Scottish Hospitals Inquiry
Witness Statement of
Dr Emilia Crighton

Introduction

1. My name is Dr Emilia Mihaela Crighton. I am currently employed by NHS Greater Glasgow and Clyde ('NHS GGC') as Director of Public Health.

Work Experience

2. I am a doctor with full GMC registration and licence to practise, GMC 4407584. I gained entry to the GMC Specialist Register on 3rd May 2004. I have been a Consultant in Public Health Medicine since May 2004 initially in NHS Argyll and Clyde (NHS AC) and then NHS GGC following NHS AC dissolution in 2006. Over that period had different additional leadership and managerial roles like lead clinician for screening services (2006-2012); clinical director (2005-2006); head of health services section (2012-2022); interim director of public health (2015-2016 and 2022-2023); director of public health (since 2023). Prior to training in public health medicine (1999-2004; employed by NHS GGC and based in NHS AC), I held trainee senior house officer or registrar posts in orthopaedics; accident and emergency; general medicine covering different specialities, including infectious diseases and haematology in Raigmore Hospital, Inverness (1994-1997) and Dundee Teaching Hospitals, Dundee (1997-1999).

3. I have served as Convenor of the Faculty of Public Health in Scotland Committee providing national professional leadership and advocating for changes to public health policy.

4. I have experience in leading and supporting the investigation and management of health protection cases and incidents, including major incidents due to CBRN threats (chemical, biological, radiological and nuclear materials). I have strong leadership; analytical; problem solving; influencing; and communication skills and a track record of identifying and implementing solutions to complex population health challenges.

5. Academic and professional qualifications: Baccalaureate (Romanian; Mathematics; Physics; Informatics); Doctor Medic (University of Medicine and Pharmacy Cluj, Romania); Master of Public Health (Glasgow University); Fellow of the Faculty of Public Health (UK); Fellow of the Royal College of Physicians (Edinburgh and Glasgow).

6. The Scottish Hospitals Inquiry (the 'Inquiry') has asked me to provide a written statement in preparation for the Glasgow III hearings commencing later this year in relation to my experiences during my time at NHS GGC.

7. The inquiry have asked me to review the following documents:

- the circumstances of my appointment as Chair of the IMT - Gram Negative Bacteraemia (GNB) – Paediatric Haem Onc, - meeting 23 August 2019 (**Bundle 1, Document 78, page 348**)
- my involvement with the SBAR dated 25 August 2019 - Ward 2A Gram Negative Bacteria (**Bundle 4, Document 41, page 165**)

8. This statement seeks to provide that information to the best of my recollection.

NHS GGC Role and IMT

Appointment as chair of IMT

9. On 22 August 2019 I was asked by my line manager Dr Linda de Caestecker, the then Director of Public Health, if I could help the next day, 23rd of August 2019, and chair the IMT meeting for Gram Negative Bacteria in paediatric haemato oncology; the Medical Director Dr Jennifer Armstrong asked for help from public health.

10. On 23rd August 2019 I took the IMT chair role; the previous chair, Dr Inkster, attended the IMT meeting. **(Bundle 1, Document 78, page 348).** During the meeting I witnessed a quite hostile tone of challenge from a senior clinician and Annette Rankin (Health Protection Scotland representative) towards Sandra Devine when she advised the group about the background to seeking a new chair and the advice previously received about the IMT being chaired by a consultant in public health medicine.

11. During the meeting I noticed the clinicians' challenge and frustration about the collective inability to have stopped new infections and their expressed need for a safe environment to treat high risk patients. I took these as a sign of their deep care for the welfare of their patients and of the strong desire to bring the incident under control.

12. In my experience chairing IMT meetings requires generic chairing skills that are applied to the specific situation of an incident. Given the nature of public health work I am used to bringing together different perspectives in complex situations to generate solutions. Enabling respectful, civil deliberation is essential to the working of a group and its ability to make sound decisions, especially when working in complex circumstances.

Background – source of infections

13. From both my hospital and public health professional, and personal, experience I am fully aware of the potentially devastating impact infections can have on the life of an individual and their families, irrespective of the source of their infection.

14. At the time of taking the IMT Chair on 23rd August 2019, from my clinical experience I was fully aware of the increased susceptibility to infections among this immunocompromised group of patients. We live in a microbiological world, carry microorganisms on and in our bodies and are continuously exposed to microorganisms in the air; water or surfaces all around us.

15. Looking for the potential source of infection is part of the clinical skills; often times a source is not obvious and a root cause analysis could be carried out. Identifying the source and mode of transmission accurately not only enables effective control measures to prevent other people from getting the infection but avoids implementation of unnecessary and potentially harmful control measures.

16. Identifying sources of infection through epidemiological investigation is a basic public health skill that dates back to mid-19th century, enriched by developments in research methodology; statistics; microbiology; genomics; metagenomics. A key challenge in epidemiology has been the establishment of causality links, beyond observed associations that could be due to chance; bias; or confounding; or the cognitive bias of “clustering illusion”.

17. Phylogenetic fingerprinting using whole genome sequencing (WGS) together with epidemiological and environmental investigation has been identified by the European Centre for Disease Prevention and Control (ECDC) as a means to deliver ultimate resolution for detecting and analysing transmission routes and tracing sources of infection. I was aware that the Glasgow laboratories

have developed bioinformatics capability to carry out WGS as a means to identify the linked infections in outbreak investigation, as used in the HIV outbreak in the City.

18. Investigating the source of infection is particularly important when there is an increase in the number of people infected with a specific micro-organism - that points to the possibility of a possible common source of infection; such instances would be considered a potential incident or outbreak.

19. Traditionally, when managing incidents due to infections, we define “the case” – i.e. who would be part of an incident; formulate a hypothesis about potential source of infection; the route of transmission (airborne; person-to person contact) and portal of entry in the body. Bearing in mind the infection control chain, control measures are proposed to interrupt the chain and stem out clinical infections.

IMT investigations

20. On 23rd August 2019 the IMT members discussed the case definition and agreed to include any patient with bloodstream infection (BSI) due to organisms commonly found in the environment and who were in contact with Ward 6a or supporting services within the last month; there was no restriction to any specific bacteria; this allowed for any such type of infection to be investigated.

21. At that time there were a number of control measures already in place to reduce exposure of the patients to organisms commonly found in potable water – chlorine dioxide and point of use filters; or air – HEPA filters, linked to the prior hypothesis that the source of infections was the hospital environment. Patients were decanted into Ward 6A from Ward 2A; and were receiving chemoprophylaxis to prevent infections. New patients requiring chemotherapy were diverted elsewhere in Scotland.

22. A large proportion of the IMT meetings was dedicated to tracking the proposed environmental control measures. As new cases of infection occurred, in spite of the control measures, additional or alternative hypothesis named new potential environmental sources of infections like chilled beams; exposure to unfiltered water elsewhere; water leaks in Ward 6A kitchen; and additional control measures were proposed and implemented.

23. Route cause analysis was later proposed and carried out to look for common sources of infection or transmission. Additional possible sources of infection were considered.

24. The IMT also received reports of the enhanced supervision and hand hygiene audits, which are important links in infection prevention.

25. In support of the hypothesis, I sought epidemiological evidence to support the existence of an outbreak: two or more; or an excess above what would be expected, infections caused by the same bacteria that would be genetically the same. Epidemiological data presented by Dr Kennedy on 23rd August 2019 showed patterns of infection among the haemato oncology paediatric patients similar to those seen in Yorkhill hospital before the move to QEUH. **(Bundle 6, Document 27, page 95)**

26. The epidemiological data presented did not support the existence of an outbreak and there was a need to establish the norm of the expected rate of infections using both historical data and comparative data to units in Scotland or UK if possible; the analysis was commissioned from Health Protection Scotland. The analysis showed the local infection rates to be similar to those seen in other Scottish Units. As NHS GGC did not have an excess of infections compared to other Scottish units the existence of an outbreak was discounted.

27. Utilising the Glasgow laboratories capability to carry out whole genome sequencing Professor Leanord carried out the whole genome sequencing of the most common type of infection present - Enterobacter. The result showed the infections in different patients were not related to a common source or one another – meaning there was no outbreak and the most likely source of these infections was endogenous - the patient's own gut flora.

28. The root cause analysis (RCA) carried out to identify the reservoir of bacteria and the route of transmission highlighted the complex patient pathways as patients spent time outside NHS GGC environment as well. The RCA could not identify a common reservoir.

29. The combined findings from Health Protection Scotland report; Root Case Analysis; hand hygiene audits; water testing results and the implementation of estates work enabled the IMT to recommend the lifting of Ward 6A restrictions to treating new admissions on 14th November 2019. The epidemiological evidence would have allowed the reopening to admissions after the first meeting I chaired as I communicated to the Medical Director.

30. Based on objective evidence, the ward was positively declared microbiologically safe from 13th September 2019. The strongly held belief that the hospital environment was the source of patient infection required any proposed environmental controls to be implemented; additional, external analysis of epidemiological data; new tests like WGS; and ultimately clinicians' participation in the root cause analysis of infection for each patient and their understanding of infection chains and control.

31. A re-opening bundle covering ongoing surveillance; case investigation; escalation and reporting procedures was agreed together with additional resources.

32. The proposal was heard by the Chief Nursing Officer who agreed to it in November 2019 and nevertheless escalated NHS GGC Board to level 4 on infection control. I have no knowledge of the reasons behind the escalation decision.

33. As IMT chair I witnessed a group of colleagues from NHS GGC; Health Protection Scotland and later Scottish Government, come together to find solutions that ensured highest level of patient safety. In my view, the group evolved from having a narrow focus on a single issue – the hospital environment - to an open minded, exploratory approach that tried to ensure the true and specific cause was identified and effective controls were in operation.

Communication and wider engagement

34. The IMT meetings had communication as a standard agenda item; in addition, I communicated with the senior managers; and set up specific communication meeting with Haemato-oncology clinicians to discuss the epidemiological findings. I also presented the epidemiological findings to the Chief Nursing Officer (CNO) and her office staff; during the meeting an in-depth analysis of infection rates in Haemato-oncology including comparison to other units in Scotland, was commissioned by CNO from Health Protection Scotland.

35. I met the Cabinet Secretary Jeane Freeman when she visited Ward 6A; Professor Leanord and I provided an update on the investigation findings including the findings of whole genome sequence analysis.

36. I was included in the group presenting to NHS GGC Board the outcome of the investigations behind the recommendation to open Ward 6A; at that time, I asked that resource was made available to complete Whole Genome Sequencing for all bacteria isolates to establish if there were any links between patients or between patients and the environment.

Conclusions

37. The subsequent Whole Genome Sequencing analysis demonstrated the utility of the method in outbreak investigations and enhanced our understanding of the microbiological diversity of hospital environments. The findings do not support the hypothesis that the hospital environment in the QEUH/RCH was the cause of observed infections among haemato-oncology patients.

38. My role as IMT chair was limited as it was an additional duty in support of the Director of Public Health. That had the advantage of maintaining a strong focus on the effective working of the IMT meetings, informing all decision makers.

39. I was later asked to comment on the methodology employed in the Case Note Review and I was puzzled and expressed my disappointment with the methodology, which was dismissive of the new world-class standards of investigating outbreaks. See Public Health Commentary Case Review**.** **(Bundle 27, Volume 4, Document 34, page 364)**

40. As the last chair of the IMT it would have been my duty to seek re-assurance that all outstanding investigations have been carried out and the findings published for the benefit of learning and future patient safety. As the NHS GGC's Executive Oversight Board took over, my role in the immediate aftermath of the Incident became extinct and I will welcome the Public Inquiry findings and recommendations.

41. In my role of Director of Public Health, I read a number of expert reviews commissioned by NHSGGC to enhance our understanding of the interplay between the hospital environment and infections. In addition, I lived through the full immersive experience of outbreak management during the Pandemic. When managing risk of infection for individuals and populations the complexity can only be addressed using an iterative approach that gives consideration to all aspects in the infection chain construct through deliberation and takes account of wider impacts of any proposed control measures.

SBAR dated 25 August 2019

42. Regarding my involvement with the SBAR dated 25 August 2019 - Ward 2A Gram Negative Bacteria (**Bundle 4, Document 41, page 165**), as chair of the IMT on 6 September 2019, under agenda item 5 Incident Update, I have listened to and facilitated discussion of the issues raised in the SBAR as described in the minute of the meeting. The IMT agreed to send the updated SBAR back to the microbiologists.

43. At the following IMT meeting on 13 September 2019, an in-depth review of the microbiology and epidemiology data took place and the IMT concluded that ward 6A was microbiologically safe. On the evening of 13 September 2019, I received a document produced by Health Protection Scotland at the request of IMT entitled ”To support NHSGG&C IMT: Mycobacterium chelonae cases and the incidence of gram-negative bacteraemia (paediatric haemo-oncology)” Author: HPS; Audience: NHSGG&C – Incident Management Team; Date of issue: September 2019. The document footnote said “2019-09-13 GGC SBAR Final Draft”. (‘HPS SBAR’) (**Bundle 3, Document 16, page, 127)**

44. The HPS SBAR analysis showed that, following the patient's move to ward 6A/4B in September 2018, the rates of environmental infections in Glasgow Unit have been similar to the combined environmental infection rates of Edinburgh and Aberdeen Units, meaning that there was no excess of environmental infections. On detailed examination of the HPS SBAR content I could see no data justification for the restrictions imposed to new admissions to ward 6A at the beginning of August 2019.

45. The following day, Saturday 14 September 2019, I wrote to Jane Grant, Chief Executive, and Jennifer Armstrong. I provided evidence that contradicted the opinion expressed in the SBAR dated 25 August 2019 recommendation point 2; and challenged the need for a re-assessment of the ward 2A decant option appraisal - recommendation 1; for their consideration and advice.

46. The subsequent HPS analysis published in the "Review of NHSGG&C paediatric haemato-oncology data" report October 2019, show there has been no excess in environmental infections in Glasgow compared to the combined Aberdeen and Edinburgh Units, for any periods of analysis between June 2015 to September 2019. The only excess observed has been in the rate of the gram negative (including enteric bacteria) rates for the period October 2017- September 2018 and for this period, as noted above, no links were established between the environment and patient infections. **(Bundle 25, Document 1, page 9)**

47. Learning from other areas of public health practice like national screening programmes or cancer care, in my view, it would be beneficial for patient's quality of care and ultimately patient safety for national (preferably UK wide) prospective data on infections to be collected, analysed using pre-agreed methodology and published for all UK haemato oncology Units.

Whistleblowing

48. I had no involvement in any of the whistleblowing process.

Declaration

I believe that 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.

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

Appendix A

A43255563 - Scottish Hospitals Inquiry - Hearing Commencing 12 June 2023 - Bundle 1 - Incident Management Team Meeting Minutes (IMT Minutes)

A37530019 – Scottish Hospitals Inquiry - Hearing Commencing 9 May 2022 – Bundle 3 - Governance - Volume 1 (of 3)(external version)

A43299519 - Scottish Hospitals Inquiry - Hearing Commencing 12 June 2023 - Bundle 4 - NHS Greater Glasgow and Clyde: SBAR Documentation

A43293438 - Scottish Hospitals Inquiry - Hearing Commencing 12 June 2023 - Bundle 6 - Miscellaneous documents

A49585984 – Bundle 25 - Scottish Hospitals Inquiry - Hearing Commencing 19 August 2024 - Bundle 25 - Case Note Review Expert Panel, Additional Reports, and DMA Canyon (External version)