SCOTTISH HOSPITALS INQUIRY

Bundle of documents for Oral hearings commencing from 19 August 2025 in relation to the Queen Elizabeth University Hospital and the Royal Hospital for Children, Glasgow

Witness Statements – Volume 3

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Scottish Hospitals Inquiry, Glasgow 4 Part 2
Supplementary Questionnaire for
Professor Mark Wilcox

The Inquiry already has your evidence at Glasgow 3 in the form of a transcript (Transcript - Professor Mark Wilcox - 29.10.2024 | Hospitals Inquiry), the CNR Overview Report (Bundle 6, Document 38, Page 975) and two witness statements Witness Statement - Professor Mark Wilcox - 29.10.2024 | Hospitals Inquiry and Supplementary Witness Statement - Professor Mark Wilcox - 29.10.2024 | Hospitals Inquiry. We also have your joint rebuttal document to the HAD Report (Bundle 44, Volume 2, Document 15, Page 120) and documents referred to within it also Bundle 44, Volume 2.

S1) NHS GGC have suggested that Chapter 8 of the CNR Rebuttal[1] in respect of Enterobacter you have misunderstood the WGS analysis carried out by Professor Evans[2] and by Professor Leonord and Dr Brown[3] in a material way. The complete criticism can be found in Bundle 44, Volume 3, Document 1 at pages 16 and 22. Three questions arise:

a. Are you correct to state that *Enterobacter cloacae* was not described by Professor Evans in his paper and if so where is this set out?

1.1. As stated in our rebuttal of the HAD report, Hawkey et al. refer to "detailed reports by Professor Tom Evans" to assert that the WGS investigations undertaken at NHS GGC do not support environmental sources for the BSIs investigated in the CNR. Thus, we sought to examine the reports by Prof. Evans.

1.2. GGC now point out in their rebuttal that a statement we made regarding Enterobacter spp. isolates included in their assessment is incorrect. It appears we have been misled what Evans has documented in his report. I stress that the misinterpretation stems directly from what Evans has/has

[1] A53071904 - Bundle 44, Volume 2, Document 15, Pages 198-200.
[2] A42895834 - Bundle 8, Document 45, Page 230.
[3] A42401483 - Bundle 6, Document 40, Page 1195.

not written in 3.2 on p 234 of his report[4] where he makes no mention at all of E. cloacae. This omission is now explained by GCC in their rebuttal, but this could not reasonably be assumed from Evans' text. Evans states (Bundle 8, Document 45, page 234 at 3.2):
'*Over this period, 29 patient samples were identified from blood cultures from patients within the QEUH/RHC. These were subjected to whole genome analysis. The species identified were E. hormaechei (14), E. asburiae (5), E. roggenkampii (4), E. kobei (2), E. chengduensis (1), E. genomosp. O (2), and E. ludwigii (1).*'

1.3. I assume Evans means 29 isolates from blood cultures. He does not clarify that these 29 were in fact identified by the clinical microbiology laboratory as Enterobacter cloacae (as clarified in GGC's rebuttal (page 17, item 20).[5] Crucially, Evans does not supply details of these patients.

1.4. For the reasons I set out below, however, this does not alter our conclusion about the major shortcomings in the WGS analysis of Enterobacter spp. isolates carried out by GGC.

1.5. I have checked again Evans report (Bundle 8, Document 45, Pages 230-238) and the conclusions we reached regarding the lack of robustness of GGC's WGS analysis regarding Enterobacter spp. still stand[6] (Bundle 44, vol 2, p.198-200). The analysis and criticisms we made are justified based on what Evans has written in his report. In their later rebuttal, NHS GGC state that our analysis is incorrect[7] (Bundle 44, Volume 3, Document 1 Para 11-21 at particularly page 17, para 20), and in so doing refer to a different report ('As stated in the WGS report by Leanord/Brown'). We cannot reasonably be expected to know that we needed to refer to a different report to determine the accuracy or otherwise of what appears in Evans' report. Actually, however, we do point out in our rebuttal examples of where numbers stated by Evans differ to those stated by Leanord/Brown (see for example, Bundle 44, vol

[4] A42895834 - Bundle 8, Document 45, Page 234.
[5] A53347475 - Bundle 44, Volume 3, Document 1, Page 17.
[6] A53071904 - Bundle 44, Volume 2, Document 15, Pages 198-200.
[7] A53347475 – Bundle 44, Volume 3, Document 1, Pages 13-17.

2, p.197 and 202, referring to inconsistences regarding Cupriavidus spp. and Stenotrophomonas spp, respectively). Where such inconsistencies exist, we do not know what are the true data. However, we are confident in our assertions that the WGS analyses have major weaknesses and so cannot be relied upon to exclude close links between environmental and clinical isolates.

1.6. The reasoning for the confusion regarding E. cloacae is briefly as follows. Bacterial species names can be determined in different ways. The GGC clinical microbiology laboratory method(s) for speciating Enterobacter spp. was less discriminatory than that used in the post-hoc whole genome sequencing (WGS). Hence, the WGS methodology split the Enterobacter spp. isolates, which had been identified as E. cloacae in the clinical laboratory, into more species. Prof. Evans did not make this clear in his report.

1.7. NHS GGC have taken issue with some of our comments about Evans' report on its WGS analysis of Enterobacter spp. Isolates. In so doing they refer to 'the WGS report by Leanord/Brown' (Bundle 6, Document 40, Page 1195). I have therefore examined this report again. The Leanord/Brown report states that:

'*A total of 42 isolates (seven human clinical isolates from GRI from Jan to Sep 2019; six environmental isolates from QEUH/RHC from 2018/19; 29 human clinical isolates from 24 patients from QEUH/RHC between Jan 2016 and Jul 2019) identified by the diagnostic laboratory as E. cloacae were sequenced (Appendix 1). The six environmental isolates were from drains, sink u-bends, or from "gunge below tap". No isolates were available from water samples as there were only four instances where Enterobacter spp. were isolated from water over the five year period (2015-2020) and isolates were not routinely saved and stored.*'

1.8. It is important to note that our CNR examined 27 BSIs in children caused by Enterobacter spp. A simple but crucial question remains: of these 27 BSIs, how many isolates did GGC include in their WGS analysis?

1.9. Firstly, I point out that 'Appendix 1' as mentioned in this text does not appear in Bundle 6, Document 40, Page 1195-1235. I do not know what Appendix 1 contains; it is possible that some of the missing information (see Secondly below) about which human isolates were examined by GGC in their WGS exercise is in Appendix 1. I was given a paper copy of the Leanord/Brown report (v9 18.01.23) by Fred Mackintosh KC when I gave oral evidence to the Inquiry in 2024. The paper copy also refers to Appendix 1, but this is not in the version I received.

1.10. Secondly, I note from the above report that Leanord/Brown state that '29 human clinical isolates from 24 patients from QEUH/RHC between Jan 2016 and Jul 2019'. No details are given here to clarify who these patients were (i.e. children, adults, the case note review children) and from what specimens (blood cultures, others?) the Enterobacter spp. isolates were obtained. Similarly, Figure 10: Minimum spanning tree of Enterobacter spp. isolates generated from SNP analysis in this report does not contain such details. I do note, however, as pointed out above, that in Evans' report he refers to an analysis of '29 patient samples were identified from blood cultures from patients within the QEUH/RHC'. Thus, from piecing together information from the two reports, in does appear that the 29 human Enterobacter spp. isolates were from blood cultures – which patients/blood cultures/when, we do not know.

1.11. Without such details, it is not possible for me to determine precisely how many isolates that caused 27 BSIs in the paediatric case note cohort that we examined were included in this WGS exercise/analysis. I do not understand why this crucial level of detail has not been supplied (unless it is in Appendix 1, perhaps).

1.12. I point out that in the report by Leanord/Brown, which covers the results of their WGS analyses of Cupriavidus spp., Enterobacter spp., and Stenotrophomonas spp. isolates, the term 'blood culture' is mentioned only once in the body of their report. They do not clarify for any of the three collections analysed how many isolates were from blood cultures (and specifically form the children in the CNR). This illustrates the

difficulty of interpreting their analyses and specifically from where the isolates originated that they included in their investigations.

1.13. Thirdly, I note that in their later rebuttal, when NHS GGC state that our analysis is incorrect (Bundle 44, Volume 3 Document 1 Para 11-21 at particularly page 17, para 20), again no details are provided to clarify the origin of the Enterobacter spp. included in their WGS analysis. I would have reasonably expected that a rebuttal defending the robustness of this exercise/analysis would have provided such information (given the absence of these details hitherto).

1.14. Fourthly, in answering these points, I note that there has been no challenge to the analysis and statement we made in our rebuttal (Bundle 44, vol 2, p.199-200) that 'It seems, therefore, that approximately 90% of the Enterobacter spp. isolates recovered from the hospital environment were not included in the WGS investigation of these bacteria.' This unchallenged fact severely undermines the ability to determine whether blood culture isolates of Enterobacter spp. matched any of the environmental isolates Enterobacter spp. Furthermore, a total of only 6 environmental isolates were included in this analysis, and this very small number is likely to be a gross underrepresentation of Enterobacter spp. Present in the hospital environment over a 5-year period. These observations clearly refute the validity of Evans' conclusion (on page 236 of his report)[8] that "On that basis, I conclude on balance of probabilities that the human infections from these Enterobacter species were not acquired from environmental sources within the QEUH/RHC."

1.15. In summary, it appears we erroneously stated that 'At best, we conclude only these 2 patients could have been included in this WGS investigation', based on what appears in Evans' report. The lack of clarity in that report caused this error. However, for the reasons outlined above, we still do not know the origin of the human Enterobacter spp. isolates included by GGC in this WGS analysis. As we included 27 Enterobacter

[8] A42895834 - Bundle 8, Document 45, Page 236.

spp. BSIs in our CNR, we would have expected that all or the great majority of the isolates from these BSIs would have been included in GGC's analysis. If this was not the case, this seriously weakens any conclusion of a lack of relatedness between environmental and children isolates of Enterobacter spp.. Crucially, however, even if all or the great majority of the isolates from these BSIs were included in GGC's analysis, we can clearly see that the environmental isolates included were extremely limited. Thus, whatever the truth is regarding the human isolates included, the analysis has serious weaknesses and does not permit a robust conclusion of a lack of relatedness between environmental, and children isolates of Enterobacter spp.

b. What do Professor Leonord and Dr Brown say in their paper about whether any or all of the *Enterobacter* isolates they examined were identified as *Enterobacter cloacae*?

A. This is answered in 'a.' above.

c. Where in their papers do Professor Evans, Professor Leonord or Dr Brown discuss *Enterobacter cloacae*?

A. This is answered in 'a.' above

S2) NHS GGC have challenged the criticism in the CNR Rebuttal document[9] that in respect of Stenotrophomonas that NHS GGC's water testing was 'sporadic/not systematic' and assert that the "percentage of total samples undergoing each microbiological test is irrelevant, especially when the total number samples is so high". The full criticism can be found in Bundle 44, Volume 3, Document 1 at pages 17 and 18. Three questions arise:

a. Was the total number of samples obtained 'high' before the Chlorine Dioxide continuous dosing commenced in the RCH in November 2018?

1.1. I do not have access to the data on how frequently, when and where water testing was performed by GGC. The term 'high' is not defined and without

[9] A53071904 - Bundle 44, Volume 2, Document 15, Page 201.

context means little. When I did have such access to data (during our investigations that informed our CNR), the limitations were highlighted in our CNR. In short, the data we were provided with did not show that water sampling was systematic.

1.2. Outline totals of water samples collected are stated in GGC's rebuttal:
'*Over the period covered by Prof Evans's WGS report (2018-2020), NHSGGC collected over 10,000 water samples, and of these, over 6,000 were tested specifically for Gram negative bacteria, including Stenotrophomonas, with the others undergoing tests for a range of other organisms. The percentage of total samples undergoing each microbiological test is irrelevant, especially when the total number of samples is so high. No other health board carries out such systematic, routine water testing, nor does any other health board routinely test for Gram negative bacteria (this test is bespoke to the QEUH)*'.

1.3. There is no indication in that water sampling was systematic. The percentage of samples undergoing specific microbiological tests is certainly not 'irrelevant'. If one combines non-systematic sampling with different degrees of searching/testing for specific bacteria, the scope for missing bacteria that are contaminating in the water system is marked.

b. Do you have any other comment to make?

A. On page p.201 of our rebuttal of the HAD Report (Bundle 44, Volume 2) we stated:
'*So, we see that, despite Evans assertion that "there is no reason to suppose that this level of the presence of S. maltophilia in water samples is not representative", approximately 40% of the water samples referred to were not specifically examined for the presence of Gram-negative bacteria such as S. maltophilia. We disagree with his statement, as it is clear that the sampling of water, sinks, drains and other sites was sporadic/not systematic, and the degree of scrutiny to which these samples were subjected to look specifically for Stenotrophomonas spp. will have been*

variable'.

I stand by this assertion.

S3) NHS GGC have raised[10] the references made in the CNR Rebuttal document to "unspecified deficiencies in NHS GGC's IPC practices". They ask you and your colleagues to specify which IPC deficiencies you are referring to. Have you, Gaynor Evans and Professor Stevens produced a report in which you have set out any areas of concern about IPC practice at the QEUH and, if so, could you identify that report?

A. We set out several examples of sub-optimal IPC practices in Chapter 5 of our CNR; see especially, 5.3.1, 5.3.2, 5.3.3, 5.3.4 and 5.4. Gaynor Evans led in our CNR on assessing IPC responses to the (clusters of) BSIs in children by GGC and so may be able to provide more information here if required.

S4) In oral evidence on 29 October 2024 you explained[11] that 23 *Stenotrophomonas maltophilia* bloodstream infections in children that were considered by the CNR[12] and in the context of 23 *Stenotrophomonas maltophilia* isolates from QEUH/RHC blood cultures being considered by Professor Evans[13] and Professor Leonord and Dr Brown[14] it was your evidence that only 15 of the 23 CNR cases were included in the Evans/Leonard/Brown analysis. It does appear that the HAD Authors have not appreciated this distinction[15]. Can you provide to the Inquiry any further details to assist the HAD Authors understand why you understand that only 15 of the 23 CNR *Stenotrophomonas maltophilia* were considered by Evans, Leonard and Brown?

A. These numbers were drawn from Figure 15 in the Leanord/Brown report (Bundle 6, Document 40, page 1219). Here we can see that a total of 25 human isolates of Stenotrophomonas spp. were included in GGC's WGS analysis. Of the 25, 15 are colour coded yellow and have the designation

[10] A53347475 - Bundle 44, Volume 3, Document 1,Page 18.
[11] Transcript - Professor Mark Wilcox - 29.10.2024 | Hospitals Inquiry, Transcript, Col 113
[12] A33448007 - Bundle 6, Document 38, Page 1029, Table 4.3.
[13] A42895832 - Bundle 8, Document 46, Page 242, para 3.3.
[14] A42401483 - Bundle 6, Document 40, Page 1217.
[15] A53410042 – Bundle 44, Volume 5, Document 2, Pages 25-27, paras 1C.3 and 1D.1.

'RHC'. I assumed, therefore, that these 15 isolates were from children in RHC. I do not know, however, if these 15 isolates are from the 23 Stenotrophomonas spp. BSIs included in our CNR. This point is not clarified in the text of this report, which only states:
'*These included 25 human clinical isolates (23 from RHC/QEUH, 1 from RAH, and 1 from VIC ACH) collected between June 2015 and June 2020.*'

S5) Do you have any further information that you have not yet given the Inquiry that you consider would assist the Inquiry in understanding the issues covered in the CNR Overview Report or CNR Rebuttal document?

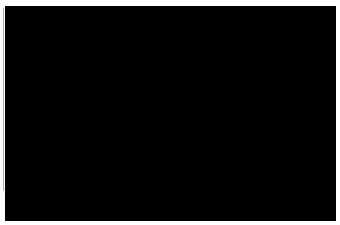
A. I have 2 points to add.

1. If the missing 'Appendix 1' to the Leanord/Brown report (see a. above) is located, I would of course be happy to examine / comment on this.

2. In GGC's rebuttal (Bundle 44, Volume 3, Document 1, paragraphs 14-15) comment is made about the following statement:
'*Enterobacter spp. are not one of the alert organisms specified by the National Infection Prevention and Control Manual Appendix 13*.'
This was a direct quote from Evans' report (Bundle 8, Document 45, Pages 230-238, paragraph 3.1). Thus, it is odd to criticise our rebuttal here.

Declaration

I believe that the facts stated in this witness statement are true. I understand that proceedings for contempt of court may be brought against anyone who makes, or causes to be made, a false statement in a document verified by a statement of truth without an honest belief in its truth.

Signed Name:  Print Name: Mark H Wilcox

Appendix A

Scottish Hospitals Inquiry - Hearing Commencing 12 June 2023 - Bundle 6 - Miscellaneous documents.

Scottish Hospitals Inquiry - Bundle of documents for the Oral hearing Commencing 12 June 2023 - Bundle 8 - supplementary documents for the Oral hearing commencing on 12 June.

Scottish Hospitals Inquiry - Hearing Commencing 19 August 2025 - Bundle 44 - Volume 2 - Expert Reports in Response to GGC Expert (HAD) Report and Associated Documentation.

Scottish Hospitals Inquiry - Hearing Commencing 19 August 2025 - Bundle 44 - Volume 3 - Substantive Core Participants' Direction 5 Responses to GGC Expert (HAD) Report & Supplementary Report/Comments on Chapter 8.

Scottish Hospitals Inquiry - Hearing Commencing 19 August 2025 - Bundle 44 - Volume 5 - HAD Questionnaire 2, Response to Five Reviews of HAD Report and Associated Documentation.

Scottish Hospitals Inquiry
Glasgow 4 Part 2
Supplementary Witness Statement of
Sandra Devine

1. Laura Imrie, Lead Consultant at ARHAI Scotland, stated that the GGC Incident Management Process Framework advises that a local assessment be undertaken before deciding if an NIPCM HIIAT assessment is required and she suggested this approach results in underreporting incidents. This initial assessment as described in the GGC document is consistent with the guidance outlined in section 6.4 Public Health Scotland Guidance: Management of Public Health Incidents Guidance on the Roles and Responsibilities of NHS Led Incident Management Teams **(Bundle 27, Volume 14, Document 18, Page 113)**. It is also worth noting that this is the guidance on which Chapter 3 of the NIPCM **(Bundle 27, Volume 4, Document 16, Page 178)** is based upon.

2. Whilst reviewing the information on the SHI website I noted the content of Environmental Pathogens Surveillance Pilot Report (2025) ARHAI Scotland **(Bundle 44, Volume 2, Document 47, Page 709).** This document suggests reasons why the boards that participated in this pilot did not report triggers. It suggests reasons which are consistent with the types of information reviewed in any assessment undertaken in GGC. In this document in the section on sensitivity, ARHAI states that, "*between January and August 2024, a total of 60 triggers were identified across three pilot sites (not GGC)… During this time period 14 ORTs (online reporting tool) were submitted across pilot units… There were several triggers which did not result in a ORT submission*". They go on to say, "*there may be reasons why triggers identified in this pilot were not reported via the ORT, including that they did not meet the requirements for reporting as described in Chapter 3 of the NIPCM. **For example, where investigation by the local IPCT has determined that an incident is not healthcare associated to the unit/hospital, e.g. identified within 48 hours of admission or mother-neonate transmission**.***" **(Bundle 44, Volume 2,**

Document 47, Pages 721-722).

3. This procedure aligns with the practices adopted by the IPCT in NHSGGC and as reported in the above document by other boards across NHS Scotland. Every individual patient referral to IPCT is reviewed and investigated, as are all triggers. Last year over 40,000 patients were referred for investigation to the IPCT in GGC and many triggers would have been reviewed. This initial assessment is to determine whether there is an incident or outbreak and therefore whether the requiring for reporting is met, is entirely consistent with existing national guidance.

4. While reporting all triggers may benefit national intelligence, it risks undermining the clinical judgment of board IPCTs, whose key role is to investigate and escalate issues that need further local action. Reporting all triggers would place an additional reporting burden on teams, without any benefit to patients. Additionally, conducting a HIIAT assessment for all triggers, as implied by Ms Imrie, would require a multidisciplinary team meeting to review patient and clinical information, temporarily removing frontline clinical staff from their duties. This has the potential to compromise patient safety.

5. It is the function of the Board IPCT to make this assessment and escalate appropriately, based on their investigation. This approach is outlined in the framework document and aligns with the practices of other boards, as noted by ARHAI in the referenced document. I am also uncertain about the relevance of this matter within the broader context of the inquiry where there has been substantial evidence submitted with regards to escalation and reporting.

Declaration

I believe that the facts stated in this witness statement are true based on my recollection. I understand that proceedings for contempt of court may be brought against anyone who makes, or causes to be made, a false statement in a document

verified by a statement of truth without an honest belief in its truth.

Signed: Sandra Devine Print name: Sandra Devine

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

Appendix A

Scottish Hospitals Inquiry - Hearing Commencing 19 August 2024 - Bundle 27 - Volume 14 - Miscellaneous Documents
Scottish Hospitals Inquiry - Hearing Commencing 19 August 2024 - Bundle 27 - Volume 4 - Miscellaneous Documents
Scottish Hospitals Inquiry - Hearing Commencing 19 August 2025 - Bundle 44 - Volume 2 - Expert Reports in Response to NHS GGC Expert (HAD) Report and Associated Documentation

Scottish Hospital Inquiry

Glasgow 4 Part 2
Questionnaire for 'Consequential Witnesses'
Dr Anna-Maria Ewins

The Inquiry has decided to hear the evidence of Professor Hawkey, Dr Agrawal and Dr Drumwright in respect of their report on the evidence of risk of infection from the water and ventilation systems at the QEUH/RHC ("the HAD Report") [Bundle 44, Volume 1, Document 1, Pages 5 to 223]. As a consequence, the Inquiry is seeking further evidence from certain witnesses who previously gave evidence in Glasgow 2 or Glasgow 3.

You have been identified as someone likely to have direct knowledge of key issues arising from that report. To assist in gathering this information effectively, we have provided you with a short questionnaire. This includes questions tailored to your prior involvement, along with access to relevant documents in the Objective Connect space, including Bundle 44, Volume 1 (the report by Professor Hawkey, Dr Agrawal, and Dr Drumwright), and Bundles 6 and 7. We ask that you respond to each question as fully as possible, to help ensure the Inquiry's understanding is accurate and complete.

To answer the questions please type your answer in the answer area marked [Type your answer here] below the question, you will note that your type comes up in a different font from that of the question – this is to allow your answer to be read with ease.

Please do not insert pictures or documents into your written answers. All our hearing bundles are on our website https://www.hospitalsinquiry.scot/. If you would like to refer to a document within our bundles which captures your answer to the question, then please refer to the relevant document in the format (Bundle X, Document Y, Page Z).

If you wish to refer to your own document, then describe the document in your statement, list all such documents at the end of the statement and provide us with a copy of that document in order that we can process the document in accordance with Inquiry protocols.

1. Your professional practice at Yorkhill

Whilst you have already provided a detailed CV in your earlier statement. Please could you summarise your connection to, involvement with or association with the paediatric haemato-oncology service in the Schiehallion Unit at Yorkhill from 2005 to 2015 and the extent of your experience/knowledge/understanding of environmentally relevant bacteraemia at Yorkhill?

A. I was appointed to paediatric haematology oncology in a middle grade post in 1997.

By 2005 I had worked across all areas of the unit in Yorkhill: benign and malignant haematology, oncology and stem cell transplant, I worked a 1:4 24 hour on-call rota. In 2006 I was appointed Associate specialist and took part in the consultant on-call rota looking after stem cell transplant patients on-call, 1:3 nights.

Until 2014 my daytime working involved looking after leukaemia patients and general haematology patients. Following the appointment of an additional haematologist (Dr Pinto) in October 2014, my remit became stem cell transplant, and I occasionally looked after non-transplant patients during colleague absences.

I took responsibility for transplant patients on ward rounds, daycare and in clinic. I worked closely with microbiology and virology colleagues to manage infection in this patient group. In 2015 I was part of a service improvement project which introduced SBAR documentation, a morning and afternoon huddle to disseminate information about patients who were unwell and agree the designation “watcher” for those who were considered at risk of becoming more unwell

2. Incidence of environmentally relevant bacteraemia cases at Yorkhill

Please review the list of 'microorganism species of environmental concern' from 2005 to 2022 listed in Tables 11A to 11F of the HAD Report (Bundle 44, Volume 1, Pages 97 to 106) and the conclusion of the authors expressed on page 109 of the bundle that refers to the "significantly higher number of cases observed historically when the haemato-oncology paediatrics service was located at Yorkhill compared with QEUH cases". On the basis of your expertise and experience, to what extent would you accept that there was a significantly higher number of environmentally relevant bacteraemia cases in the paediatric haemato-oncology patient population at Yorkhill from 2005 to 2015 compared to the QEUH/RHC from 2015 to 2022? Please explain the basis of your answer.

A. I recall concern about line-related infections rates whilst at Yorklhill. A former senior nursing colleague had speculated about seasonality of gram negative infection at Yorkhill, which I think tended to happen in the warmer months. This concern led to review of line care, including the practice of inserting central lines on "emergency lists. We now do this on a planned theatre list with a smaller number of experienced operators who have helped developed a "bundle " to optimise skin hygiene before line insertion.

Audits and reviews at Yorkhill achieved a significant reduction in gram positive line infection, and corresponding reduction in line removal.

We also use Tauroloc, an antimicrobial central line lock, and anti-microbial caps on the end of central lines, which may be preventing central line colonisation/infection, especially if the line ends are submerged in bath water.

At the QEUH there has been greater awareness of the need to optimise /reduce broad spectrum antibiotic exposure, especially carbapenems with working groups who monitor antibiotic stewardship.

Advances in the management of relapsed ALL, with BiTEs (Blinatumomab. Intumomab) and the use of Venetoclax as reduced intensity management of relapsed AML, means that we no longer subject heavily pre-treated relapsed patients to myeloablative re-induction chemotherapy, this means that we avoid prolonged periods of neutropenia before transplant.

I would speculate that this reduces the infection burden before transplant, and antimicrobial exposure, which in turn reduces the emergence of resistant gram negative bacterial colonisation.

Reduction in use of communal patient spaces, with more regular cleaning of equipment and toys used by patients may also contribute to a reduction in infections rates, at the cost of increased patient isolation.

3. **Rate of change of incidence of environmentally relevant bacteraemia cases between Yorkhill and QEUH/RHC**

Please review Figure 22 of the HAD Report and the text discussing it (Bundle 44, Volume 1, Pages 116 to 119) and the conclusion of the authors in the second bullet point on page 119 that "Among paediatric haemato-oncology patients, we see an ~2 fold decrease in incidence and cases of bacteraemia attributed to environmentally relevant microorganisms following transfer of services from Yorkhill to QEUH; lower incidence at QEUH was statistically significant". To what extent is this conclusion consistent with your experience at Yorkhill and subsequently at the QEUH/RHC? Please explain the basis of your answer.

A. This conclusion is consistent with my experience at Yorkhill. In the QEUH infection concerns centred around the shift away from gram positive to gram negative infection, and the emergence of new (to us) pathogens. We always acknowledged that the CLABI rate overall was falling.

4. **Comparison between the susceptibility of adult haemato-oncology patients and paediatric haemato-oncology patients to bacteraemia attributed to environmentally relevant microorganisms.**

From your own professional expertise are you able to assist the Inquiry as to the extent to which it is appropriate to consider that adult haemato-oncology patients as a class and paediatric haemato-oncology patients as a class have a similar susceptibility to bacteraemia attributed to environmentally relevant microorganisms?

A. I don't know if this conclusion can be drawn. abies in nappies are high risk for gram negative infection because of proximity to faecal material. Central lines are used more in paediatric and for longer duration

5. Specific infections of microorganism species of environmental concern at Yorkhill from 2005 to 2015

Accepting that much time has passed please review the list of 'microorganism species of environmental concern' from 2005 to 2022 listed in Tables 11A to 11F of the HAD Report (Bundle 44, Volume 1, Pages 97 to 106). Can you recollect any details of any of the investigations into the infections there listed at Yorkhill from 2005 to 2015 and whether any that occurred after the publication of the National Infection Prevention and Control Manual in 2012 were investigated as 'healthcare infection incidents' and/or reported to HPS?

A. I do not recall the details of these investigations, or whether they were investigated or reported to HPS.

6. IPC practice in the Schiehallion Unit at Yorkhill from 2005 to 2015

Accepting that much time has passed can you assist the Inquiry by giving an assessment of the extent to which at the Schiehallion Unit at Yorkhill from 2005 to 2015 the investigation of bacteraemia cases from potentially environmentally relevant microorganisms such as those listed in Tables 11A to 11F of the HAD Report (Bundle 44, Volume 1, Pages 97 to 106) (a) formed a part of IPC practice, (b) were the subject of investigation by the IPC team and/or (c) were reported to HPS?

A. I do not know about IPC practice or investigations from 2005-2015.

7. Awareness of risk of bacteraemia from potentially environmentally relevant microorganisms at Yorkhill from 2005 to 2015

Accepting that much time has passed can you assist the Inquiry by giving an assessment of the extent to which the awareness of and management of the risk of bacteraemia from potentially environmentally relevant microorganisms was a significant part of practice at the Schiehallion Unit at Yorkhill from 2005 to 2015?

A. There was awareness of environmental infection amongst stem cell transplant team because of the requirement to report such infections to JACIE (from 2009).

I do not recall stenotrophomonas or pseudomonas bacteraemia leading to questions about the built environment, however, there were reviews of sterile technique when accessing central lines.

8. CLABSI in the Schiehallion Unit at Yorkhill from 2005 to 2015

Accepting that much time has passed can you assist the Inquiry by giving an assessment of the extent to which at the Schiehallion Unit at Yorkhill from 2005 to 2015 any particular efforts were made to promote line safety of the sort later carried out at

QEUH/RHC under the CLABSI (Central Line Associated Blood Stream Infections) from 2016?

A. There was collection of data and audit of central infections which were discussed at unit meetings. During the Yorkhill era, I do not recall any RCA of CLASBI infection. “no touch” central line flushing and the use of alternative skin site cleaning agents, away from chlorhexidine to prontosan for example.

9. Enteric Infections

The Inquiry has heard evidence that some BSI can arise by breakthrough from the patient’s gut. It has been suggested that that the Inquiry would be entitled to assume that if you and your colleagues considered that one of your patients had such an infection as a result of gut breakthrough such a case would not require to be escalated to a PAG or IMT within the IPC system. Do you have a view on this?

A. I do not think in practice that we made this assumption, all gram negative infections, as far as I know, were reported, underwent RCA and were escalated as appropriate. I accept that not all gram negative infections should be discussed at a PAG, i.e. if a patient with known gut colonisation with pseudomonas, or Stenotrophomonas.

10. Additional information to assist the Inquiry.

The Inquiry is attempting to understand the extent to which it can be said that the adequacy of ventilation, water contamination and other issues have or have not adversely impacted patient safety and care at the QEUH/RHC. Do you have any further information that you have not yet given the Inquiry that you consider would assist the Inquiry in understanding that issue?

A. Adequacy of ventilation: this certainly impacted the decision and timing of transplant at the RHC/QEUH, and led to decants when remedial work was undertaken. During this period of decant the task of providing patient care was made more difficult by the dis-location from paediatric services in the children’s hospital.
Investigation of the possible water contamination was challenging with contingencies which made life difficult for patients and their families (bottled water, cold baths etc).The reporting in the press was upsetting for patients and their families who found themselves needing high risk treatment at RHC. It was also demoralising for staff. Many patients were safely cared for during this tumultuous process.

Declaration

I believe that the facts stated in this witness statement are true. I understand that proceedings for contempt of court may be brought against anyone who makes, or causes to be made, a false statement in a document verified by a statement of truth without an honest belief in its truth.

Signed: [redacted] Print name: Dr Anna Maria Ewins

Appendix A

Scottish Hospitals Inquiry - Bundle of Documents for the Oral Hearing Commencing 12 June 2023 - Bundle 6 - Miscellaneous documents

Scottish Hospitals Inquiry - Bundle of Documents for the Oral Hearing Commencing 12 June 2023 - Bundle 7 - Reports prepared by HPS, HFS and ARHAI

Scottish Hospitals Inquiry - Hearing Commencing 19 August 2025 - Bundle 44 - Volume 1 - NHS GGC Expert (HAD) Report

Scottish Hospitals Inquiry

Supplementary Statement of Dr Teresa Inkster
MBChB BSc (Hons), FRCP, DTMH, MPH, FRCPath

20 August 2025

1. On Monday, 18 August 2025, I was advised of a new document being added to an Inquiry bundle **(Document 6, Bundle 44, Volume 8**). This document is a journal article titled "Reversing and controlling microbial proliferation in the water system of a high-risk hospital ward after extended closure and reconstruction" (the 'Chaput paper') and published in Water Research Vol. 282, 2025. The first author is Dr Dominique Chaput. The other authors are Kerr Clarkson, Linda Bagrade, Aleksandra Marek, Dennis Kelly, David Watson, Tom Steele, and Alistair Leonard.

2. I do not understand why this paper has been produced at such a late stage. It is my understanding that the article was accepted for publication in early May of this year, and if Dr Chaput wished to rely on it, then it should in my view have been produced at an earlier stage.

3. I was, in any event, already aware of the article. I am concerned about significant errors in the paper. These concerns are shared by other professionals working in this field. I have authored a comment on the Chaput paper along with Professor Elaine Cloutman-Green of Great Ormond Street, Dr Michael Weinbren, and Dr Christine Peters and we have submitted it to the journal, Water Research.

4. The comment is currently with the journal for review. Because it has not yet been accepted for publication, I do not consider that it would be appropriate for the full text of our paper to appear in an inquiry bundle at this stage.

5. The abstract, which is reproduced below, can be published:

   "*This communication identifies several incongruities in a recent article published in the journal. Key concerns include: a lack of context provided in relation to the background issues with the hospital water system, misapplication of research findings, and a lack of clarity in the discussion section regarding enteric pathogens."*

6. Should the Inquiry wish the full text of our comment before it is published, then I understand it could be provided by the publisher on receipt of a request pursuant to section 21 of the Inquiries Act 2005.

Declaration

I believe the facts stated in this witness statement are true to the best of my knowledge, information and belief. I understand that this statement may form part of the evidence before the Inquiry and be published on the Inquiry's website.

Signed:  Print Name: Dr Teresa Inkster

Appendix A

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

A53823770 -Bundle 44 Volume 8 Document 6- Miscellaneous Documents

SCOTTISH HOSPITALS INQUIRY

Bundle of documents for Oral hearings commencing from 19 August 2025 in relation to the Queen Elizabeth University Hospital and the Royal Hospital for Children, Glasgow

Witness Statements – Volume 3