relation to adequacy of ventilation, water contamination and other matters adversely impacting on patient safety and care which arose in the construction and delivery of the QEUH; and (7) examine what actions have been taken to remedy defects

and the extent to which they have been adequate and effective. The Inquiry has framed those terms of reference by asking whether the ventilation or water adversely impacted on patient safety and care and whether the QEUH is, or was, "unsafe". What is "unsafe" is defined by the Inquiry as "*present[ing] an additional risk of avoidable infection to patients*".

7. Addressing these terms of reference requires the Inquiry, in part, to have regard to evidence in respect of the systems, whether those systems impacted on patient safety and care, and whether the remedial action has now made those systems "safe", or conversely, they were and remain "unsafe". The purpose of the Glasgow III hearings was to hear evidence in connection with these terms of reference, together with term of reference 8.

8. It was initially envisaged, as detailed in Direction 5, that an interim report would be issued after Glasgow III which would include recommendations on these terms of reference. Put short, the intention was that all relevant evidence in respect of the "safety" of the systems would be heard in Glasgow III. However, it was, and remains, clear that there are significant gaps in the evidence, not least from those responsible for the design and build of the QEUH. NHSGGC welcomes the confirmation that it is no longer the Inquiry's intention to issue an interim report and a report will not be issued until after Glasgow IV[1].

9. These closing submissions address what NHSGGC respectfully submits are severe shortcomings in the approach adopted by Counsel to the Inquiry to date. NHSGGC does so in the hope that these issues can be rectified in advance of, and at, the Glasgow IV hearings.

10. An inquiry is established to investigate matters of "public concern". It is obvious that the safety of the QEUH is clearly, and very plainly, a matter of significant public concern. The safety of Scotland's largest hospital, and any perception by patients and families that they have been let down by the care received there, is of the utmost importance. It is difficult to conceive of something of greater "public concern". It is wholly appropriate, and indeed entirely welcomed, that the Inquiry undertakes a full and frank review into the issues framed in its terms of reference in order to make recommendations.

11. Whilst a full and frank approach is appropriate and welcomed, it is obvious that an inquiry is not a prosecution. An inquiry under the 2005 Act "is not to rule on, and has no power to determine, any person's civil or criminal liability.[2]" It is acknowledged that "an inquiry panel

[1] Direction 8
[2] Section 2(1), 2005 Act

is not to be inhibited in the discharge of its functions by any likelihood of liability being inferred from the facts that it determines or recommendations that it makes."[3] It may determine accountability. However, as explained below, it must do so fairly and by allowing individuals and organisations subject to criticism to put their explanation forward in a fair and complete manner.

12. As summarised by Lord Bingham in *R (Amin) v. Secretary of State for the Home Department*[4]*:* (i) the investigation must be independent[5]; (ii) the investigation must be effective; (iii) the investigation must be reasonably prompt; and (iv) there must be a "sufficient element of public scrutiny".

13. Whilst full and robust questioning is necessary and appropriate, it also must be fair. In terms of section 17(1) of the 2005 Act, the procedure of the Inquiry is such as the Chair may direct. However, that discretion is fettered by section 17(3) which provides that the Chair is obliged to act with fairness. Fairness includes fairness to core participants, those otherwise affected and to the public more generally[6]. The latter is of particular importance. As noted by Lord Justice Toulson in his opinion in the judicial review of a decision of Lord Leveson in the Leveson Inquiry,[7] it is of the greatest importance that the Inquiry should be, and be seen by the public to be, as thorough and balanced as is practically possible. If an Inquiry does not hear the "full story"[8] it would be open to criticism. There would be cause for concern that in those circumstances the Inquiry would have failed in a significant regard to achieve its terms of reference, and the credibility of its findings and recommendations would be lessened.

14. If the QEUH is or was "unsafe", and that can be determined on the balance of probabilities[9], then public interest is clearly in favour of that, and the reasons behind it, being fully explored. If that cannot be determined to the necessary standard of proof, it is not in the public interest that unguarded and serious allegations are made without an evidential basis. Patients and families ought to be at the centre of this Inquiry. It is significantly unfair to a patient, or their families, who are about to embark on the "cancer journey", or are already on that journey, to

[3] Section 2(2), 2005 Act.
[4] [2003] UKHL 51
[5] See also *Edwards v United Kingdom (2002) 35 EHRR 19.*

[6] R (on the application of EA) v Chairman of the Manchester Arena Inquiry [2020] HRLR 23
[7] R (Associated Newspapers Ltd) v The Rt Hon Lord Justice Leveson [2012] EWHC 57 (Admin)

[8] Ibid at para 53 per Lord Justice Toulson
[9] Direction 1 explains this is the standard of care applied by the Inquiry

have an unjustified fear that the hospital was, and remains, "unsafe". Put simply, if the evidence is partial and limited, it does not justify the conclusion. Patients and families should not be bearing the additional burden of that conclusion. NHSGGC raises this as Counsel to the Inquiry invites the Inquiry to make findings that the hospital remains "unsafe" despite remedial action. It is submitted that is done on insufficient, and in some cases plainly flawed, evidence.

15. An inquiry is not a court of law, and nobody is on trial.[10] Its proceedings are, in general terms, inquisitorial, not adversarial. In BP's Application[11], Girvan LJ expressed this distinction in the following terms: "*[inquiries] ought to provide an inquisitorial rather than an accusatorial forum to enquire into matters of public interest or concern. Inquiry witnesses before inquiries have no "case" to promote in the adversarial sense and similarly there is no case against any witness. There may be damaging factual evidence given by others which is disputed and there may be opinion evidence which disparages a witness. In these events the witness may need an opportunity to give his own evidence in refutation but he is not answering a case against himself in the adversarial sense. He is simply a witness giving his own evidence in circumstances in which he has a personal interest in being believed*." Whilst an inquiry is inquisitorial rather than adversarial, the requirements of natural justice continue to apply. This is underlined by the statutory duty of fairness embodied in s.17(3) of the 2005 Act.

16. It is submitted that there is an admirable intent behind an inquiry not straying too far into an adversarial model. An inquisitorial model allows an inquiry to remain focused on its terms of reference. It allows the inquiry to focus on the issues that are of concern to it, because an inquisitorial model has the inquisitor at its centre. It allows often contentious and difficult issues to be examined and determined in a relatively dispassionate environment, without the extra heat that is brought to an affair when people are adversaries to each other.[12] However, the intent is only fulfilled if the witnesses are examined, and the issues are determined in a dispassionate environment. A partisan approach to the inquisitorial proceedings entirely undermines that intent. It is respectfully submitted that Counsel to the Inquiry has adopted a plainly partisan and adversarial approach. NHSGGC witnesses are treated with suspicion. They are subjected to disproportionate, and adversarial, cross examination, which is not consistent with the approach towards other witnesses. Their evidence is subject to unjustified criticism. Their expertise is belittled.

[10] Sir John Chilcot, Chairman of the Iraq Inquiry in written evidence post legislative Inquiry into the 2005 Act.
[11] [2015] NICA 20,
[12] Jason Beer KC, now lead counsel to the Post Office Horizon Inquiry, in evidence to the post legislative inquiry into the 2005 Act.

17. The overarching principle that an inquiry is inquisitorial needs to be put in context. It is submitted that it is not immutable. There is a particular caveat where a participant may be the subject of adverse comment or criticism. In acting fairly, the Inquiry must listen fairly to any relevant evidence conflicting with the finding, and any rational argument against the finding, that a person represented at the Inquiry, whose interests (including in that term career or reputation) may be adversely affected by it, may wish to place before him or would have so wished if he had been aware of the risk of the finding being made.[13] An inquiry must be prepared to hear both sides. An inquiry must give the person whose activities are being investigated a reasonable opportunity to put forward facts and arguments in justification of his conduct of these activities before they reach a conclusion which may affect that person adversely.[14] It is submitted that Counsel to the Inquiry is not doing so, instead adopting a partisan approach, advancing the interests of certain individuals, to the detriment of NHSGGC and, more importantly, the public interest.

Importance of inquiry

18. It is submitted that the importance of this Inquiry is beyond doubt. NHSGGC operates Scotland's largest hospital. It treats a significant number of patients on a daily basis. The haemato-oncology wards, which are subject to particular scrutiny by the Inquiry, treat some of the most clinically vulnerable patients in Scotland. The RHC is a national centre for paediatric haemato-oncology treatment with world leading experts in caring for that vulnerable patient cohort. Patients from throughout Scotland are treated in those wards.

19. It ought to go without saying that it is critical that the public have trust in the hospital and its clinicians. Public confidence will be significantly undermined in the event that the Inquiry makes any unjustified adverse comment about the "safety" of the hospital. The conclusion that Scotland's largest hospital and a nationally important paediatric cancer centre was or is "unsafe" and exposes patients to an increased risk of infection is a serious one. It is likely to significantly undermine public confidence in the hospital. Patients may no longer want to be treated there. That would be to the clear detriment of their care, and would put significant pressure on other centres. Accordingly, it is submitted that any such comment requires to be based on robust and tested evidence, not on the perceptions of certain individuals with incomplete knowledge of events and flawed expert opinion. It is of great concern that Counsel to the Inquiry concludes that the ventilation system remains "unsafe", although the measure of safety applied by counsel

[13] Advice of the Privy Council in *Mahon v Air NZ* [1984] A.C. 808
[14] F. Hoffmann-La Roche & Co. AG v. Secretary of State for Trade and Industry [1975] A.C. 295

to the Inquiry is unclear, and to the extent it can be understood, is flawed. It is submitted that any recommendations made on the back of the evidence heard to date would be unsafe.

20. NHSGGC's staff have been subject to prolonged and detailed criticism by certain witnesses. NHSGGC has a duty to its staff to ensure that their position is advanced in as full and detailed a manner as possible, along with any relevant supporting evidence. NHSGGC must ensure that its staff are not subject to unjustified criticism. The staff members exposed to criticism by the Inquiry are all professionals. They are experts. Doctors, nurses, clinical staff and other staff put the needs of patients above all else. The trenchant criticism made by Counsel to the Inquiry calls that priority, and their professionalism, into question. It is suggested by Counsel to the Inquiry that self-interest, or even worse, organisational interest, is put above patient safety. Such an allegation is serious, undermines the professionalism of staff and, it is submitted, ought not to be made without a robust evidential base. Not surprisingly, staff are personally aggrieved by Counsel to the Inquiry's closing submissions which call into question their professionalism and competence. It is submitted that it is inherently unlikely that professionals tasked with the care of highly vulnerable children, whether medical or estates, place their reputation, or the reputation of the organisation they work for, above their patients' interests. It is submitted that there ought to be a presumption against such an allegation, and that it ought to take compelling and cogent evidence to prove such an allegation. It is submitted that no such evidential base exists.

The closing submissions

21. Counsel to the Inquiry has produced a 785-page closing submission. It is wholly impractical, and disproportionate, to respond to the submissions of that length. Aspects of the narrative are uncontroversial but commentary, often unjustified by the evidence, is interwoven within the narrative. The submissions are unwieldy. Any attempt to answer in a similar manner would be similarly unwieldy. In the circumstances, NHSGGC has felt that its only option is to answer the specific questions asked of it. However, that should not be seen as acceptance of what is set out in the submissions. Indeed, subject to agreeing the factual points in the narrative, it is a complete rejection of Counsel to the Inquiry's assessment of the evidence and approach.

22. It is submitted that the submissions make unjustified and wholly disproportionate criticisms of the NHSGGC's witnesses. It ought to have been acknowledged that these witnesses were experts in their fields. Instead, their evidence is dismissed out of hand, often with a flippant

tone which, it is submitted, undermines and belittles their expertise and the effort they have expended in assisting the Inquiry.

23. It is submitted that the written submissions amount to a prosecution of NHSGGC. Counsel to the Inquiry invites the Chair to engage in that prosecution. NHSGGC considers that this has been a repeated feature of the documents produced by Counsel to the Inquiry since the publication of PPP5. PPP5 was a document that presented, without hearing evidence, that the hospital was unsafe. NHSGGC made clear in its response that infection risk was multifactorial. One cannot look at one or two aspects of a built environment and ask whether those features were unsafe. No hospital is sterile, and infection risk is managed by a range of methods. That was repeated in NHSGGC's response to PPPs 11-14. However, unlike the position adopted by Counsel to the Inquiry in the Lothian hearings, and considered further at para 68 below, Counsel to the Inquiry in Glasgow III has failed to engage in any multifactorial assessment. Instead, the approach has been to analyse certain features in the abstract and ask what risk they posed without considering any mitigation. It is submitted that is an incomplete story and insufficient to reach any conclusion on "safety".

24. It is submitted that it is both notable and unfortunate that much of the evidential basis for the criticisms advanced against NHSGGC comes from three factual witnesses: Dr Inkster, Dr Redding and Dr Peters. Their evidence is accepted unquestionably by Counsel to the Inquiry. Indeed, their evidence is "commended" to the Chair. It is stated by Counsel to the Inquiry that these individuals are experts. That is accepted by NHSGGC. However, it is suggested by Counsel to the Inquiry that they did not act with self-interest. By contrast, Counsel to the Inquiry readily criticises NHSGGC's witnesses, many of whom have equivalent or more expertise, as being motivated by self-interest, or worse, organisational interest. The rationale for that difference in approach and assessment is not clear. One standard is applied to the evidence of Dr Inkster, Peters and Redding. An entirely different standard appears to be applied to NHSGGC's witnesses. On the contrary to Counsel to the Inquiry's submissions, it is evident that Drs Inkster, Redding and Peters each feel deeply personally aggrieved by events. It is submitted that their evidence ought to be seen in that light; that is not acknowledged at all in the written submissions.

Approach by NHSGGC

25. From the outset of the Inquiry, NHSGGC has sought to engage constructively with it. NHSGGC has engaged fully in responding to the Inquiry's 43 formal requests for information and 16

requests for supplementary information. It has produced 16,300 documents. It has provided 55 witness statements or responses to questionnaires. 39 witnesses from NHSGGC have given evidence over a period of 29 days. A significant amount of management and clinical time has gone into these responses. Positioning papers have been produced. It is disappointing to note that it appears that much of the documentation provided has not been considered by Counsel to the Inquiry. This may be by virtue of the wholesale change in counsel team. Whatever the reason, counsel has chosen to base questioning on the Case Note Review and the evidence of Drs Inkster, Peters and Redding.

26. NHSGGC instructed an independent expert report from Professor Peter Hawkey, Dr Samir Agrawal, and Dr Lydia Drumwright in respect of the incidents of infections at the QEUH. That report was finalised on 25 July 2024. It is submitted that the authors are all independent, and meet the standard required of expert witnesses by *Kennedy v Cordia*. Each of the authors of the report is a recognised expert in their respective fields. Professor Peter Hawkey is Professor Emeritus of Clinical & Public Bacteriology and Consultant Clinical Microbiologist, Grampian Health Board. Dr Samir Agrawal is Consultant Haematologist, St Bartholomew's Hospital and Senior Lecturer Queen Mary University of London. Dr Lydia Drumwright is Research Assistant Professor, University of Washington and University Lecturer of Clinical Informatics in the Department of Medicine at the University of Cambridge. That report concludes, taking a multifactorial approach, that the QEUH/ RHC did not, and does not, pose an increased infection risk. The authors also found no evidence of any link between the built environment and any cases of infection. This is precisely the opposite conclusion to that reached by the Inquiry's experts and the one advanced, and commended to the chair, in the closing submissions.

27. The decision of the Chair to decline to receive the report, and to hear evidence of its content, is subject to judicial review. NHSGGC did not present the petition for judicial review lightly. It was considered by NHSGGC that it could not fully and properly address the criticisms advanced by Counsel to the Inquiry, and the Inquiry's expert panel, without the evidence contained in the report. It is respectfully submitted that the validity of those concerns has been confirmed in the course of the Glasgow III hearings. It is noted that Counsel to the Inquiry draws particular attention to the rule 9 process used during the Glasgow III hearings and, by inference, its effectiveness. It is submitted, however, that the ability to suggest questions for witnesses was significantly curtailed by an inability to refer to contrary expert evidence and, in turn, NHSGGC's witnesses were similarly constrained, each having to state in the abstract that there was no link, but being unable to refer to independent evidence to do so.

28. It is respectfully submitted that, without reference being permitted to the independent expert report instructed by NHSGGC, the Inquiry has been left with an incomplete understanding of a crucial issue and incomplete evidence from NHSGGC witnesses who, at all times, endeavoured to assist the Inquiry; in short, the Inquiry has not heard the "full story."[15] It is submitted that this is a wholly unsatisfactory position which has been compounded by the unwarranted, trenchant and, in some situations personal, criticism to which NHSGGC witnesses have been subjected in the closing submissions.

29. In respect of the rule 9 process, NHSGGC also wishes to indicate the significant prejudice caused by the manner in which documentation was produced to core participants. Documentary evidence was collated into 51 volumes of Hearing Bundles. Significant volumes of witness statements were produced in addition. Many were made available at short notice. Most ran to hundreds, if not thousands, of pages. The majority of the documents contained within them were not put to witnesses. Any rule 9 questioning must be seen in that context. Fairness requires that sufficient information should be provided to allow those potentially adversely impacted to challenge the accuracy of facts and arguments upon which any decision could be based.[16] The timing and volume of disclosures of witness statements and documents meant that any input NHSGGC could provide by way of rule 9 was significantly curtailed.

30. For the avoidance of any doubt, NHSGGC will accept criticism where justified. NHSGGC accepts, as indeed did the witnesses who gave evidence in Glasgow III, that there were shortcomings with communication. NHSGGC accepts that the building was not what it asked for. Indeed, it would not be advancing proceedings in the Court of Session against Multiplex and others if that was not the case.

Comments on the credibility and reliability of witnesses

31. It is submitted that it is deeply regrettable that a significant amount of time at the Glasgow III hearings was devoted to the evidence of Drs Inkster, Peters and Redding. Indeed, Drs Inkster and Peters were the only witnesses who gave evidence for 2 full days. Even those within NHSGGC with direct managerial responsibility for the events under consideration were not permitted to give evidence for that length of time. Drs Inkster, Peters and Redding's evidence has been accepted unquestionably by Counsel to the Inquiry. Their expertise and approach is

[15] R (Associated Newspapers Ltd) v The Rt Hon Lord Justice Leveson [2012] EWHC 57 (Admin) at para 53 per Lord Justice Toulson

[16] *Bushell v Secretary of State for the Environment* [1981] AC 75 at 96C-D

acknowledged and commended by Counsel to the Inquiry. They are "praised". Wherever there is a difference in their version of events when compared with any other witness, their version is invariably preferred. Indeed, Counsel to the Inquiry concludes at para 115 that there is no reason for the Inquiry not to give significant weight to Dr Inkster's opinion about clinical events prior to her resignation. It is submitted that there is a plain and obvious reason. Dr Inkster was aggrieved by the way she perceives she was treated. NHSGGC's witnesses are criticised for purportedly putting self-interest above patient interest. Why is the same criticism not even suggested of Dr Inkster? It is submitted that it ought to have been. The Chair is respectfully invited to do so, and treat her evidence, and the evidence of Dr Peters and Dr Redding in that light. Leaving aside questions of reliability, these individuals were not involved in every decision. They were not present at every event. Their knowledge is limited. It is submitted that these factors are not acknowledged at all. Instead, their account is treated as precisely what occurred.

32. Given that the Inquiry is tasked with investigating the built environment, and safety of the hospital, it is surprising and unfortunate that so much time was spent taking evidence from individuals who could offer an incomplete version of events. With particular reference to Dr Inkster, it is notable that a large passage of evidence focussed on her removal as chair of the IMT. This appeared more as an investigation into an individual's grievance, and disciplinary concerns, as opposed to an inquiry in the public interest. It is submitted that there has been a polarisation of witnesses as a result of the manner in which the evidence of Drs Inkster, Peters and Redding became the focus of Glasgow III. The Chair has been invited to prefer their account over every other witness. Ultimately, Counsel to the Inquiry has favoured the evidence of Drs Inkster, Peters and Redding. That results in the criticism made of NHSGGC at paragraph 52 that "it seems more likely than not that the reason these concerns were dealt with in the way that they were was from a desire to undermine the people raising the concerns, and, to adopt a sporting idiom, to play the man not the ball." It is submitted that such an analogy is deeply inappropriate. It belittles the evidence of NHSGGC's witnesses and suggests that personal attacks were put above patient safety. It will be recalled that NHSGGC's witnesses emphasised that IMTs were difficult. They were investigating fast moving situations and required to react quickly. A failure to engage constructively hampered that process. A change of IMT chair was required and that was actioned. That was due to patient safety and the wider interests of the patient cohort, not some personal grievance. With hindsight, it was accepted by a number of witnesses that the process could have been managed differently. However, it is submitted that is not something for a public inquiry. It is suggested at paragraph 46 that NHSGGC management, including the medical director, sought to undermine these individuals. That, in

our submission, is not borne out by the evidence. Indeed, Dr Inkster appeared to acknowledge in her own evidence that she and Dr Armstrong had a good working relationship.

33. As a result of the approach taken to the evidence, and that Counsel to the Inquiry has preferred the evidence of Drs Inkster, Peters and Redding, all witnesses from NHSGGC come under significant criticism for their interactions with Drs Inkster, Peters and Redding. The Chair is urged by Counsel to the Inquiry to treat NHSGGC's evidence with caution purely on the basis of those interactions. It is submitted that this approach leads to some absurd results. The evidence of Drs Inkster, Peters and Redding is favoured over people with equivalent or significantly more expertise in particular areas, for example Prof Leanord, Prof Steele, Mr Walsh, Prof Williams, Dr de Caestecker, Dr Crighton and Dr Stewart. In each instance, counsel criticises the witness on the basis of the way they interacted with Drs Inkster, Peters and/or Redding. However, counsel does not properly address why the evidence of Drs Inkster, Peters and/or Redding is to be preferred.

34. The Chair is invited by Counsel to the Inquiry to treat NHSGGC's evidence with caution, largely on the basis of the perceptions Drs Inkster, Peters and Redding have of NHSGGC's conduct towards them. NHSGGC's witnesses on the other hand did not set out in their written or oral evidence to engage in respect of Drs Inkster, Peters and Redding's grievances. By way of stark example, it is suggested that Ms Devine was "muted" in her criticism of them. An alternative interpretation is that she wished to engage and assist with critically important issues of patient safety, not the secondary issue of an internal grievance. Regrettably, the internal grievance was the focus of Counsel to the Inquiry's questioning, not what Ms Devine could add in respect of the "safety" of the QEUH. To take a further example, counsel's conclusion on whole genome sequencing (WGS) is contained in Chapter 11. Dr Inkster and Dr Peters are cited as witnesses who undermine the validity of WGS. Their evidence is favoured over those with far more expertise in this area, again largely because of their personal grievances. It is submitted that the Inquiry should not set aside a detailed, and respected, scientific methodology because three individual doctors were aggrieved; that, however, is what Counsel to the Inquiry invites the Chair to do.

Expert evidence

35. The evidence of the Inquiry's "expert panel" is also accepted unquestionably by Counsel to the Inquiry. NHSGGC submitted detailed criticisms of their evidence, and their expertise. Their impartiality was challenged. NHSGGC submitted, and continues to submit, that their

conclusions were flawed, not backed up by data, and any recommendations based on them would be similarly flawed. The Direction 5 responses from NHSGGC have been dismissed without any, or at least adequate, reasoning. Indeed, the impartiality challenge appears to be dismissed at paragraph 20 on the basis that *Kennedy v Cordia* does not even apply to these proceedings. Given the adversarial approach adopted by Counsel to the Inquiry, it is submitted that it is inconceivable that conclusions should be reached on expert evidence that does not meet the standards prescribed by the UK Supreme Court in respect of adversarial proceedings.

36. NHSGGC does not repeat the content of its Direction 5 responses here. The Chair is invited to have regard to them. NHSGGC maintains those objections in their entirety. By way of example only, Ms Dempster did work in the CNR which is critical of NHSGGC and finds a link between infections and the building. It is submitted that Ms Dempster is plainly not independent and that another expert ought to have been sought. That criticism is dismissed by Counsel to the Inquiry out of hand (para 22). It is also submitted that Dr Walker is similarly not independent, but that criticism is said to be "equally unfounded". It is submitted, however, that Dr Walker is connected with Dr Inkster. Dr Inkster's evidence is relied on heavily by Counsel to the Inquiry. Given their link, and the purported importance of Dr Inkster's evidence, it was incumbent on Counsel to the Inquiry to find an independent expert. It is trite that justice must be seen to be done. It is submitted that the existence of a previous link calls the evidence of the expert into question.

37. The approach taken by Counsel to the Inquiry to witnesses with expertise has been wholly inconsistent. Whereas criticisms of the lack of independence of Ms Dempster and Dr Walker have been dismissed out of hand, by contrast the perceived lack of independence of all NHSGGC witnesses who have appropriate expertise has been deemed by Counsel to the Inquiry to be fatal to the value of any evidence which they can provide to the Inquiry. The reason for the difference in approach is not clear, and not justified.

38. Similarly, counsel has rejected criticisms of Mr Bennet and Mr Poplett. They both concede that they have no expertise in a clinical environment and, therefore, it is submitted that they cannot comment on infection risk, and critically infection management, in a hospital, which is multifactorial. These limitations are neither recognised nor acknowledged by Counsel to the Inquiry.

39. It is submitted that Mr Mookerjee's report is particularly problematic. His conclusion, being that the hospital exposed, and continues to expose, patients to an increased risk of infection, is highly likely to cause significant concern amongst patients, families and the wider public. It

amounts to a conclusion that the QEUH caused infections in vulnerable patients. Indeed, startlingly, he claims, on what is submitted to have been a deeply flawed basis (considered below), that a patient admitted to Ward 2A in 2017 had a 16% chance of contracting a bloodstream infection. It is of great concern that it has been accepted, and indeed even entertained, by Counsel to the Inquiry. It is submitted that this unguarded conclusion will cause significant, and entirely unjustified, fear for those who are presently being treated in the QEUH, and betrays a lack of regard by Mr Mookerjee, and indeed, Counsel to the Inquiry, for the public interest in maintaining confidence in the QEUH, where appropriate.

40. Mr Mookerjee provided an analysis of whether there was an association or causal link between the environment and patient infections, or the risk of patient infections. Mr Mookerjee's initial report was received on 9 May 2024. Mr Mookerjee concludes in his report dated 9 May 2024 that there was a higher number of infections than in comparator hospitals. He does so using data provided by NHSGGC together with data recovered by way of Freedom of Information requests made to other hospitals, including Great Ormond Street. In his analysis, Mr Mookerjee purports to divide the number of infections by the total number of patients. In respect of the RHC, he uses inpatient data only. In respect of comparator hospitals, he uses inpatient and outpatient data. For the haemato-oncology patient cohort, a significant number of patients are treated as out-patients. They do not stay overnight in the hospital. It is submitted that the result is that Mr Mookerjee's analysis significantly inflates the number of infections per patient in the RHC over the comparator hospitals. By incorrectly using a lower number of patients, the number of infections per patient is artificially and incorrectly increased. It is submitted that the Inquiry has plainly flawed expert evidence before it, without any contradictor.

41. Following NHSGGC's critique, Mr Mookerjee was provided with an updated dataset for the QEUH/RHC which included out-patient data. However, inexplicably, Mr Mookerjee then excluded that data from his analysis, making the same fundamental error in his supplementary report. It is submitted that the fact that he was not comparing like with like ought to have been obvious. Admission figures Mr Mookerjee was using in respect of the RHC were significantly lower than the comparator hospitals even though the comparator hospitals were smaller, or equivalent, to the RHC.

42. It is submitted that Mr Mookerjee's conclusion, being that there were higher infections in the QEUH/RHC remains plainly flawed as his denominator (the number of patients treated) is obviously different. However, Mr Mookerjee's analysis is unquestionably adopted and relied upon by other Inquiry experts, including Dr Mumford and Ms Dempster in their joint report. It is submitted that the use of Mr Mookerjee's plainly flawed analysis undermines their conclusion

also. It is further submitted that Mr Mookerjee's errors are fundamental errors and not points of detail, and that the nature of these fundamental errors in the basic statistical analysis calls into question Mr Mookerjee's reliability as an expert witness, and indeed his expertise as a whole.

43. Based on Mr Mookerjee's evidence, there is a significant risk that the Inquiry will reach a conclusion that the QEUH/RHC is/was "unsafe" in the sense that it exposed patients to an increased risk of infection. It is submitted, however, that Mr Mookerjee's analysis is fundamentally flawed, and that the fundamental flaw undermines his conclusion. NHSGGC, and indeed other core participants, have made representations to the Inquiry as to the basic flaw in Mr Mookerjee's reasoning. Notwithstanding those criticisms, Counsel to the Inquiry claims that he was an impressive witness with a strong background in the subject matter [para 308]; that is rejected by NHSGGC. Regrettably, NHSGGC's criticisms have not been addressed by Counsel to the Inquiry at all; they have, quite wrongly it is submitted, been dismissed out of hand.

44. It is submitted that the questions in respect of "safety" are technical. That being so, it is essential, it is submitted, for the Inquiry to hear expert or skilled evidence before deciding thereon: Walker & Walker on Evidence, 5th ed, at 16.3.19, citing *inter alia Connelly v H.M. Advocate* 1990 JC 349, *The "Nerano" v The "Dromedary"* (1895) 22 R 237, and *United States Shipping Board v The Ship St. Albans* [1931] AC 632. Counsel to the Inquiry invites the chair to make findings that the QEUH remains unsafe. He does so based on flawed evidence and without even considering any contrary evidence. Accordingly, in the state of things as they stand, the Inquiry is faced with matters which require skilled evidence in order to be determined, yet where the only skilled evidence permitted has no contradictor. It is submitted that that leads to the wholly unsatisfactory position where the ability of the Chair, absent a contradictor, to discount the skilled evidence which has been led would be limited to a situation in which that evidence "does not stand up to rational analysis" (*Honisz v Lothian Health Board* 2008 SC 235 at [39]), or where it was mere *ipse dixit* or based on an incomplete understanding of the facts (*Griffiths v TUI (UK) Ltd* [2023] 3 WLR 1204 at [62]-[66]).

45. NHSGGC's position on the approach taken by Counsel to the Inquiry, including the assessment of the evidence from the Inquiry's expert panel, informs its responses to those questions as posed in Direction 5.

Direction 5, Question 1: From the point at which there were patients within the QEUH/RHC was the water system (including drainage) in an unsafe condition, in the sense that it presented an additional risk of avoidable infection to patients?

46. There are two aspects to this question: first, whether there was an additional risk of avoidable infection from the water system to patients and, secondly, whether the water system was, at any stage from the opening of the hospital, in an unsafe condition.

Additional risk of avoidable infection

47. In terms of whether the water system at the QEUH/ RHC presented an additional risk of avoidable infection to patients, it is accepted that some preventative and remedial actions which had been identified, and which could have been taken in relation to the system prior to and from the point of handover in 2015, were not taken. The report obtained from DMA Canyon in 2015 identified steps which ought to have been taken to maintain the proper functioning of the system and that, at that time, the report was not actioned.

48. It is submitted that the evidence from NHSGGC estates, notably that of Mr Ian Powrie, explains what occurred following receipt of the report: the report was passed in good faith by Mr Powrie to others in the estates department to action; there followed a degree of confusion as to responsibility for actioning the report, against a background of all of the operational issues with which the estates department was faced following the opening of the hospital. Thereafter, no action was taken in respect of the report's recommendations until it re-emerged in June 2018.

49. At no time was the existence of the DMA Canyon Report concealed by Mr Powrie or by NHSGGC: on its existence and contents being made known for the first time to more senior management in June 2018, it was immediately shared with a number of organisations including Health Protection Scotland, and Dr Inkster in her capacity as Chair of the IMT.

50. It is accepted that it was reasonably practicable and, indeed, necessary to employ the preventative and remedial measures which had been identified by DMA Canyon in its report. In the absence of these reasonably practicable control measures having been taken, designed to mitigate against risk, it follows from that that a risk of additional infection was created, and allowed to persist, and that this risk was avoidable.

Whether water system was "unsafe"

51. NHSGGC does not accept, however, that the water system was, at any point, unsafe. There has been no evidence led to quantify what might be "unsafe."

52. The Inquiry offered Dr Jimmy Walker as its expert on water. On receipt of his report in March 2024, NHSGGC submitted a response, outlining a series of fundamental concerns with the conclusions reached by Dr Walker. It is submitted that these concerns remain unanswered on the evidence, as does the question of whether the water system could properly be categorised as "unsafe." It is submitted that the parole evidence of Dr Walker did nothing to enhance the quality of his written opinion.

53. Dr Walker's evidence placed focus on microbial counts in water being above "set thresholds." There is no national (or international) guidance on thresholds for microbial counts. It remains unclear upon which set thresholds Dr Walker seeks to rely in offering his conclusion on the question of safety.[17] Where thresholds for water testing were set within QEUH/ RHC, these were set by NHSGGC itself on its own initiative, for the purpose of surveillance.

54. Dr Walker's report sets out factors which could render a water system unsafe, including "where colony counts are above the threshold."[18] It was not explained what is meant by "colony counts." If the statement is intended to refer to testing for total viable counts (TVCs), there are no defined thresholds for TVCs. Guidance suggests only that the TVC testing can be useful for trend analysis. NHSGGC chose to have unusually strict thresholds for TVC testing for its own internal monitoring purposes. Exceeding these thresholds, which are not national standards, does not equate to an unsafe water system.

55. In Dr Walker's opinion, "unsafe water could be described as water where the thresholds of agreed/ industry standard total viable counts for waterborne pathogens have been exceeded."[19] No evidence has been led as to which thresholds or industry standards Dr Walker refers. There is no national guidance on such thresholds.

56. It is submitted that the question of what is meant by an unsafe water system remains unanswered on the evidence which has so far been led. Leaving aside questions of the quality of Dr Walker's evidence, his evidence has not been sufficient to answer the question.

57. In Mr Mookerjee's comparator exercise, he focused on gram negative and fungal organisms found within QEUH/ RHC. The organisms considered were commonly seen across the comparator sites and were not unique to QEUH/ RHC, despite their categorisation by Dr

[17] Dr Walker report para 5.1.15 (ii)
[18] Ibid at Para 5.6.4
[19] Ibid at para 5.30.3

Mumford as "unusual." Further, Mr Mookerjee focused only on those organisms found within QEUH/ RHC and not other organisms, such as those found at the comparator sites (which were not present within QEUH/ RHC). Dr Dominique Chaput has conducted a review of the microbiological findings at QEUH/ RHC and how these have been utilised for the purposes of the comparator exercise.

58. In these circumstances, and given the importance of this question to the Inquiry, it is submitted that further evidence should be heard from Dr Dominique Chaput.

Direction 5, Question 2: From the point at which there were patients within the QEUH/RHC was the ventilation in an unsafe condition, in the sense that it presented an additional risk of avoidable infection to patients?

59. It is accepted, as it always has been, that some ventilation systems in the QEUH/ RHC did not comply with guidance as set out in SHTM 03-01 from its opening in 2015. However, it is not accepted that such non-compliance gives rise to any additional risk of avoidable infection to patients. Further, it is not accepted that such non-compliance renders the ventilation system unsafe.

60. Whilst some ventilation systems on wards within the QEUH/ RHC did not comply with SHTM guidance, there remains a question about the practical effect of that non-compliance, if any, from the perspective of infection prevention and control and patient safety. This question has not been answered by the evidence led before the Inquiry thus far. Importantly, there has been no factual evidence placed before the Inquiry of any suggested link between ventilation and any known case of infection.

Additional risk of avoidable infection

61. The Inquiry heard evidence on ventilation from its experts Mr Alan Bennett and Mr Andrew Poplett, both of whom had submitted reports to the Inquiry in advance of the Glasgow III hearings. In accordance with Direction 5, NHSGGC had submitted a response to these reports in which a number of concerns were outlined in relation to the experts' conclusions. It is submitted that these concerns have not been addressed on the evidence, nor has the question of the safety of the ventilation system been properly answered.

62. Neither expert has considered, nor have they the expertise to offer opinion on, the extent to which non-compliance with SHTM 03-01 gives risk to clinical and infection risk. It is

submitted that the experts have not had proper regard to the full range of measures within a hospital which mitigate against infection risk. Accordingly, the question of the true impact, if any, of ventilation upon increased risk of exposure to infection, not just in isolation but from a global infection prevention and control perspective, has not yet been answered.

63. On the question of the true impact of ventilation upon increased risk of exposure to infection, it is important to recall the evidence from microbiologist Professor Humphreys in June 2022. Professor Humphreys questioned the evidential basis for the standards as set out in SHTM 03-01 from a microbiological perspective. In particular, he questioned in evidence what scientific basis exists for the rate of air changes being as they are in the guidance. He advised the Inquiry that there is no precise science that he is aware of which sets rates of air changes per hour as they appear in SHTM.

64. Whilst acknowledging the importance of ventilation in preventing infection, he took a more holistic view in relation to infection prevention and control. He emphasised that ventilation is just one aspect in what should be a series of measures in place to prevent infection, including the use of prophylaxis. Further, he noted that the relevant standards appear to have derived from research carried out by Dr Owen Lidwell in 1972, at a time when hospital wards tended to be configured as nightingale wards and long before the more recent prevalence of single bedrooms on wards, which is preferred from an infection prevention and control perspective.

65. Professor Peter Hoffman gave evidence to the Inquiry, and gave his opinion to Dr Inkster when she requested it, that rates of air change are relevant to temperature control and patient comfort. In his opinion, air change rates have no impact on infection prevention and control in relation to highly immunocompromised patients. It is of note that the submissions of Counsel to the Inquiry depict Professor Hoffman as something of a lone voice in his views that air change rates have no bearing on infection prevention and control, when viewed holistically. Such a depiction is wrong as it ignores the earlier evidence of Professor Humphreys.

66. Further, the views of Professor Hoffman and Professor Humphreys chime with those of Dr Samir Agrawal, consultant haematologist at St Bartholomew's Hospital, London. Dr Agrawal prepared a report on the ventilation arrangements within ward 4C. This report was provided to the Inquiry in July 2021 yet no evidence of its content has, as yet, been led. In the opinion of Dr Agrawal, there is no evidence to support SHTM minimum ventilation requirements being as they are and there is nothing to suggest that rates of air changes themselves have any direct impact upon rates of infection.

67. The Inquiry is invited to approach the ventilation question holistically and to consider all steps taken to mitigate against risk of infection, not just ventilation in isolation. Steps taken to manage risk within the QEUH include but are not limited to use of single en-suite rooms, prophylaxis, PPE, air filtration, air pressure differential, limiting access to patients, staff vaccination, cleaning regime, screening, testing and monitoring. Infection control is multifactorial. The combined impact of these features in a hospital environment, particularly one used to treat neutropenic patients, must be understood.

68. Evidence of the multifactorial nature of infection control was led in the Inquiry's Lothian III hearing in February 2024, principally from: Dr Donald Inverarity, Lead IPCD and microbiologist at NHS Lothian; Lindsay Guthrie, Associate Director Infection Prevention & Control at NHS Lothian; and Dr Tracey Gillies, Medical Director, NHS Lothian. All witnesses spoke to the multifactorial approach which requires to be taken in the assessment of safety and that safety, of itself, is not a binary consideration. Their evidence was relied upon by Counsel to the Inquiry for the Lothian hearings (Mr MacGregor KC) and encapsulated in his closing submission to the Inquiry as follows:

> *"The evidence before the Inquiry indicates that safety is not a binary issue. Rather, there is a sliding scale of risk from safe to unsafe, which can be influenced by many factors. SHTM 03-01 sets out recommended parameters reflecting a consensus about what is appropriate to create an appropriate level of patient safety. These are consistent with parameters set in other countries. Any departure from such recommendations, taken in isolation, is liable to increase risk. However, the evidence indicates that other factors could be introduced to make a space that did not have ventilation compliant with SHTM 03-01 sufficiently safe such that patients could be treated there. For example, the old Sick Kids hospital at Sciennes did not have any mechanical ventilation but the other control measures ensured that a safe environment was created in which to treat patients."* [20]

69. The approach taken by Counsel to the Inquiry in Lothian III is commended to the Inquiry as both sensible and appropriate.

Whether ventilation system was "unsafe"

70. Neither Mr Bennett nor Mr Poplett has been able to define what is meant by "unsafe". No other evidence has been led as to how safety or otherwise of the ventilation system might be quantified. What is "unsafe" must be considered with reference to the particular environment,

[20] Para 334 Closing Submission of Counsel to the Inquiry; Lothian III

and type of patient, including whether that patient is particularly vulnerable to infection. Further, to determine whether the environment is "unsafe" it is necessary to compare it to a base line environment that is considered "safe". The evidence led thus far has not clarified what is a "safe" hospital environment. It follows that it is not possible to answer whether the systems were objectively unsafe.

71. Further, it is submitted that departure from guidance does not, of itself, render a system unsafe. This is particularly the case when control measures other than ventilation are in place. The question of whether mitigation against infection can be achieved by other measures is critical to the overall question of safety. It is submitted that there has been no evidence that the ventilation arrangements within QEUH/ RHC were "unsafe."

72. Importantly, there has been no evidence led nor is any such evidence understood to exist, that ventilation had any impact on any patient infections within QEUH/ RHC since its opening.

Direction 5, Question 3: Is there a link, and if so in what way and to what extent, between patient infections and identified unsafe features of the water and ventilation systems?

73. NHSGGC does not accept, with the exception of two cases which are known to the Inquiry, that there was any link between any patient infection and the environment. No common source for infections was ever identified, despite rigorous investigations.

74. Further, there was no evidence that any infections were linked to each other. The conclusions of the CNR are of limited utility, as has been accepted by Counsel to the Inquiry. It is submitted that, for the reasons already stated, the evidence of Mr Mookerjee took matters no further forward.

75. There has been no evidence led of any link between an infection and the ventilation system.

Direction 5, Question 4: Are the water and ventilation systems no longer in an unsafe condition in the sense that they now present no additional avoidable risk of infection?

Water system

76. The submissions of Counsel to the Inquiry bear to accept that, as at the present day, the water system at QEUH/ RHC no longer poses a risk level that would justify it being categorised as

"unsafe." NHSGGC agrees. The submissions of Counsel to the inquiry acknowledge that an Authorised Person for water is now in post. The system is now dosed with chlorine dioxide.

77. In addition to these factors relied upon by Counsel to the Inquiry, it is, however, of vital importance to this question to acknowledge the extent of the routine water testing currently carried out within QEUH/ RHC, as detailed in the reports of Dr Dominique Chaput. These reports were provided to the Inquiry in 2022. No evidence of their content has, as yet, been led.

78. NHSGGC has conducted, and continues to conduct, more surveillance of its water system at the QEUH/ RHC than any other NHS board. All routine water testing currently carried out across QEUH/ RHC exceeds requirements and recommendations set out in national guidance (where such guidance exists), in terms of testing frequency, locations tested (general as well as high-risk), types of tests performed, and thresholds to trigger action. Much of the routine testing carried out at these sites, notably coliforms, E.coli, fungal counts, gram negative bacteria, and mycobacteria, is bespoke to NHSGGC, as there are no formal requirements or recommendations applicable to these tests.

Ventilation system

79. As has been stated, NHSGGC accepts that some ventilation systems in QEUH/ RHC are not compliant with SHTM 03-01. However, for the reasons already outlined, it is not accepted that the ventilation systems pose an additional risk of avoidable infection to patients, nor is it accepted that it can be categorised as "unsafe" when matters are looked at in the round.

80. By way of example, ward 4C, which is not compliant with SHTM 03-01, has a low rate of documented infection. Whilst not compliant with the guidance, a range of measures is in place to mitigate, successfully, against infection. This tends to support the proposition that there is no increased risk of airborne infection on that ward. The report from Dr Samir Agrawal, submitted to the Inquiry in July 2021, supports this position.

Terms of Reference 1, 7 and 8

81. Core participants have been asked to address whether sufficient evidence has now been led to allow findings to Terms of Reference 1, 7 and 8.

Terms of Reference 1 and 7

82. Terms of Reference 1 and 7 concern water and ventilation, their impact upon patient safety and the extent to which defects have been addressed. These Terms of Reference are inextricably linked with each other and with the four questions posed in Direction 5.

83. For the reason stated above, it is submitted that further evidence will require to be led before findings can be made on these Terms of Reference.

Term of Reference 8

84. Term of Reference 8 concerns the impact of the issues examined by the Inquiry upon patients and their families, together with the question of adequacy of communication to patients and families, including duty of candour.

85. Addressing the first of these considerations, the Inquiry's impact hearings in 2021 heard evidence from patients and families on their experiences at the QEUH/ RHC from the opening of the new hospitals. It was clear that the experience of many patients and families at the QEUH/ RHC was adversely affected by the issues which were ongoing at the hospital at the time of their treatment. It has always been, and remains, a matter of profound regret to NHSGGC that the experience of patients and families at the QEUH/ RHC, at an already stressful and challenging time in their lives, was made worse by events unfolding within the hospital, particularly for those patients and families affected by the decant from ward 2A.

86. Secondly, it is accepted that there were failures by NHSGGC in its communications to patients and families. Certain families and patients first learnt of the proposed closure of Wards 2A and 2B, and the decant to Ward 6A, from media sources rather than from NHSGGC. That this occurred was a matter of deep regret and an immense source of frustration at the time to those within the Board who were responsible for communications.

87. The failure in communication was not deliberate and requires to be put in a fair and proper context. That context is that, following the decision of the IMT that Wards 2A and 2B should be closed and that patients should be decanted to Ward 6A, a process was initiated in accordance with the National Manual[28] governing the operation of IMTs to agree the terms of the communications to be made to patients and families regarding the decision. Before any communication could be finalised and approved by the Chair of the IMT the decision of the IMT to close Wards 2A and 2B and decant to Ward 6A was leaked to the media and made public. The wholly inappropriate leaking of sensitive information by persons unknown fundamentally undermined the Board's ability to communicate effectively with many of those affected by the decision taken by the IMT, and was a matter over which the Board had no control.

88. It was clear from the evidence of Sandra Bustillo that managing communications was made all the more challenging by these factors and by the unique and fast-moving situation being faced by NHSGGC. It is matter of great regret to NHSGGC that there were failures in its communications, despite its efforts in a challenging and unprecedented situation, and it is wholly understood that this increased anxiety to patients and families.

89. It is important to emphasise, however, that at no stage did NHSGGC deliberately conceal, or attempt to conceal, information from patients and families. The position of NHSGGC on the suggestion that it engaged at any stage in any "cover-up" is wholly refuted, as stated in its submission following the evidence in Glasgow II:

> "Further, and importantly, there was nothing in the evidence of the clinicians which was heard in the June 2023 hearing to demonstrate any "cover-up" or collusion on the part of NHSGGC as had been suggested or implied by certain witnesses at the September/ October 2021 hearings; on the contrary. The evidence from all witnesses was consistent in this regard, namely that at no time was pressure of any description applied on any individual by NHSGGC, and at no time did witnesses consider that their obligation, and the expectation upon each of them, was anything other than to be transparent and truthful. In its closing submission to the Inquiry in December 2021, following the evidence heard in September/ October/ 2021, NHSGGC refuted any and all allegations which called into question the fundamental integrity of NHSGGC. It is submitted that a conclusion can now be drawn from the evidence that NHSGGC was, at all times, acting in good faith, with no collusion or "cover-up," in circumstances which were both challenging and unprecedented."

90. It is submitted that no evidence has been led in Glasgow III which would undermine this position; on the contrary.

91. In relation to duty of candour, there is a distinction between professional duty of candour and statutory organisational duty of candour. It is submitted that the professional duty of candour was executed at all times in accordance with GMC guidance on Good Medical Practice. Organisational duty of candour is engaged following a defined "incident" which has given rise to harm. The legislation does not set out a clear definition of "incident."

92. It is submitted that there was no requirement for NHSGGC to invoke organisational duty of candour for the infection episodes under review as, after extensive investigation, no evidence was found that any infection was linked to deficiencies in the hospital environment or to failures

in care or procedures by NHSGGC staff. There was therefore no clear evidence of an unexpected or unintended incident which led to the episodes of infection under investigation.

93. In 2020, NHSGGC engaged with other health boards to ensure its application of duty of candour was in line with that of other boards in relation to infection related events. NHSGGC was reassured that its practice was consistent with that of other health boards. Any allegation of unlawfulness, as suggested in para 97 of Counsel to the Inquiry's submission, is entirely refuted.

94. It is noted that further evidence on duty of candour and NHSGGC's policy will be led in Glasgow IV. In those circumstances, it is submitted that it would be premature for any findings to be made in relation to duty of candour meantime.

Conclusions

95. It is submitted, therefore, that the Inquiry's questions as posed to core participants in Direction 5, cannot be answered on the evidence led thus far. Further, and for the same reasons, it is submitted that insufficient evidence has been led to allow findings to be made on Terms of Reference 1 and 7. It is submitted that further evidence, as outlined, is necessary before these matters can properly be determined.

96. In summary, NHSGGC proposes that evidence is required from Dr Dominque Chaput, Professor Peter Hawkey, Dr Samir Agrawal and Dr Lydia Drumright in order that these questions can be answered fully with regard to the Inquiry's Terms of Reference.

97. It does so not to "present matters in the best light for NHSGGC,"[21] or in at attempt at "spin"[22] or in order to seek to protect its reputation as has been variously, and unfairly, suggested. It does so in order to present relevant and useful evidence to assist the Inquiry to allow it to properly fulfil its Terms of Reference and in order to present a fair opportunity for public confidence in the QEUH/ RHC to be in some way restored.

98. There is a need to maintain public confidence in the QEUH and not subject the hospital and its clinicians to unwarranted criticism based on plainly flawed evidence. Having regard to fairness to NHSGGC, its clinicians, patients and the public, it is necessary for such conclusions to be based on robust evidence. The evidential basis for counsel to the Inquiry's conclusions is flawed and insufficient to say on the balance of probabilities that the QEUH is (or was) unsafe. It will,

[21] Submission of Counsel to the Inquiry, para 380
[22] ibid. para 100

wrongly, undermine public trust and confidence in the hospital and its clinicians. It will cause public concern including significant concern for patients and families receiving treatment for haemato-oncology conditions. The Inquiry's conclusions will have a direct impact on that nationally important hospital and the clinicians who work in it.

99. Infection management and control is multifactorial. The Inquiry heard evidence in the course of the 2023 Lothian hearings on the multifactorial nature of infection prevention and control. However, no expert led to date can speak to the whole circumstances of infection management in a hospital. NHSGGC has obtained a report which provides a detailed analysis of the number of infections per patient in the QEUH/RHC. It utilised comparator data from other hospitals. It utilised both inpatient and outpatient data in respect of the QEUH/RHC and comparator hospitals. It therefore compares like with like, which is plainly not the case with Mr Mookerjee's analysis. It reaches the conclusion that there was no increased risk of infection. Such a conclusion supports that the hospital is safe and that there is no need for public concern as to any risk posed by the hospital.

100. Standing the criticisms advanced by Counsel to the Inquiry and the flawed, and partisan, evidence relied upon, it is hoped that the inquiry will now have regard to the contrary evidence presented in the report of Professor Peter Hawkey, Dr Samir Agrawal and Dr Lydia Drumwright. Having had regard to that report, and having heard evidence from its authors, it is hoped that counsel to the Inquiry can review the submissions on credibility and reliability of NHSGGC's witnesses given that they will be supported by independent expert evidence. Should counsel to the Inquiry refuse to do so, it is hoped that the Chair will have regard to it in making recommendations.

Peter Gray KC,
Emma Toner, Advocate
And
Andrew McWhirter, Advocate

31 January 2025

SCOTTISH HOSPITALS INQUIRY

CLOSING STATEMENT

on behalf of the

SCOTTISH MINISTERS

relating to the Glasgow III hearing

A) Preliminary

1. The Scottish Ministers are grateful to the Chair for his invitation to submit this closing statement.

2. For the most part, the submissions of Counsel to the Inquiry concern matters which do not directly concern the Scottish Ministers or their witnesses.

3. The Scottish Ministers do not respond in this closing statement to the submissions on those matters. This does not necessarily indicate the Scottish Ministers' agreement with or endorsement of all that is said in Counsel to the Inquiry's submissions. The Scottish Ministers have in mind that the other Core Participants will be best placed to respond to the issues that do concern them, and that the extent to which the evidence of a particular witness is to be accepted as credible or reliable is ultimately a matter for the Chair.

4. They have one clarification to offer as regards Professor White's role in the review of NHS GGC's duty of candour policy. At chapter 3, paragraph 409, it would be more accurate to state (suggested amendment in italics): 'Having been involved in the legislative process which produced the statutory organisational duty of candour, he was also involved in discussions with NHS GGC to review their policy and in due course *considering the substantial amendments that NHS GGC made to* their policy on the statutory duty.' That is because Professor White was not involved in the process of amendment, as that paragraph might otherwise suggest.

B) Communication (chapter 8 of Counsel to the Inquiry's submissions)

i) Duty of candour

5. The Scottish Ministers note that Counsel to the Inquiry would welcome Core Participants' submissions on the extent of the duty of candour on clinicians with managerial responsibility.

6. The first observation to be made in that regard is that the content and scope of the duty are primarily matters for the statutory regulators of healthcare professionals, among which the General Medical Council and Nursing & Midwifery Council. That said, it is in the Scottish Ministers' submission within the Inquiry's powers to make observations as to any apparent lacunae in that duty as it applied – or was perceived as applying – in the circumstances.

7. Having regard to the guidance referred to by Counsel to the Inquiry, it is not apparent to the Scottish Ministers that there is such a lacuna. That guidance ('Openness and honesty when things go wrong: the professional duty of candour' published by the GMC and NMC in 2015) not only applies expressly to healthcare professionals in managerial positions but also indicates that such persons ought to be regarded as having additional responsibilities to fulfil and ensure the fulfilment by others of the duty of candour: see paras 30–32 and the GMC's guidance reproduced at Appendix 1 ('Good medical practice', para. 76, 'Raising and acting on concerns about patient safety', paras 21–22, and 'Leadership and management', paras 28–29').

8. The Scottish Ministers offer that observation subject to better information available to other Core Participants as to the expected application of the regulatory duty of candour.

9. So far as the duty of candour did apply to healthcare professionals in senior roles, it is a matter for the Chair to comment, so far as minded to do so, on how far it was complied with. Doubtless the relevant regulators would also have an interest in that matter.

ii) Social media

10. In so far as it has been suggested that the Scottish Ministers monitor the social media accounts of individuals, the Scottish Ministers confirm that it does not actively do so. In some circumstances a social media post, or series of posts, may be brought to the attention of Ministers, where, for example, the Scottish Government, or an individual Minister is tagged in the post or comments attributed to the post. In such circumstances, and where appropriate, the Scottish Ministers may include such material in Ministerial briefings where relevant to do so. In doing so, the Scottish Ministers do not intend to cause any upset to any person.

C) Glasgow IV (chapter 9 of Counsel to the Inquiry's submissions)

11. The Scottish Ministers are content with Counsel to the Inquiry's proposals for the matters to be addressed in Glasgow IV.

D) Proposed conclusions on Terms of Reference 1, 7, and 8

i) Term of Reference 1

12. The Scottish Ministers have no submissions regarding the proposed conclusion on Term of Reference 1.

ii) Term of Reference 7

13. The Scottish Ministers note the oblique invitation to the Chair to reach, as regards Term of Reference 7, a conclusion 'found in the answer to the third Key Question'.

14. This is unsatisfactory, not only as a matter of form but also as a matter of substance. Term of Reference 7 requires the Inquiry, 'To examine what actions have been taken to remedy defects and the extent to which they have been adequate and effective.'

15. There is, certainly at present, an inadequate evidential basis for Counsel to the Inquiry's observation on the third 'key question', to which they refer.

16. The Scottish Ministers submit that Counsel to the Inquiry are correct in chapter 1 and at chapter 4, paragraph 62, to endorse the evidence of the Inquiry's skilled witnesses. It emerges from that evidence, and particularly that of Dr Walker and Mr Poplett, set out in chapter 7, paragraphs 185 and 191, respectively, that the crucial point is that safety exists in the round—not just from the risk that may be present but also from the ways in which it is mitigated or controlled.

17. In material respects (e.g. as regards general wards), Counsel to the Inquiry's submissions are based explicitly on an absence of evidence rather than on any assessment, expert or otherwise, that the risks arising from too few air changes per hour have not been satisfactorily mitigated (ch. 7, paras 255–56). It is unclear, from the remainder of Counsel to the Inquiry's submissions on this point, on what evidence they have relied in formulating their proposal as regards other wards; that in itself speaks to the unsatisfactory nature of the proposed conclusion at this stage.

18. The Scottish Ministers also invite the Chair to have in mind Counsel to the Inquiry's (justified) recognition that evidence will be led in Glasgow IV that has a bearing on this proposed conclusion (see e.g. ch. 7, para. 236).

19. The proposed conclusion on Term of Reference 7 is therefore premature and, at present, unjustified.

iii) Term of Reference 8

20. The Scottish Ministers have no objection to Counsel to the Inquiry's proposed conclusion on Term of Reference 8. They would, in addition, invite the Inquiry to find, as appears to be implicit Counsel to the Inquiry's submissions, that:

    (1) the deficiencies referred to in paragraph 27 were not attributable to the Scottish Ministers;

    (2) the conclusions of the Oversight Board were well founded; and

(3) in any event, that the establishment of the Oversight Board and in particular of its Communications and Engagement Subgroup was an appropriate and well-founded response.

Ruth Crawford K.C.
Stephen Donnelly, Advocate
Counsel to the Scottish Ministers

Scottish Hospitals Inquiry

Submission by MDDUS on behalf of Dr Teresa Inkster, Dr Christine Peters, and Dr Penelope Redding

January 2025

Index

Abbreviations and references

The following abbreviations are used throughout this submission:

Dr Christine Peters	CP
Counsel to the Inquiry's Closing Submission	CS
Counsel to the Inquiry	CTI
NHS Greater Glasgow and Clyde	GGC
Infection prevention and control	IPC
Infection prevention and control team	IPCT
Dr Penelope Redding	PR
Dr Teresa Inkster	TI
Queen Elizabeth University Hospital	QEUH

Transcript references

References to the transcripts of the Glasgow III hearing are **in bold** and are made by date, followed by column number (abbreviated to "C") e.g. **20 August C123 to C128**.

Introduction

1. TI, CP and PR would like to record their gratitude at the outset for the careful analysis of the evidence that is contained within the CS.

2. Members of their legal team have analysed their own notes of the most significant parts of the evidence, and carefully compared those against the very detailed contents of the CS.

3. The majority of the points that we would otherwise have anticipated raising in this submission are covered within the CS. In addition, the conclusions drawn from that evidence by the CS are often in line with our own.

4. Given the extent of the material already before the Inquiry in the CS, we have tried to avoid further contributing to the Inquiry's considerable task by repeating matters that are contained within the CS. We have therefore restricted ourselves to additional observations and comments which supplement or support the material already before the Inquiry in the CS or which we consider to be of particularly critical importance to the key issues before the Inquiry.

5. The two key matters which TI, CP and PR believe remain unanswered and require to be addressed are (i) is the QEUH now safe? and (ii) How can a repeat of the events that have occurred at QEUH be avoided? These matters are dealt with in more detail at the conclusion of this submission and indeed throughout it.

Answers to the Four Key Questions

6. TI, CP and PR submit that the Inquiry should answer the four key questions it set itself in the following terms:

    (1) From the point at which there were patients within the QEUH/RHC was the water system (including drainage) in an unsafe condition, in the sense that it presented an additional risk of avoidable infection to patients?

        Yes.

    (2) From the point at which there were patients within the QEUH/RHC was the ventilation in an unsafe condition, in the sense that it presented an additional risk of avoidable infection to patients?

        Yes.

    (3) Are the water and ventilation systems no longer in an unsafe condition in the sense that they now present no additional avoidable risk of infection?

        The Inquiry cannot be satisfied that the water and ventilation systems are no longer in an unsafe condition.

    (4) Is there a link, and if so in what way and to what extent, between patient infections and identified unsafe features of the water and ventilation systems?

        Yes, there is clearly a link between the water and ventilation systems and the infections experienced by patients. A more detailed submission on this will follow at the end of Glasgow IV

7. As can be seen from the foregoing, save for the answer to the third key question insofar as it relates to the water system, TI, CP and PR agree with the answers to the other key questions which are reached by CTI in the CS (see, e.g., CS, Chapter 10.1). TI, CP and PR also agree with the reasoning set out in the CS, as supplemented by this submission, to justify those proposed answers.

8. In relation to the proposed answer to the third key question put forward by TI, CP and PR (that the Inquiry cannot be satisfied that the water and ventilation systems are no longer in an unsafe condition), the justifications for this conclusion are set out in the

Inquiry witness statements of TI and CP and the closing comments of this submission and reflect the fact that infections which are believed to be at least potentially linked to the environment continue to occur at the QEUH but in CP's view are not dealt with in accordance with best practice, nor do they appear to be reported to ARHAI. Further, the prevailing culture within GGC and, more particularly, the IPCT at the QEUH continues to be hostile to challenge and reluctant in its communications with ARHAI. If the Inquiry is to have a meaningful impact on future patient safety at the QEUH, further evidence requires to be heard about these recent cases and how they are handled, including but not limited to those brought to the Inquiry's attention during Glasgow III (Cryptococcus). Further evidence also requires to be heard regarding working culture.

The Terms of Reference

Term of Reference 1

1. For the reasons set out in the CS, TI, CP and PR's position is that the water and ventilation systems were both defective. In addition, GGC failed to competently operate and maintain the water and ventilation systems. However, unlike CTI, the position of TI, CP and PR is that the Inquiry cannot be satisfied on the evidence led thus far that those failures have ceased.

Term of Reference 7

9. TI, CP and PR's position is that the steps taken to remedy the defects have not been adequate and effective. The justification for this conclusion is the same as that underlying the answer to the third key question (see above). Given the importance of this matter to ensuring future patient safety, further evidence requires to be heard.

Term of Reference 8

2. TI, CP and PR's position is that the effects on patients and families have been catastrophic. Those effects continue to the present day. The NHS GGC communications have been unacceptable in a number of respects. TI, CP and PR adopt the reasoning of CTI, as set out in the CS, in support of these conclusions. In their view, sufficient evidence to allow the Chair to reach conclusions on this Term of Reference has been heard.

Comments on the evidence of individual witnesses

3. We have offered comments or observations where we have considered it appropriate to do so, or to specifically highlight matters that we wish to emphasise, or that appear to us to remain outstanding at the conclusion of the Glasgow III hearing. We have not commented on the evidence of every witness.

Witness (in order of appearance at hearing)	**Comments**
Kerr Clarkson	During Mr Clarkson's evidence it became clear that further clarification was required on the Horne taps. CTI indicated that this witness would receive a further questionnaire. That should, in our submission, be done now if it has not already been actioned (**20 August C89 to C90**). The key unresolved issue so far as CP, TI and PR are concerned is when and how maintenance of the Horne taps (involving cleaning and decontamination as opposed to pressure testing) actually occurred.
Colin Purdon	At para 26 of the CS, CTI notes that Mr Purdon was unable to recall very much at all, and that this failure in recollection included matters that one might reasonably expect him to recall. We agree with this. His position on being unable to recall certain matters was surprising. Particular examples of this include his implausible evidence on the lack of an authorised person and his inadequate response to the DMA Canyon Risk Assessment **(20 August C123 to C128**). Colin Purdon was pressed on the question of pigeons in questions asked under the Rule 9 procedure – (**20 August C169**

Witness (in order of appearance at hearing)	Comments
	to C178). He had initially given evidence (**20 August C170 – C171)** that the pigeon issue was sporadic, and that there was not widespread contamination. This was plainly not the case and he was taken to documents by CTI which demonstrated that. Ultimately his position came to be that there was in fact a widespread issue with pigeons (which was contrary to the position he had adopted in his witness statement) (**20 August C171)**, that pigeons were a significant issue (**20 August C172)** and that there had been a failure in the system which meant that this issue had not been highlighted with infection control (**20 August C173**). This sort of pigeon ingress is totally unacceptable in a hospital housing highly vulnerable patients. The reality is that all of this was, or ought to have been known, to this witness at the point when he visited the plant rooms with CP and TI but it was not shared with them. Instead, Mr Purdon sought to emphasise the minimal nature of the pigeon contamination, an approach which he continued in his witness statement. The approach that he took impeded their investigations.
Alan Gallacher	Alan Gallacher's evidence was totally unsatisfactory. Numerous examples could be cited to illustrate his apparent self-interest and lack of any genuine effort to assist the Inquiry. One example would be question 78 of his witness statement (at page 27 of that document). He was asked whether HEPA filters were

Witness (in order of appearance at hearing)	Comments
	installed in relevant rooms at handover. The correct answer, as known to everyone interested in the Inquiry and, undoubtedly also to Mr Gallacher, is a simple "*no*". His answer was "*I was not aware of the design requirements*". He repeatedly answered questions by saying "*I cannot help you with that"*. A more accurate answer would have been "*I <u>will</u> not help you with that*".
Tom Makin	Dr Makin gave important evidence about the potential ongoing risk of the nearby sewage works, the proximity of which he found "*astounding*" (**27 August C15 – C16**). He was clear that this was a potential risk factor for both airborne and water borne transmission (**27 August C51 – C52**). This issue requires to be investigated further in order that recommendations can be made for future improvements in line with the Inquiry's Terms of Reference. In particular, the Inquiry should seek evidence of whether there have been documented leaks from the Shieldhall site and, if so, the nature and extent of any such leaks. In terms of recommendations for the future, it is important to note that this witness indicated that routine testing for pseudomonas should be added when the SHTM is updated (**27 August C25 – C27**).
Dennis Kelly	Mr Kelly's evidence was given in a satisfactory manner but the overall message seemed to be that the role of authorising engineer does not necessarily provide any sort of effective

Witness (in order of appearance at hearing)	Comments
	safeguard given the extremely variable approach taken by different health boards. Despite Mr Kelly being the Authorising Engineer (AE) for GGC from 2011, he was not asked to do any AE work for the QEUH site until the end of 2016 (**27 August C114-C116, C120**). The Inquiry should consider making recommendations to improve the effectiveness of this role in the future. Mr Kelly was in favour of the permanent use of point of use filters in high-risk areas, which is contrary to the current approach taken by GGC (**27 August C208-C209**). Again, the Inquiry should consider recommendations about future revisions to the SHTM on this point. CP understands that point of use filters have never been installed in the adult ITU at QEUH and no explanation has ever been provided for this.
Darryl Conner	We wish to specifically highlight the deeply unsatisfactory position relating to pigeon infestation and the fact that CP and TI were not provided with clinically significant information about the scale of that problem despite that information being held by individuals in Estates, who knew that CP and TI were attempting to investigate pigeon ingress. No explanation was given for the failure to pass this information on to CP or TI at a time when it would clearly have been relevant to the performance of their clinical duties (**28 August C61 – C68**).

Witness (in order of appearance at hearing)	Comments
	Mr Conner spoke to a database of photographs and other evidence of pigeons being maintained by Colin Purdon (**28 August C63 – C64**). No explanation was forthcoming from any Estates witness as to why this information was not shared with CP and TI at a time when they were actively working with Estates to investigate issues relating to pigeons. Mr Conner's evidence also highlighted the generally unsatisfactory nature of information sharing. For example, he accepted that he didn't know whether the lack of validation for the ventilation system (which he later conceded should have been in place before opening - **28 August C72 – C73**) was shared with anyone in IPC and that he himself hadn't seen fit to share this information with the IPCT (**28 August 2024 C74 – C74**). Ultimately, it was the responsibility of Craig Williams, Sandra Devine and Tom Walsh to either actively seek out this validation information or delegate responsibility to someone else for doing it. They should have done the same with the DMA Risk Assessment. No explanation has been provided to the Inquiry as to why these steps were not taken.
Tommy Romeo	Mr Romeo's evidence highlighted the generally dysfunctional and unsatisfactory way in which some aspects of the Estates function were being run. When asked whether he had been given enough training for the job he was being required to do, his answer was a clear "*No*" (**5 September C115 – C117, C119)**.

Witness (in order of appearance at hearing)	Comments
	He indicated that he had been concerned about the lack of an Authorised Person for the water system because he knew there should have been one in place but when asked why he hadn't done more to escalate his concerns his position was "*it's difficult for someone who is not a senior estates manager to tell someone who is a senior estates manager how to do their job….you [would have] thought they would possibly know"* (**28 August C129 – C130**).
Susan Dodd	Susan Dodd was a highly impressive witness. She described the attitude of senior managers, particularly from the Estates department, as being "*combative*" rather than "*constructive*" in their approach to Dr Inkster (**29 August C112-C113**). She confirmed her agreement with Dr Inkster's hypothesis about the environmental link to the infections (**29 August C102**)**.** She also gave helpful evidence about the means by which more unusual infections are highlighted to IPC by microbiologists working in the lab (**29 August C7 – C10**). This is relevant to the submission which follows about the evidence of Alistair Leanord on whether microbiologists without IPC sessions need to be kept up to date on IPC matters. The reality is that their day-to-day role provides a vital link in identifying infections. An example of what happens when this system isn't working as well as it

Witness (in order of appearance at hearing)	Comments
	might can be found at **29 August C63 – C64** and relates to Mycobacterium chelonae. Mrs Dodd spoke to producing a document which summarised her concerns in early 2017, providing it to Sandra Devine and Tom Walsh, and being told it would be raised at the Acute Infection Control Committee and the Board Infection Control Committee. In fact, there is no reference to it in the minutes of those meetings (**29 August C19 – C20**). She summarised clearly the steps that should be taken in responding to an infection which is not on the alert list (in this case Stenotrophomonas maltophilia and Elizabethkingia) and explained that you have to act on them, consider whether they have been acquired in the healthcare environment, and if so how (**29 August C27 – C28**). This is entirely in line with the approach that TI and CP attempted to take in the face of considerable lack of support and opposition from GGC senior colleagues as identified in the CS.
Karen Connelly	Ms Connelly confirmed the sheer scale of the problems with pigeons at QEUH. She was "*surprised to find the amount of pigeons that had actually accessed the building or plant rooms*" (**30 August C42 – C43**).

Witness (in order of appearance at hearing)	Comments
	She confirmed that GP Environmental required to be on site daily for a period of "*weeks, if not months*" (**30 August C47 to C48**) which is clearly suggestive of a significant infestation.
Pamela Joannidis	Mrs Joannidis confirmed the fallacy of using Yorkhill as a comparator site (**30th August 2024, C131**). She also confirmed that chilled beams had provided a vehicle for the transportation of environmental organisms into the patient area (**30 August C122**). It is important to note that Mrs Joannidis had a very senior role in the build project as an IPCT representative. She now works for Scottish Government as an HAI policy advisor. Her involvement in the build project and the role that she played at that time should all be explored as part of Glasgow IV.
Annette Rankin	Ms Rankin's view was that there appeared to be a number of patients with blood stream infections associated with the water from March 2018 onwards (**3 September C97 – C98**). This witness also confirmed that the two-way dialogue between the microbiology lab and IPC was "*very important*" (**3 September C75**). This will be returned to in relation to Alistair Leanord's evidence. Ms Rankin was involved in a literature review exercise in which she observed *"selection bias to try and disprove the hypothesis*

Witness (in order of appearance at hearing)	Comments
	of a healthcare acquired link" on the part of some GGC staff (**3 September C114 to C115**). Ms Rankin also spoke to the risk posed by chilled beams, confirming that if you can grow an organism from a chilled beam then it doesn't matter whether you have cases of that organism in that week or month: there is still a risk of infection (**3 September C123 – C124**). Her evidence suggested that Sandra Devine may have misled the IMT about the circumstances in which TI had been replaced by Emilia Crighton (see CS, page 473, paras 893-894). The email sent by Sandra Devine might be regarded as being contrary to the duty of openness and honesty imposed upon her by her regulator, the NMC. Ms Rankin also confirmed that she did not support the view of Brian Jones and Alistair Leanord at the next IMT that the environment was "*microbiologically safe*" (**3 September C149 to C154**). She said that she and her colleagues felt compelled to attend the IMT meetings in pairs because the minutes that were being circulated were not accurate (**3 September C155 to C156**). This reflects, on any view, an extraordinary state of affairs. She gave damning evidence about the reporting culture (which continues to this date) in GGC and their lack of cooperation with

Witness (in order of appearance at hearing)	Comments
	ARHAI, from whom she said GGC "*don't like any communication back …at all*" (**3 September C157 – C158**). She also said that, in order to try and secure reporting, they had to fix a meeting once a week with their lead nurse (**3 September C158**). This was not a step they required to take with any other health board. TI wishes the Inquiry to be aware that shortly after she completed her evidence Sandra Devine cancelled this meeting. The Inquiry should be gravely concerned about the implications of that step for the reporting of infections in GGC and the extent to which it can be satisfied that the QEUH is now being run safely. Evidence should be led in Glasgow IV about this matter. TI would also wish the Inquiry to be aware of emails from as recently as 21 January 2025 which in her view demonstrate the reluctance of GGC staff to fully report circumstances relating to infections (in this case Cupriavidus). TI wishes to produce these emails to the Inquiry, and for evidence to be given about these emails as part of Glasgow IV.
Phyllis Urquhart	Phyllis Urquhart was the full time Compliance Manager for GGC from November 2017 to January 2022. While this was a Board wide role which covered a range of sites including the QEUH, the role was new for the QEUH (**5 September C5, C14-C15**). A question which was asked but which Ms Urquhart was unable to answer was how the role came about (**5 September C15**). This is an important question which, it is submitted, would merit further exploration in Glasgow IV because it is clear that, until

Witness (in order of appearance at hearing)	Comments
	Ms Urquhart's appointment, there was very little compliance with any of the statutory obligations required to ensuring the safe operation of the hospital water and ventilation systems. For example, various roles required under SHTM-04-01, including the role of Authorised Person (Water), were not filled when Ms Urquhart started in her position for the QEUH (**5 September C27-28**). This was despite the fact that Alan Gallacher accepted that compliance with all statutory requirements fell within his responsibilities as General Manager (Estates) for NHS GGC and he had been in position from August 2015 (**23 August C4**). The fact that the Compliance Manager role was only created over 2 years after the hospital was handed over is another point of concern and one which ought to be explored further in the upcoming hearing. Ms Urquhart's evidence exposed the gaping holes in compliance which existed at the QEUH until at least 2017. Her evidence showed that some of these holes had only been filled as recently as 2024 (**5 September C53-C54**). It is hoped that the Inquiry's recommendations will address the issue of compliance to ensure that such failures will not happen again.
Melville MacMillan	Mr MacMillan told the Inquiry about what appears to be quite extensive water sampling, whereby the samples were sent to an outside lab called Alcontrol for testing (the exact time frame of

Witness (in order of appearance at hearing)	Comments
	the sampling is unclear). Mr MacMillan carried out the sampling at the request and under the direction of Ian Powrie. Mr MacMillan advised that the results were received by him. He said that there were some out of spec results and that he still had those results on a "stick", by which he appears to mean a pen drive (**5 September C161-164; 183-185**).
Laura Imrie	Ms Imrie confirmed Ms Rankin's views on the reporting culture in GGC: *Q To what extent does the approach of [GGC] differ from ….other larger health boards in Scotland..?..* *A Some of the infection control doctors in Glasgow don't like to be challenged or don't like to be asked questions…….we end up getting a situation where our senior nurses…they are hired to deal with incidents and outbreaks…..when they go back to the Board and asking [sic] the questions, the Infection control doctors didn't respond well to that"* (**6 September C90**). This evidence is entirely consistent with TI's recent professional experience. The Inquiry should consider what recommendations it can make which would be of practical assistance in replacing the prevailing culture with one of openness.
Eddie McLaughlan	Of note, given the topics to be explored during Glasgow IV, is Mr McLaughlan's evidence about the documentation, including for water systems, which should have been available on handover.

Witness (in order of appearance at hearing)	Comments
	Subject to the caveat that he was not offering "legal advice", he told the Inquiry: "*There's a legal obligation on the people designing and building a system to provide the users with comprehensive as-built drawings that reflect what was actually built and operating instructions and safety instructions.* *When we went looking for that information for the water, we found that there were significant gaps in the information available. Now, I'm very cautious here because the information that we saw-- When I say we, I mean Ian Storrar. The information that we saw was the information that the board was able to make available to us, not necessarily all the information that was available, but it looked like the handover documentation that's required in the construction design and management regulations wasn't provided the way it's supposed to be provided*" (**10 September C26-C27**). The questions which arise from this are: (i) why not? and (ii) why did no one notice until months, if not years, later? The governance and accountability issues which these questions raise are extremely serious, particularly given the size, scale and cost of the QEUH.

Witness (in order of appearance at hearing)	**Comments**
Susanne Surman-Lee	The following three points, which arose from this witness' oral evidence but which are not picked up in the CS, are drawn to the Chair's attention: First, the necessity for "*a risk assessment for water safety [to be undertaken] at the design stage, to ensure the systems were designed to maintain water quality targets which would ensure safety for all intended users who may be exposed to water and wastewater as well as sprays and aerosols derived from water sources*" (see Statement of Dr Surman-Lee, pages 6-7). While the draft SHTM 04-01 does state that a risk assessment should be completed at each stage of a project, it is recommended that the Inquiry consider whether that can be improved and/or more effectively enforced. Second, *Legionella* is not the greatest risk for high-risk patients such as haemato-oncology patients, whether adult or paediatric. As Dr Surman-Lee points out, *"[b]ecause of their immunocompromised state they are at risk from a whole range of waterborne pathogens particularly Pseudomonas aeruginosa and other gram-negative bacteria as well as from non-tuberculous mycobacteria, and fungal infections*" (see Statement of Dr Surman-Lee, pages 18-20). This observation also links into the recommendation made by Tom Makin (referred to above) about routine testing for pseudomonas being added when the SHTM is updated.

Witness (in order of appearance at hearing)	Comments
	Third, of note are Dr Surman-Lee's comments about antimicrobial resistance. Specifically, Dr Surman-Lee states that "*exposure to water and associated above ground drainage poses too great a risk of direct harm and also increases the potential for an increase in the development of antibiotic resistance as many of these waterborne opportunistic pathogens are inherently resistant and facilitate the spread of antibiotic resistance between microbial species*" (see Statement of Dr Surman-Lee, pages 28-29). Finally, the contents of Dr Surman-Lee's post inquiry statement are important on the question of colony picks; she confirms her view that multiple colony picks are required, contrary to the evidence given by Alistair Leanord on this matter. TI had spoken in her own evidence (**1 October 133 – C134**) about the fact that Dr Surman-Lee was of the view that 20 to 30 colony picks were required. Alistair Leanord clearly listened to this evidence and then attempted to belittle TI's position by stating that he had spoken to the person who TI was referring to and this was not their view. This evidence from Alistair Leanord is difficult to reconcile with Dr Surman-Lee's clearly stated view on this matter, and with the documents that TI subsequently produced to the Inquiry that showed that he himself had applied for funding for a research project in which multiple colony picks were part of the research strategy.

Witness (in order of appearance at hearing)	**Comments**
Tom Walsh	Mr Walsh's entire attitude and approach to whistleblowers is exemplified by his evidence that CP took an "*unnecessary and inappropriate interest in infection control*" (**13 September C13**). The fact that Mr Walsh, who has no formal training or qualifications in Microbiology whatsoever, felt so able to determine what information an experienced Consultant level microbiologist does or not require to do their job properly is very concerning. In his statement (Pages 12 – 13) he criticised CP for this "*unnecessary and inappropriate*" interest which he felt continued after 2015 when she resigned her IPC sessions. This criticism is unfounded for the reasons outlined above but in any event ignores the fact that CP was still regularly doing ICD sessions until October 2016 and providing ad hoc cover thereafter. He continued to make very serious allegations, particularly about CP, throughout his evidence, without any ability to back them up under reference to specific examples. This is illustrated by the discussion about what he repeatedly described as "*operational interference*". He was unable, when he was quite rightly pressed on the point repeatedly by CTI, to identify a single credible example of this behaviour, but maintained the allegation against CP nonetheless (**13 September C36 and C94**).
Kathleen Harvey Wood	Ms Harvey Wood spoke to her vast experience as a biomedical scientist with a special interest in infections in children. She

Witness (in order of appearance at hearing)	Comments
	confirmed that in her view, the criticism that CP had been subjected to was not justified (**18 September C4**). She was taken to graphs that CP had been largely responsible for producing, which CP had not herself had the chance to speak to in her own evidence. These will be returned to in the discussion of the evidence of Alistair Leanord which follows.
David Stewart	In the context of a discussion about a letter he had written which the Chair of the Inquiry had already indicated might be reasonably construed as not having been "honest" (**11 September C189**), this witness described himself as having "*robustly*" been an "*advocate*" for TI and CP. The reality is that there is no evidence of Dr Stewart having been any sort of advocate for TI and CP, robustly or otherwise; in fact the opposite is the case (**19 September C64**). PR told Dr Stewart about the concerns she had about the safety of the hospital as early as 2015 (see statement of PR, para 27, page 12). He was well aware that the concerns were serious and longstanding but did nothing to assist TI, CP, and PR, beyond simply passing the matter on to Dr Armstrong.
Iain Kennedy	Dr Kennedy is a Consultant in Public Health Medicine. He is not a microbiologist. When considering his evidence, it is important that the limits of his expertise are borne in mind. Notwithstanding these limits, of note is that Dr Kennedy was on various occasions asked by Dr Armstrong to deal with matters

Witness (in order of appearance at hearing)	Comments
	which went beyond his public health expertise. For example, he was asked "*to support response (sic) to an issue raised by Dr Inkster and Professor Gibson about whether cases of potential gram-negative bacteria from 2017 had been appropriately identified and dealt with*" (see Statement of Dr Kennedy, para 137). Dr Kennedy has neither paediatric nor BMT experience. He was also asked to produce "*a briefing note for Dr Armstrong, on the general mycobacteria in water supplies*" (see Statement of Dr Kennedy, para 143). This note appears to have been the subject of some criticism by TI (who unlike Dr Kennedy, is qualified to comment on such matters) and, according to Dr Kennedy, it was around the time that his relationship with her deteriorated. At no point does Dr Kennedy acknowledge that what he had been asked to do did not fall within his skillset and should have been done by a microbiologist. It is to be queried first, why Dr Kennedy was repeatedly asked to undertake tasks outside his direct area of expertise when GGC had ready access to those who did have the relevant expertise, but whose views might not have been welcomed, and second, whether the answer to this question is arrived at in part by CTI's observation that Dr Kennedy was "*somewhat hesitant to discuss topics which appeared to criticise NHS GGC's handling of matters*" (see CS, page 75, para. 205).

Witness (in order of appearance at hearing)	Comments
Emilia Crighton	Dr Crighton is currently a member of the GGC Board Given CTI's comments about her credibility and reliability (with which we agree), it is submitted that her continued position on the Board is a cause for concern (see CS, pages 104-106). Of similar concern is Dr Crighton's involvement in the IMTs for the gram-negative bacteraemia in 2019, given her approach to the science. On taking over as Chair of the IMT, rather than seek a briefing from either Dr Inkster or another microbiologist, information was provided from a Public Health Consultant, Dr Kennedy (see CS, page 105, para 341). Dr Crighton told the Inquiry that she agreed with Sandra Devine's paper which concludes that there might be a connection between infections and deprivation in the population served by the hospital, a view which has not received any support from any of the independent experts instructed by the Inquiry (see CS, page 105, para 342). Given that QEUH houses Scotland's national BMT services for children and adults, the vast majority of its patients are not drawn from its local area, and thus the local socio-economic deprivation or otherwise cannot possibly be relevant. It is also worth noting that this was also the case for the previous unit at Yorkhill.

Witness (in order of appearance at hearing)	Comments
	Indeed, at points throughout the CS, it is rightly noted that Dr Crighton's approach to the science is at variance with the Inquiry's independent experts (see, e.g., CS, page 134, para 456; page 166, para 568). In relation to the change of Chair of the IMT in August 2019, the question posed by CTI for Glasgow IV is noted, i.e., "*whether NHS GGC's actions at this time were focused solely on the interests of their patients rather than the protection of its reputation*" (CS, page 475, para. 899). However, it is submitted that, given the evidence above regarding the ability of Dr Crighton to chair such a complex IMT, and also to understand the science underpinning it, the inescapable conclusion is that the change in Chair was driven by a focus on matters other than the interests of patients. In terms of ensuring that the water and ventilation systems at the QEUH are no longer in an unsafe condition, a key recommendation must be that IMTs should only be chaired by appropriately qualified individuals.
Sandra Devine	Sandra Devine is currently the Director of Infection Prevention and Control for GGC. She has been a constant presence in the IPCT at the QEUH from 2015 to date. As CTI observe, she "*participated in many of the events on which the Inquiry has heard evidence*" (CS, page 54, para 120).

Witness (in order of appearance at hearing)	Comments
	Sandra Devine attempted to describe the fact that she misled ARHAI about the, on any view, unacceptable circumstances in which TI was removed from the chairmanship of the IMT as an "*overstatement*" on her part (**3 October C143 – C144**). She did not offer any explanation for why or how she came to make an "*overstatement*" on such a critical matter at such a sensitive time. The effect of this "*overstatement*" was to mislead ARHAI. Of relevance to Glasgow IV and TOR 9 ("How infections from unusual micro-organisms that may be linked to the environment are identified, reacted and reported to HPS/ARHAI" per CS, page 750), is that the weekly meetings between ARHAI and Sandra Devine which Laura Imrie spoke in evidence about (see CS, page 79, para. 221) have since been cancelled at the instigation of Sandra Devine. It is submitted that this concerning development should be explored further in evidence at Glasgow IV.
Tom Steele	Tom Steele's evidence was also concerning. It should be noted at the outset that he has no nursing, medical or microbiology qualifications. Despite that, he displayed a striking willingness to contradict the views of those, who unlike him, do hold considerable qualifications in these areas. One example is his clear lack of respect for TI's training, experience and qualifications in relation to her explanation of Elizabethkingia having previously been located in the international space station (**4 October C93 – C94**).

Witness (in order of appearance at hearing)	Comments
	He sometimes avoided providing direct answers to questions. He was asked four times whether there is now a process in place to alert IPC to pigeon ingress and was unable or unwilling to provide a clear answer on this very important point (**4 October C48 to C52**)**.** This is extremely worrying given the recent incidences of cryptococcus infection at QEUH discussed below. At one point, Inquiry Counsel had to go so far as insisting on a "*straight answer to a straight question*" (**4 October C112**), such was the reluctance of the witness to provide a "straight" answer. He gave evidence that he was unaware of any further cryptococcus cases and agreed that if there were further cryptococcus cases then that would require to be investigated. This is concerning given that the Inquiry has clear evidence of recent cryptococcus cases that have not in fact been reported to ARHAI and about which all of the senior staff who were asked about them claimed to be unaware, including this witness (**4 October C70**). He gave evidence about the SHTM (**4 October C12, C17, C37, C75, C78**) but then said that he hadn't actually looked at the document himself (**4 October C76**) which might be thought to be surprising given the post which he holds. Perhaps the worst part of his evidence was when he was asked, following a Rule 9 request on behalf of TI, CP and PR, whether the very serious allegations he was making in his statement were directed at them. His answer was "*no*". It is submitted that

Witness (in order of appearance at hearing)	Comments
	it is absolutely clear that he was certainly criticising at least TI and CP in that particular passage of his statement, there being no sensible alternative explanation and certainly none offered by this witness, and his unwillingness to commit to that position during his evidence demonstrated an ill-fated attempt at self-preservation at the expense of giving honest evidence to the Inquiry (**4 October C119 – C120**).
Anne Cruikshank	This witness was supportive of the positions of TI and CP. She was clear that it was "*all to do with patient safety*" rather than any other motivation (**4 October C133**).
Linda de Caestacker	It was clear that the process that underpinned the report prepared by Dr de Caestacker was incomplete and unfair. She was provided with large amounts of information from Sandra Devine directly rather than from people with a wider range of views (**8 October C45 - C46**). She proceeded on the basis of second hand information (**8 October C79**) from people who were known to disagree with CP, and gave CP no fair chance to respond to, or even see, the report that she produced.
Jennifer Armstrong	Even by the time she gave evidence, Dr Armstrong was reluctant to conclude that TI and CP had been, in broad terms, right about what they had been saying. She was presented with what was specifically prefaced as being a "yes or no" question but was unable or unwilling to answer it in those terms (**10 October C50 – C52**).

Witness (in order of appearance at hearing)	Comments
	She agreed that TI's suggested comparison with infection rates in other tertiary centres such as Great Ormond Street would have "*helped*" (**10 October C99 – C100**), so it is not clear why she was not in fact supportive of that work being undertaken at the time. It was surprising that she felt able to describe herself as having "*lived through it and kept patients safe"* given the very clear evidence that the hospital was not, at all times, "safe" for patients (**10 October C72**). She was clearly unhappy that TI had fulfilled her professional obligation to be candid in her discussions with an HAI inspector because it had resulted in public scrutiny of events at QEUH (**10 October C183 – C190**). Her suggestion that things should have been raised via a different route ignores the fact that TI had, for an extended period, been attempting to raise her concerns via the usual internal routes without success. She avoided directly answering questions on numerous occasions. One example was that she was asked whether a particular paragraph in her statement was intended to be an allegation that either CP or TI had provided inaccurate information to patients and families regarding infections. That is a simple question. She was unable or unwilling to answer it clearly despite having prepared the statement which she was being asked about the meaning of (**10 October C215 to C216**).

Witness (in order of appearance at hearing)	Comments
	Her evidence on whether TI and CP were motivated by anything other than concern for the wellbeing of their patients was troubling. Her evidence in her witness statement was that there "*was a view*" that whistleblowers had been more concerned about proving themselves right than "*a focus on the children*" (statement of Jennifer Armstrong, page 93). When pressed on this extraordinarily serious allegation, her position was unsatisfactory (**10 October C227 to C233**). This whole passage is illustrative of the casual way in which allegations of the utmost seriousness were made, and repeated, against whistleblowers who were trying to safeguard the best interests of their patients by raising concerns which have subsequently been shown to be entirely well founded. Any clinician working in GGC at the present date, and considering acting as a whistleblower themselves, will only be deterred from doing so by this evidence from an individual then holding the office of Medical Director. Finally, a point of clarification; Dr Armstrong is described (para 296, page 94 of the CS) as having been a non-executive director of the Board of GGC. In fact, it is the understanding of PR, TI, and CP that she was an executive director.
Angela Wallace	Professor Angela Wallace has occupied, and continues to occupy, important senior positions within the NHS. Indeed, she is currently a member of the GGC Board.

Witness (in order of appearance at hearing)	Comments
	Professor Wallace's oral evidence to this Inquiry was replete with management speak (examples include references to "their truth", and a "broken compass" **(25 October C17, 75)**) which at times made it difficult to follow the meaning. The meaning of her written evidence became equally difficult to understand at the conclusion of her oral evidence. For example, in her statement, Professor Wallace made the following serious criticisms of TI and CP (at statement, para 185): *"On taking up my role, I remained as the HAI exec lead in NHS FV and within only a few weeks the Covid-19 pandemic began and all NHS Scotland systems moved into the gold command structures to face these unprecedented times. I assessed the style and tone of leadership and relationships akin to any other system including my home board, NHS FV. The behaviours of colleagues who have raised concerns, Dr Peters and Dr Inkster, were however something I had not experienced before despite almost 40 years continuous NHS experience. The overarching desire of all colleagues appeared to be in the service of patient care and provision of quality services. However, as I began to lead in my role, I began to create new conditions in which colleagues could move forward or reset and the largest part of this was the impact and consequences of the behaviours. The scale of trauma or moral injury I witnessed was significant. The OD plans, including individual coaching appointments and OD support in the*

Witness (in order of appearance at hearing)	Comments
	Buzz meetings, did not have the impact I had hoped for and Dr Peters continued to challenge IPC decisions regarding the management of infection incidents in QE and RHC. This hampered new ways of working that were tentatively building. Unfortunately the pattern prevails today." When challenged by CTI to explain the above comments which were described as "*pretty hefty criticism*", Professor Wallace was unable to (**25 October C66-C67**). She said ""*behaviours*" *are not always bad behaviours*" and, despite only naming CP and TI, tried to retrospectively argue that "*the behaviours/that experience were across a range of colleagues*" (**25 October C67-68**). As noted in the CS, Professor Wallace was appointed Interim Director of Infection Prevention and Control, notwithstanding a lack of specialist qualifications in IPC (at page 511, para 1014). It is submitted that the qualifications and job descriptions of all those who make up the IPCT requires serious scrutiny and is an area which would benefit from recommendations by the Inquiry. Of relevance in this regard is the evidence of Dr Sara Mumford who explained the role of Director of Infection Prevention and Control (DIPC) in England and Wales. She noted that it was a statutory role and that no background or experience in infection prevention and control was necessary to hold it. However, Dr Mumford advised that, in her opinion, a

Witness (in order of appearance at hearing)	Comments
	non-subject matter DIPC should be supported in the role by a strong subject matter deputy (**12 November C31 – C32**).
Mike Stevens	Mike Stevens highlighted the fact that any theory relating to gut translocation requires identification of clinical signs and symptoms to suggest serious inflammation of the gut mucosa that you look for in order to make a judgement about whether infection has come from gut translocation as a result of severe damage to the gut or whether it has come from the environment (**30 October C14 to C15**). He debunked Alistair Leanord's theory relating to meropenem use (**C57 to C78**). His description of Jennifer Armstrong's attitude to the conclusions that his review reached was deeply concerning. She had written him a letter with a view to trying to *"move our final report in the direction they wished it to go"* (**30 October C140**). His description of Jane Grant's behaviour was similarly concerning: the witness recalled thinking *"here is someone who is trying to turn the screw on me…."* **30 October C141**.
Mark Wilcox	This witness highlighted the flaw at the heart of Alistair Leanord's entire approach. If a water system is contaminated by biofilm, then in his view it is "*far more likely*" that you would see a range of organisms causing infections associated with the water (**29 October C121 to C122**).

Witness (in order of appearance at hearing)	Comments
	He described looking for a match as being the same as looking for a needle in a haystack. In his words, "*you're just not going to find a match, and therefore the fact that you don't find a match does not exclude a working hypothesis of contamination from the water causing infections in patients*" (**29 October C122 to C123**). He highlighted a specific example based on a hypothesis involving Enterobacter: *"If one knew nothing else about the cases but that Enterobacter were involved – 27 Enterobacters were involved in these bloodstream infections, I would not expect one Enterobacter to be responsible across five years. I would expect multiple….absolutely expect multiple…and which one or ones were involved at any point in time – one could be involved, disappear – "disappear" in inverted comas – still be in a biofilm, reappear or not, but one would expect, in a contaminated water system, virtually all plug holds by the way get contaminated. You would expect many, many different types over time of in this case, Enterobacter"* (**29 October C124 – C125**). He also highlighted the flaws in Alistair Leanord's evidence of colony picks, which he had given apparently with the aim of undermining TI's position (**29 October C127 – C128**).

Witness (in order of appearance at hearing)	Comments
	He confirmed the implausibility of gut translocation as an explanation where the patients did not have any evidence of gut inflammation (typhlitis) which causes their gut wall to become leaky and makes them more prone to endogenous blood stream infection (**29 October C133**). He also debunked the theory outlined by Alistair Leonard relating to infections being related to pressures caused by antibiotic use (**29 October C149- C151**). He expressed surprise at the treatment of whistleblowers. He said he had *"never, ever come across a colleague telling me that they have been denied access to absolutely core information in order to enable them to do their job"* (**29 October C156**). On the key question of infection link, his evidence was clear: *"The evidence suggests strongly to me - and, I believe, us - that the clustering in time, person and place of these organisms and two or three species in particular are strongly suggestive of a link between aspects of the environment, almost certainly waterborne, and some of the infections that occurred in children"* (**29 October C166**).
Dr Jairam Sastry	Dr Sastry gave evidence via witness statement. At para 373, page 112 of the CS is it is noted that air sampling in ward 6A did not show cryptococcal spores. However, it is critical to note that no air sampling was undertaken before the clean-up operation was undertaken in the plant rooms. It is also critical to note that Cryptococcus species other than Cryptococcus neoformans

Witness (in order of appearance at hearing)	Comments
	were not isolated from the outside air, which is the alternative hypothesis for source.

Comments on the factual narrative in the Inquiry Counsels' Submissions

Year: 2014

Horne Optitherm Taps and their Maintenance

Page 200/Para 18

4. Ian Powrie also stated that the taps could not be cleaned properly because of an issue with their warranty which he stated *"should have been challenged at the time".* He wasn't pressed on who should have challenged it or what the outcome of such a challenge might have been. **22 August C79-80.**

Page 198/Para 19

5. The CS notes that "*NHS NSS, for its part has said that it was "unaware that the advice in its SBAR had been contravened until March 2018. Mr McLaughlan agreed that the advice not to use the taps in areas where there were vulnerable patients did not change*."

6. This is incorrect. NHS NSS were made aware of the situation by Dr Inkster in 2016. In an email from Dr Inkster to Lisa Ritchie dated 21 February 2016, Dr Inkster advised that option 1 had been selected but no sampling had commenced (see Bundle 14, Vol 1, page 145).

Requirement to carry out a HAI-Scribe at commissioning

Page 208/Para 40

7. The CS observes that "*[i]t was acknowledged by Dr Inkster that she did not look for a stage 4 HAI-SCRIBE for the new hospital at any stage. She assumed that it would be in place because it is very clear in the SHFN.*"

8. While the above statement is correct, it is submitted that some context is required. Dr Inkster started working at the QEUH in August 2015 after it opened. She did not become lead ICD until April 2016. Therefore, responsibility for ensuring that a Stage 4 HAI-SCRIBE had been undertaken lay with Professor Williams, Sandra Devine and Tom Walsh, who comprised the IPC senior management at the time.

Year: 2015

Water Safety

Page 227/Para 89

9. Not only did Alan Gallacher tell the Inquiry that he thought he had known about the 2015 DMA Canyon report in 2017, but his evidence was that, on the basis of a conversation he had with Mary Anne Kane, it was his understanding that the Chief Executive, Jane Grant, was also aware of the report in 2017 (see **23 August C45-46**). It is submitted that this evidence should be followed up in Glasgow IV when it is anticipated that both Ms Kane and Ms Grant will give evidence to the Inquiry.

10. It is important to emphasise that many members of senior GGC staff were aware of serious concerns relating to water and ventilation as far back as 2015, not just Mrs Grant. PR's statement confirms that she had a meeting with David Stewart and Grant Archibald in 2015. She could not remember the exact dates but recalled that it was around about the time when CP was appointed (statement of PR, para 27, page 12). She specifically highlighted at that meeting that Consultant Microbiologists and ICDs were not being listened to when they raised concerns. Mr Archibald's attitude to her professional expertise was unacceptable. He belittled her views, describing them as just her "*opinion*", despite having no clinical qualifications himself. PR asked for an external expert to be appointed to review any differences in "opinion" (see statement of PR, para 81, page 27). This suggestion was not taken up. Things may have panned out very differently had she been treated with the courtesy and respect that she deserved from Mr Archibald, or if Dr Stewart had taken her concerns more seriously. The observations at para 13, page 527 of the CS apply equally to these individuals.

Concern about the choice of PPVL Rooms for all isolation rooms

Page 229/Para 93

11. CP assumed Professor Williams was dealing with ventilation based on his role as Lead ICD and his statements at the SMT.

Page 229/Para 94

12. It should be noted that there were pressure gauges in the PPVL rooms but not in the positive pressure rooms.

Ventilation system in Ward 4B (adult BMT ward)

Page 241/Para 137

13. The rooms at issue in Ward 4B were not PPVL rooms but positive pressure rooms.

Page 244/Para 139

14. It is unclear from the evidence what risk assessment process was undertaken for non-transplant patients to move back to Ward 4B after several weeks and what patient communication was undertaken regarding the reasons for the move back when not much had changed in the ward. In terms of patient risk exposure, it is submitted that it should be clarified whether these patients were present on the ward for the duration of the works.

Issues around the Management and Culture of the IPC Team

Page 252/Para 172

15. There is a typographical error – the date should be "Between 19 June and 7 July 2015…".

Page 258/Para 192

16. It is submitted that most of the cultural issues which required to be addressed were between Professor Jones and Professor Williams, and did not relate to CP or TI.

RSV Virus Facemask Incident

Page 262/Para 206

17. Of relevance to the face-mask incident is the evidence of Linda Dempster who told the Inquiry that she would have followed the advice of the microbiologist initially and, if she had any queries or concerns about it, would work with them later to find a resolution (**13 November C167-168**).

Year: 2016

An Increase in Aspergillus Cases in Ward 2A

Page 268/Para 222

18. The leak in Ward 2A was an air leak, not a water leak.

The Infectious Diseases Ward

Page 270/Para 234

19. On 6 May 2016, TI received an email from Infectious Diseases consultants in relation to, *inter alia*, the fact that they had been reassured that they would have access to two negative pressure rooms but that this had not materialised (see Statement of TI, para 337). The email was not in relation to PPVL rooms on Ward 5C as that ward does not have those types of rooms.

Year 2017

20. PR attended a meeting in February 2017 with Robert Calderwood. At that meeting she advised him that she had concerns about ventilation. He told her that she couldn't expect to reach a "*gold standard*" with everything, and that CP, who he described as "*that Peters woman*" was "*creating problems*". Mr Calderwood was therefore aware of concerns held by PR and CP as at February 2017 if not before (see statement of PR, para 94, page 31).

21. By April of 2017, Jane Grant had taken over from Robert Calderwood. On or around 21 April 2017 she was involved in a telephone discussion and a series of text messages with PR. Again, Jane Grant was made aware of the concerns that were held at that time. She sent a message to PR indicating that she would "*ensure appropriate learning was taken on board*". That clearly did not happen (see statement of PR, page 32, para 99).

Page 279/Para 268

22. Contrary to Professor Jones' position, CP did not want the position of lead ICD when TI became ill. The following points in this regard are of relevance:
    1. CP did not apply for the post when Professor Williams left and she encouraged TI to do so.
    2. CP did not apply for the post when TI resigned.
    3. CP emailed Dr Armstrong in January 2018 as part of an effort to get TI to return to her post after TI resigned.
    4. CP asked to leave the IPCT in 2015 but was not permitted to do so until 2016.
    5. CP has never asked to rejoin the IPCT.
    6. CP refused to take on the role in 2017 due to the composition of the IPCT at the time and the approach taken to IPC which did not conform to CP's understanding of best practice.

Page 280/Para 269

23. Rather than being an example of “operational interference” and as evidenced in her SBAR at the time, CP arranged for samples to be taken from the chilled beams following a request by TI, the then lead ICD, to deal with the situation.

Issues about the safety of the environment raised prior to October 2017 SBARs

Page 300/Para 335

24. The statement that “[*t*]*here was…no advice from IPC or microbiology at that time which indicated a possible link to the environment*” is not correct. Rather, there were concerns, as evidenced by a microbiologist requesting water testing, the October 2017 SBAR, and CP’s emails about environmental organisms.

Year: 2018

The idea of an Executive Control Group

Page 360/Para 519

25. As detailed in this paragraph, it is understood that TI's proposal for an 'Executive Control Group' is of interest. It may be of further interest that it was agreed that this group be established. In fact, terms of reference were drawn up and meetings took place chaired by Kevin Hill. Relevant documents about this group were submitted to the Inquiry. It is submitted that an important question to be asked in the Glasgow IV hearings is why this Executive Control Group failed and why meetings were discontinued given the importance of the situation.

The 'emergence' of the DMA Canyon L8 Risk Assessments

Page 373/Para 562

26. It should be noted that the statement that "*[o]n 2 July 2018, TI received electronic copies and an SBAR written by Mr Walsh*" is not correct. TI never received electronic copies and was told there were no electronic copies.

Ventilation in Ward 4C

Page 411/Para 697

27. The abnormal ventilation strategy identified in the Innovated Design Solutions Report was not the same as that discussed in the 26 May 2016 email. The email from Ian Powrie in 2016 was about 3 ACH and chilled beams. The abnormalities identified in the Innovated Design Solutions Report included the use of thermal wheels (which TI had never heard of) and the risk of mixing clean and dirty air, along with the existence of abnormal ductwork configurations. These matters concern different aspects of the

ventilation system. There was, therefore, information in the report which was new to TI and not dealt with in the 2016 email.

Year: 2019

High particle counts on Ward 6A

Page 429/Para 755

28. In relation to Ward 6A, the CS notes that Professor Steele "*thought that it was an over-reaction to move patients again, and that the potential harm would be greater to move the patients. He considered the work to be minor repairs, not major works.*"

29. These statements are based on the following evidence of Professor Steele (at **4 October C55**):

Because that weekend, as that meeting alludes to, there was quite a significant plan of works to happen in the ward that weekend. All minor in nature, but a number to happen, and they were all associated with flooring repairs.

I had a phone call at mid-morning from Dr Inkster. She was on the ward with Professor Gibson and she had some concerns that there was a "gluey smell," in her words.

On the Monday after this meeting, Dr Inkster considered that the risks were too great, and I think her logic around that was based on some air sampling that had been done the previous week, and there were high counts of, I'll say, fungal spores or other airborne contaminants. My concern about that was that the plates that had been used were put down in an occupied ward, and it was not a critical air system, so we were naturally going to get contaminants coming through the system, albeit it's an F7 system. But moreover, the ward was densely occupied by staff and patients and their families. I thought it was an overreaction to move patients again, considering they'd only fairly recently moved from 2A, and I thought that the potential harm would be greater in terms of patients' and families' confidence in Ward 6A and instruction to go to CDU."

30. It is submitted that the above is an example of Professor Steele giving a view on matters when not qualified to do so. Professor Steele has no IPC expertise or qualification and was, in effect, trying to overrule an ICD. While it was not a critical air system, portable HEPA filters were being used on the Ward. Therefore, the results could be interpreted by a microbiologist with expertise in air sampling. Further, Professor Steele does not appear to appreciate the harm associated with mould in the patient environment. The problem was more serious than a "gluey smell". There was mould in the showers which represented a high risk to the patient group. Of relevance is that Dr Mumford agreed with the decision to move the patients to do the work on the ward.

31. Page 430/Para 755

32. Of concern is that Professor Steele is still in position and works of the exact same nature have been proposed for Ward 4B. The question arises as to how the level of risk for these proposed future works can be appropriately managed.

Dr Mathers SBAR - 1 March 2019

33. Page 436/Para 775

34. Dr Mather's SBAR is evidence of the fact that interventions could have been taken at an earlier stage which, in turn, could have reduced the number of infections in vulnerable patients. Therefore, it is submitted that it is important to fully explore the detail of the events which followed the SBAR, particularly in relation to governance.

Water System Management

Page 438/Para 778

35. The source of CP's information regarding the March date is Phil Raines.

IMT of 8 August 2019 and Chilled Beams

Page 452/Para 826

36. Of additional relevance in relation to the evidence of Annette Rankin that "*in 2019 she considered chilled beams to be the most likely hypothesis for the water infections given that there were reports of them leaking onto a patient's bed and there had been positive microbiology*", is the following exchange at **3 September C123-124**:

Q *Right. You have unusual microbacteria like Pantoea and you are capable of growing it in a particular part of the hospital system which, in this case, is directly above patients' beds. At one level, does it matter whether you have cases that week or month of that microorganism in your patient at that precise moment? Is that even relevant? Surely there's a risk still?*
A *Absolutely. So, I think what you're asking me is, "Does it matter that they're not there present, but what if they'd been present a month before or the" -- Is that what you're a*sking?
Q *Yes.*
A *Absolutely**.***
Q *Because how reliable is this sort of swabbing exercise? And what I mean by that is, if you swab this chilled beam, are you sure you've caught every single microorganism growing on the chill beam?*
A *No.*
Q *And why is that?*
A *Because you might not have got the part where the issue is. You might have-- So, I think the fact that you have something that has the ability to grow it, whilst it might not match at that particular time, it might have matched at a previous time or you might have gone on, in another chilled beam in another room, to grow something different.*

Page 452/Para 827

37. While the chilled beam system ought to have been a “closed system”, in reality it was not. There were regular leaks up until 2024 which in effect rendered it an open system where the water and, therefore, any pathogens within, could gain access to patients and their environment.

IMT of 11 October 2019

Page 496-497/Para 959

38. It is extremely disappointing to learn that the 37-page document entitled “Report on the findings of a review of 99 patient cases from the QEUH and RHC. [Draft 8]” (A51028524) is not to be shared with Core Participants or Dr Mumford.

Chapter 6: How and why did key events happen?

6.5: How did the IPC team, Estates staff and GGC as an organisation respond to what appear to be unusual numbers of infections in the Schiehallion Unit in 2018?

Page 537/Para 50

39. Building on the evidence of Professor Steele and Mr Leiper, responsibility and accountability for the failures related to the 2015 and 2017 DMA Canyon Risk Assessments must be properly attributed to the GGC Board; specifically, the Chief Executive as the "Duty Holder (**4 October C7-8; 23 October C97-98**).

40. While undoubtedly further relevant evidence about the governance structures (or lack thereof) for water safety at the QEUH will be elicited during the Glasgow IV hearings, it is clear from the evidence already heard that whatever systems were in place failed. Subject to the point noted above raised during Mr Gallacher's evidence about the awareness of the Chief Executive in 2017, it would appear that it took 3 years for the Board to become aware of the 2015 DMA Canyon Report. But crucially, no one at Board level was asking about it or, it would appear, knew what such a report was. According to Professor Steele, "Mrs Grant would have no understanding, certainly at the time, of what a pre-occupation risk assessment was" (see **4 October C7**).

41. Given the high risk posed by water, this statement about the Chief Executive's state of knowledge about her legal duties is extremely alarming. However, realistically it should not be a surprise in view of the fact that slightly further down the management chain, Alan Gallacher, who was the General Manager (Estates) at the relevant time and who had responsibility to ensure that GGC met its national and statutory obligations, failed to action many of the fundamental requirements related to water safety (see, e.g., CS, page 13, paras 13-14).

42. In terms of this lack of senior management and Board level action, the following observations of Dr Surman-Lee about the 2015 DMA Canyon report are relevant (at Statement of Dr Surman-Lee, page 58):

"I was really shocked that there was so much wrong, they'd finished construction in 2015 and started occupation fairly soon afterwards, this risk assessment was done as a preoccupation assessment, there were so many things wrong, and they didn't address those before admitting patients. So, I would have expected the findings to be put on the risk registers and discussed at board level or senior management to discuss the implications of the risk assessment. I haven't seen anything to say this happened, that there were many things not addressed inby (sic) the time the 2017 assessment was completed us (sic) a cause for concern. I haven't seen any evidence that senior management action actually happened."

43. While the day-to-day responsibility of a Duty Holder can be delegated, the overall accountability cannot (see **23 October C98**). The following exchange during the evidence of Mr Leiper crisply identifies what might be considered by members of the public to be an obvious point (**23 October C101**):

MR CONNAL: *…So to find that there really wasn't a system in place which would have allowed somebody either to progress something that had been done or, on the other hand, to supervise and say, "Where the heck has our L8 got to?" seems a little odd.*
A *Yes, it is.*

44. It should be noted that from a very early stage CP regularly sought information which was not provided to her. She asked Ian Powrie for a table of the legionella testing results which he had mentioned to her at a meeting by sending him an email of 25 June 2015 (Bundle 14, Vol 1, Page 206). She asked Tom Walsh for the same results, highlighting that she hadn't received them, in a further email of 29 June 2015 (Bundle 14, Vol 1, Page 209). An earlier email in the same thread which is also in the bundle specifically states that full information about legionella and water was required to enable clinical risk assessment. She emailed Billy Hunter on 30 June 2015 (Bundle 14,

Vol 1, Page 212) who again told her that water testing results would be forthcoming. No explanation for the failure to provide the information was ever provided.

45. Ian Powrie's "*open and honest acceptance ("I dropped the ball"*) of failings on his part", must be viewed in the above described wider context (CS, page 32, para 22 (footnotes omitted). Responsibility for the failings related to the 2015 and 2017 DMA Canyon reports sit properly, not just with Mr Powrie or those who worked under him to try to fix the many problems which they faced following the handover of the "flagship hospital", but with the Board and the managers who were supposed to ensure that a proper functioning, failsafe system was in place which would identify when the required safety checks and measures were not being undertaken and/or being scrutinised due to the fact that those charged with performing or instructing them had not done so, for whatever reason, including overwork.

Chapter 7: The Key Questions and the opinions of experts

7.2: Potentially Deficient Features of the Ventilation System

Other Potentially Deficient Features

Page 585/Para 216

46. It is submitted that the issue is not whether the CF ward required specialist ventilation but that the CF ward does not meet the standard ventilation specification. Therefore, of all the clinical groups, these patient cohorts experience the highest risk posed by the derogation.

Ward 4C – the QEUH

Page 594/Para 244

47. In relation to the air change rates for Ward 4C, CTI submit that TI and others should have been pressing for 10ACH on this ward due to the regular presence of patients with recent neutropenia. However, this submission is to be contrasted with the evidence of Dr Mumford which is referred to in Chapter 7, at paragraph 510 on page 685. According to Dr Mumford it would be a very high bar for Ward 4C to be a 'neutropenic ward' as neutropenic patients do go home.

48. It is acknowledged that 10ACH is the requirement in the SHTM for a neutropenic ward. However, the following points should be noted:

    - TI's SBAR states that the ACH should be a minimum of 6, given that this was a retrofit. This figure was based on the fact that Ward 4B started with 6ACH and could not achieve 10. Therefore, it was considered very unlikely that Ward 4C could go from ~3 to 10. Had the SBAR been accepted, there would have been further discussion with a design team about what could be achieved.

- There are two risk assessments from 2020 and 2021 noting 3ACH which were signed off by Brian Jones, Alistair Leanord and Tom Steele (see Bundle 20, page 1420). This ignores TI's SBAR.

Conclusion on Cryptococcus

Page 605/Para 279

49. The CS notes the following:

"Mr Bennett returned to his thesis that a different type of investigation, possibly involving epidemiology, might have produced a different result. It was suggested to him, that a possible investigation would have looked at lack of isolation in a HEPA filtered environment, a prophylaxis ineffective against Cryptococcus and the epidemiology link of time, place and pigeon infestation. He thought there might be other infection control issues to add."

50. It is submitted that it is important to realise that the above is exactly what the IMT did and found and that this was the basis for forming the subgroup.

Proposed answers to the key questions

Page 607/Paras 289-293

51. When determining the answer to Key Question 3, which concerns the current safety of the ventilation systems, it should be noted that there is a serious inaccuracy in Professor Steele's oral evidence to the Inquiry. In his evidence he said "*What we have in the general air systems is really high-quality air. We have theatre-quality air in the whole hospital, which is unusual*" (**4 October C37**). This is a grossly misleading statement. The QEUH does not have theatre quality air. Theatre ventilation specification is a high air change rate (>22 ACH) and positive pressure (25pa). When air sampling theatres, the fungal limits are set at zero. From the air sampling undertaken at QEUH, these limits are not achieved. This should be queried with Professor Steele.

7.3: What can the epidemiology tell us?

The geographical scope of Mr Mookerjee's work

Page 618/Para 327

52. It is a matter of regret that neither CP nor TI were able to meet with the Inquiry's experts in advance of their reports being prepared. Had they had the opportunity to be more involved, then they could have assisted with the Inquiry's work including assisting Mr Mookerjee to identify the patients of relevance to his work. It is submitted that a learning point for future inquires is to ensure that whistleblowers are not excluded as a matter of course.

7.4: Key Question 4 – Is there an infection link?

Expert Panel visit to the QEUH in March 2023

Page 666/Para 465

53. CTI's submission that the decision of the Inquiry to arrange a site visit in March 2023 and to permit NHS GGC to present to Dr Mumford, Ms Dempster and Dr Walker does not impact on the independence of their reports and evidence misses the point. No Core Participant should be provided with access to the experts instructed by the Inquiry which is not equally afforded to the other Core Participants. This is a matter of basic fairness. The position is made worse by the fact that Dr Mumford and Ms Dempster asked to speak to the whistleblowers and were not provided with access to them.

Role of epidemiologists in IPC

Page 695/Para 538

54. In considering Dr Mumford's evidence, it is important to note that Kathleen Harvey-Wood's data did not just "sit[] there". Ms Harvey-Wood gave monthly updates to the clinical teams, the CLABSI group and to the IPCT over an extended period. The reason for doing the presentation was not to give the information for the first time, but to encourage appropriate engagement with the implications of the data. The IPCT had access to all the data via ICT, and the lack of uptake on the trend issue occurred when Professor Jones was lead ICD.

Mycobacterium Chelonae

Page 703/Para 568

55. Dr Mumford was not the first person to spot the 2016 case. CP provided the patient's name to ARHAI when discussing what data to use for the CNR. Further, TI had also identified the case.

Role and Actions of the IMT Chair/Lead ICD

Page 710/Para590

56. In relation to the allegation that neither CP nor TI put patients' interests first but were more interested in being right, it is submitted that the fair and logical first step should have been to ask whether the allegation was factually accurate before proceeding to an initial informal conversation.

The Evidence of Alistair Leanord

57. Alistair Leanord's ("AL") evidence was a matter of very significant concern to TI, CP and PR. The fact that AL was called after TI, CP and PR had completed their own evidence meant that he was able to give evidence which was, in their view, inaccurate in a number of key respects and without challenge. This included drawing what TI and CP believe to be inaccurate conclusions based on work that TI and CP had done, but had not been asked about in their own evidence. It is critical that the unfairness occasioned by this is properly remedied by the Inquiry to ensure its procedural integrity.

58. A paper was produced by TI, CP and PR to address the issues arising from his evidence. Given the unfairness arising from the order in which evidence was taken, and the matters that this witness was taken to which had not been canvassed with TI and CP, it is respectfully submitted that the paper should be received by the Inquiry.

59. The witness started off his evidence by indicating that he did think that the built environment had "*played a part*" (**9 October C19**) but, thereafter, consistently attempted to dispel suggestions that the environment had caused infections.

Opportunistic plumbing pathogens

60. TI and CP were surprised that AL indicated that he had not heard of the term "Opportunistic Plumbing Pathogen" before his involvement with the Inquiry. It was also surprising that his position was that he "*had always understood*" Enterobacter and klebsiella to be enteric (**9 October C21 – 24**). Their status as environment organisms is well known and recognised in the literature. See, for example, the CDC guidance at this link: https://www.cdc.gov/healthcare-associated-infections/php/toolkit/water-management.html

His attitude to raising concerns

61. He admitted that, when CP indicated her concerns about IPC and the built environment, his response was to tell her something along the lines of "*you do realise that this will not be an easy path to tread"* (**9 October C25 – C26)**. His position was that he made this comment as part of, what he described as, a "*pastoral*" conversation. This evidence is a damning indictment of the culture within GGC in which a microbiologist raising concerns to a more senior consultant colleague who should find encouragement, support and acknowledgement of their concern, will instead be told that they ought to keep their concerns to themselves unless they want to make matters difficult for themselves. In this respect, at least AL's position was absolutely right; when CP did continue to raise her concerns she certainly did find that things became very difficult.

The Harvey-Wood data

62. He referred to the "Harvey-Wood data" (**9 October C31-32**). The reality is that the graphs were largely prepared by CP and she should have been able to speak to them herself. He had no involvement in the work and many of his comments on it are inaccurate, perhaps as a result of that lack of involvement and therefore understanding.

Comparison with Yorkhill

63. His position that comparing the new, flagship QEUH with the old Yorkhill was "*right*" (**9 October C33-34)** is inconsistent with the evidence of virtually every other witness (the reality being that in fact one would expect significantly lower rates of infection in a brand new, state of the art hospital). In the very next answer, he had to concede that he didn't even know what, if any, water testing was done at Yorkhill. It is submitted that the Inquiry should conclude that one would expect a lower number of infections in a state of the art facility. His evidence was that he had "*no knowledge of Yorkhill at*

all" (**9 October C44)**. How can he insist on its appropriateness as a comparator in those circumstances?

Enterobacter

64. The witness acknowledged that testing based on TVCs will not tell you whether a particular pathogen is in the water (**9 October C37 – C38**). However, he then indicated that there was not and had not been Enterobacter in the water [emphasis added]: *"we do not see Enterobacter in the potable water. I think there's six isolations in over 10,000 samplings over a five-year period* ***so it's not in there"*** (9 October C99-100). This ignores the fact that for a prolonged period only TVC data was obtained, which would not in any event have identified Enterobacter if it had been present.

Dr Inkster's Cupriavidus paper

65. On Cupriavidus in hospital water supplies generally, he misquoted the conclusions of a paper which TI had been one of the authors of. His position was that she and her co-authors had concluded that "*63% of other hospitals had – or samples from ten other hospitals had these types of organisms within them*" (**9 October C45 to C46**).

66. In fact, the paper records that 40% of the hospitals the team (which included TI) had looked at tested positive for cupriavidus. It is not clear where the figure of 63% comes from. However, the position is actually even more clear cut when the actual paper is considered. The team who authored the paper found that in 157 outlets from which samples were taken, only 5 were found to be positive for cupriavidus. This is a stark contrast to the outlets on ward 2A. When they were tested, 75 of 98 outlets were found to be positive for cupriavidus. Despite this, the witness attempted to use TI's work to (erroneously) support the opposite conclusion to that which was actually reached by the authors of the paper in question.

See Cupriavidus spp. and other waterborne organisms in healthcare water systems across the UK - Journal of Hospital Infection

T Inkster, G Wilson, J Black, J Mallon, M Connor and M Weinbren, Vol 123m P80-86, May 2022.

67. This paper has been relied on previously by GGC to demonstrate that cupriavidus is common. However, the conclusion of this paper is that cupriavidus should, along with other rare and unusual waterborne pathogens such as Delftia acidorovans, Sphingomonas spp., Brevunidomonas spp., Comamonas spp. and Elizabethkingia spp., be added to the national alert organism list.

Occam's Razor

68. The witness relied on *Occam's Razor*, a philosophical concept, to support his argument that the simplest explanation is usually the best, and the simplest explanation is that patients were not infected in the hospital environment (**9 October C47- 48**). TI, CP and PR disagree that his explanation is, in fact, the simplest. His hypothesis relies on:

    (i) Water in the homes of multiple patients being contaminated with the same species of pathogen (an assumption given that no samples were obtained in the homes of patients so far as we are aware); **and**
    (ii) Multiple patients being exposed to a particular pathogen (e.g. Stenotrophomonas) in a similar time frame in their own individual home environments, presumably by ingesting contaminated water; **and**
    (iii) This water contamination occurring across multiple areas of the Scottish mainland and Islands given that the unit in question provides a nationwide service; **and**
    (iv) These same patients all becoming colonised with Stenotrophomonas in their gut because in each of them the waterborne organism managed to survive the acidic environment of the stomach, which has evolved to kill such pathogens; **and**
    (v) The same patients all being colonised at such low levels that routine faecal sampling on admission was negative for Stenotrophomonas; **and**

(vi) These same patients all developing typhlitis or other inflammatory conditions causing their gut to leak, leading to a bloodstream infection, despite there being no clinical evidence of such a condition having occurred in many of the patients; **and**

(vii) Bacteraemia with Stenotrophomonas occurring in these patients rather than with other, more pathogenic organisms in their gut which would on the basis of (vi) above also have leaked from their gut along with the Stenotrophomonas, all whilst on meropenem (there being no particular evidence that the patients in question actually were on meropenem at the relevant time); **and**

(viii) Bacteraemia from the gut attaching to the Hickman line causing line infection arising from Stenotrophomonas bacteraemia in these patients.

69. The Inquiry may wish to note that line infection is a term used to describe a situation in which an organism circulating in the patient's bloodstream attaches to an indwelling plastic line (in the same way that biofilm might attach to parts of a water system) and therefore provides a continuing source of infection even after IV antibiotics have been administered to the patient to treat the infection in the bloodstream.

70. If Alistair Leanord was right in stating that the simplest explanation is the best and more likely to be correct, the simplest explanation is that the water was contaminated and that the contamination increased the risk of patients developing waterborne infections and caused some patients to develop such an infection. Dr Inkster's hypothesis (which ultimately caused her to be removed as Chair of the IMT was as follows:

i. The hospital environment including patient rooms had a high bioburden due to issues with the drains, issues with chilled beams, unfiltered water, and a contaminated water system; and

ii. Multiple immunocompromised patients were in the hospital and sharing an environment with the same bacteria species present; and

iii. There were multiple routes for these organisms to infect patients including:

a. A direct route via their hands (touching dirty water, then their Hickman line, eyes, nose, or mouth)
b. A splash onto their line, eyes, nose or mouth from the drains (note that in paediatric patients the lines are close to the sink due to the height of the children)
c. Aerosolisation from drains into the air
d. Droplets from splash zones (e.g. around the sink) – a known risk in infection control

71. This is, it is respectfully suggested, clearly a far simpler explanation than that provided by Alistair Leanord.

Handwashing

72. He described handwashing as "altruistic" (**9 October C52**) on the basis that you cannot infect yourself with a bug you already carry unless there is a breach in your anatomical barriers. In fact, the practical reality is that a significant proportion of haemato-oncology patients will have numerous breaches in their anatomical barrier, in the form of gut inflammation, or Hickman lines, or other wounds, plus there is always a risk of introducing organisms from the hands into the mouth or eyes.

73. The basic premise of pathogenesis is micro-organisms gaining access to parts of the anatomy in which they do not normally reside. A micro-organism that is harmless in the gut can cause significant problems if it enters a patient's urine, upper gastrointestinal tract, or upper respiratory tract. Reducing the prevalence of potentially harmful organisms in the environment is an essential component of infection control and hand hygiene is a fundamental requirement due to the incredibly high concentration of bacteria in the faeces.

74. In any event, any suggestion that one cannot infect oneself with one's own micro-organisms is of course entirely contrary to the theory of gut translocation on which he sought to rely fairly extensively in other parts of his evidence.

Communication with Microbiology Colleagues

75. The witness' position on what one needs to know in order to act as a microbiologist, who may not have formal ICD sessions, is not accepted (**9 October C67 – C70**). It either ignores or fails to add appropriate weight to the fact that microbiologists with no formal ICD sessions still have to provide out of hours cover and therefore need to know what is happening. For example, the microbiologists covering out of hours had to deal with a leak in the kitchen of ward 6A which occurred whilst they were responsible for the service. Microbiologists also regularly cover ICD sessions when their ICD colleagues are on sick leave or on holiday.

Whole Genomic Sequencing

76. The whole genomic sequencing which is relied upon to attempt to disprove a link between the infections and the environment is entirely unfit for that purpose. In this case, work has been undertaken by Alistair Leanord and his colleage Mr Brown without adequate consideration of the incident epidemiology or other key factors such as the findings of the DMA Canyon risk assessment and the Intertek reports. An understanding of the nature and extent of the biofilm in the water is important in interpreting the microbiology results. Had the involvement of a range of microbiology views been sought, a more balanced and accurate piece of work might have resulted.

77. It is unclear which environmental isolates were actually sequenced and how the location from which the isolates had been obtained relates in time and place to which patient. It appears that only six drain isolates were included which is not representative of the drainage system as a whole. This means that whilst the whole genomic sequencing work undertaken by the witness and Mr Brown might allow one to rule out person to person spread or the presence of multiple infections from a single point

source (e.g. a single outlet), it cannot assist the Inquiry in drawing any conclusions beyond that basic analysis. The witness has not shared the exact lab sample numbers for the individual isolates or the total number of isolates of Enterobacter in the laboratory system. His work was never shared with the microbiology colleagues who were actually giving advice relating to wards 2A and 6A. This is not consistent with an open, transparent and collaborative approach.

78. His position also doesn't reflect the fact that, particularly where there is biofilm, a polymicrobial or polyclonal outbreak is more likely than an outbreak involving a single clone. This is an established principal which is extensively evidenced in the literature. Examples can be provided to the Inquiry if that would assist.

79. A single clone might dominate if it has specific resistance properties which gave it a survival advantage, it was being spread from room to room by cleaning practices (e.g. not changing cloths), or there was a single contaminating event which had then spread throughout the water system.

80. However, multiple clones would be more likely to be responsible for infections where:

    i. Multiple drains had biofilm with contamination caused by regurgitation/splash from the areas of these drains
    ii. The water system had multiple routes of contamination over time (as is now known to have been the case at QEUH)
    iii. Flora from different patients colonised different drains
    iv. Different water systems were involved (e.g. chilled beams and domestic water services)

81. The whole genomic sequencing work instigated by Alistair Leanord simply serves to support the IMT hypothesis which TI was investigating.

"False Positive" Cryptococcus results

82. The witness gave evidence about what he believed to be a "*false positive*" (**9 October C91**) result of a cryptococcus test. His view that the case was a false positive was disputed by many microbiology colleagues and by the consultant treating the patient in question. The patient had had numerous positive CRAG (cryptococcal antigen) tests over a prolonged period. The patient began to test negative after having been treated for cryptococcus. His symptoms also resolved after treatment for cryptococcus. The available evidence suggests that he did, in fact, have cryptococcus. This is also the view of his treating clinician, Dr Sastry (see statement of Dr Sastry, page 11, answer 16. Note there are multiple statements for Dr Sastry – we are referring to Document A48004322).

Colony Picks

83. The witness gave evidence (**9 October C97 – 98)** in which he mentioned the statistical improbability of requiring more than one colony pick under reference to "billions". AL was trying, it would appear, to argue that any suggestion that more than one colony pick is required is disproved by the fact that he found 7 closely related stenotrophomas species from a one colony pick strategy per water sample. TI and CP would make the opposite point; the reason that you need to take more picks (they suggest 30) is so that you can have a meaningful understanding of the variability within the sample. It is unsurprising that he found 7 closely related Stenotrophomonas species in the water tanks in the basement. All that tells you is that there is a lot of that particular Stenotrophomonas in those particular water tanks. It does not tell you what might be in biofilm elsewhere in the system, or in outlets in patient rooms. It also doesn't tell you anything about the diversity of organisms in the water tank in which the Stenotrophomonas was found.

Closing Comments

84. Dr Inkster, Dr Peters and Dr Redding have one overwhelming concern at the conclusion of the Glasgow III hearing. **How can we prevent this from happening again?** They are enormously grateful for the care taken by the Hospital Inquiry to explore the events in which they became reluctant participants and to give them a chance to have their voice heard and their positions vindicated. However, they consider that thus far, there has been insufficient focus on, and evidence about, the current safety of the QEUH. They do not believe that the water or the ventilation systems can be described as safe. They do not believe that there has been any cultural change.

85. The practical reality is that most of the senior staff members involved in the events in question remain in their posts. In her day-to-day working life at the QEUH, CP continues to experience exactly the same attitudes that prevailed at the time of the events which the Inquiry explored in Glasgow III. She has continued to witness events and working practices which lead her to believe that the QEUH is currently unsafe. She is deliberately cut out of lines of communication. This must be explored in Glasgow IV.

86. TI continues to be gravely concerned about the culture at GGC based on her own experience of working at ARHAI in a national role as Infection Control Doctor. She has seen evidence that GGC continue to be reluctant to make full and frank disclosures to ARHAI. It is essential that TI and CP have the opportunity to provide the Inquiry with up to date evidence on these matters.

87. The evidence which the Inquiry did hear about recent Cryptococcus cases and the decision not to report those to ARHAI is a further compelling illustration that nothing has changed. The only reason that the Inquiry knows about the new cases is because CP happened to hear about them in the course of her duties and alerted the Inquiry. GGC had not reported the cases to ARHAI. They did not volunteer information about them to the Inquiry even though they were aware that Cryptococcus was of specific

interest to its work. None of the senior managers or IPC staff who gave evidence were prepared to admit to knowing anything about these cases, despite their apparent clustering in renal patients.

88. Who does know about these cases? Why were they not reported to ARHAI? What do these cases mean for the safety of the ventilation system? There are no answers to any of these questions at present.

89. CP's experience of attempting to use the INWO (the National Whistleblowing service set up to protect people in her position) has been extraordinarily unsatisfactory. She continues to have real concerns about infections at the QEUH.

90. At every opportunity GGC have simply doubled down on their approach against the whistleblowers. How can the culture in GGC be improved now that some of the issues have been cogently identified by the Inquiry Team? If the Hospital Inquiry is to achieve its stated aims, then it is critically important that these questions are properly dealt with in Glasgow IV so that appropriate recommendations can be made to ensure that actual improvements are elicited.

91. The net result of TI, CP and PR's evidence to the Inquiry is that whistleblowers in the NHS, and particularly in GGC, will feel far less able to come forward with concerns rather than reassured that they will be treated with openness and respect. They will see the unconscionable way in which doctors were treated for coming forward with concerns which were ultimately proven to be correct, and will be deeply fearful of the proven effects of engaging a similar exercise themselves.

92. The Inquiry must clearly establish the position relating to the current safety of the QEUH and it must investigate ways of actually achieving change with a view to making recommendations that have a practical effect in ensuring that matters are left in a better state, rather than an even worse one, at the conclusion of this Inquiry.

Helen Watts KC

Leigh Lawrie, Advocate

The Medical and Dental Defence Union of Scotland

31 January 2025

THE SCOTTISH HOSPITALS INQUIRY

CURRIE & BROWN UK LIMITED

CLOSING STATEMENT - GLASGOW III HEARING

INTRODUCTION

1. This Closing Statement is served on behalf of Currie & Brown UK Limited ("**Currie & Brown**") following the Glasgow III Inquiry hearing on 19 August to 13 November 2024.

2. This Closing Statement responds to the Closing Statement issued by Counsel to the Inquiry ("**CTI**") on 20 December 2024, where relevant to Currie & Brown's involvement and insofar as possible at this stage of the Inquiry's investigations.

3. Currie & Brown has explained its role on the project for the procurement, design, and construction of the new Glasgow hospitals[1] for GGC ("**the Project**") in detail in its response to the Inquiry's PPP 13 dated 29 November 2024 [**22_3/7**], which is not repeated here.

4. In this Closing Statement:

   4.1 The definitions and abbreviations used in CTI's Closing Statement are adopted herein for ease of reference, unless otherwise stated.

   4.2 References to paragraph numbers and Chapter numbers are to the numbered paragraphs and Chapters of CTI's Closing Statement unless otherwise stated.

   4.3 References to documents in the numbered bundles of evidence before the Inquiry are in the form [**Bundle No._Volume No. / Page no**.].

   4.4 In each case, any emphasis in a quotation has been added, unless otherwise stated.

[1] Namely, the Queen Elizabeth University Hospital and the Royal Hospital for Children in Glasgow, referred to here collectively as ("**the QEUH**") for ease of reference.

NARRATIVE OF EVENTS IN CHAPTER 5

Context

5. Core Participants have been invited to comment on the narrative of events in Chapter 5. With only a small number of exceptions, the main focus of Chapter 5 is on events during the period 2015 to 2019,[2] following handover of the QEUH to GGC on 29 January 2015. This period largely post-dates Currie & Brown's substantive involvement in the Project,[3] therefore it is able to make only limited comments on Chapter 5 from first-hand knowledge.

6. It is noted that, in the main, the Inquiry has adduced and heard evidence on matters post-dating handover during the Glasgow II and III hearings before hearing evidence relating to the procurement, design, construction, and commissioning of the Project pre-handover (now scheduled for the Glasgow IV hearing). One consequence perhaps of the non-chronological order in which the evidence has been heard is that some misapprehensions about certain relevant events in the period from 2008 to 2014 have emerged. Some examples of this are referred to below.

Events in 2014

7. By way of general observation, the narrative of events in 2014 in **paragraphs 5 to 40 of Chapter 5** is, in some cases, not cross-referenced to contemporaneous documents and appears to be, in large part, based on subjective perceptions or assumptions about what had been designed and built recounted by witnesses who were not involved contemporaneously or directly in the design and construction of the Project (many of whom complain about the absence of documents and information about the new buildings).

8. One of the risks of over-reliance on the testimony of witnesses whose involvement post-dated handover, and a possible consequence of the non-chronological order in which evidence has been called, is that the true facts about the design and construction of the QEUH may not emerge, and conclusions may be drawn on the basis of mistaken belief. Currie & Brown therefore submits that any firm conclusions on the narrative of events in 2014 set out in Chapter 5 should await the written and oral evidence of the witnesses who were involved in the Project at that time, which it is understood will be adduced in Glasgow IV.

---

[2] As per §63 of CTI's Closing Statement.

[3] Currie & Brown's role as consultant to GGC on the Project was largely completed by the time the Sectional Completion Certificate for Stage 3 of the Project was issued on 29 January 2015, save for the provision of some limited support for (a) Stage 3A demolition works, (b) the management of the installation of certain medical equipment, and (c) rectification of minor snagging by Multiplex. In addition, Currie & Brown responded to some discrete requests for information or assistance post-handover. Separately, Currie & Brown also had some continuing involvement until around February 2018 in other work for GGC on the wider QEUH campus, but this was unrelated to the Project which forms the subject matter of this Inquiry.

9. **Chapter 5, paragraph 16** refers to the meeting held on 5 June 2014 between GGC, Health Facilities Scotland, and others to discuss the Horne Optitherm taps. Referring, it seems, to GGC's account of this meeting in its response to the Inquiry's PPP 5, paragraph 16 states that "*[t]he response from Currie & Brown indicates that it agrees with this understanding of what was said at the meeting*". No document cross-reference is given, so it is not entirely clear what "*response*" is being referred to here, but it may be Currie & Brown's own response to PPP 5 which commented on various documents relating to the Horne taps, including the minutes of the meeting on 5 June 2014.[4] As has been explained previously,[5] contrary to the impression given by paragraph 16, Currie & Brown did not attend the meeting on 5 June 2015. This is clear from the minutes of that meeting [**15/692-695**], and, in particular, from the list of attendees [**15/692**]. Nor was Currie & Brown invited to attend that meeting (as is clear from the list of apologies in the minutes [**15/692**]). There was no reason why Currie & Brown should have been invited, or attended, because Currie & Brown had no specialist expertise to contribute to that meeting.

Events in 2015

10. Another risk of over-reliance on the testimony of witnesses whose involvement post-dated handover is illustrated by the issues around the Infectious Disease Unit. Some of those witnesses had held the mistaken belief that an Infectious Disease Unit was part of the original Project brief.[6] It was not, as Currie & Brown explained both in (a) its response to PPP 5 dated 21 April 2023; and (b) its response to PPP 12 dated 16 April 2024 [**22_1/359**]. In the latter response, Currie & Brown referred the Inquiry to the relevant contemporaneous evidence which proves this, namely the Schedule of Accommodation for Level 5 (a copy of which was supplied) and the Employer's Requirements. Despite this, **paragraph 98 of Chapter 5** refers to this as a mere 'submission' on behalf of Currie & Brown[7] and gives no conclusion as to whether this 'submission' is correct. It is unfortunate that, at this late stage of the Inquiry process, the Inquiry does not yet appear to have established to its own satisfaction that the Infectious Disease Unit was not a part of the original Project brief and was a late change.

11. Similarly, when referring to the concerns raised post-handover about the absence of HEPA filtration in Ward 2A, **Chapter 5, paragraph 115** states that "*[i]n their response to PPP 5 Currie & Brown insist that HEPA filters were part of the design for Isolation Rooms in Ward 2A*". The

[4] Currie & Brown's response to PPP 5 was provided by letter from its representatives, Keoghs LLP, to the Inquiry dated 21 April 2023. In particular, its response to PPP 5 drew the Inquiry's attention to the notes of an Early Warning Meeting on 12 June 2014 as well as commenting on the minutes of the meeting on 5 June 2014 [**15/692**].
[5] By letter from Keoghs LLP to the Inquiry dated 19 August 2024.
[6] See, e.g., §34 of Dr Peters' witness statement and §193 of Dr Inkster's witness statement for Glasgow III.
[7] Paragraph 98 of Chapter 5 states: "*It should be noted that Currie & Brown submitted in their response to PPP 5 that an Infectious Disease Unit was not part of the QEUH project brief*". This follows the statement in paragraph 97 that "*Dr Inkster and Dr Peters had both attended a meeting with Brookfield in June 2015, who were apparently surprised to learn that there was an Infectious Diseases Unit at the QEUH*".

use of the word "*insist*" may connote a degree of scepticism about Currie & Brown's response; it is certainly not a neutral word. Far from 'insisting', Currie & Brown merely 'noted' this fact in its response to paragraph 2.2.1 of PPP 5, as follows:

> "*Currie & Brown note that HEPA Filtration was part of Ward 4B and in other areas as briefed by the Board. HEPA filters were part of the design for Isolation Rooms in Ward 2B.*"

12. The matters referred to in paragraphs 10 and 11 above are capable of objective verification by reference to the relevant designs and Employer's Requirements, and other contemporaneous documentation; thus they need not be couched as mere submission or assertion on the part of Currie & Brown (who was not, in any event, directly involved in the events in question).

13. **Chapter 5, paragraph 133** refers, in the context of Prof. Craig Williams' oral evidence, to "*correspondence with…Currie and Brown and other specialist engineers*". It is acknowledged that paragraph 133 is merely citing the witness's own subjective understanding but, for the avoidance of doubt, Currie & Brown are not engineers, let alone "*specialist engineers*", as implied. Currie & Brown is an asset management and construction consultancy, who discharged its role as consultant to GGC during the initial pre-construction phase of the Project (2008-2009) through various subconsultants (the Technical Team), which included AECOM as civil and structural engineers and Wallace Whittle as M&E engineers.[8] However, as explained in its response to PPP 13,[9] Currie & Brown's role changed following the award of the Building Contract to Multiplex (in December 2009) as a consequence of which the Technical Team was stood down. Currie & Brown's role during the design and construction phase of the Project (2010-2015) was limited to providing services to support GGC's own project management and cost management functions. Currie & Brown did not, therefore, provide any engineering services during the design and construction phase of the Project.

14. Looking ahead to Glasgow IV (as Core Participants were invited to do in Chapter 9), it is respectfully submitted that it will be important for the Inquiry to establish and understand the respective roles of those involved in the design and construction of the Project accurately, to ensure that the right lessons can be learned from the Inquiry process. As Currie & Brown identified in its response to PPP 13 [**22_3/7**], there appear to have been some misunderstandings about this which have persisted even at this late stage of the Inquiry process, due perhaps to the non-chronological order in which evidence has been called (as noted above).

15. **Chapter 5, paragraph 143** refers to the late change in use of Ward 4B (from a general ward to the Adult BMT Ward, formerly housed in the Beatson), the timing of which constrained the

[8] See paragraphs 5 and 11-12 of Currie & Brown's response to PPP 13 [**22_3/7**].
[9] See, in particular, paragraphs 16 to 24 of Currie & Brown's response to PPP 13 [**22_3/10**].

capacity of the ventilation in that space. However, the source cited by CTI for this is Currie & Brown's response to PPP 5 dated 21 April 2023, which referred only very briefly to the constraints of already installed plant and equipment in Ward 4B due to its original designation as a general ward. In fact, Currie & Brown did not realise until reviewing PPP 12 (which was issued by the Inquiry on 28 March 2024, almost a year after PPP 5) that the Inquiry was unaware of these constraints (again, perhaps as a consequence of the non-chronological order in which evidence has been called). To assist the Inquiry, Currie & Brown therefore provided further information about this in its response to PPP 12 on 16 April 2024 [**22_1/359**], enclosing a copy of Multiplex's 'Design Statement' for Ward 4B [**22_1/369**] in which Multiplex advised GGC of those constraints. This is therefore a matter of contemporaneous record. It is respectfully submitted that it may have been more accurate and comprehensive to have referred in paragraph 143 to Multiplex's 'Design Statement' (the direct, first-hand, contemporaneous source for the information and advice on the constraints), rather than referring to the second-hand information provided in Currie & Brown's response to PPP 5 (which was in any event superseded by the fuller account in its response to PPP 12).

CTI's SUBMISSIONS IN CHAPTER 6

16. Chapter 6 is described in **paragraph 40 of Chapter 1** as comprising "*Submissions on what took place and why in respect of key events between handover and the end of 2019*".

17. CTI submit in **Chapter 6, paragraph 1** that:

> "*…understanding the **impact of the building** that was built and handed over to NHS GGC in January 2015 on patient safety and care, **requires** that the Chair reach conclusions on the reasons why NHS GGC staff, HPS and HFS and others reacted (or did not react) to the discovery of what we have called potentially deficient features of the water and ventilation systems and to infections that had the potential to be linked to those deficiencies*."

18. In that vein, the seven "*fact specific questions*" listed in **paragraph 2 of Chapter 6**, and discussed in turn in Chapter 6, focus to a great extent on the "*reaction*" and "*response*" of individual GGC staff; the "*understanding*" of individuals in GGC about the features of the water and ventilation systems and their connection to the number of infections; and "*GGC's understanding of the state of both the water system and the ventilation during 2019 and about the way that NHS GGC were responding at that time*".

19. Far from being "*fact specific*" as suggested in paragraph 2, these questions (and the discussion of them in Chapter 6) largely focus on the subjective understanding and perception of the design and construction of the QEUH held by individuals within GGC at various points after handover, and how those individuals then reacted and responded as a consequence. In that regard, these

questions reflect the focus to date of the Inquiry in the Glasgow II and III hearings, which has largely been on witnesses the vast majority of whom were not involved contemporaneously or directly in the design and construction of the Project.

20. Evidence of the subjective understanding, reaction, and response of witnesses who were not involved in the design and construction of the Project will, of course, be of assistance to the Chair in assessing, amongst other things, (a) the speed and efficiency with which GGC responded to the issues and infections as they arose; and (b) GGC's governance procedures and communications. These post-handover matters are relevant to Terms of Reference 4 (in part), 5, 6(c), 7, 8, 9, and 11.

21. However, it is submitted that, in order to assess the actual impact (as opposed to the perceived impact) of the building on patient safety, it is vital for the Chair to establish what was in fact designed and specified (and why); what was in fact built and commissioned (and whether that was in line with what was designed and specified – and if not, why not); and whether any of the actual (as opposed to perceived) features of the building were deficient and did adversely impact on patients. These pre-handover matters are relevant to Terms of Reference 1, 2, 3, 4 (in part), 6(a), 6(b), and 10.

22. To date, the majority of the evidence that has been presented to the Chair has not addressed the matters summarised in the foregoing paragraph. It is understood that the evidence relating to these pre-handover matters will be adduced in Glasgow IV. However, it is observed that there will be only <u>five</u> weeks of evidence in Glasgow IV, compared to the <u>fifteen</u> weeks of post-handover evidence heard in Glasgow II and III taken together. The concerns this raises are discussed in more detail later in this Closing Statement.

KEY QUESTIONS AND TERMS OF REFERENCE 1, 7 & 8

23. It is understood that CTI's intention was to lead sufficient evidence to enable the Chair to reach conclusions on Terms of Reference 1, 7, and 8 by the end of Glasgow III.[10] CTI make submissions about the conclusions they invite the Chair to reach on those Terms of Reference in **Chapter 7** and **Chapter 10** of their Closing Statement.

24. Currie & Brown is not able to comment on whether that objective has been achieved in relation to Terms of Reference 7 and 8 as these are outside the scope of its involvement on the Project.

[10] As set out in paragraph 3 of CTI's Opening Note for Glasgow III dated 6 August 2024; and in Section 1, paragraph 9 and Section 5, paragraph 2 of CTI's Closing Statement.

Currie & Brown had no involvement in the works to remedy the alleged defects in the QEUH which form the subject matter of this Inquiry.

25. However, it is submitted that the Chair has not yet heard sufficient evidence to reach conclusions safely on Terms of Reference 1, or to answer Key Questions 1 to 4,[11] for the reasons explained in paragraphs 21 to 22 above and also in the following paragraphs.

26. By way of reminder, Terms of Reference 1 is as follows:

> "*1. To examine the issues in relation to adequacy of ventilation, water contamination and other matters adversely impacting on patient safety and care which arose in the construction and delivery of the QEUH and RHCYP/DCN; and to identify whether and to what extent these issues were contributed to by key building systems which were defective in the sense of:*
>
> *A. Not achieving the outcomes or being capable of the function or purpose for which they were intended;*
>
> *B. Not conforming to relevant statutory regulation and other applicable recommendations, guidance, and good practice.*"

27. The Closing Statement refers in places to "*flaws*" in the ventilation and water systems of QEUH having been "*identified*" by individuals who (on the whole) had little or no involvement in the design and construction of the Project and became involved only after handover of the QEUH to GGC.[12] This differs from the language previously adopted in the Inquiry's PPPs, which carefully referred to "*potentially deficient features*". The Chair is respectfully invited to exercise caution before finally concluding that any feature of the ventilation or water systems is a "*flaw*" or a deficiency before hearing the evidence of witnesses with direct knowledge and experience of the design and construction of the Project in Glasgow IV. This is because it is likely to be unsafe and premature to conclude that any particular feature of the systems was deficient until evidence has been heard about the design and specification of that feature. The adequacy of a feature must be judged in part against the outcome that it was requested and reasonably required to achieve, rather than against the expectations of those who were not involved at the time, speaking many years after the relevant events, and with the considerable benefit of hindsight.

28. Connected to that, **Chapter 5, paragraph 6** refers to a recurring theme[13] in CTI's Closing Statement, namely the alleged "*difficulty a range of witnesses found in getting information from the Project Team*" about the design, construction, commissioning, and validation of the QEUH. Inherent in the refrain about this alleged difficulty is an acceptance that it is important to establish both what was intended to be built, and what was actually built, before concluding that what has

[11] Key Questions 1 to 4 are set out in paragraph 108 of Chapter 2.
[12] See, e.g., paragraphs 44, 46, and 49 of Chapter 2.
[13] See also, e.g., Chapter 5, paragraph 100; and Chapter 6, paragraphs 3 to 4.

been handed over is deficient. Despite that, the Inquiry has (so far as Currie & Brown is aware) not yet considered that same information in full nor spoken with some of the key witnesses involved contemporaneously in those relevant events. The reasons why this information was so important to those involved post-handover are the same reasons why it is so important this evidence should also be considered by the Inquiry before conclusions are reached in respect of Terms of Reference 1 and Key Questions 1-4, namely that deficiencies cannot properly be identified or established without understanding what GGC requested, what was advised, what was designed and specified (and whether that was appropriate), and how that compares to what was in fact built. Hence the Chair is again respectfully invited to exercise caution before reaching definitive conclusions about such matters before hearing from witnesses in Glasgow IV.

29. In that same regard, it is respectfully submitted that it is unfortunate that the technical experts were invited to opine in final reports and to give oral evidence in Glasgow III without the benefit of considering pre-handover evidence which is due to be adduced and heard in Glasgow IV.

30. Further, Currie & Brown makes the general observation in relation to **Chapter 7** that no proper causal link appears to have been established between any of the "*potentially deficient features*" of the ventilation or water systems and the number of infections. Instead, the experts appear to be relying on the totality of the complaints and criticisms about the QEUH raised by those involved post-handover in drawing the conclusion that the built environment caused the allegedly high incidence of infections. The lack of rigour applied to causation is illustrated by the fact that none of the experts seem to have directly and systematically addressed whether it was (a) the ventilation system, or (b) the water system, or (c) both systems that caused the allegedly high number of infections; nor have they apparently considered which specific feature(s) of those systems was/were causative. This makes it difficult for the Inquiry properly to discharge the objective of ensuring that any past mistakes are not repeated in future NHS infrastructure projects.

LOOKING FORWARD TO GLASGOW IV (CHAPTER 9)

31. The Remit of the Inquiry is as follows:

> "*The overarching aim of this Inquiry is to consider the planning, design, construction, commissioning and, where appropriate, maintenance of both the Queen Elizabeth University Hospital Campus (QEUH), Glasgow and the Royal Hospital for Children and Young People and Department of Clinical Neurosciences (RHCYP/DCN), Edinburgh. The Inquiry will determine how issues relating to adequacy of ventilation, water contamination and other matters adversely impacting on patient safety and care occurred; if these issues could have been prevented; the impacts of these issues on patients and their families; and whether the buildings provide a suitable environment for the delivery of safe, effective person-centred care. The Inquiry will make recommendations to ensure that any past*

mistakes are not repeated in future NHS infrastructure projects. The Inquiry will do this by fulfilling its Terms of Reference."[14]

32. The matters underlined in the quotation above now largely fall to be considered in Glasgow IV, as they have not yet been fully explored with witnesses who were involved contemporaneously and directly in the planning, design, construction, or commissioning of QEUH as mentioned above.

33. As set out in paragraph 22 above, Currie & Brown does have some concerns about the short time available to investigate these important matters in Glasgow IV. There has been a considerable amount of focus on post-handover events in Glasgow II and III, leaving very little time to investigate or establish the relevant events relating to the procurement, design, construction, and commissioning of the Project pre-handover.

34. Against that context, Currie & Brown was surprised to read in **Chapter 9, paragraph 1** that the Inquiry intends to devote yet further time during Glasgow IV to "*the reaction to the growing understanding of deficient features*" and "*further evidence on the response to Whistleblowing*", both of which were extensively and exhaustively considered during the twelve weeks of Glasgow III. In the short time available in Glasgow IV, it is submitted that the Inquiry's priority should be to hear evidence concerning the procurement, design, construction, and commissioning of the Project pre-handover, many examples of which have been identified in Chapter 9 and indeed throughout CTI's Closing Statement. It is important that evidence on these matters is heard from witnesses who were directly and contemporaneously involved in these events rather than reliance being placed on the subjective perceptions of those who had little or no involvement prior to handover.

CONCLUSION

35. Currie & Brown continues to stand ready to provide such further assistance as may be required by the Inquiry and will provide any further documentation that may be requested and witness evidence as and when directed by the Inquiry to do so.

LYNNE McCAFFERTY KC

31 JANUARY 2025

4 Pump Court, Temple, London, EC4Y 7AN

[14] https://www.hospitalsinquiry.scot/remit-terms-reference

Scottish Hospitals Inquiry

Closing Statement by NHS National Services Scotland

Following Glasgow III hearings in respect of the Queen Elizabeth University Hospital/Royal Hospital for Children, Glasgow

1. This closing statement is prepared pursuant to the Chair's Directions 8 and 9. In this closing statement NHS National Services Scotland ("NSS") responds to the relevant key questions and Terms of Reference, to the closing statement prepared by Counsel to the Inquiry following Glasgow III, and to other matters that arose in the course of the Glasgow III hearings.

2. References in the format "paragraph X of chapter Y, (page Z)" are to the closing statement prepared by Counsel to the Inquiry following Glasgow III.

Response to Key Questions and Terms of Reference

3. Pursuant to paragraphs 2.4 and 2.5 of Direction 9, NSS sets out each relevant key question or Term of Reference followed by its response.

<u>Key question 1: From the point at which there were patients within the QEUH/RHC was the water system (including drainage) in an unsafe condition, in the sense that it presented an additional risk of avoidable infection to patients?</u>

4. NSS considers that the Inquiry has heard substantial evidence on this issue, but it is a matter for the Chair whether that evidence is sufficient to reach conclusions that address key question 1. From the evidence available, NSS considers there were additional risks of avoidable infection to patients given the lack of water safety management measures, delay in appointing designated roles for operation of the water system, poor record- keeping, and other lack of controls as referred to in Counsel to the Inquiry's closing statement at paragraphs 80 - 194 of chapter 7, (pages 551-576).

Key question 2: From the point at which there were patients within the QEUH/RHC was the ventilation in an unsafe condition, in the sense that it presented an additional risk of avoidable infection to patients?

5. NSS considers that the Inquiry has heard substantial evidence on this issue, but it is a matter for the Chair whether that evidence is sufficient to reach conclusions that address key question 2. From the evidence available, NSS considers there were additional risks of avoidable infection to patients given the derogations from SHTM 03-01, the lack of validation and the other deficiencies noted in Counsel to the Inquiry's closing statement at paragraphs 210- 211 of chapter 7, (page 582).

Key question 3: Are the water and ventilation systems no longer in an unsafe condition in the sense that they now present no additional avoidable risk of infection?

6. NSS considers that the Inquiry has heard evidence on this issue, but it is a matter for the Chair whether that evidence is sufficient to reach conclusions that address key question 3. As NSS has not itself undertaken any recent assessments of the water and ventilation systems, it is unable to state a yes or no answer to this question. NSS' knowledge of the current condition of the water and ventilation systems at QUEH is largely based on the evidence presented to the Inquiry. According to the information reported by NHS GGC to NSS via the Outbreak Reporting Tool, no infection-related incidents have been reported to Antimicrobial Resistance and Healthcare Associated Infection ("ARHAI") Scotland for paediatric haemato-oncology patients since the reopening of Ward 2A/2B. NSS cannot provide assurance that all infection-related incidents have been reported, as there have been concerns that NHS GGC may not be following national reporting protocols.

7. To answer this question, the Inquiry may wish to consider an independent review of more detailed technical information pertaining to the current water and ventilation systems. For example, current action plans in relation to water and ventilation audits, planned preventative maintenance and reactive maintenance activities, and critical ventilation systems annual validation reports in accordance with SHTM 03-01 Part B including Chapter 4 Clause 4.9 (Bundle 13, Miscellaneous – Volume 8, page 527?).

Key question 4: Is there a link, and if so in what way and to what extent, between patient infections and identified unsafe features of the water and ventilation systems?

8. NSS considers that the Inquiry has heard evidence on this issue, but it is a matter for the Chair whether that evidence is sufficient to reach conclusions that address key question 4. NSS' view is that the evidence in the Glasgow 3 hearings is consistent with there being a link. The risks identified with both the water and ventilation systems alongside the unusual types of pathogens identified within a single patient cohort, would indicate a valid and justified position of assuming an association between the built environment (water and ventilation systems) and some of the clinical paediatric haemato-oncology patient cases.

Term of Reference 1: To examine the issues in relation to adequacy of ventilation, water contamination and other matters adversely impacting on patient safety and care which arose in the construction and delivery of the QEUH and RHCYP/DCN; and to identify whether and to what extent these issues were contributed to by key building systems which were defective in the sense of: A. Not achieving the outcomes or being capable of the function or purpose for which they were intended; B. Not conforming to relevant statutory regulation and other applicable recommendations, guidance, and good practice.

9. NSS considers that the Inquiry has heard substantial evidence on this issue, but it is a matter for the Chair whether that evidence is sufficient to reach conclusions that address Term of Reference 1. NSS refers to its responses to key questions 1, 2, 3 and 4 above.

Term of Reference 7: To examine what actions have been taken to remedy defects and the extent to which they have been adequate and effective.

10. NSS considers that the Inquiry has heard evidence on this issue, but it is a matter for the Chair whether that evidence is sufficient to reach conclusions that address Term of Reference 7. NSS refers to its response to key question 3 above.

Term of Reference 8: To examine the physical, emotional and other effects of the issues identified on patients and their families (in particular in respect of environmental organisms linked to infections at the QEUH) and to determine whether communication with patients and their families supported and respected their rights to be informed and to participate in respect of matters bearing on treatment.

11. This Term of Reference relates to matters outwith NSS' knowledge and expertise. NSS considers that other Core Participants will be better able to assist the Inquiry on these matters.

Response to the closing statement prepared by Counsel to the Inquiry

12. Paragraph 23 of chapter 3, (page 32), in relation to Colin Purdon's evidence, sets out his evidence that the retained estates comprised the older buildings and the laboratory block, the teaching and learning centre, and the office building built by Multiplex. In fact, his evidence was only that the laboratory block was built by Multiplex (transcript column 116). NSS notes, in case it is relevant, that the other buildings were not built by Multiplex.

13. In paragraph 38 of chapter 3, (page 35), Darryl Conner is referred to as having "trained as an AE in high and low voltage systems at the QEUH." The term AE appears to be a mistake, and NSS assumes that the statement should be that he: "trained as an AP in high and low voltage systems at the QEUH."

14. With regard to paragraph 219 of chapter 3, (page 78), Laura Imrie is noted as having explained that "ARHAI has two roles". NSS notes that this explanation of ARHAI's roles was in relation to local board incident management only. Clearly ARHAI has more than two roles, and some of them are set out later in paragraph 219. ARHAI provide expert intelligence, support, advice, evidence-based guidance, clinical assurance and clinical leadership to local and national government, health and care professionals, the general public and other national bodies, with the aim of protecting the people of Scotland from the burden of infection and antimicrobial resistance.

15. With regard to paragraph 221 of chapter 3 (page 79), and to the reporting of infections by NHS GGC, there continue to be issues and NSS remains in communication with NHS GGC. Should this topic be a matter of interest to the Inquiry, NSS respectfully suggests that more evidence will be needed.

16. Surveillance of alert organisms and the national alert organism list are discussed at several points in the closing statement (paragraph 128 of chapter 3, (page 56); paragraph 359 of chapter 5, (page 307); paragraph 802 of chapter 5, (page 445)). NSS would like to ensure there is clarity with regards to the role of the national alert organism list in supporting local surveillance. The National Infection Prevention and Control Manual (NIPCM) national alert organism list is evidence based and derived from Scottish epidemiological data, reported outbreaks in Scotland and the UK, and intelligence from ARHAI systematic literature reviews. Appendix 13 hosts the national agreed minimum list of alert organisms/conditions (Available at: National Infection Prevention and Control Manual: Appendix 13 - NHSScotland Minimum Alert organism/Condition list). The purpose of this list is to support NHS Board infection prevention and control teams to establish and maintain local surveillance/reporting systems, including development of triggers for clinical areas. The list is not exhaustive. Specialist units, for example those managing patients with Cystic Fibrosis, will also be guided by local policy regarding other alert organisms not included within these lists. Ongoing local surveillance of other priority organisms, informed by local epidemiology and an understanding of the patient population being cared for, is an essential component of infection prevention and control (IPC) surveillance. In addition, microbiologists working locally have the skills and expertise to identify unusual organisms that require further investigation. An electronic system cannot replace this expert knowledge. Investigation to determine the actions required and reporting to ARHAI as per the NIPCM requirements, should happen irrespective of whether the organism is on the national or local alert organism list, or is identified by microbiology expertise. In paragraph 220 of chapter 3, (page 78), it was noted that Laura Imrie discussed that there are instances where a health board identifies an unusual organism but does not report it to ARHAI. Laura Imrie also discussed (transcript column 104) the fact that NHS GGC had “developed its own governance structures around carrying

out Healthcare Infection Incident Assessment Tool (HIIAT) assessments and criteria for reporting infection-related incidents which appear not to align with NIPCM reporting." During the hearing of Angela Wallace's evidence, she was requested to supply the NHS GGC reporting standard operating procedure (transcript column 49). NSS is unaware if this has been produced.

17. The Scottish Government is currently leading on the development of an outline business case for a national IPC e-surveillance solution. It is intended that this system will have local and national functionality. ARHAI are supporting the development of the national requirements and will propose that national alert organism lists are maintained nationally. This would enable any new intelligence about unusual organisms, including those that pose a risk from the environment, to be included in such a system in a consistent and timely fashion. The NSS pilot of a methodology for surveillance of environmental organisms in high-risk units includes the development of local surveillance triggers that could potentially be built into future IPC e-surveillance solutions. At this time, the only funding agreed is to develop the outline business case. The funding to procure a system national system for Scotland has not yet been agreed and so the future of such a connected system remains uncertain.

18. Paragraphs 54 and 57 of chapter 4, (pages 189 and 190), refer to the risk of infection. NSS notes that infection is the outcome of a risk - that risk being, for example, exposure to pathogens, weakened immune systems, poor hygiene practices and so on. Guidance should be read and followed holistically. In the instant case, there are several different pieces of NHSScotland technical guidance which would have contributed to the design and operational requirements of the spaces provided, to ensure risks were appropriately mitigated through multifactorial measures.

19. With regard to paragraph 60 of chapter 4, (page 191), NSS suggests caution in any future recommendations associated with flow straighteners. The construction of taps is complex, where many variables need to be considered, not least the maintenance and cleaning of outlets. Steps taken to eliminate one risk may introduce others. The current position in guidance across the different

parts of the UK (Scotland, England, Wales, and Northern Ireland) is that, for existing installations, removal of flow straighteners should be considered, subject to a risk assessment. For new installations their use is discouraged. Further work is planned on sanitaryware through a review of SHTM 64 (2009) (Bundle 15, PPP, page 100). Selected guidance references include:

a. SHTM 04-01 Part A (2014) (page 65, paragraph 9.51, note 15) (Bundle 15, PPP, page 317)
b. SHTM 04-01 Part G (2015) (page 61, paragraph 17.4) (Bundle 15, PPP, page 522)
c. HTM 04-01 Addendum (2013) (pages 2, 5 and 14-15, paragraphs 2.6, 3.9, and 4.49b-c) (not held by the Inquiry and not included within Bundles. Available at: Health Technical Memorandum 04-01 Addendum: Pseudomonas aeruginosa – advice for augmented care units)
d. HTM 04-01 Part B (2016) (page 71, paragraph D22) (submission to the Inquiry confirmed, not included in Bundles)
e. HTM 04-01 Part C (2016) (page 3, paragraph 2.9) (submission to the Inquiry confirmed, not included in Bundles)

20. Also, with regard to paragraph 60 of chapter 4, (page 191), and paragraphs 13 to 19 of chapter 4, (pages 198 to 200), in relation to the Horne Optitherm Taps, NSS maintains the position that the ultimate decision on 5 June 2014 in relation to the use of Horne taps belonged to NHS GGC. Whilst NSS was present at the 5 June 2014 meeting, this was only in a support capacity and responsibility for the decision was at no point assumed by NSS. Prior to that meeting, in response to advice sought by NHS GGC, NSS' Health Protection Scotland (HPS) had produced an SBAR (Situation, Background, Assessment, Recommendation) "Pseudomonas risk: taps" in April 2014 (Bundle 3, NHS National Services Scotland: Situation, Background, Assessment, Recommendation (SBAR) Documentation, page 5). At the meeting on 5 June 2014, NHS GGC decided not to follow the recommendation in that SBAR (Bundle 15, Water PPP page 692).

21. With regard to paragraph 60 of chapter 5, (page 217), and the third bullet point on page 217, NSS notes that in 2009 it published an Estates and Facilities

"Safety Action Notice" SAN(SC) 09/03 (Submission to Inquiry confirmed, not included in Bundles) cautioning against the use of ethylene propylene diene monomer rubber (EPDM) and potentially other types of flexible hoses for the supply of potable water. This is because they may have an enhanced risk of harbouring Legionella bacteria and other potentially harmful microorganisms.

22. With regard to paragraph 678 of chapter 5, (page 405), and for the avoidance of any doubt, NSS notes that Geraldine O'Brien was not a technical author of the "HFS Water Management Issues Technical Review". She was HFS' head of research and was acknowledged for her help by the authors of the report (Bundle 7, Written Reports prepared by Health Protection Scotland (HPS), Health Facilities Scotland (HFS) and Antimicrobial Resistance and Healthcare Associated Infection (ARHAI), page 193).

23. With regard to paragraph 737 of chapter 5, (page 425), Professor Steele's claim that those from NSS who had technical expertise supported the hypothesis and the process of evaluating the hypothesis in the report of the Cryptococcus advisory sub-group, should not be accepted. As noted at paragraph 729 of chapter 5, (page 422), Annette Rankin explained the difficulties with the sub-group and that the report was ultimately NHS GGC's report, as NSS comments were not taken onboard, with no rationale being given for why they were not addressed. As noted at paragraph 732 of chapter 5, (page 423), Susan Dodd confirmed this and that NSS did not agree with the conclusions of the report. There is nothing to support Professor Steele's assertion that the report did in fact have support from NSS.

24. With regard to paragraph 213 of chapter 6, (page 584) NSS notes that the Inquiry has heard evidence in relation to the application of Positive Pressure Ventilated Lobby (PPVL) rooms for certain patient cohorts. NHS England has recently published an updated HBN 4 Supplement 1 document (Available at: NHS England » Health building note 04-01: adult in-patient facilities). NHSScotland Assure plans to liaise further with wider NHSScotland stakeholders in 2025 around its applicability, or otherwise, in Scotland.

25. With regard to paragraph 230 of chapter 7, (page 589), and in relation to the use of thermal wheels, NSS notes that, in light of evidence heard during the Glasgow III hearings, a rapid literature review has been commissioned to identify whether there is any evidence to support a change in current SHTM 03-01 guidance. The review is ongoing, but preliminary findings indicate that, whilst there is a risk of air leakage between sections of the thermal wheel, the risk of pathogen transfer remains low and the impact on patient outcomes unknown. NSS plans to include revised text within the planned 2025 edition of SHTM 03-01, noting that where thermal wheels are proposed they should be reviewed by the ventilation safety group and considered as part of clinical and HAI-SCRIBE risk assessments.

26. With regard to paragraph 313 of chapter 7, (page 613), NSS acknowledges the challenges with undertaking comparative analysis between hospitals and/or haematology units. This is a challenge faced when undertaking any epidemiological comparison, due to confounding (this occurs when other differences across the populations being compared influence the results of the comparison). With regard to paragraph 337 of chapter 7, (page 622), these issues were also a limitation in the comparator analyses undertaken by NSS, where the best available data was used and the limitations understood. It is important to note that obtaining comparative data for specialist units in Scotland is challenging, given the size of the population and the fact that many specialist services are delivered via regional/national centres.

27. NSS has previously raised this issue in its response to (i) Mr Mookerjee's expert report (Bundle 21, Volume 3, Responses to Expert Report of Sid Mookerjee, page 21, question H), and (ii) his supplementary report (Bundle 21, Volume 7, Substantive Core Participant responses to Supplementary Expert Report of Sid Mookerjee, page 17, paragraph 5). Statistical adjustment for confounding is a complex epidemiological method and there are significant information governance considerations that have to be considered when requesting and holding the required granularity of patient data. Ideally, patient level datasets would be available for both populations being compared. The data would include information about factors that can confound the comparison by their

uneven distribution across populations, e.g. age, sex, underlying co-morbidities, and treatment regimes, alongside contextual factors such as staffing levels, occupancy on the unit, and facilities available. Selection of appropriate comparators, for example comparing a Bone Marrow Transplant (BMT) unit with another BMT unit, may help reduce some of the effects of confounding. However, there will remain differences across the populations that will impact on any comparison metric. Like NSS, Mr Mookerjee did not have the data to statistically account for confounding. Instead, as described in paragraph 424 of chapter 7, (page 654), Mr Mookerjee asserts that his use of a larger sample size would adjust for the effects of bias and confounding. NSS does not consider this an adequate method, without express acknowledgement of the limitations of the approach. Often it is necessary to work with the data available, but ensuring that the caveats are well described, and that the strength of any conclusions drawn is understood in the context of the data available is essential.

28. In paragraphs 315 to 321 of chapter 7, (pages 614-616), Mr Mookerjee's approach to correlation and causation is discussed. NSS acknowledges the challenges faced by Mr Mookerjee in his analysis to determine an association between water positivity and rates of infection. There were a number of methodological limitations that should have been considered when interpreting the limited data. Mr Mookerjee stated in his oral evidence that, "I accept the hypothesis that there is a strong association between the exposure variable, which is the water contamination, and the occurrence of infections from environmental bugs in the Schiehallion cohort." (transcript column 132). In NSS' view, the strength of this conclusion should be considered in the context of the limitations of the data and methods used. NSS does not disagree in principle with Mr Mookerjee's conclusion, when consideration is given to all the epidemiological evidence presented during the course of the Inquiry.

29. In paragraph 339 of chapter 7, (page 622), it is stated that Laura Imrie accepted "that it was the case that in the Statistical Process Control (SPC) charts in the three HPS reports the baseline was the average of the rates of infection for the period covered by the chart and not some external validated baseline". In fact,

Laura Imrie did not say this, and this statement in paragraph 339 is incorrect. In her evidence on 6 September 2024, as recorded in the transcript at page 21 in column 38, Laura Imrie states that she thinks “there was a different baseline set”. For example, the baseline in the “Review of NHS GG&C paediatric haemato-oncology data” report of October 2019 used the average of the rates prior to the move as its baseline (Bundle 7, Written Reports prepared by Health Protection Scotland (HPS), Health Facilities Scotland (HFS) and Antimicrobial Resistance and Healthcare Associated Infection (ARHAI), page 257).

30. Paragraph 340 of chapter 7, (page 623), in relation to SPC charts, describes Mr Mookerjee as having “stated that the learning is not to wait for the upper limit line. . . in a vulnerable position, he considered that the SPC charts leads the reader to wait for the data points to fall into the realm of the unusual to suggest that something is wrong.” For the avoidance of doubt, NSS notes that when SPC charts appeared in their reports including the “Review of NHSGG&C paediatric haemato-oncology data” of October 2019, they were not being used in real time locally to identify instances of unusual variation and to prompt further investigations and declaration of an outbreak. They were being used retrospectively, to analyse infection data and identify instances of unusual variation historically, to support the Incident Management Team (IMT).

31. Paragraph 342 of chapter 7, (page 623), recounts Mr Mookerjee’s evidence regarding the utility of charting annual infection figures, rather than monthly or quarterly figures, in SPC charts. NSS disagrees with any general proposition that these charts are better when data are presented annually. This was an incident that progressed over time, with specific points of concern during the year. Annual data may not be granular enough for incident/outbreak management.

32. Paragraphs 350-352 of chapter 7, (pages 627-628), discuss de-duplication in relation to infection episode reporting. In his evidence, Mr Mookerjee was referred to his supplementary report at para. 2.31 (Bundle 21, Volume 1, Expert Reports by Sid Mookerjee, Sarah Mumford, Linda Dempster, Jimmy Walker, Andrew Poplett and Allan Bennett, page 79), where he asserted that “a unique

infection episode is identified by a positive blood culture with a named organism (pathogen of interest- gram negative and fungus) and where a repeat blood culture within 14 days of the initial culture is regarded as representing the same infection episode" (transcript column 62). He was referred to the HPS review of NHS GGC paediatric haematology oncology data in 2019 (Bundle 7, Written Reports prepared by Health Protection Scotland (HPS), Health Facilities Scotland (HFS) and Antimicrobial Resistance and Healthcare Associated Infections (ARHAI), page 220) for its case definition "A positive blood culture of a single organism that has not been previously isolated from the patient's blood within the same 14-day period (i.e. 14 days from date last positive sample obtained)" (transcript column 62-63). He denied that he had taken a different approach to the case definition from HPS' approach (transcript column 63). He claimed that he had taken the same approach to the definition of an episode of infection as set out by the UK Health Security Agency (UKHSA) in England and by ARHAI in Scotland. He stated that any distinction was semantics (transcript column 64). However, NSS' position is that the Scottish national protocol is consistent with the definition in the HPS review of 2019, not with Mr Mookerjee's definition (Bundle 19, Documents referred to in the Quantitative and Qualitative Infection Link expert reports of Sid Mookerjee, Sara Mumford and Linda Dempster, page 53). The method used by Mr Mookerjee resulted in a higher number of episodes of infection than there would have been had the Scottish methodology been used.

33. NSS acknowledges that there is a variation across the UK in the definition of a new episode of infection. However, it reiterates that Mr Mookerjee's stated position is inaccurate - there is in fact a difference in the definition used by him, and that in the Scottish protocol used by HPS, which resulted in his calculation of a higher number of episodes of infections. Paragraph 350 of chapter 7, (page 627) states that, "NHS NSS maintain that the correct HPS approach is to count 14 days from the first positive, and so the second does not count." For the avoidance of doubt, using the HPS definition, the 14-day period resets following subsequent positive blood cultures, and the last positive is used to identify episodes. The definitions used by HPS and Mr Mookerjee diverge after the 14-day period from the first positive, where Mr Mookerjee will include any new

positives after 14 days, irrespective of whether there had been positives in the intervening period.

34. Paragraph 355 of chapter 7, (page 629), recounts Mr Mookerjee's evidence that there is no evidence that someone who is an inpatient for 10 days is at more (or less) risk than someone who is a day patient on 10 separate days. However, NSS notes that his choice of admissions as the denominator does not reflect this. A patient who is an inpatient for 10 days will contribute 1 to the denominator. But a patient who is a day patient on 10 separate days will contribute 10 to the denominator. NSS acknowledges that Mr Mookerjee did not have access to the data that would have been required to fully capture the level of risk in the denominator. NSS agrees there is a risk associated with care provided during day case admissions, and that time at risk for all patients receiving treatment (combined for inpatient and day case admissions) would be the most appropriate denominator. However, this data was not available to Mr Mookerjee. It is important to acknowledge this limitation in the denominator when drawing conclusions.

35. Paragraph 383 of chapter 7, page 639, recounts Mr Mookerjee's evidence that a child admitted to ward 2A in 2017 had a 16% chance of catching a bloodstream infection. For such a statement to avoid risk of misunderstanding, NSS considers that the denominator should be the number of children admitted, rather than the number of admissions generally. What Mr Mookerjee describes is the number of infections per 100 admissions, not the probability of a child in the cohort catching a bloodstream infection.

36. Paragraph 506 of chapter 7, (page 682), refers to evidence that proactive surveillance of environmental organisms is widespread in England and is not an unusual task. This covers, as NSS understands it, surveillance of all environmental organisms, rather than just those on the national list. NSS notes that no specific examples of such surveillance were given. If the Inquiry may rely on the existence of such surveillance in England, then NSS respectfully suggests that further evidence would need to be heard on it. It is difficult to

nominate a potential witness without further information on where the surveillance is said to be in place.

37. Paragraph 19 of chapter 9, (page 759), states that “If a Board did not want to follow the advice, the project would be labelled ‘unsupported’ and would not progress”. NSS notes that this is a broad observation and that both the Key Stage Assurance Reviews (KSAR) process and the pre-existing NHSScotland Design Assessment Process (NDAP) are undertaken in a collaborative manner with the health boards. Whilst both the KSAR and NDAP processes consider compliance with appropriate guidance and standards, both processes can also provide recommendations that may be considered “improvement activities” which a health board may wish to consider, but would not necessarily lead to an unsupported status should they not be followed. For example, a “Category 5” observation in a KSAR would be classed as an “observation and improvement activity”.

38. Paragraph 21 of chapter 9, (page 759), raises the question whether NHSScotland Assure could provide a template for building healthcare buildings. NSS considers that there are difficulties with this. Due to the typically unique clinical requirements and the subsequent interdependencies of guidance and their application to projects throughout the period of briefing, design, development and operation, it is challenging to provide a ‘one size fits all’ template. However, the activity database (ADB) and the NHSScotland Assure repeatable rooms provide the starting block for ‘template’ departments/rooms.

39. Paragraph 54 of chapter 9, (page 766), refers to the need to carefully consider and record derogations. There is reference at footnote 3486 to Andrew Poplett’s recommended process for managing derogations in his report on ventilation (Bundle 21, Volume 1, Expert Reports by Sid Mookerjee, Sarah Mumford, Linda Dempster, Andrew Poplett and Allan Bennett, page 553, paragraphs 9.90 to 9.124). With respect to a standard derogations process, NSS refers to previous comments it made in its 28 May 2024 closing statement, following the Edinburgh hospital hearings commenced in February 2024 (Closing Submission Bundle, Edinburgh III, February 2024 Hearing, page 358).

Paragraph 8 states that, “It is the intention of NHS S Assure to produce a "once for Scotland" derogation standard process which will be put out to stakeholders for consultation within the next six months”. The intended timescale has slipped due to pressure of work. Now stakeholder engagement is planned for 2025.

Other matters that arose in the course of the Glasgow III hearings

40. NSS supports the views offered by Mr Leiper, which promote engagement with technical personnel and other key stakeholders throughout all stages of a project’s design and build cycle (transcript columns 107 and 111; statement paragraph 269).

NHS National Services Scotland

31 January 2025

THE SCOTTISH HOSPITALS INQUIRY

Closing Statement for the affected Core Participants: patients and the parents and representatives of the adult and child patients affected by their treatment at QEUH

Glasgow III Hearing Diet: 19 August to 13 November 2024

---

1. Introduction

1.1 The Core Participants represented before this Inquiry by Messrs Thompsons, Solicitors are patients and family members of the children and adult patients who were, or are still being, treated on the children cancer ward, on adult wards and in the neo-natal unit at the Queen Elizabeth University Hospital in Glasgow ('QEUH').

1.2 The remit of this Inquiry is as follows (with our emphasis):

> "*The overarching aim of this Inquiry is to consider the planning, design, construction, commissioning and, where appropriate, maintenance of both the Queen Elizabeth University Hospital Campus (QEUH), Glasgow and the Royal Hospital for Children and Young People and Department of Clinical Neurosciences (RHCYP/DCN), Edinburgh.* ***The Inquiry will determine how issues relating to adequacy of ventilation, water contamination and other matters adversely impacting on patient safety and care occurred; if these issues could have been prevented; the impacts of these issues on patients and their families; and whether the buildings provide a suitable environment for the delivery of safe, effective person-centred care.*** *The Inquiry will make recommendations to ensure that any past mistakes are not repeated in future NHS infrastructure projects. The Inquiry will do this by fulfilling its Terms of Reference.*"

1.3 Term of Reference 7 requires this Inquiry to "*examine what actions have been taken to remedy the defects and the extent to which they have been adequate and effective.*"

1.4 The stated purpose of the recent hearings was to lead sufficient evidence, taken with evidence led in Glasgow I, and Glasgow II, all relevant Provisional Position Papers and also the evidence led in respect of ventilation principles and practice at hearings of the inquiry in respect of Royal Hospital for Children and Young People/ Department of Clinical Neurosciences, in Edinburgh, that would provide a basis to answer four Key Questions:

(1) From the point at which there were patients within the QEUH/RHC was the water system (including drainage) in an unsafe condition, in the sense that it presented an additional risk of avoidable infection to patients?

(2) From the point at which there were patients within the QEUH/RHC was the ventilation in an unsafe condition, in the sense that it presented an additional risk of avoidable infection to patients?

(3) Are the water and ventilation systems no longer in an unsafe condition in the sense that they now present no additional avoidable risk of infection?

(4) Is there a link, and if so in what way and to what extent, between patient infections and identified unsafe features of the water and ventilation systems?

1.5 It is submitted that the evidence taken from clinical staff, managerial staff and expert witnesses resonates with and supplements the evidence previously heard from patients and families affected by the issues under investigation by the inquiry.

2. <u>Adopted from the Closing Statement of Counsel to the Inquiry</u>

2.1 That the Inquiry's five expert witnesses covering microbiology, water systems, ventilation, engineering solutions for hospital water and ventilation systems, epidemiology and infection prevention and control should, subject to what is said below about the limitations of their evidence, be considered

to be expert witnesses to the standard required for civil litigation and their opinions accepted as their evidence.

2.2 That: there is no substantive evidence to support the view that Dr Peters and Dr Inkster were ever wrong when they identified flaws in the ventilation systems of the hospital, which they then drew to the attention of colleagues and NHS GGC; these attempts began in the summer of 2015 and continued well into 2019; at every turn NHS GGC senior managers, including the Medical Director, sought to minimise or belittle the points they were making, while at the same time reacting to the flaws identified in a way that suggests that they recognised (too late,) that the flaws existed; those senior managers used informal meetings, Whistleblowing reports and eventually the power to remove Dr Inkster as IMT chair, in order to undermine points being made by Doctors Redding, Peters and Inkster and to protect the reputation of NHS GGC; Dr Armstrong's criticism of Doctors Redding, Peters and Inkster (that they put their interest ahead of patients) is not supported by the other evidence.

2.3 That Doctors Redding, Peters and Inkster should be praised for their commitment to ensuring that the effect of the flaws in the water and ventilation systems of the QEUH on its patients were more fully investigated than they would have been but for their engagement and action.

2.4 That: a repeated feature amongst senior NHS GGC managers was to assume that other people were carrying out important tasks that impinged upon their own responsibilities; the issue was those managers abject failure to mention important information known to them in reports, meetings and email exchanges, where others might reasonably expect them to mention the issue (that is, on the assumption that that information was already known to those who needed to know it).

2.5 That amongst those NHS GGC managers who were involved in: (i) the response to the 3 October 2017 SBAR 1 and its associated 'Whistleblowing'

processes; and (ii) the removal of Dr Inkster as the chair of the Gram-Negative Bacteraemia IMT in August 2019 by NHS GGC, there was a desire to undermine the people raising concerns and, moreover, to deflect attention away from those concerns.

2.6 **Water**: that: from the point at which patients were present in the QEUH, the water system was in an unsafe condition, presenting an additional risk of avoidable infection to patients; there was a growing awareness of flaws in the water systems, with clinicians expressing concerns about unusual microorganisms found in patient samples; Experts like Dr Walker and Mr Poplett provided reports indicating that the water system was not safe, with issues such as the presence of waterborne pathogens due to uncapped pipe ends during the build phase; there was a link between patient infections and unsafe features of the water systems; the presence of gram-negative environmental bacteria in both patient infections and the water system is strong circumstantial evidence of an association; the high infection rate prompted significant remedial actions, such as the use of point-of-use filters and chlorination of the water system, indicating in our submission a clear and obvious acknowledgment by NHS GGC of the environmental risk and risk to patients/staff posed by the quality of the hospital's water system; following remedial actions, there was a noted reduction in infection rates with environmental organisms suggesting that the measures taken by NHS GGC addressed at least some of ~~took steps to address~~ the sources of infection; on the balance of probabilities, certain bloodstream infections were strongly associated with the contaminated water system at the hospital.

2.7 **Ventilation**: that: the ventilation system at QEUH was unsafe from the point at which patients were present in the hospital, giving rise to an additional risk of avoidable infection to patients; Inquiry Experts concluded that there was a link between patient infections and the unsafe features of the ventilation systems; there was failure to provide safe, HEPA filtered mechanical

ventilation and, rather, what was provided was a ventilation system that provided minimal air changes per hour, poor airflow and lack of air-locks which were identified as factors that contributed to the increased risk of patients acquiring airborne infections, such as Cryptococcus; the use of chilled beam units, thermal wheels and the lack of positive pressure and HEPA filtration were identified by the Inquiry Experts as creating an avoidable risk of infection, particularly for vulnerable patient cohorts; the presence of environmental organisms in patient infections and in the environment was considered strong circumstantial evidence of a link, suggesting that the ventilation system contributed (i.e. made a material contribution) to these infections; significant remedial actions were taken, such as fitting air scrubbers and relocating patients, which resulted in a reduction of infection rates; the reduction in rates after remedial measures were taken demonstrates that the inadequate ventilation system at the hospital was a contributing factor to the incidence of infections. These incidences of infections were of the level that wards 2A and 2B required an entire refurbishment. The Adult Wards however did not receive the same required attention. There is no explanation for that in the evidence before this inquiry.

2.8 **Communication**: that: there are concerns and anger about the transparency of NHS GGC's communications, with there being a clear tendency to withhold or inadequately disclose information to patients and families leading to perceptions of concealment and mistrust; press releases sometimes contained more information than was directly communicated to patients, creating an impression of a lack of candour and transparency; NHS GGC are rightly criticised for not adequately fulfilling their duty of candour, which requires openness and honesty when things go wrong and this was evident in specific incidents where communication was described as 'poor' or 'suboptimal'; the statutory duty of candour procedure, which involves

offering apologies and reviews after unexpected incidents that could cause harm, was reportedly not operated by NHS GGC; communication was often described as reactive rather than proactive, with criticisms that the hospital management did not engage effectively with patients and families to discuss concerns and solutions; there were reports of inadequate communication regarding the reasons for prescribing prophylactic medications, leading to misunderstandings about their purpose, role and necessity; the culture within NHS GGC was a barrier to effective communication, with internal conflicts and concerns about reputation management overshadowing patient-centred communication; the communication strategy of NHS GGC is rightly criticised for being disjointed, not sufficiently person-centred and failing to systematically involve patients and families in discussions about issues relating to their safety and care; witnesses and Experts alike highlighted the need for better communication practices by NHS GGC, emphasising that infection control and communication should be considered the responsibility of everyone within the organisation; there are significant issues with how NHS GGC communicated and communicates about safety concerns, managed transparency and fulfilled its duty of candour with those issues leading to a breakdown in trust with patients and families.

2.9 It is submitted that neither, in 2022 nor now, is there evidence to suggest that substantial improvement in communications with patients and families has occurred.

2.10 The Scottish Government de-escalated the special measures in 2022. However since then families who are visiting the hospital on a regular basis, are seeing examples of problems today that cause concern that the hospital remains unsafe for their loved ones. There is clear evidence, not before this Inquiry , about ongoing infections and issues with mould in rooms at the QEUH. It seems that incidences of infections including Cryptococcus are not being reported by HHS GGC to ARHAI Scotland as they should be.

3. Water

3.1 There is no basis for doubting that contaminated water in a hospital environment would have the potential to be harmful to patients, particularly vulnerable patients.

3.2 From the point at which patients were present in the QEUH/RHC, the water system was deemed to be in an unsafe condition, presenting an additional risk of avoidable infection to patients. There was a growing awareness of flaws in the water systems, with clinicians expressing concern about unusual microorganisms being found in patient samples.

3.3 Experts like Dr Walker and Mr Poplett provided reports/gave evidence indicating that it was their opinion that the water system was not safe. They identified issues such as the presence of waterborne pathogens throughout the building due to pipe ends being left uncapped during the build phase.

3.4 It is submitted that the presence of gram-negative environmental bacteria in both patient infections and the water system falls to be considered strong circumstantial evidence of an association between those infections and the water system at QEUH.

3.5 The high infection rate prompted significant remedial actions by NHS GGC, such as the use of point-of-use filters and chlorination dosing of the water system. This, we submit, is a clear acknowledgment by NHS GGC of their acceptance that there was an environmental risk posed by the water system. That would be particularly so for immunocompromised patients

3.6 Following remedial actions, there was a noted reduction in infection rates with environmental organisms, suggesting the measures taken addressed at least some of the sources of infection.

3.7 The remedial actions taken by NHS GGC would not have been required had they acted proactively. Their reactive response or behaviour came far too late.

3.8 On the balance of probabilities, certain bloodstream infections were strongly associated with the contaminated water system at the QEUH.

3.9 It is submitted that the evidence points to the following failures in relation to the water system:

(a) The water system was filled at least 9 months, possibly longer, before the hospital was occupied/in use. NHS GGC knew about the early filling of the water system but took no steps to ensure that the water within the system was flushed/turned over. This allowed the water to stagnate and provided a suitable environment or habitat for the development and multiplication of microorganisms. It allowed biofilm to accumulate in the hospital water system and associated pipework. This created a significant risk of contamination of the water system as in fact happened.

(b) Testing of the water system in Dec 2014 / Jan 2015 by the contractor showed high Total Viable Count results; the system was dosed with Sanosil. There is no evidence that the lead ICD Professor Williams or anyone else knew if these water test results were assessed and reviewed by anyone from NHS GGC. There has been no explanation from NHS GGC for this.

(c) NHS GGC instructed a report from an independent specialist water company called DMA Canyon Limited prior to handover of the hospital. They were instructed to perform a Legionella Risk assessment of the hospitals water system. The assessment was not completed until April 2015. It is submitted that, for obvious reasons, the risk assessment should have been carried out pre-handover so any problems could have been fixed by the contractor before patient occupation.

(d) In January 2015 DMA Canyon advised NHS GGC to have a written scheme or water safety plan and provided them with the documentation. NHS GGC failed to do this.

(e) The DMA Canyon report identified numerous problems with the water system including pipes bypassing the filtration plant; stagnant water in tanks; hot water below 50/55 degrees safe level and cold water above safe temp level with the risk that bacteria would grow in the system; out of spec microbiological samples at handover. Flushing was carried out as were local disinfections but no water test results were provided to DMA Canyon; low turnover pipes and dead legs should have been removed from the system; there ought to have been a written scheme; there ought to have been a water safety plan; there was, however, no formal management structure or communications protocol for the hospital insofar as the safety of its water system was concerned. These were dangerous aspects of the water system identified even before the hospital opened. NHS GGC singly failed to take steps to address the serious concerns identified in the DMA Canyon report until 2018. There has been no apology given or explanation offered for that appalling failure.

(f) In short, the 2015 DMA Canyon Report identified deficiencies in the water system that obviously, without remediation, gave rise to an increased avoidable risk of patients being exposed to infections.

(g) NHS GGC failed to take steps to address the serious concerns about the water system identified in the report, escalate it to senior colleagues or advise IPC of identified issues until 2018.

(h) DMA Canyon advised NHS GGC to fit supplementary control systems to the water system (i.e. background dosing such as chlorine dioxide) to maintain microbiological control. NHS GGC failed to action this until 2018.

(i) GGC did not have a Designated Person for water when the hospital was opened in June 2015. NHS GGC have consistently failed to explain their blameworthy failure to appoint a Designated Person for water at the QEUH.

(j) Moreover, GGC failed to appoint an Authorised Person for water. No explanation has been offered by NHS GGC's Board.

(k) It is clear that there was no proper oversight by NHS GGC of the operation of the water system by the Board. The simple appointment of an independent Authorised Water Engineer would have led to the resolution of most if not all of these issues. NHS GGC should have exercised proper oversight and exercised suitable and sufficient review of the actions of those who they charged with control over the water system.

(l) There was a Board Water Safety Group which included Mary Anne Kane, Jonathan Best and Pamela Joannidis. It is not possible to be clear about what they actually did about ensuring the water supply was safe. One thing is clear – they completely failed to provide a safe water system for patients, staff and others using the hospital.

(m) All the members of the Board Water Safety Group knew or ought to have known that a pre-occupation risk assessment ought to have been carried out. We have had no satisfactory explanation from any of the NHS GGC witnesses about why it is that they failed to perform such an obvious assessment.

(n) NHS GGC's Board Water Safety Group failed to carry out what must be its primary duty, that is ensuring the water system at the hospital is safe. How they did not know that neither a Designated Person for water nor an Authorised Person for water had been appointed? Incompetence? Wilful non-observance? Lack of training? Lack of experience? Lack of knowledge?

(o) There was a clear lack of systemic sampling of the water system including a complete failure to perform base line sampling.

(p) At the time of this assessment by DMA Canyon there was no Authorising Engineer for the hospital. An authorising Engineer should have been appointed as part of the guidance required management structure. Thus

far, NHS GGC have failed to provide any explanation or justification for their failure to appoint an Authorising Engineer. Such an appointment is highly important as the Authorising Engineer provides independent guidance to the Board about how to manage the water system at the hospital and implement recommendations.

(q) Until the Glasgow III hearings, NHS GGC had never accepted that the water system at the QEUH was contaminated after the hospital opened in 2015. Only one witness, Professor Steel, accepted this proposition and this acceptance was extremely reluctantly. The fact that NHS GGC have so far failed to accept this as a fact when their own court action against the contractors states that in 2015 there was "*systemic contamination of the domestic water system*" might make patients and ordinary people astonished by the lack of transparency, candour and openness in assisting this Inquiry. Such poor conduct shows a lack of empathy, respect and understanding for those patients and families who have been seriously affected by the problems with the water supply at the hospital.

(r) The type of taps installed and flow straighteners: NHS GGC ignored the advice from HPS which NHS GGC had sought. This was the decision of David Louden (Director of Estates). HPS identified a risk of biofilm in flow straighteners and recommended removal from taps. NHS GGC's decision seems to be based on cost. There is no evidence that the safety of patients and staff using the water was considered.

(s) It was, or ought to have been, obvious to everyone involved that there was a real and developing problem with the water supply. Yet no one at NHS GGC seemed to grasp that they ought to have been advising patients and families quickly, honestly and clearly about what was happening and why.

(t) The perception of families that the media were a higher priority than them in terms of communication is supported by the documentary evidence considered in detail at the recent hearings

4. **Ventilation**

4.1 There is no basis for doubting that any deficiencies in the ventilation system presented a potential for increased risk of infection to patients, particularly vulnerable patients.

4.2 It beggars belief that no evidence whatsoever has been produced by NHS GGC explaining the circumstances in which there was a derogation from the SHTM 03-01 Guidelines.

4.3 We are still in the dark three years after the first hearings as to precisely what was lacking in the ventilation system installed in wards 2A and 2B to warrant a £10 million refit. That is astonishing. There ought to be an honest, candid and transparent account given of the full reasons for the new ventilation system in Wards 2A and 2B at the NHS's publicly funded, flagship hospital.

4.4 The derogation from SHTM 03-01 involved reducing the air change rate from the recommended 6 Air Changes per Hour (ACH) to 3 ACH or less for most of the hospital. There is no justification provided for delivering less than 6 ACH and, bizarrely for a Health Board that proclaims to put its patients first, it seems no patient risk assessment was undertaken for derogation from the SHTM 03-01 Guidelines.

4.5 The infection control team at QEUH was not provided with a detailed explanation or risk assessment for the derogation. This change was not communicated to the infection control team until years later, which caused great concern among the team members.

4.6 It seems that the collective project team prioritised achieving a BREEAM award, which may have influenced decisions about ventilation specifications. This focus on energy efficiency and sustainability might have contributed to the decision to derogate from the standard ventilation requirements. The ventilation systems were close to capacity and could not achieve the

recommended 6 ACH in general rooms. There was, on the evidence, no provision for a back-up plant, which may have necessitated the derogation.

4.7 On the evidence, the position remains entirely opaque.

4.8 The ventilation system at QEUH/RHC was deemed unsafe from the point at which patients were present there, presenting an additional risk of avoidable infection to patients.

4.9 Experts concluded that there was a link between patient infections and the unsafe features of the ventilation systems. The failure to provide HEPA filtered mechanical ventilation, minimal air changes per hour, poor airflow, and lack of air-locks were identified as factors that contributed to the increased risk of patients acquiring airborne infections, such as Cryptococcus, while in QEUH. The use of chilled beam units, thermal wheels, and the lack of positive pressure and HEPA filtration were identified as creating an avoidable increased risk of infection, particularly for vulnerable patient cohorts.

4.10 The presence of environmental organisms in both patient infections and the environment is considered strong circumstantial evidence of a link, suggesting that the ventilation system at the hospital contributed to these infections.

4.11 Significant remedial actions were taken, such as fitting air scrubbers and relocating patients, which resulted in a temporary reduction of infection rates. We submit that this fact/outcome demonstrates the existence of a causal connection between the ventilation system and the increased rates of infection being encountered at the QEUH.

4.12 On the balance of probabilities, certain bloodstream infections were strongly associated with the sub-optimal ventilation system at the QEUH.

4.13 The evidence points to the following failures in relation to the ventilation system:

(a) NHS Guidance in Scottish Health Technical Memoranda (SHTM) 03-01 gave advice and guidance to NHS GGC on the design and installation of the ventilation system in the new hospital. Some aspects may be derogated from but a derogation from NHS Guidance that could impact on patient or staff safety should never be undertaken. NHS GGC agreed a derogation on the air change rates. NHS GGC have failed to give any satisfactory explanation as to why this was done.

(b) The number of air changes for general single rooms should be 6 ACH in accordance with the guidance. This did not happen. NHS GGC agreed to a derogation from the guidance proposed by the contractors and the actual air change rate for single rooms was 2.5 ACH.

(c) The patients in Sciehallion Ward 2A were immunocompromised children and considered high risk. The rooms on this ward required specialist ventilation including 10ACH as specified by the NHS guidance. The same applies to Wards 4B (BMT unit) and 4C. NHS GGC agreed to the proposal by the contractors to have an air change rate of around 2.5 ACH for 4B and the ward was built in that way.

(d) NHS GGC's agreement to derogate from the guidance has caused an increased risk of infection to patients.

(e) Validation of the ventilation system is a process of proving that the system is fit for purpose and achieves the operating performance specified. This should be done before handover for obvious reasons. NHS GGC failed to do this.

(f) NHS GGC should have appointed a suitably qualified Authorised Person to carry out validation. NHS GGC failed to do so.

(g) Validation should be done before handover of the hospital. This was not done by NHS GGC.

(h) Critical ventilation systems require annual verification and quarterly maintenance checks. This is needed to check the ACH (room air change rate), pressure differentials and air-flow rates. NHS GGC failed to carry out annual

verification of ventilation systems in critical care areas until 2019 – some 4 years after the hospital opened. Concern remains that adequate checks are still not being carried out.

(i) Ward 2A did not have HEPA filters (Immunocompromised patient rooms and wards require to have HEPA filters); it did not have an air change rate of 10ACH; it failed to have positive pressure in the rooms (Positive pressure ventilation is used to protect very vulnerable patients such as those undergoing chemotherapy or organ transplantation); it failed to provide sealed rooms; it failed to provide an airlock to enter the ward; it failed to provide a back-up air handling unit; it failed to provide monitoring systems. These failures were rectified by provision of a new ventilation system for ward 2A in 2019. Ward 2A was unsafe from 2015 until the patients were moved out in September 2018.

(j) Ward 4B had multiple failures at handover in 2015 causing the patients to be moved back to the Beatson after a month. Following remedial works the ward still has an air change rate of 6ACH, which is below the recommended guidance level of 10ACH and the corridors are not HEPA filtered. It seems that there is no clear backup monitoring system.

(k) Portable HEPA filters were provided in Ward 6A after the decant. It is clear from the evidence that they did not provide the same level of protection as HEPA filters that filter the air before it enters the room. They simply filtered the air within the patient's room.

(l) In December 2019 an HSE Improvement Notice was issued on ward 4C as they had failed to ensure that ventilation system was suitable. NHS GGC appealed against this notice and the Employment Tribunal sisted the notice in March 2020.

(m) There is no evidence before this Inquiry as to whether Ward 4C ventilation is suitable and sufficient.

5.Prophylaxis

5.1 Patients and families acknowledge that treatment with prophylactics in the course of cancer care is a necessary step in protecting the patient. What they dispute, however, is that it was a reasonable step to prescribe medications like posaconazole without providing families with a clear explanation for its prescription.. When Karen Stirrat's son was treated in America, the clinicians were surprised by his medication regime. They considered it to be out with normal practice and contacted QEUH who advised that her son had been prescribed the medication because of the "dirty water" there. This medication was immediately stopped and it was only when he returned to the QEUH that it was recommenced.

5.2 The evidence of patients and families is that that they were not advised of the consequences and risks associated with the prescription of prophylactics for extensive periods of time. It will be recalled that Sharon Ferguson's son suffered hearing loss. Moreover, the children of Charmaine La Cock and Karen Stirrat are currently experiencing significant stomach issues considered to be associated with the prescription of prophylaxis.

6. Impact

6.1 It was suggested in the evidence, based on the NHS GGC positioning paper (Bundle 25 page 364), that the reason for the raised infection rates at the QEUH was due to a high level of deprivation in Glasgow (see also chapter 7 of the Closing Statement of Counsel to the Inquiry at paras 550 and 551). This suggestion was distressing to a group who come from all over Scotland and do not identify with this. The suggestion made by NHS GGC is misguided. Patients and families find the suggestion offensive.

6.2 Families spent many years being dismissed and some felt spoken down, particularly when being told there was no problem at the hospital. They were made to feel that they were wrong to be raising what they were seeing every day.

6.3 We observe that Professor White was appointed by the Scottish Government to represent and liaise with the families. Some families felt that he was a hinderance rather than a help in that he would not fully respond to them, clearly or at all in some cases. Some considered him to be self-important and of little assistance. In her evidence Karen Stirrat refers to e mail exchanges in November 2019, where it took over a month for Professor White to provide an unsatisfactory response to the question of whether the water at the hospital was suitable and safe for an immunocompromised patient. Some families did not trust Professor White and considered that his responses became part of the problem.

6.4 In January 2019 David Campbell e-mailed Jeane Freeman directly raising with her his concern about the risks that were posed to his son and the environment. Ms Freeman acknowledged the e-mail but did not answer the issues raised by him. In August 2019 Professor Gibson and a group of clinicians wrote to Jeanne Freeman raising concerns about the environment at the hospital. Mr Campbell was left feeling that his legitimate concerns were ignored.

6.5 The Inquiry has evidence that Anthony Dynes was left with long term implications from developing Aspergillus in September 2020 and Stenotrophomonas in May 2021 contributing to his death. There is also evidence that Emily McDowall passed away in October 2021. It is submitted that her death was hastened by her contraction of numerous environmental infections.

7. Summary

7.1 The purpose of this inquiry, at its core, is to ensure accountability and transparency for those impacted by the failings in the design, construction, and operation of the QEUH before and after it opened its doors to the Scottish public in 2015.

7.2 Throughout this Inquiry, we submit that the evidence has been clear and compelling: there is a well-supported link between the water and ventilation systems at QEUH and the increased level of infections (particularly rare infections) experienced by patients.

7.3 Expert testimony and extensive reports have highlighted significant failings in the design, commissioning, validation and ongoing maintenance of these critical systems, which were supposed to protect patients and safeguard their health. Instead, these systems became conduits for dangerous infections that contributed to a pattern of illness, distress, and, tragically, death

7.4 The evidence of water contamination and the inadequate functioning of ventilation systems is not a mere technical issue; it is a public health failure with dire consequences for real people. We have heard from families who saw their loved ones suffer unnecessarily, some even losing their lives to infections that could have been prevented had the hospital been built and maintained to the highest standards of safety and care.

7.5 Families have faced not just physical trauma, but emotional devastation, as they learned in the course of the evidence led in Glasgow III of the systemic failings that directly contributed to their loved ones' suffering. For many, the very institution meant to protect them instead became a place of fear and uncertainty. This inquiry has revealed a pattern of inaction, disinterest and abdication of responsibility by NHS GGC and the Scottish Government (and its associated NHS services) that cannot, and should not, be allowed to occur in the future.

7.6 The Estates team, particularly individuals like Mr. Ian Powrie, failed to act on critical reports such as the 2015 DMA Canyon L8 Risk Assessment. This report highlighted serious concerns about the water system, yet no effective action plan was created or implemented to address these issues. There was a tendency to make assumptions about responsibilities and actions, leading to significant oversights. For instance, Mr. Powrie assumed that other colleagues

would carry out the necessary remedial actions without confirming that this was so. The Zutec document management system, used for managing construction documents, was reportedly difficult to use and incomplete. This hindered the Estates staff's ability to access necessary information about the water and ventilation systems, impacting their ability to manage these systems effectively. The Estates team was criticized for being reactive rather than proactive. For example, Mr. Gallacher acknowledged that with hindsight, a more proactive approach would have been preferable, The Estates team was under-resourced and overworked, which contributed to their inability to address issues promptly. This was compounded by a reliance on external contractors and a lack of adequate staff to manage the demands of maintaining the hospital's infrastructure. Critical issues, such as those identified in the DMA Canyon report, were not escalated to senior management or the Infection Prevention and Control team, which could have facilitated a more coordinated response. There was no systematic sampling or risk assessment conducted for the water and ventilation systems, which could have identified and mitigated risks earlier

7.7 Is QEUH now fit for purpose and can Question 3 in Paragraph 1.4 above be answered on the evidence led before this Inquiry to date? We submit that Question 3 cannot be answered on the available evidence and for the reasons identified below.

7.8 Can the patients and families we represent and wider, the Scottish public, be assured, with confidence, that the hospital is currently a safe environment for patients? The answer, based on the evidence presented here, is unequivocally no. While significant efforts have been made to address some of the issues, the scale of the failures uncovered during this inquiry casts serious doubt on the hospital's current safety. Is the water system safe? Biofilm has built up over many years in the water system/ pipework. This major defect has not been resolved by dosing the water supply. The expert evidence we heard made

that clear. It may be many years before we know with confidence that the biofilm accumulated has been removed. Has NHS GGC carried out any testing of the position? Is the ventilation system safe? The vast majority of the hospital still fails to meet the required level of air change rates in SHTM03-01. Where are the risk assessments for the hospital clinical areas assessing the impact on patients and staff of the reduced air change rate? The ongoing risks posed by the ventilation and water systems, and the inability of the hospital to meet its fundamental duty of care, call into question whether QEUH can truly serve as a fit and reliable institution for public health.

7.9 It is crucial that the Inquiry does not allow the scale of the failings of NHS GGC to be minimised or swept under the rug. The patients and families involved in this inquiry, and the wider Scottish public, deserve a clear acknowledgment of what went wrong and a transparent plan for addressing these systemic issues in the future. NHS GGC's unwillingness to accept or even acknowledge the existence of safety issues in the face of overwhelming evidence, attitude towards Whistleblowers, continued lack of candour/transparency in its communications with patients. families and staff alike and approach to expert (or indeed any) evidence that contradicts their adopted position has done nothing to improve public confidence or trust in them. It seems that action to address serious patient safety issues will not be undertaken unless and until NHS GGC acknowledge (or are forced by other legal and regulatory proceedings to accept) that the built environment and systems at QEUH gave rise to a real risk to patient safety. NHS GGC's approach to Whistleblowers has undermined what ought to have been a positive and beneficial process.

7.10 The people of Scotland deserve a health system and provider of service they can trust, and right now, that trust has been deeply shaken by the events at QEUH.

8 What merits further comment/exploration in Glasgow IV

8.1 Is QEUH currently fit for purpose?

8.2 It is submitted that there is a lack of evidence adduced by the Inquiry about the link between infections and the ventilation system at QEUH as a whole. It is not accepted that there is no good reason to seek more epidemiological data (Closing Statement by Counsel to the Inquiry: Chapter 7 at Paragraph 447)

8.3 Further epidemiological analysis is merited. The focus of the Inquiry's evidence from Mr Mookerjee was the Schiehallion paediatric cohort and a relatively narrow category of infections (and often to the exclusion of the adult haemato-oncology cohort and the complete omission of all other patients at increased risk, specifically due to the ventilation). There has been no detailed evidence led about the position with the adult wards and infections including Aspergillus, Cryptococcus, Mycobacterium Chelonae, Fusarium and Mucor. Adult patients and their families would therefore urge the Inquiry to instruct further expert reports, equivalent to those seen for the paediatric cohort (excluding water as the one water system serves both the RHC and QEUH and therefore the deficiencies affect all patients equally). An epidemiology report would also overcome the restricted knowledge of adult cases that are in part due to the different visitor arrangements seen in the adult cohort - families are less likely to 'pick up information' from being present and overhearing conversations as they are not there 24/7 as is often seen in the paediatric cohort. It must be noted that the Closing Statement by Counsel to the Inquiry refers to paediatric cases of cryptococcus, excluding the adult death in Ward 4C and, similarly, excludes the aspergillus outbreak on 4B (1 child and 2 adults) in 2020, the reason for which is unexplained.

8.4 IPC input should be sought in connection with adult wards and equivalent to that provided by Dr Mumford and Ms Dempster in relation to the Schiehallion cohort.

8.5 Evidence ought to have been taken from a Cryptococcus expert. No expert evidence has been led about the infection and the probability/nature of its link to the environment. Mr Bennett, the expert called by the inquiry, was unable to give expert evidence about rates of environmentally acquired as opposed to hospital acquired Cryptococcus or to give fuller analysis of incubation periods and the question of reactivation.

8.6 At Chapter 6, Paragraph 57, it is stated (our emphasis): "*When it comes to the investigation into the Cryptococcus cases from December 2018 there was clearly a lot of suspicion between Dr Inkster and Dr Peters on the one hand and Professor Steele on the other, about whether the latter was keeping information from the former. Given that we doubt that Professor Steele was ever cleaning up pigeon detritus in plant rooms, and the Estates and Facilities staff who seem remarkably open about their lack of appreciation of the dangers of pigeons and Cryptococcus,* ***it seems most likely that the reason reports that would show remarkable amounts of dead pigeons and guano in the key plant rooms are missing was simply because photographs were not taken because the teams who were finding pigeon detritus did not realise the importance of collecting evidence***." We observe that this statement does not accord with the evidence of Doctors Inkster and Peters, both of whom gave evidence that plant room photographs **were** taken and provided supportive evidence of pigeon infestation and guano. It seems that these photographs were withheld and only came to light much later in February 2020 (See: (i) Dr Teresa Inkster Written Statement, Chapter 13 at paragraphs 695, 698 ,718 and 730; and (ii) Dr Christine Peters written statement at paragraphs paras 267, 268).

8.7 Dr Inkster's opinion was that there was a strong probability of the link between the ventilation system and the Cryptococcus infections that the two patients had when they died. Whilst it is acknowledged by Dr Inkster that the patients could have had reactivation of Cryptococcus she was of the opinion that there was an epidemiological link in time, place and person linked to a

building where there was significant evidence of pigeon guano in a plant room. Further, the patients were not in a HEPA filtered environment and were not on appropriate prophylaxis. Further evidence is needed from an expert in Cryptococcus about incubation periods and the question of reactivation.

8.8 Chapter 3, Paragraph 69 provides: "*In Mr Walsh's view, he would expect an experienced microbiologist to be aware of very unusual organisms and to escalate where there is one infection rather than waiting for a sequence of the same unusual organism infection. He also thought that microbiologists in the lab should be made aware of any increased risks such as the Legionella report for the QEUH noting a high risk.*" This begs the question of why escalation did not occur following three Aspergillus cases in the later part of 2020. Should a PAG or IMT have taken place?

8.9 At Paragraph 296 of Chapter 3 it is stated that Dr Jennifer Armstrong is the Medical Director of NHS GGC. She is not in that post and, at the time of her giving evidence, knew perfectly well (as she had done since August 2024) that she was to be replaced by Dr Scott Davidson if not replaced already. The position ought to have been clarified in her evidence. It is difficult to understand why it was not. Transparency is vital for trust by the patients and families. It is noted that, unlike with other witnesses, Counsel to the Inquiry makes no observation or comment about the reliability or credibility of Dr Armstrong's evidence to this Inquiry.

8.10 It is stated at Chapter 5, Paragraph 314, that the Philipshill Ward, part of the adult hospital, falls out with the remit of this Inquiry. Why? The Terms of Reference do not specify new or retained estate, different patient cohorts or specific wards but rather are about patient safety and infections potentially sourced from the QEUH campus. The same falls to be said in connection with the Neo-natal Unit including intensive care. Carolanne Baxter's son spent his entire lifetime of six months in the Neonatal Unit. She now

understands that he developed three hospital acquired infections during this time.

8.11 At Paragraph 55 of Chapter 6 it is observed that: "*Aspergillus appears to have been a recurring feature of the RHC and Schiehallion Unit after it opened, whilst Cryptococcus was a jarring and distressing intrusion onto a hospital that hoped it was getting back on its feet after the water incident. Both have the potential to be connected back to potentially deficient features of the ventilation systems that are discussed in more detail in Chapter 7.*" It is submitted that would also be relevant to acknowledge and refer to the Ward 4B case of Aspergillus in this Paragraph referred to above.

8.12 Part of the remit of this Inquiry is to look at: (i) whether communications with patients and their families supported and respected their right to be informed; and (ii) whether any individual or body deliberately concealed or failed to disclose evidence of failures in performance or inadequacies of systems including evidence relating to the impact of such matters on patient outcomes.

8.13 If, for example, NHS GGC discovered that the ventilation system in a ward comprising immunocompromised child patients was potentially unsafe and was not constructed to the required safe standard, one might reasonably expect NHS GGC to inform and advise the families of this fact when their children were moved to another ward. But that is not what happened. The parents were informed that the "opportunity" was being taken to upgrade the ventilation on the ward. That is simply not true. Senior Board officials knew about the deficiencies with the ventilation system at this time. The only reasonable conclusion is that NHS GGC deliberately concealed and failed to disclose the true reasons for the changes to the ventilation system. Yet again no one at Board level has provided an explanation for this grossly misleading and untrue communication at the time of the decant of patients from Ward 2A to Ward 6A, a communication which someone at Board level appears to have approved before it was released.

8.14 There was and remains a perception among the patients and families that, in the eyes of NHS GGC, they were of secondary importance to the press, particularly when, to them, more information was provided in a press release than was given to them. Chapter 8, Paragraph 65, states: "*The issue of whether putting more information in a press release than was given to patients, risks creating the impression that there was a lack of transparency, or something is being concealed, has already been conceded by Mr Redfern. Ms Bustillo argued that that risk would not arise because press releases were also given to patients. Whether that is a complete answer is open to question.*" It is observed that the evidence of patients and families is that press releases were only provided after they had been continually asked for and usually long after they had gone to press. The majority of press releases were not received.

8.15 At Chapter 8, Paragraph 73 it is said that: "*What about timing, and the connected suggestion that communications to the media were prioritised over communications to patients? On the evidence it is not possible to conclude that there was any policy of prioritising the media over patients. The NHS GGC position was that the reverse was true."* Beth and Sandie Armstrong made it clear in their written statements and in their oral evidence that they were very angry about the fact that public statements were made to the media, by the Health Minister and via press releases in January 2019, only weeks after their mother's death, that although she contracted cryptococcus at the QEUH, it had not been the cause of her death. They complained about this to the QEUH and the Health Minister, arguing that they could not make that statement until an investigation had been carried out. They did not receive a satisfactory response from either party. Furthermore, they were not aware that another cryptococcus patient had died until they read it in the press. That information came out the day after their mother was cremated.

8.16 The observations made at Chapter 8, Paragraphs 85, 89 and 90 are not accepted. To suggest that a lack of sensitivity alone is the reason for Mrs

Slorance being told that there were no concerns over her husband's treatment appears to avoid any analysis of the more obvious reasons why such a statement would be made about a patient with two HAIs who was supposed to have received treatment in a fully protective environment. What more evidence could there be of deliberate concealment? There is ample evidence available to this Inquiry to support the proposition that NHS GGC had, for a significant period, been putting out inaccurate, or in any event incomplete, information in press statements, reviews and other forms (see Paragraph 6.13 above). Moreover, Beth and Sandie Armstrong made it clear in their written statements that there was a failure of communication about whether their mother still had Cryptococcus in her system at the beginning of December 2018. They state that they were told repeatedly by clinicians that her blood cultures were clear of infection, but the information that she was still antigen positive for cryptococcus on 19 December 2018[h], and that they were investigating a fungal eye infection possibly connected to Cryptococcus in late December, only came to light years later when they received information from medical records and other sources. It is hard to believe that this withholding of information and failure to discuss important clinical information which was purely the result of differing views about the infection. We submit that, if there were differing views, those views should have been included in any discussions with the patient and families.

8.17 Post-mortem examinations are likely to have shown definitively whether the airborne infections were a cause of death. At the time of collection of Ms Gail Armstrong's death certificate advice was given by NHS GGC to the effect that post-mortem examination was not required as lymphoma had been the cause of death. That assertion was repeated by Dr Hart in a meeting with NHS GGC on 30 September 2020. No further discussion took place. Counsel to the inquiry states at Chapter 8, Paragraph 91, that it is not clear why this issue was not discussed with the Armstrongs. Louise Slorance was

discouraged from considering a post-mortem and it was not proposed in the case of Anthony Dynes. The Inquiry should look to adduce evidence at the Glasgow IV Hearings as to why the position with post-mortem examinations was not discussed in any transparent manner with patients' families. The Inquiry should look to adduce evidence at the Glasgow IV Hearings as to why the position with post-mortem examinations was not discussed in any transparent manner with patients' families. Failure to recommend post-mortem examination following deaths at the QEUH leaves open the question of whether there may have been more deaths associated with hospital acquired infections than have been reported. NHS Guidance proposes that post-mortem examination will be carried out if it has been requested by a hospital doctor to find out more about an illness or the cause of death (or to further medical research or understanding). The integrity of the advice against post-mortem, or the lack of any advice, given to families should be subjected to scrutiny.

8.18 Another example of the lack of transparency and failure to present a complete picture to patients and families is the Significant Clinical Incident (SCI) Report of 28 April 2020 into the death of Gail Armstrong. Dr Inkster's input to the investigation, namely the reference to the pigeons and the ventilation system, was not included in the final report (Dr Inkster's written statement ch13 page 227 para1.14). It is difficult to see this as anything other than a deliberate attempt by NHS GGC to conceal that information from Sandie and Beth Armstrong.

8.19 At Chapter 8, Paragraphs 92 and 99, Counsel to the inquiry states that there is inadequate evidence to support a conclusion that there was a deliberate and inappropriate motive to conceal information from patients, families and the public. We submit that the evidence available does indeed point to a sustained policy of concealment. This is echoed by the numerous statements of, among others, Beth and Sandie Armstrong, Louise Slorance, Professor Cuddihy,

Maureen Dynes, Dr Inkster and Dr Peters. What would the Inquiry consider to be sufficient evidence to establish a deliberate and inappropriate motive to conceal? Will this matter be further examined, as it ought to be, in the course of the Glasgow IV Hearings?

8.20 Chapter 9, Paragraph 22. States: "*HIS – Is there is a fundamental gap in regulation? If HIS does not have regulatory powers, the inspections and reports can thus carry little weight. Boards are free, at least in theory to ignore any recommendations. Does that need to change?*" The clear answer is yes, of course it does. But who should the regulator be? It is submitted that it is clear, on the evidence before this Inquiry, that HIS does not currently hold the necessary skills or expertise to hold necessary regulatory powers. In addition, an essential part of regulation is the holding of public trust. It is unlikely with the recent history of HIS that they would be able to establish such trust. For these reasons, a recommendation to establish a new, entirely independent from government, body for regulation, with different personnel and a range of expertise in Health is proposed in the strongest of terms. Effective regulation of high risk industries is an essential element of safety, both for the workforce and users. The lack of any regulation of NHS Scotland services might be seen as a matter of shame for consecutive governments in Scotland. The very nature of the NHS is 'life and death' and for this reason alone, regulation is not a choice but an absolute requirement. It appears to the families that all NHS GGC reviews were focused on trying to disprove hospital failure rather than seek the truth and the answers they deserved. The impact of ineffective regulation and oversight on the patients and families cannot be overstated.

8.21 We would welcome and appreciate an opportunity to visit the QEUH, particularly the plant rooms, if that can be accommodated.

8.22 It is understood that NHS GGC has spent a significant sum of money to a private company to prepare NHS GGC witnesses for giving evidence to this Inquiry. Those we represent are surprised and angry that public money

appears to have been spent to prepare witnesses to give evidence. The nature, extent and content of the preparation provided merits scrutiny by this Inquiry. That is all the more so given the manner in which certain NHS GGC witnesses have given their evidence and the content of that evidence.

8.23 There has, throughout Glasgow III, been an issue for us with late disclosure of documents including witness statements. The Closing Statement drafted by Counsel to the inquiry refers to a Statement from Lisa Ritchie of ARHAI. We are not aware of Ms Ritchie's statement having been disclosed or published on the Inquiry's website and this ought to be addressed. Ms Ritchie is National Deputy Director of Infection Prevention and Control for NHS England. Between April 2009 and March 2020, she was a Nurse Consultant in Infection Prevention and Control with ARHAI Group at HPS in Glasgow. She appears to have provided a statement stating that the ventilation system at QEUH was SHTM 03-01 compliant. What is her reasoning for making that statement and what is her competence to offer a view? Her statement about compliance is at odds with other evidence in the case and it is noted the Counsel to the Inquiry makes no comment at all about the credibility or reliability of her evidence. Her competence to offer the view she does is a matter of public interest.

9. Conclusion

9.1 Those whom we represent are trusting that the Inquiry will remain absolutely committed to investigating, exploring and discovering the truth with the same rigour as they have shown to date.

9.2 We remain committed and look forward to working further with the Inquiry Team in this and subsequent substantive hearings. It is of the essence that full investigation and exploration is carried out based on transparency, respect, trust and honesty.

9.3 It is of the essence that the Inquiry fulfils its remit and hears evidence about whether the QEUH is currently safe and fit for purpose.

SCOTTISH HOSPITALS INQUIRY

Submission on behalf of Wallace Whittle Limited/TÜV SÜD Limited

in response to the Closing Statement by Counsel to the Inquiry

in respect of the hearings from 19 August to 13 November 2024

("Glasgow III")

(I) Introduction

1. This written statement is provided on behalf of core participant, Wallace Whittle Limited/TÜV SÜD Limited (together referred to as "WWTS"). It is provided in response to the closing statement by counsel to the Inquiry (dated 20 December 2024; the "Closing Statement"). For the avoidance of doubt, where this submission makes no specific comment on a particular aspect of the Closing Statement, no inference should be drawn that that WWTS agree or accept that aspect of the statement. Consequently, where individual paragraphs within the Closing Statement are not specifically addressed herein, it should not be assumed that they are admitted by WWTS. In what follows, we will refer to the Queen Elizabeth University Hospital/Royal Children's Hospital as the "QEUH/RCH".

2. Our clients were given an extension of time to respond to the Closing Statement – for which they are grateful. Since that extension was granted, however, the challenge by Greater Glasgow Health Board ("GGHB") to the Chair's decision not to receive the expert report that it considered has been successful (see [2025] CSOH 12). The consequence is that any further application by GGHB to have the relevant report received into evidence will now require to be considered by the Inquiry. The GGHB report concerns the risk, or otherwise, of infection arising from the water and ventilation systems at the hospitals. The report is a potentially significant document from the perspective of our clients. Until we know whether the report will be received, if so it's status, and how the Inquiry intends to deal with its admission and any further evidence to be led, our clients cannot make fully informed and comprehensive submissions in response to the Closing Statement. An issue of fairness obviously arises from this. The result is that our clients reserve their position in relation to making additional submissions to the Inquiry, depending on what happens with the GGHB report.

3. That said, we are instructed to set out a provisional response, so that the Inquiry is aware of our clients' current position. We will make five preliminary points.

4. First, at the outset our clients wish to express their profound concern that a number of patients, families and staff at GGHB have experienced difficulties, and also their deepest sympathies in relation to the deaths which occurred after the opening of the QEUH/RCH.

5. Second, we wish to comment on the approach and tone which Inquiry Counsel have chosen to take within their Closing Statement. It appears to us to be a particularly partisan document, and in terms of the "Tail Piece" it starkly seeks to align the Inquiry with the 'whistleblowers', rather than present an independent and balanced perspective as is required by the Inquiries 2005 Act.

6. Third, Appendix A of Direction 5 set out the purpose of Glasgow III – which was to explore evidence to allow four key questions related to the ventilation and water systems within the QEUH/RCH to be answered. The answers were intended to be based on the evidence led in Glasgow I, II and III, as well as the evidence led in respect of ventilation principles and practice at hearings held to consider the Royal Hospital for Children and Young People/ Department of Clinical Neurosciences, in Edinburgh and responses to the various Provisional Position Papers ("PPP") produced by the Inquiry.

7. This response does not seek to review and comment on all of the evidence heard by the Inquiry in the hearings, but rather to focus on the key matters which are considered potentially relevant to the Terms of Reference ("TOR"), and which relate specifically to WWTS.

8. Fourth, the building services design for the QUEH/RHC was originally carried out by Zisman Bowyer & Partners LLP ("ZBP"). ZBP ceased trading in 2013. The main contractor Multiplex appointed WWTS to assist in completing the project at that point. The detailed design phase had been completed by the time WWTS were appointed. Indeed, that design was already being implemented by the time WWTS became involved in the project.

9. Fifth, a consequence of the work on the detailed design having been done by ZBP, and not WWTS, is that the ability of WWTS to comment upon certain elements of the Closing Statement is limited.

(II) <u>Chapter 7: Key questions and the opinions of experts</u>

10. Chapter 7 of the Closing Statement addresses the key questions sought to be answered by the Inquiry and the opinions which the relevant experts hold. More specifically, chapters 7.1 and 7.2 consider the key questions in relation to the water and ventilation systems which were addressed in the PPPs numbered 11 and 12. It is regrettable that the Inquiry counsel do not seem to have considered, and given appropriate weight to, the responses submitted by the Core Participants in these papers. Our clients' position on these matters has not changed from that reflected in their responses, and thus for the sake of brevity we refer the Inquiry to our clients' responses.[1]

[1] Bundle 22, Volume 1, pages 9-12 and 267-271.

Water systems

11. We note that, as regards the design of the water system, the highest a criticism has been put in evidence was of there being a "risk factor" in the form of the potential for temperature gain arising from a failure to insulate properly or to have hot and cold pipes too close together.[2] This supposed "risk factor" was not developed further in evidence in any substantive way and, in particular, the actual manifestation or effect of this risk were not addressed. In our respectful submission, it is clear therefore that it has not been established that there was any fault in the design or that the supposed risk factor manifested itself. There is simply no substantive evidence which would justify either conclusion. For completeness, it should be noted that the positioning and insulation of pipes is not considered a design matter. It should also be noted that, in line with this general practice, the design does not specify the placement of the pipes.

12. As Counsel to the Inquiry sets out, the issues with contaminated water appear to have arisen from the physical use of the system, as well as being a result of the pipes not having been properly stored during the build phase, rather than being attributable to any design issue.[3]

13. In this context, our clients agree with the overriding theme in the Closing Statement that the evidence provided by the experts suggests that it was the commissioning, maintenance and lack of early testing which appear to have caused the problems in the water system. None of these matters was the responsibility of our clients. It is also relevant to note here that the scope of the design did not include the choice of hardware – which was a matter for the architect to specify. In our submission, this should be made clear by the Inquiry.

Ventilation systems

14. It is our clients' position that the deficiencies in briefing, including the current deficiencies identified in the Closing Statement[4] do not relate to the design, but rather to the lack of validation, installation and operation. The design solution provided by ZBP fell within the available guidance and was set out as a clarification in the Clarification Log[5] at the appropriate time.

15. Our clients' position on the requirements for the ventilation is not a deviation from other experts' views. With regard to the evidence of Peter Hoffman, the Inquiry should note that the Closing

[2] Closing Statement, page 557, para 100
[3] Ibid, pages 578 – 580, paras 195 – 203
[4] Ibid, page 582 – 583, para 211 and page 607, paras 290-293
[5] Bundle 17, M&E Clarification Log, pages 821 – 834.

Statement itself notes that he has often been described as the 'go to' person on ventilation.[6] It is very clear than Mr Hoffman is extremely experienced in this area and provided very valuable evidence to the Inquiry by way of an opinion (which did not align to those which had been provided before). It is therefore surprising that Counsel to the Inquiry seek to subvert his views by noting that his evidence must only be considered while bearing in mind that his views are different from others.[7] Our clients consider it unsafe for the Inquiry to question Mr Hoffman's view on the sole basis that it does not correlate with what is asserted to be a supposed 'consensus' – which, in fact, is nothing of the sort[8].

16. Our clients do, however, agree with the Closing Statement when it recognises that there is a very real difficulty in proving any linkage between the ventilation system and the infections[9]. It is therefore surprising that Counsel to the Inquiry submit that the fourth key question should be answered in the affirmative. The degree of association between any issues in the ventilation system and the infections actually suffered remains extremely tentative at best, and the Inquiry ought to conclude either (a) that no causative link can safely be held to have been established on the evidence led or (b) that further evidence must be heard in this regard before a properly founded conclusion can be reached.

17. The suggestion in the Closing Statement that, as regards ventilation, the "best conclusion" is that "a number of infections have arisen due to the absence of a fully protective environment"[10] is, in our respectful submission, an unsustainably general and unfounded conclusion which has no proper, detailed basis in evidence. The statement is speculation. The reference to a "number of infections" having supposedly arisen due to ventilation begs an obvious question. Which ones? Unless this question is answered specifically and based on proper evidence, the supposedly "best conclusion" being proposed by the Inquiry counsel is obviously ill-founded. The point is reinforced by the fact that the Closing Statement itself says that it is "no part of the remit of the Inquiry to make findings focused on the link to infection in individual cases of infection"[11]. Further, and in any event, it is our position that the report produced by GGHB would have to be admitted into evidence, and be the subject of submissions, before the Chair could come to proper conclusions in this regard. There are very real issues of fairness to Core Participants which arise in this connection as regards how the Inquiry is going to proceed here.

[6] Closing Statement, page 91, para 280.
[7] Ibid page 91 para 284
[8] Further support for there being no such consensus is provided by the evidence from Mr Stewart McKechnie of WWTS on 4 May 2023 and of Darren Pike of MPX on 29 February 2024.
[9] Closing Statement, page 771, para 8.
[10] Ibid
[11] Ibid, page 770, para 6

18. Finally, we note that a number of criticisms appear to be directed at the systems modified after the initial design, and after WWTS were involved. Our clients obviously cannot comment in this connection given that they were not involved at the material time.

(III) <u>Chapter 10: Conclusions on key questions and TOR 1, 7 and 8</u>

19. Chapter 10 provides the Inquiry Counsel's proposed conclusions in relation to the four key questions.

"From the point at which there were patients within the QEUH/RHC was the water system (including drainage) in an unsafe condition, in the sense that it presented an additional risk of avoidable infection to patients?"

20. Counsel to the Inquiry propose that question be answered in the affirmative. It is our clients' position that the water system was designed in accordance with the guidance provided. There is no substantive evidence justifying any other conclusion relative to the design. We have already noted that Inquiry Counsel seek – rightly, in our clients' view – to attribute the difficulties which arose to issues with installation, commissioning, maintenance and a lack of early testing. Those were not matters which were the responsibility of our clients.

"From the point at which there were patients within the QEUH/RHC was the ventilation in an unsafe condition, in the sense that it presented an additional risk of avoidable infection to patients?"

21. Counsel to the Inquiry propose that question be answered in the affirmative. Our clients gave a full response to PPP 12 to which the Chair is again invited to have detailed regard. We note that little or no references to the detailed responses to PPPs provided by core participants feature in the Closing Statement. This does not suggest that Counsel to the Inquiry have taken full and proper cognisance of the evidence led and submissions made to the Inquiry in that connection.

    Our clients are clear that the original design was compliant with the Clinical Output Specifications, as well as the available guidance, and that the air changes were explained by ZBP and the reason for them clarified (rather than being a derogation)[12].

"Are the water and ventilation systems no longer in an unsafe condition in that they now present no avoidable risk of infection?"

22. We have no comment to make in relation to this question. Our clients (and indeed ZBP) were

[12] Bundle 17, Clarification Log (2010) ltP FINAL 2010, pages 966 to 985.

not involved in any alterations to the systems.

"Is there a link, and if so in what way and to what extent, between patient infections and identified unsafe features of the water and ventilation systems?"

23. Based on the evidence led thus far before the Inquiry, it is respectfully submitted that the above-noted question falls to be answered in the negative. No causative link can safely be held to have been established based on the evidence led. The Inquiry should not, on such an important issue, engage in speculation or arrive at conclusions which are not firmly established in the evidence. Reference is made, in particular, to the points made at paragraphs 16 and 17 above. In any event, the Inquiry may consider that it impossible for this question to be answered until the issues surrounding the GGHB report have been resolved, and core participants have been allowed to make submissions in the light of the concluded evidence.

24. That is also our clients' position on TOR 1, 7 and 8.

BTO Solicitors LLP
Solicitors for WWTS
13 February 2025

SCOTTISH HOSPITALS INQUIRY

Hearing Commencing 19th August 2024 Core Participants' Closing Submissions