Scottish Hospitals Inquiry
Supplementary Witness Statement of
Laura Imrie

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

1. Individual background and overview

1.1. Full name

A Laura Jane Imrie

1.2. Current role description and work history with reference to CV

A Appendix 1

1.3. Outline of professional qualifications

A Appendix 1

1.4. Areas of specialist interests and expertise? How did these develop?

A Appendix 1

1.5. Briefly describe your involvement with infection control in QEUH, what triggered your involvement in the IMTs, and what your role was when the National Framework was triggered - (full statement to be taken in due course)

A Part of the role of NHS Scotland Assure and Antimicrobial Resistance & Healthcare Associated Infection ("ARHAI") Scotland is to receive, review and report infection related incidents across NHS Scotland. As an Infection Prevention and Control Nurse Consultant (IPCNC) within ARHAI part of my role would have been communicating with any NHS Boards reporting incidents into ARHAI. This may have been to request further information relating to the incident, to provide advice/support to the IMT or as part of the ARHAI role to

provide communications to Scottish Government.

Within my role as IPCNC I would attend an IMT on the request of the NHS Board or when supporting the National Framework triggered by either the NHS Board or Scottish Government.

In relation to the Water Related Incidents within the Royal Childrens Hospital and QUEH I supported the IPCNC who was the lead contact for ARHAI. In this incident I attended IMT to cover for leave or in my capacity as Clinical Lead for the Surveillance programme within ARHAI to discuss the data report.

2 Your report – HPS Review of NHSGG&C paediatric haemato-oncology data – October 2019

2.1 How did your report come about? **(Bundle 7, Document 6, page 214)** Is it a requirement when the National Framework is triggered? If so, what are the requirements/ specification for the report?

A Report was commissioned by Chief Nursing Officer (CNO) following the NHS GGC Stocktake Meeting 25th September 2019. Not a requirement of the National Framework.

2.2 If not, was it commissioned, and if so, by whom?

A As above

2.3 Terms of Reference: Were you given these precise objectives, or did you have some leeway?

A The original request was emailed to ARHAI from Chief Nursing Officer Directorate (CNOD) “CNO commissioned HPS to undertake an independent expert review of GGC’s data and then to produce a position statement and status report on the incident, setting out from start to finish: how the incident has developed over time; what measures have been put in place to manage risk; and HPS’ view on whether the ward is safe. This will include a full breakdown of the original and subsequent hypotheses; the work undertaken to investigate them; and the full suite of control measures implemented”. There were several

conversations thereafter with Scottish Government to refine the objectives for the comparison of data mainly the role of the IMT in determining the ongoing controls and patient safety. A separate report: Summary of Incident and Findings of the NHS Greater Glasgow and Clyde: Queen Elizabeth University Hospital/Royal Hospital for Children water contamination incident and recommendations for NHS Scotland situational assessment report produced in response to the National Framework being invoked. **(HPS Report Water Contamination Summary of Incident and Findings – December 2018 – Bundle 7, Document 2, page 32)**

2.5 If the former why did you select these particular objectives?

A The objectives for the report were agreed to focus of the data sets that were informing the decisions of the IMT.

2.6 Did you work alone or part of a team? If in a team, who did what?

A Fiona Murdoch – Epidemiologist Stephanie Walsh – Data Manager Elaine Glass – Data Manager Shona Cairns - Epidemiologist

The data and methods were also reviewed by Prof Chris Robertson Strathclyde University

NSS Public Health & Intelligence Governance Group

2.7 To whom was the finalised report sent?

A Jennifer Armstrong NHSGGC Medical Director Fiona McQueen SG Chief Nursing Officer Josephine Ives CNOD Policy Unit

Lesley Shepherd SG CNOD Policy Unit IPC Professional Advisor Jason Birch CNOD Policy Unit

Emilia Crighton CPHM Chair of IMT Sandra Devine ICM NHSGGC

Scott Davidson NHGGC Associate Medical Director Jacqui Reilly NSS Nurse Director

2.8 What did GGC do with the report?

A I am unaware of what NHSGGC did with the report.

3 Data and Methodology

3.1 The datasets examined were 1) CLABSI for paediatric haematology and 2) ECOSS for the named wards and 3) LIMS..Were any other datasets a) available and if so b) considered? Why?

A These datasets were compared as all three datasets were being used to inform the IMT however there was different conclusions being drawn. SG therefore requested a review to explore each data set and where there were differences to identify what these were and the significance. ARHAI extracted data from ECOSS and the other data was provided to ARHAI by NHSGGC. There were no other data set available.

3.2 You note that of the three sources there are pros and cons to each, and you also note that each data set uses different case definitions and methods, which account for the discrepancies. Would a more integrated system (as recommended by the CNR) be 1) feasible and 2) desirable? Or would more consistent recording of data alone be sufficient to alleviate problems?

A LIMS does transfer data across into ECOSS, with minimum requirements for data transferred agreed with Public Health Scotland, not all data is transferred and indeed different local laboratories across NHS Scotland will transfer different data. There is currently a laboratory improvement project “ECOSS Development Rollout Improvement Programme” (“EDRIP”) looking at the quality and standardisation of local lab data transferred into national systems. The CLABSI data is collected to monitor Central Line Associated Bloodstream Infections and therefore definitions and methodology are designed for that purpose.

A complete national database would be desirable, the feasibility would depend on national funding and IT infrastructure capabilities.

3.3 Can you explain how you developed your overall methodology?

A A plan of analysis was developed based on the commission from SG and follow up conversations. This defined the epidemiological review and was agreed with the ARHAI team supporting the work.

3.4 Did you consider alternative methodologies? How were these discounted?

A Yes however the methods used were restricted given the time available, the limited data and small numbers being reviewed.

3.5 Fungi (all species of the following: Candida; Rhodotorula) were excluded as it could not be established if all positive fungi blood cultures were being processed through ECOSS. What is the reason for this?

A The Cryptococcus and Mucorales data held within ECOSS are not currently suitable to describe the local or national epidemiology. EDRIP aims to address these issues but until such time, the most robust way to describe the epidemiology in NHSGGC would be through local LIMS system along with other local data systems. This would ensure all cases are ascertained and validated providing a more robust epidemiological picture to support investigations. For the same reasons, ARHAI were unable to provide robust national comparison data as the data held at national level are unvalidated and incomplete.

3.6 Case definition **(Bundle 7, Document 6, page 220)**. Why was this used? Were any others considered?

A The case definition was aligned with other national bacteraemia surveillance case definitions, a standard 14 day rolling deduplication was applied to the ECOSS dataset. All positive blood cultures were included with the exception of postmortem blood, any quality test samples, foetal samples or non-human samples.

3.7 Use of SPC charts and methodology. The CNR had reservations about this owing to a) the difficulty to establish a baseline and b) the small number of incidents. To what extent do you agree/ disagree?

A A caveat was included in the report to highlight the limitations and noted that the purpose of the SPC triggers is to identify when it is appropriate to instigate a local investigation into the possible increases in cases. Given the small numbers for the environmental group T- Charts (time between event) were considered, however this would not have accounted for change in activity.

Timescales for delivery of the report were also a factor when considering

methodologies available. ARHAI sought advice from Professor Chris Robertson, Head of Statistics at Health Protection Scotland.

4 Difficulties accessing information and data sharing

4.1 It has been noted by, among others, the Case Note Review panel **(Bundle 6, Document 38, page 975)** that the collection, storage and sharing of data was sub optimal? To what extent did you experience:

a) Data noted with no location or date?

b) Limited organisms being tested for?

c) Inconsistent recording of data – eg IMT minutes not matching sample; information on one system not matching another system

A Re bacterial typing in particular; information had to be collated from several different systems and the numbers of environmental samples were limited and lacking in location information as well as comparisons with other microorganisms. Not enough bacterial isolates were included. There was no database recording all typing data.

ARHAI do not have access to local NHS Board systems and data provided by NHSGGC was provided as an extract, therefore I am unable to comment.

4.2 What do you believe was the basis/cause of these issues?

A ARHAI do not have access to local NHS Board systems and therefore I am unable to comment.

4.3 Did this impact on the preparation of your report? In what way?

A The aim of our report was to compare the datasets being used by the IMT for managing the incident therefore we were provided with these individual datasets, and were not interrogating laboratory systems for data.

4.4 The Case Note Review in particular **(Bundle 6, Document 38, page 1069)** was critical of the fact that there was no electronic database for typing results. One of their recommendations was to develop a “comprehensive and searchable database that allows details of microbiology reference laboratory reports to be compared between samples of the same bacteria obtained from different

patients or environmental sites". Are you able to comment on whether this has been achieved?

A No I am unable to comment if this has been achieved by NHSGGC.

5 Infection patterns

5.1 According to many clinicians and microbiologists, infection rates at QEUH were unusual both in frequency and type. However, it is acknowledged that it was difficult to measure empirically as there was no data readily available for many of the (rarer) organisms. Do you consider that there were:

a) more bloodstream/ patient infections than normal?

A When all bloodstream infections were reported together, then no there was no increase. This was mainly due to the improvement programme to reduce CLBSI which led to a reduction in gram positive bloodstream infections.
However this was not mirrored in the reporting of gram negative bloodstream infections.

b) more unusual bloodstream infections? (we take the point that water sampling/ environmental testing might show up rare organisms that are always present but never tested for)

A Yes, there were more unusual organisms isolated from clinical samples.

c) Multiple bacteriaemia in one sample- Dermot Murphy and Kathleen Harvey-Wood consider this unusual. Do you agree?

A Yes, polymicrobial bloodstream infection are unusual.

5.2 If you do NOT agree, can you venture an opinion as to why this was the perception?

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

A The role of ARHAI Scotland remains. NHS Boards are still required to report in Healthcare Infection incidents as per NIPCM Chapter 3 National Infection Prevention and Control Manual: Chapter 3 -

https://www.nipcm.scot.nhs.uk/chapter-3- healthcare-infection-incidents-outbreaks-and-data-exceedance/ **(Bundle 27, Volume 4, Document 16, page 165)**

NHSGGC have only reported one incident to ARHAI Scotland within this patient population (paediatric haemato-oncology) since January 2022. This incident was not healthcare associated.

5.4 The Case Note Review **(Bundle 6, Document 38, page 975)** makes the point that GGC introduced significant interventions and control measures (ward closure, POU filters, chlorination) in response to these infections and that they did so with the support of external agencies. They suggest that they would not have done so unless they accepted that there was an environmental link. Do you agree? Or was this solely to address public confidence and no other reason?

A My understanding is that several IMT agreed hypotheses of a potential environmental source and controls were put in place in accordance with reducing the risk of transmission from this source. I have never seen or heard any evidence to suggest these controls were to address public confidence. To my knowledge many of these controls remain in place.

Key Question 4

A question which the Inquiry needs to consider, (as did the CNR) is as follows: *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?*

5.5 Was the question of infection link part of your paper's Terms of Reference? If not did your report address the question to some extent?

A No the papers sole purpose was to explore the three different infection data sets which did not include any environmental samples.

5.6 What do you understand by "infection link"? Is it a causal link, or something less, such as association or contribution?

A Cases that are "linked" are normally linked by pathogen group, time, place or

person. “Linked” cases require further investigation to establish if the link is real and if so what the link may be. Our review of the data did not include mapping of individual patient risks or environmental samples as there was no remit to establish links.

5.7 As you will be aware, the CNR concluded that the vast majority if the cases they studied were either possibly or probably linked to the hospital environment. In very general terms do you agree or disagree with their findings?

A In very general terms, based on the hypotheses generated by several IMT, their investigations and the success of environmental controls, I agree. I have never had any other hypotheses or evidence shared or discussed with me directly to suggest any other hypothesis.

6 <u>Whole Genome Sequencing and Typing</u>

6.1 What typing was carried out within GGC? On the evidence we have seen so far this seems to be confined to cupravidius, stenotrophomonas and enterobacter. Why only these three?

A I am not aware of all the typing that NHSGGC carried out however I am aware of typing being carried out in the organisms listed.

6.2 There is a disconnect between the position put forward by GGC and many of the authors. We have seen the view that while typing can be used to confirm a link, an absence of typing cannot be seen to exclude a link. Where two isolates are not closely linked does this exclude a link? Or merely not confirm one?

A My understanding of the published literature is that due to the complexity of environmental sampling where two isolates are not closely linked, this does not exclude a link.

6.3 The CNR took the view that, even in the absence of typing, it is possible, taking all the evidence as a whole, to identify a “probable” link. Do you agree / disagree? Why?

A I agree, using descriptive epidemiological data persons were linked by time and place to an environment where clinical samples isolated the same organisms as

environmental sources. Environmental controls were widely utilised and are still in place.

6.3 According to one witness outbreaks can have more than one strain, and it is not unusual to see more than one strain of bacteria in a sample. Consequently, the presence of two strains does not rule out a common source, although it may rule out direct transmission. Do you agree?

A Agree.

7 Additional questions

7.1 How common is a breach of the Upper Warning limit?

A If the data falls above the upper warning limit then this is a signal of a special cause variation. If a process is in control and all characteristics of the process are stable, then you would not expect to have points above the UWL.

7.2 What is the consequence of such a breach?

A Areas of special cause variation are a trigger in the context of quality control or improvement endeavours, potentially revealing hidden issues. An SPC chart signal should not be automatically construed as an indicator of a problem, nor do such signals provide insights into the root causes of the variation. Rather, these signals should serve as a catalyst, prompting the user to delve deeper into investigation and analysis.

7.3 On page 23 **(Bundle 7, Document 6, page 235)** you make the following statement “The SPC charts included in this report describe that there has been instances of variation outside what would normally be expected in this patient population” Can you expand on this? Is this with reference to empirical data, or simply an impression?

A This statement refers to Table 4 Summary table listing SPC shifts, trigger points (UWL breach) and outliers (UCL breach) following the move to RHC using HPS data from July 2013 to September 2019 (page 17) **(Bundle 7, Document 6, page 231)** of the report.

7.4 You also say, “The data presented in this report do not provide evidence of

single point of exposure",

a) Can you expand on this? What do you mean by "single point of exposure"?

b) Does this rule out a link between infections and environment, or simply not prove one?

A When individuals are all subjected to a shared source of exposure within a short timeframe the number of cases surges quickly, reaching a peak, and then tapers off. Most of the cases manifest within a single incubation period this was not the case in the incident being investigated. No the report did not rule out this link, it did not prove one as this was not an objective for the report.

8 <u>Comments on your report by others</u>

The following is an extract from the Case Note Review 8.2.3 Review of NHS GGC Paediatric Haemato-oncology data (HPS October 2019)83 **(Bundle 6, Document 38, page 1068)**: "The context for the report is that, having supported NHS GGC in dealing with cases of blood stream infection in patients in Wards 2A and 2B, associated with concerns about the contaminated water supply in 2018, HPS were asked to assist when concerns emerged about a suspected increase in Gram-negative environmental (GNE) bacteraemias in patients on Ward 6A during the summer of 2019.

We had not intended to provide a critique of this report as we saw it as one of a number of previous investigations, the results of which should not influence our own. However, its significance loomed large in our discussions with NHS GGC and we have therefore added this short section summarising our view of the reports findings. The aims of the report were to describe any differences in the datasets being used to explore the situation; to review the GNE infections; and to identify if there had been a change. The principal methodology used was the creation of Statistical Process Control (SPC) charts which were used to explore the data collected from July 2013, before the move of patients to the new site at QEUH/RHC, until September 2019. Changes in hospital activity data for the Paediatric Haematology Oncology service were explored in parallel and, finally, comparisons were made between data for the whole of RHC, for the period June 2015 to September 2019, with similar data for the Royal Hospital for Sick Children, Edinburgh and Royal Aberdeen Children's Hospital. In summary, the report identified periods at which there were upward shifts, trigger points (above

the Upper Warning Limit) and outliers (above the Upper Control Limit) in the SPC plots of bacteraemia identified since the move to the new hospital. Overall, however, patterns showed no consistent trend. There were also differences between NHS GGC and the data from Edinburgh and Aberdeen. This showed higher rates for environmental with enteric bacteria over the whole time period at NHS GGC, but lower rates for Gram-positive and no difference for Gram-negatives and environmentals alone. Various subgroup analyses showed no consistent message.

As far as we are able to ascertain from our own assessment of the data presented in the report, we agree: a) that the dataset used was providing an accurate reflection of the situation at NHS GGC; b) that there were episodes of variation in the SPC data (the latest occurring in September 2019) but that this alone did not provide clarity about its cause or significance; and c) that the caution expressed about small numbers in the analysis of some subsets of the data, is justified. We do not see that this report would have provided any clear message of either reassurance or concern about past events. Nor do we see that it offered a clearly

interpretable and favourable comparison with other Scottish children's hospitals (not least because the size of the paediatric haematology oncology services in these three hospitals varies very substantially – NHS GGC being easily the largest).

From our perspective, the most useful output of the HPS report lies in the clarity of its recommendations for the future, some of which align with our own. We would particularly emphasise the points made that, going forward, interpretation of these data requires the systematic collection of clinical data; must be set in an environmental context; and requires continual monitoring. NHS GGC accepted the need for ongoing monitoring."

8.1 Can you comment on this? To what extent do you agree/ disagree? In particular do you agree that 1) patterns show no constant trends and that 2) the information offers a clearly interpretable and favourable comparison with other children's hospitals?

A 1) I would agree that the comparison of the data sets had many limitations and due to the small number within the cohort under investigation and the short time

period studied there were no clear messages of reassurance or concern. The recommendations within the report were developed in recognition of the gaps in the report.

2) The limitations of the data available for comparison against other hospitals prevents either a favourable or unfavourable comparison to be made.

8.2 In their response to PPP5 -History of Infection Concerns-NHSGGC (at para 4.2 say as follows **(Substantive Core Participant Responses to Provisional Position Paper 5 – The History of Infection Concerns (HOIC) for the Queen Elizabeth, page 25)**:

"Accordingly none of these comparison exercises (of which the review is one) indicates that during the period of which this Inquiry is concerned, there was an increased rate of overall infection or of infection from microorganisms relating to the built environment at the QEUH. Indeed, the ARHAI comparisons with other health boards found that the infection rates at QEUH are as good if not better, than at other Health Boards". Can you comment on this? To what extent do you agree/ disagree?

A The limitations of the data available for use in the report for the purposes of comparison against other hospitals prevented either a favourable or unfavourable comparison to be made. I am unaware of any reports, relating to this incident, produced by ARHAI that concluded rates to be "as good if not better, than at other Health Boards".

8.3 In their report the Oversight Board say (see) 133. **(Bundle 6, Document 36, page 848)**. "However, the Oversight Board does not believe the HPS analysis demonstrates that there was nothing 'unusual' occurring with infection incidents in the RHC and QEUH. The report principally focused on a review of data quality and datasets. While it clearly set out some findings on comparisons with other hospitals, it equally caveated its work by noting the different sample sizes of the patient groups in each hospital (for example, the Aberdeen and Edinburgh hospitals did not have bone marrow transplant units in this analysis). There were numerous 'breaches' of the upper control limits, showing spikes in infection rates throughout the period. Ultimately, the report did not comment on the issue of water contamination, or offer a view about what kind of action

should or should not have been taken in response to the infection incidents being identified." Can you comment on this?

A Agree.

8.4 Your report makes eight recommendations (page 22) **(Bundle 7, Document 6, page 236)**. Other than question five which relates to control measures in force at the time, to what extent have these been implemented?

A I am unable to comment of the recommendations for NHSGGC.

The recommendations for HPS feature on ARHAI Scotland work plans and are ongoing.

ARHAI Scotland will review the categorisation of environmental organisms following the literature reviews for Chapter 4 of the NIPCM.

ARHAI Scotland, August 2023: The water systems literature review is into phase 2 (development of recommendations) and is due to go out to working groups for consultation, with estimation completion date of Spring 2024. Work has also resumed on the ventilation systems literature review, estimated completion in 2024.

ARHAI Scotland will further support the development of an appropriate trigger for ongoing monitoring.

ARHAI Scotland update, August 2023: ARHAI Scotland continue to develop and refine methodologies to monitor and review triggers in surveillance data.

ARHAI Scotland should consider these findings when developing methods to support other boards in monitoring infection risk associated with environmental organisms.

ARHAI Scotland update, August 2023: Development of a proof-of- concept environmental surveillance system has been completed with next steps to undertake a pilot study during 2023/24 financial year.

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.

Appendix 1

Laura Jane Imrie Clinical Lead

Summary

Clinical Lead with 5+ years of experience leading and managing a national infection prevention and AMR program and services. Sound understanding of clinical governance, effective clinical engagement and priority management. A strong track record of excellent performance in delivery of the national IPC and AMR strategy, managing change and developing response systems to improve clinical quality and patient outcomes. Extensive experience and understanding of policy development and national implementation. NMC registered with MSc in Infection Prevention and Control.

Experience

Clinical Lead NHS National Services Scotland Antimicrobial Resistance and Healthcare Associated Infections (ARHAI) Scotland, NHS Scotland Assure, Glasgow Scotland

2018 – Present

Leads the develop and implementation of appropriate ARHAI Scotland long-term business strategy, working with internal and external stakeholders to ensure ARHAI Scotland strategy delivers what's needed to reduce the burden of infection for the people of Scotland and links with the needs, priorities and policy of Scottish Government.

Develops and supports Scottish Government on long term strategic plans (5 years plus) for specified areas within AMR, IPC and HAI, which impact across the NHS and has implications for associated resources both internally and externally in terms of programme development and delivery.

Anticipates future developments, working on a 5 year planning horizon.

Responsible for prioritisation of clinical resources to ensure open and transparent process for management and delivery of planned and reactive programmes of work in line with NHS Scotland

Responsible for advising and overseeing the development of a portfolio of

ARHAI Scotland Priority Programmes, which impact on the NHS and contribute to the wider UK policy and strategy for HAI & AMR.
Undertakes responsibility for the recruitment, selection and development of senior clinical staff.
An active member of the clinical governance groups with responsibility for escalation and management of clinical risks within the NSS clinical governance framework.
Nurse Consultant Infection Prevention & Control NHS National Services Health Protection Scotland, Glasgow Scotland

2012 – 2018

Provided strategic clinical leadership to Scottish Surveillance Healthcare Associated Programme (SSHAIP).
Produced and published detailed surveillance reports examining, analysing and evaluating variations/exceptions or trends and highlighting and synthesising these with expert knowledge in an appropriate and accessible way for stakeholder groups.
Participated in the consultant daily on call rota for HPS, acting as a national source of information and advice for public health and infection prevention and control related issues.
Developed and maintained close working links with key stakeholders (e.g. NHS Boards, Local authorities, Scottish Government, Academic bodies), providing input to the development and implementation of relevant Scottish and UK Government public health and IPC policy (e.g. through participating in expert national and international advisory groups)
Led in the strategic development, business planning and relevant corporate functions of HPS SSHAIP providing scientific professional leadership and participating in performance management and staff development of the multidisciplinary team working under the post-holder's leadership.
Overseen the development and maintenance of Healthcare Associated Infection surveillance and systems designed to monitor challenges, consequences and the impact on these of interventions.
Provide national leadership to NHS Board support to support outbreaks, infection related incidents and emerging issues relating to IPC or HAI

Lead Infection Prevention & Control NurseNHSGGC West Sector, Glasgow Scotland

2007 – 2012

Senior Infection Prevention & Control Nurse NHS Greater Glasgow Victoria Hospitals, Glasgow Scotland

2002 – 2007

Infection Prevention & Control Nurse NHS Lanarkshire, Monklands Hospital, Lanarkshire Scotland

2000 - 2002

Infection Surveillance Nurse NHS Lanarkshire, Hairmyres Hospital, Lanarkshire Scotland

1997 - 2000

Staff Nurse NHS Lanarkshire, NHS Lanarkshire, Hairmyres Hospital Lanarkshire Scotland

1993 -1997

Qualifications

MSc Infection Prevention & Control University of Highlands and Islands 2007 – 2011

BSc Nursing with Specialist Practitioner Infection Prevention & Control University of Dundee 1999 – 2002

Registered General Nurse Lanarkshire School of Nursing 1990 – 1993

The witness was provided the following Scottish Hospital Inquiry Bundles / documents for reference when they completed their questionnaire statement (Appendix A).

Appendix A – Documents referred to by SHI in this Questionnaire:

Bundle 7
Bundle 6
Bundle 27
Substantive Core Participant Responses to Provisional Position Paper 5 – The History of Infection Concerns (HOIC) for the Queen Elizabeth, page 25):