Scottish Hospitals Inquiry
Witness Statement of Questions and Responses
Peter Hoffman

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

Professional History

1. Please list your professional qualifications, with dates

A B.Sc. (IIii) Microbiology, University of Bristol 1976
Honorary Diploma in Hospital Infection Control (HonDipHIC), University of London 1999

2. Please give your chronological professional history.

a) roles held where and when- please also provide an up-to-date CV.

A From 1977, a scientist in the Public Health Laboratory Service (1977-2003), Health Protection Agency (2003-2013), Public Health England (2013-2021) and the UK Health Security Agency (2021) in the department dealing with healthcare associated infections. Essentially the same role progressing through those successive organisations, becoming a Consultant Clinical Scientist. Retired in October 2021.

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

A A broad interest and expertise in the ways that microbes causing infection could transfer in healthcare and analogous settings and preventing or limiting that transfer. This included decontamination (cleaning, disinfection & sterilization) of

reusable medical instruments and other relevant items such as infant incubators and healthcare fabrics; decontamination of the healthcare environment; aspects of hospital design, ventilation in operating theatres, procedure rooms, isolation facilities, specialist burns units and elsewhere; hand decontamination; the use of personal protective equipment in the context of infection prevention. This interest and expertise extended to contexts outside the medical field such as infection prevention in tattooing and body piercing. My bachelor's degree in microbiology provided me with a broad context that facilitated build-up of expertise by experience in infection prevention. My honorary diploma in hospital infection control was awarded as a "grandparent" diploma for my part formulating and delivering that qualification for the University of London.

Summary of Involvement

4. Please describe in brief terms any formal instructions/ appointments with the ICPT at QEUH, both pre and post opening (July 2015) other than in respect of Cryptococcus.

a) Which issues were you consulted with, and when?

A I had no such formal instruction or appointment. I have no recollection of consultations, but this does not exclude such consultations having occurred.

Cryptococcus in General

5. What is your own experience of Cryptococcus? How many times had you personally come into contact with Cryptococcus in a healthcare setting prior to your involvement with QEUH?

A Assisting with the issue of Cryptococcus at the QEUH is the only time I have had specific involvement with Cryptococcus in any context.

6. What is your personal view on the link between Cryptococcus and the built environment in general?

A My personal view is that it is a fungus of an uncertain range of environmental origins that transmits from outside the clinical environment to inside, where there may be susceptible patients, via an airborne route. This could be prevented by specialist ventilation systems that supply air via air filters of a grade that remove fungal spores passing through them, that air being supplied to rooms in substantial excess of air mechanically removed from those rooms. The effect of this is that the excess of supplied air leaks out through the inevitable gaps that will exist in a room's fabric. The outward passage of air through those gaps prevents the inward passage of unfiltered air from surrounding spaces. Thus the only air for susceptible patients to breathe is that which has passed through adequate filtration.

Cryptococcus in QEUH

7. When did you first become aware of issues with Cryptococcus in QEUH? Who contacted you about them?

A I do not recall when I was first contacted about this issue. It would probably been via a phone call from Dr John Hood, a Consultant Microbiologist in Glasgow. A questionnaire sent to me from a parallel investigation by Police Scotland makes reference to phone conversation(s) with Drs Teresa Inkster and/or Christine Peters, both Consultant Microbiologists in Glasgow. In the original questionnaire sent to me by the Inquiry, the preamble stated ""…..we know that at one point he agreed with Inkster re aerolisation through air ducts form plant room" "indicating possible prior discussion. Both of these suggest prior discussion(s) to that with Dr Hood. These may have taken place, but I have no recollection of them.

8. What do you understand to be the issues with Cryptococcus at QEUH?

A That patients had developed Cryptococcus infection associated with being inpatients at QEUH. I have no recollection of being informed of the number of

patients involved until being a member of the Sub-group.

9. Did you give the IPCT any advice regarding Cryptococcus prior to the setting up of the Sub-group? If so please give details.

A My recollection is that I advised exploration of pigeon dropping accumulations found in the plantroom as a source of Cryptococcus that then ingressed into the ventilation system. I cannot recall specifically who I gave that advice to.

10. How did you become involved with the Cryptococcus Sub-Group meetings ? Who requested your involvement?

A My recollection is that I was asked to attend meetings by Dr Hood. I understood my involvement to be that of a specialist technical advisor within areas of my expertise rather than a full member of the sub-group.

Composition of the Sub Group

11. What do you understand to be the way the sub-group was set up?

A I have no information on this.

12. Which of the sub-group members were previously known to you?

A Dr Hood and probably minor interactions with Annette Rankin in her role with Health Protection Scotland e.g. on same working groups.

13. What were the group's Terms of Reference?

A I do not know the group's terms of reference.

Functioning of the Sub-Group

14. How did the group function as a whole? Were people able to speak openly?

A My impression was that it appeared to function well. It appeared to me that people were able to speak openly.

15. Did everyone contribute? Or were there some members who contributed more than others?

A It appeared to me that members of the group would contribute as and when their particular expertise became relevant. Dr Hood was the main contributor.

16. If there were disagreements, were opposing views respected?

A Yes

17. Was there external reporting? If so, to which agencies (SG, HPS, GGC Board)

A I do not know.

18. Do you consider you were given adequate resources and investigative materials to function effectively? If not, please elaborate.

A I did not require resources or investigative materials.

The Hypotheses.

19. During the life of the subgroup several hypotheses were put forward. How were they arrived at? Were any put forward by you personally?

A My recollection is they were all formulated by Dr Hood and that the structure of the report being based on exploration of a series of hypotheses came about after the group had already been meeting for a while. Elements that I had discussed in earlier meetings may have contributed to formulation of some aspects of some of the hypotheses, though I have no specific recollection of details of this, but basing the structure of the report on a series of hypotheses was Dr Hood's idea.

For each hypothesis please give your own opinion on its likelihood (or otherwise) and any other comments you might have.

20. Hypothesis 1- Plantroom Air

A In the Summary of Findings section in the group's report, this concerns

contaminated plantroom air entering the air distribution ductwork whilst the air handing unit (AHU) was shut down for maintenance, final filter removed for replacement and the AHU open to allow plantroom air in. I do not find the absence of C. neoformans on air sampling in the plantroom particularly evidential. The nature and level of air contamination in any environment may vary over time. What I do find evidential is that when AHUs were deactivated, as would occur during a filter change, air was observed to flow strongly up through the ductwork from the clinical area into the AHU, then into the plantroom. This indicates that whatever the contamination in the plantroom air, it would not transfer into patient areas when the AHU was out of service and the final filter removed for replacement. My experience from observing airflows around poorly sealed rising service voids in hospitals is that this effect (I know it as a stack or chimney effect) is a constant phenomenon. Additionally, the reported observation that “AHUs in Plant rooms related to case patient rooms/wards were not opened when the case patients were in these rooms/wards” makes this hypothesis even less feasible. In the main body of the report this also includes Cryptococcus ingress to the supply air when the ventilation is running as normal cryptococcal spores (if present) entering the Plant Room air (on for example, Plant rooms on Level 12 QEUH) and then gaining access to the Air Handling Units (AHU’s) ventilating the rooms/wards where the case - patients were”, also detailed in “Sixthly” in the section of the main report. This would have involved plantroom air bypassing filtration. Air filters are supplied as preconstructed units in a rigid frame which slide into mountings within the AHU, typically as an array 2 unit across and 2 units high. There can sometimes be unsealed gaps between the outer surface of the mounting and the AHU such that air can pass though these gaps. It will do so preferentially as there is a far lower resistance to the passage of air though gaps as opposed to passing through a restrictive filter meshwork. There can also be gaps between the filter units in the array i.e. they do not abut each other firmly. Air can similarly pass through those gaps without filtration. This was put to the Estates members of the group and they reported back that the filters in the relevant AHUs had been inspected and no gaps around or between the installed filters had been detected. There is also a possibility was that the AHUs had been constructed in a way that made them unsuitable for

microbiological contamination control of the air they supplied. The core element of an AHU is a fan that pulls air in to the AHU and then pushes it into the branched system of ductwork which supplies air to a number of outlets. All parts of the AHU before the fan will be under negative pressure – air is being pulled in by the fan i.e. air will pass inwards through any holes or gaps in the AHU's integrity. Similarly after the fan, both AHU and ductwork will be under positive pressure – air is being pushed along these section by the fan i.e. any holes or gaps will leak outwards. AHUs will often have 2 sets of filters. A fairly coarse filter as an early component of the AHU ("the primary filter") and a fine filter as a later component ("the final filter"). For healthcare applications where microbiological control of the supplied air is required, it is important that the final filter is positioned after the fan. This means that any holes or gaps in the AHU or ductwork after the final filter will leak outwards; there will be a loss of clean air but no ingress of unfiltered air. If the fan is positioned in the AHU after the final filter, there will be a section of the AHU after the final filter and before the fan which is under negative pressure. Unfiltered air and contaminants within it will be drawn inwards into the airflow after the final filter through any holes or gaps. I have come across high levels of fungal contamination in operating theatre air where this fault has been present and there have been significant gaps/holes in the AHU integrity. The Estates members of the group were informed about this and they reported that they had inspected the relevant AHUs and they were constructed correctly with the final filters after the fan. For these reasons I could not envisage how contaminated plantroom air that entered the AHUs could have escaped filtration. The efficacy of the filters is also relevant. Some of the AHUs were said to have high efficiency particulate air (HEPA) filters as their final filters. These are very fine filters, with their most penetrating particle size being generally around 0.2 microns; fungal spores are about 20 times larger. They are generally clamped into their mounting with non-drying gel seals, reliably sealing them such that air cannot bypass the filter. The recommended procedure is that after fitting, each HEPA filter assembly is challenged with airborne particles and lack of their passage through the installed filters is required to be demonstrated. Sub-HEPA filters, such as the F7 grade filters said to be used as final filters in the remaining AHUs, filter to lower quality assurance. These are graded on

percentage passage of a standard mixed particle size dust rather than specific sized particles. Their fit in situ is less secure than HEPAs and they are not tested for resisting the passage of particles after fitting. The majority of operating theatres have air supplied via F7 filters. I know from long experience of sampling air in operating theatres that fungal contamination of operating theatre air is occasional and sparse unless there is a fault such as those described above. Significant fungal contamination in the outdoor air, the air that these AHUs take in, is the norm.]

21. Hypothesis 2 Outside Air source

A This is detailed in the Summary of the report as “Wards 4C and 6A had F7 standard air filters but did not have HEPA filters therefore would allow through a percentage of C. neoformans spores if present in the outside air”. Whether the presence of what were reported to be modest accumulations of pigeon droppings affected the microbiological quality of the plantroom air remain in question. What I do not see as being in question is that the air in the plantrooms is derived from outdoor air and so would substantially reflect the microbiological quality of the outdoor air. I consider that my response to Hypothesis 1 applies equally to Hypothesis 2.

22. Hypothesis 3 Lack of protective Isolation

A This is given in the main body of the report as “The possibility that unfiltered air from the Plant rooms could, via mechanical or electrical risers and or service voids, get into the rooms/wards where the ‘at risk’ patients were and an explanation of the varying degrees of the ‘lack of control’ of air movements around the entrances and exits of 6A, 4C and even 4B.” One of the problems in addressing this is the lack of a definition of “protective isolation”. There is one table (“Table 3: Airborne protective facilities”) giving some guidance on how to achieve what might be termed “protective isolation” in the current Scottish healthcare ventilation guidance (SHTM 03-01) but this was issued in 2022. I have searched on that term in the previous SHTM 03-01 published in 2014 and found no matches. My definition of “protective isolation” would be a ventilation system that ensures that 100% of every breath a patient takes has passed

through a filter that ensures removal of all fungal spores. This would be achieved by passing the supply air through a HEPA or EPA (recent reclassification of the 3 previous lowest HEPA grades) filter in an AHU designed for specialist healthcare application (see my comments on Hypothesis 1) and ensuring the rate of air supply in the room(s) supplied substantially exceeds the extract rate. The excess supply air passes outwards through all the inevitable gaps in the room (e.g. poorly sealed covers on risers & voids, the door undercut, gaps around pipe or cable entry points etc.). If air is passing outwards, it means that unfiltered air in surrounding areas cannot pass back into the room through those gaps. Thus all the air present has that which has passed through the filter system in the supply mechanism. There can be no opening windows. I think this partially coincides with the definition quoted above from the main body of the report. My recollection is that the form of protective isolation I detailed above was only present in ward 4B patient rooms in the QEUH areas the investigation addressed. If a patient were assessed as being susceptible to infection by inhalation of airborne fungi, they would be protected whilst in a room ventilated to this strategy. I am not qualified to make that assessment of patient susceptibility.

23. Hypothesis 4 Cylinder Room

A This is summarised as “Unfiltered (outside air) circulating in the cylinder room (medical gas store) near PICU entered the patient room ….” with the qualification “when the case-patient was in this room it was a Positive Pressure Ventilated Lobby Room (PPVL)”. The ventilation strategy of a PPVL isolation room is that a high volume of air is mechanically supplied to the lobby of an isolation suite comprising a lobby, a patient bedroom and an ensuite (i.e. integral) shower/toilet room. The air supplied to the lobby then flows in two directions – part of it flows out into the corridor, part of it flows into the patient bedroom. This intended to create a barrier to air from the corridor entering the patient bedroom. The air from the lobby is intended to flow in a circular manner around the patient bedroom, collecting airborne contamination as it does so before being drawn into the shower/toilet room from which air is extracted. This strategy is meant to provide both source and protective isolation. I have reservations about the ways

in which this concept functions. “Protective isolation” as discussed under Hypothesis 3 involves the provision of highly filtered air as the only air existing in the patient room. The lobby was “not ventilated with HEPA filtered air” but assuming this was F7 filtered air, that is likely to have a high degree of removal of fungal spores. That air then flows into the patient room, itself with nil or minimal ventilation before being drawn into the shower/toilet room. The patient bedroom is described as “neutral pressure”, but in this case that does not mean zero pressure but neither intentionally positive nor intentionally negative pressure; it will inevitably and randomly be one or the other. This means that, if negative, air will be drawn into the room from surrounding areas such as through pipe and cable entry points, poorly sealed service voids and any bed door (a door directly into the patient room from the corridor). Such air could carry contamination that may be a risk to highly immunocompromised patients – see comments on Hypothesis 3.

Note: There seems to be confusion in the draft of the report I was passed as final which says “The PPVL room is essentially trying to achieve the best of both worlds i.e., the room is ventilated itself, but the lobby is under negative pressure to both the patient room and the ward corridor, with air being pulled in and extracted from the room and the ward corridor itself”. This is not the PPVL (positive pressure ventilated lobby) room outlined in the Scottish guidance “In-patient accommodation - supplement 1 - Isolation facilities in acute settings (SHPN 4 sup 1)”, in particular in paragraph 4.4 “The entry lobby is to be at +10 Pascals with respect to the corridor” and “Table 1: Isolation Suite – Ventilation Parameters”.

I am unaware of any particular ventilation strategy for the PICU as a whole. If this is the case, contaminated air could enter the PICU from multiple routes which include, but be addition to, that which could enter via the cylinder room. Thus if the PICU PPVL patient room were under negative pressure, air entering the PICU via the cylinder room could be a source of outside air contamination. However, it is probably that this would be a minor component of air in the patient room, most of it coming from that mechanically supplied to the lobby then

flowing into the patient room. It is unlikely that air specifically from the cylinder room would be the only source of unfiltered air in the PICU main space, with air leaking in to the PICU from a variety of sources, examples given above.

24. Hypothesis 5 - Helipad

A This is “That the down draft from Helipad was aerosolising cryptococcal spores from pigeon guano dust into the air intakes and thence the AHUs providing ventilation into the patient areas.” Part of the approach to this was via a computational fluid dynamics (CFD) analysis of airflows during helicopter activity. I have no expertise in CFD but see it as a precise mathematical modelling that can be based on input data that are approximate and sporadic (i.e. the known unknowns can be approximations and the unknown unknowns are omitted]. Having said that, my views in the draft report are given as “Peter Hoffman stated it is unlikely to have been a build-up of aerosolisable material e.g., pigeon faeces as it would be regularly scoured by the helicopter”. With regular helicopter take- offs and landings, either soiling materials would be firmly adherent to surfaces and so no mobilizable by the vigorous air movements or they would be removed on each take-off/landing with no chance to build up.

25. Hypothesis 6 -Specimen transport POD

A This is “AKA the ‘pneumatic tube system’. This system is used to move specimens from wards to labs (and back the other way) via compressed air drawn from either the Plant room (PR 31 – not a PR on Level 12) or the ward area. These PODs then discharge the air into the ceiling void above Ward Treatment Rooms (on return to them).” I am quoted in the report as “PH [Peter Hoffman] view: ‘Felt that a small amount of unfiltered air coming into a Prep/Treatment room would have little effect on the air quality in a patient room.’ ‘He thought that this was an insignificant source if the C. neoformans was getting to patients by the air.’ ”. I consider that to reflect my view accurately.

26. Hypothesis 7 Dormancy reactivation

A This is “Dormacy/Latency/ Re-activation, and therefore often an unknown time of Exposure (and therefore an unknown Incubation Period) This Hypothesis

suggests that both patients could have been exposed to C. neoformans prior to their QUEH/RHC hospital admission …… Hypothesis Number 7 is therefore possible, in both patients, that they acquired the Cryptococcus neoformans prior to their admission to the QUEH/RHC, but: highly likely to be impossible to prove." This is not an area in which I have any expertise. I cannot comment on its likelihood.

27. Were any other hypotheses considered? If so what were they and why were they discounted?

A I have no recollection of other hypotheses being considered.

Dr John Hood's – Refer to Draft Cryptococcus Report

Dr Hood authored a report, although this was not adopted by the sub-group as a whole.

28. Insofar as not already dealt with by your answers to the Hypotheses section above, what is your opinion on Dr Hood's report. To what extent do you agree/ disagree with his conclusions?

A I consider the report to be a fair evaluation of a relevant range of possibilities. I consider that the report often contains excessive, marginally relevant detail that could obscure and distract from more coherent logic pathways. I would not refer to the likelihood assigned to individual hypotheses as "conclusions" but more as assessments of possibilities. That definitive conclusions were missing is perhaps a realistic reflection of abilities to establish what precisely occurred in each case of patient acquisition of Cryptococcus.

29. In general, what were the opinions of the other group members on the John Hood report? Did anyone else agree with it?

A I was unaware of disagreements from other group members with the report when I was involved with it.

30. Did you submit any written comments to the report? If so, please provide a copy.

A I retired on the 22nd October 2021. I did not submit written comments on the report.

31. To your knowledge was the report adopted by the Greater Glasgow and Clyde Health Board as a whole, or did it remain the opinion of Dr John Hood alone?

A I have no knowledge of this.

Link to the Environment

32. (Again, insofar as not answered in Hypotheses section) what is your own opinion on the link between Cryptococcus and the ventilation system in Do you consider that it is more likely than not that the Cryptococcus came from the ventilation system? If so why or why not?

A I addressed this as fully as I am able in the Hypotheses section above.

Additional Cryptococcus Cases

33. The Inquiry's investigations have revealed another 4 cases of Cryptococcus within QEUH. Were you aware of this? If so, how did you come by this information?

A I was unaware of this.

34. Can you comment on this? Does it change to any extent your answers to the Hypotheses section or Link to environment section above?

A I have no comment on this. It does not change my answers to the Hypotheses section or Link to the environment section to any extent.

Aftermath - Events After the Group Disbanded

35. What is your understanding of what GGC did with Dr Hood's report? Are you aware any practical measures taken as a result of it?

A I have no knowledge of what GGC did with Dr Hood's report, nor of any practical measures taken as a result of it.

36. If so what is your opinion of them?

A See my answer to question 35.

37. Is there anything further that you want to add that you feel could be of assistance to the Inquiry?

A I was asked to provide a witness statement to the Inquiry on 12th June 2024 and given access to a bundle comprising two documents: 1) A collection of minutes of the Cryptococcus sub-group and 2) a short string of emails from October 2021. No cryptococcus report was provided, so I worked from one dated 5th April 2022 sent to me by Sandra Devine, DIPC GGC on the 21st August 2023 as "… a final redacted (patient case reviews removed) copy of the report from the Cryptococcus Incident Management Team Expert Advisory Sub-Group". I assumed that was the report I should be using. It was only when my witness statement was formatted by the Inquiry Team on the 12th August 2024 that I became aware that my bundle should have comprised (Appendix A) "A45379981 – Bundle 9 – QEUH Cryptococcus Sub-Group Minutes & A44348959 – Draft Cryptococcus Report". The absence of the Draft Cryptococcus Report from my bundle was notified to the Inquiry Team on 16th August. I was notified on 19th August that my bundle had been updated to include a different draft report, dated 7th October 2021, by an email with the wording "I have also uploaded a copy of the Crypto report (screenprint 1) into your connect workspace if you need to review your statement further. As this is a new document I have altered the object ID number and heading, to reflect, in Appendix A". This left little time to review my statement if I were to return it in a timely manner. As far as is thus possible, I have reviewed my statement in accordance with the different report version and see it as accurate where it

refers to it directly. I apologise from any minor discrepancies due to report versions that may inevitably remain.

Declaration

38. 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.

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

40. The witness verbally introduced or provided the following documents to the Scottish Hospital Inquiry for reference when they completed their questionnaire statement (Appendix B).

Appendix A

A45379981 – Bundle 9 – QEUH Cryptococcus Sub-Group Minutes

A49682615 – Crypto Report Draft October 2021 (003)

Appendix B

A49595979 – CV – Peter Hoffman

CURRICULUM VITAE

Peter **HOFFMAN**

This is my last full CV from 2010 with significant updates up to retirement in 2021 added immediately before the publications list

Present post

Consultant Clinical Scientist in the Infection Control Unit, Laboratory of Healthcare-associated Infection, Centre for Infections, Health Protection Agency (this continued into Public Health England and the UK Health Security Agency)

Qualifications

B.Sc. (IIii) Microbiology, University of Bristol 1976
Honorary Diploma in Hospital Infection Control (HonDipHIC), University of London 1999

Registered as a Clinical Scientist with the Health Professions Council

Committees and Working Groups

Department of Health, Advisory Committee on Decontamination Science and Technology. Member 2010 – present.

Department of Health, Steering Group for isolation facilities in acute healthcare redrafting Health Building Note 04, Supplement 1. 2010 – present.

Hospital Infection Society, Working Group on the facilities required for minimally invasive surgery and minor procedures. 2009 – present.

Rapid Review Panel (as an Arms Length Body) 2009 – present.

Department of Health, Steering group for drafting Health Building Note 00-09 Infection Control in the Built Environment. 2008 – present.

Department of Health, Steering Group for drafting Health Technical Memorandum 01-01, Decontamination of Reusable Medical Instruments, Parts B, C and D. 2009 – present.

Department of Health, Dental Decontamination Survey Board. 2009 – present.

Department of Health, Steering Group for drafting Health Technical Memorandum 01-06 Decontamination of Flexible Endoscopes, 2008 – present.

Department of Health, Steering Group for drafting Health Technical Memorandum 07-01 Safe Management of Healthcare Waste, 2008 - present

International Federation of infection Control, Special Interest Group on infection control and hospital buildings, 2007 – present.

Advisory Committee on Dangerous Pathogens, Clinical Care Subcommittee. 2007 – present.

Department of Health, Steering Group for drafting Health Technical Memorandum 01-07, Decontamination of Healthcare Laundry, 2007 – present.

British Standards Institution CH/216 Chemical Disinfectants and Antiseptics. 1994 – present.

Department of Health, Uniforms and Infection Control Working Group, 2006.

Department of Health, Engineering and Decontamination Advisory Committee into the Decontamination of Surgical Instruments Including Prion Removal (ESAC Pr). 2007 – 2010. (Committee disbanded and reformed as the Advisory Committee on Decontamination Science and Technology; membership continued)

Hospital Infection Society Operating Theatre Working Group - 1999 – 2005 (Chair Prof H Humphreys); lead member Commissioning and Monitoring Subgroup; member Operating Theatre Practices & Rituals Group.

Hospital Infection Society. Rinse water for heat-labile endoscopy equipment 1999 – 2002.

Department of Health/Health Protection Agency UK Endsocope Task Force and Expert Advisory Sub-group. 2004 – 2005.

British Society for Antimicrobial Chemotherapy. Burns Working Group. 2002 – 2004.

NHS Purchasing and Supply Agency. Clean Hospitals Program Advisory Group 2002 – 2003.

NHS Purchasing and Supply Agency. Near-patient alcohol hand disinfectant specification advisory group 2003.

UK Working Group on Body Piercing Creation of a Standardised Qualification. 2001 – 2003 (Chair Dr B Walsh).

London Specialised Commissioning Group. Paediatric Bone Marrow Transplant/Oncology Review Group. Review of Infection Control Aspects of Tertiary Care in South-East England. (Reviewers: PN Hoffman and S Pedler) 2004.

Health Protection Agency. Multi-resistant Acinetobacter Working Group 2003 – 2005.

NHS Estates Agency health Technical Memorandum 2025 (Ventilation in Healthcare) Refresh and rewrite advisory group. 2004 – present.

Health Protection Agency/Department of Health. Rapid Review Panel. 2004 – 2009 (disbanded in that form in 2009, continued membership as an Arms Length Body)

HABIA Health Safety & Science Forum. Member 2005 - 2007

Ambulance Infection Control Network. Member 2005 - 2007

NHS Estates Advisory Group on drafting of healthcare ventilation guidance Health Technical Memorandum 2025. 2004 – 2007

Member of interdisciplinary working group to produce the curriculum for a national qualification on infection control in body piercing and tattooing (convened by Kingston & Richmond Health Authority, Dr B Walsh). 2001 – 2003.

British Standards Institution TCI/082/01 Industrial Laundering 1999 – 2008 (committee disbanded).

Member of Central Sterilising Club working party on re-use of single-use instruments (1993 - 1997)

Member of Central Sterilising Club working party on processing of healthcare laundry (1997 - 1998).

BMA Steering Group member for "A code of practice for sterilisation of instruments and control of cross infection" (report published 1989).

Member of Association of Port Health Authorities' Aircraft Subcommittee's Disinfection of Aircraft Working Party (1992 - 1995; reported 1995)

Member of NHS Estates Business Agency theatre linen specifications working party (1995 - 1996, reported 1996).

Grants

Hospital Infection Society major research grant ([redacted]). Brown DWG, Cheesebrough JS, Hoffman PN, Green J. Investigation of patterns of environmental contamination with small round structured viruses on hospital wards and the development and evaluation of decontamination procedures. 1998

Health Protection Agency R&D fund ([redacted]). Thompson G, Bennett A, Hoffman P, Davies A, Bonington A, Isalka B, Duffell E, O'Brien S, Macartney I, Turner A, Walker J, van Tam J, Phin N. The requirement for respirator use during an influenza pandemic. Investigations into whether medical procedures generate aerosols necessitating respiratory protection. 2009.

International consultancies

Short Term Consultant to Western Pacific Region of the World Health Organization – Beijing. June/July 2003. Preparation of a risk assessment of air conditioning and the transmission of SARS in domestic premises, public buildings and non SARS-risk

areas of hospitals, and guidance on the ventilation of SARS-risk areas of hospitals and fever clinics.

Short Term Consultant to Western Pacific Region of the World Health Organization – Beijing. May 2004. Preparation of a strategy for building decontamination following a laboratory escape of SARS virus and assisting in the incident investigation.

Auditor on the Egyptian hospital infection control audit 2005 in a national infection control audit organised by the Egyptian Ministry of Health and Population and the U.S. Naval Medical Research Unit (NAMRU 3).

International education

Invited lecturer on national Australian infection control course. Fremantle Hospital, Western Australia, 2003. This involved a series of lectures over one week to a group of about 30 medical and nursing healthcare workers from Australia.

Invited lecturer on the first Egyptian infection control program, organised by the Egyptian Ministry of Health and Population and the U.S. Naval Medical Research Unit (NAMRU 3). 2003 – 2005. This involved a series of lectures and practicals over one week to a group of about 40 senior medical and nursing healthcare workers from every govenorate (administrative region) of Egypt. Three such weeks occurred during 2003-5.

Invited lecturer to Juntendo University Medical School, Tokyo 2004. This involved a series of lectures over one week to a group of about 40 medical and nursing healthcare workers from within Juntendo Hospital and Medical School.

Invited lecturer on the Stellenbosch University's Diploma in Infection Control, hospital design module, run every two years at Tygerberg Hospital, Cape Town, from 2006 to the present. This involves a series of lectures, group projects, group discussions and site visits within Tygerberg Hospital and to other Cape Town hospitals. Each course has about 30 medical and nursing healthcare workers from around South Africa.

External Examiner, Diploma in Infection Control, Stellenbosch University, Republic of South Africa.

Invited lecturer on a study day ("Advances in epidemiological surveillance, prevention and control of hospital infection") at the Universita degli Studi de Molise, Campobasso, Italy in 2007.

National education commitments

University of Greenwich. Contributor of a unit to e-learning package on disinfection & sterilisation as a unit of an online M.Sc. in Biomedical Science. 2003 – 2005. This is a course aimed at non-medical healthcare staff (mostly biomedical scientists).

Lecturer and convener. Hospital Infection Society/Health Protection Agency. Diploma in Hospital Infection Control course, a required module for the Diploma in Hospital Infection Control, 1995 – present. This week-long course takes place twice a year. The day I convene is on hospital hygiene and I coordinate myself and three other presenters, adjusting the content in line with student feedback and my own assessment of the day.

Course organiser, lecturer and tutor. Engineering Aspects of Infection Control (a one week residential course) and required module for the Diploma in Hospital Infection Control. Eastwood Park Training Centre. 1996 – present. I am the sole organiser of this unique course. It is intended to equip senior infection control practitioners with the ability to comprehend the principles and practices underpinning aspects of infection control they are normally unfamiliar with, but which are vital to infection control and will, in some emergency and outbreak situations, need a fundamental understanding. The course covers specialist ventilation (operating theatres and isolation rooms), endoscope washer-disinfectors, surgical instrument washer-disinfectors, hospital food hygiene, healthcare laundry, sterile supply departments and steam sterilisers. The lectures and practicals (Eastwood Park has unique teaching laboratories for washer-disinfectors, specialist ventilation and steam sterilisers) are by specialist engineers and there are site visits (kitchen, laundry and sterile supply department) hosted by the facility managers. I organise the material to be taught in these lectures and practicals and am in constant attendance during teaching, site visits and practicals and in effect function as a co-presenter, highlighting the infection control significance, or lack of it, of the engineering principles. This is further explored in evening discussion sessions where I, both with and without co-presenters, lead group discussion on the application of engineering principles in a variety of infection control scenarios. This course has undergone significant changes since its inception in 1996, both as a result of attenders' feedback and my perception of requirements gleaned from my wider role in infection control. The course generally has a range of nationalities attending with about two-thirds from the UK.

University of London, Diploma of Hospital Infection Control – Examination Committee 2001 – present.

University of London, Diploma of Hospital Infection Control – Course Committee 2001 – present.

University of London. Examiner on Diploma of Hospital Infection Control 2003 – 2006.

Lecturer. M.Sc. in Clinical and Public Health Bacteriology. London School of Hygiene & Tropical Medicine. 1998 – present.

Lecturer. M.Sc. in Clinical Microbiology. Royal London Hospital. 2003 – present.

Lecturer on the Diploma in Infection Control Nursing at London South bank University. Two lectures each year: "Applied Microbiology" and "Decontamination". Annually since 2006.

Health Protection Agency internal education commitments

Lecturer on "Disinfection and sterilisation" and practicals on hazardous spill clearance and laboratory suitability for fumigation to specialist laboratory staff as part of an HPA training for workers in high containment laboratories.

Lecturer on "Disinfection and sterilisation" to trainee Biomedical Scientists at the HPA Centre for Infections.

Teaching commitments – examples from the last 5 years (as of 2010)

2005

"Training the Trainers" – a one week series of talks and practicals as part of an Egyptian Ministry of Health and Population and the US U.S. Naval Medical Research Unit (NAMRU 3). 2003 – 2005. This involved a series of lectures and practicals over one week to a group of about 40 senior medical and nursing healthcare workers from every govenorate (administrative region) of Egypt. (See above under International Consultancies).

Lecturer and convener on Hospital Hygiene day on the core Diploma in Hospital Infection Control taught module. I both present on this day and organise the teaching of three co-presenters. Those attending are 25 Consultants and Specialist Registrars in Medical Microbiology and senior Infection Control Nurses. Two such courses that year.

Lecture on "Sterilisation and disinfection" to infection control link practitioners at the Chelsea & Westminster Hospital, London. These are healthcare staff who act as infection control practitioners within their individual specialities. Three such presentations that year. About 20 attendees per lecture.

Lecture on "Design and ventilation in healthcare facilities" at North Middlesex Hospital. This was mainly to engineers and Estates Department people, but infection control and those working in relevant departments such as operating theatres; about 30 attendees.

Lecture "Ventilation and infection control". M.Sc. in Clinical Microbiology. Royal London Hospital. About 30 Specialist registrars and Biomedical Scientist attended.

Lecture on "Decontamination issues" at Whiston Hospital, Liverpool. This was to infection control, ward and specialist department nursing and medical staff and Estates department staff; about 50 attendees.

Course organiser, lecturer and tutor. Engineering Aspects of Infection Control (a one week residential course) a required module for the Diploma in Hospital Infection Control.. Eastwood Park Training Centre. See above under "national training commitments". Fifteen attendees, mostly Consultant Medical Microbiologists and Specialist Registrars with some more experienced Infection Control Nurses. Two such courses run this year.

Lecture “Airborne infection transmission outside operating theatres” at the Institution of Mechanical Engineers, London. Those attending were mainly members of the Institution – Mechanical Engineers and those involved in mechanical aspects of hospital design, as well as manufacturers of ventilation systems and some Consultant Medical Microbiologists. About 150 attendees.

Lecture “Disinfection and sterilisation in healthcare” to Directors and Deputy Directors of Chinese regional Centres for Disease Control as part of the Chinese Infectious Diseases Mission to the UK to access the UK’s experience in building hospitals and laboratories. Four principal attendees plus administrators and translators.

Lecture “Hospital Hygiene” on the M.Sc. in Clinical and Public Health Bacteriology. London School of Hygiene & Tropical Medicine. About 25 attendees, mostly Specialist Registrars and Biomedical Scientists, from UK and overseas. This is an annual commitment.

Lecture “An exploration of recent endoscope decontamination failures” at the Health Protection Agency annual conference. About 60 attendees from the spectrum of HPA scientific and medical staff.

2006

Lecturer on the Diploma in Infection Control Nursing at London South Bank University. Two lectures each year: “Applied Microbiology” and “Decontamination”. About 20 Infection Control Nurses attended.

Course organiser, lecturer and tutor. Engineering Aspects of Infection Control (a one week residential course), Eastwood Park Training Centre. DipHIC module: details as before.

Lecturer and convener. Hospital Infection Society/Health Protection Agency. Diploma in Hospital Infection Control course. DipHIC module: details as before.

Lecture on “Sterilisation and disinfection” to infection control link practitioners at the Chelsea & Westminster Hospital, London. Details as before.

Lecture “Hospital Hygiene” on the M.Sc. in Clinical and Public Health Bacteriology. London School of Hygiene & Tropical Medicine. Details as before.

Lecture “An exploration of recent endoscope decontamination failures” at the annual meeting of the Central Sterilisation Club. The Club is a multidisciplinary group comprising medical Microbiologists, scientists, engineers, Infection Control nurses, SSD managers and industry. It is the UK’s oldest infection control society and had opinion formers in a variety of disciplines. About 120 attendees.

Lecture “Ventilation and infection control”. M.Sc. in Clinical Microbiology. Royal London Hospital

Lecturer on the Stellenbosch University's Diploma in Infection Control, hospital design module, run every two years at Tygerberg Hospital, Cape Town. This involves a series of lectures, group projects, group discussions and site visits within Tygerberg Hospital and to other Cape Town hospitals. About 30 medical and nursing healthcare workers from around South Africa attended.

Lecture "Linking infection spread to hospital design and engineering" at the 6th International Meeting of the Hospital Infection Society, Amsterdam. Those attending were Medical Microbiologists, Infection Control Nurses and scientists from around the world. About 80 attendees.

Lecturer "Infection control and endoscope decontamination" at the annual meeting of the Hungarian Infection Control Society. This was a lecture to about 120 delegates at a comparatively newly-formed infection control society.

Workshop presenter "Water, air and other environmental factors influencing infection control" at the 7th Congress of the International Federation for Infection Control, Stellenbosch, South Africa. Those attending were Medical Microbiologists, Infection Control Nurses, engineers and scientists from around the world with a mainly African focus. About 100 attendees.

Lecturer on a training day on specialist healthcare ventilation at Southmnead Hospital, Bristol. This was a bespoke training day where I was the sole lecturer on all aspects of ventilation and infection control from basic principles to advanced applications. Those attending were about 15 infection control specialists from the Bristol area.

Lecture "Operating theatres: Design, ventilation and testing" at a joint meeting of Microbiologists and Infection Control Nurses of Northern Ireland. About 15 medical Microbiologists and Infection Control Nurses attended.

Lecture "Tuberculosis, infection control and hospital design" at the seminar Problematic Pathogens In Health Care Settings, Birmingham. About 30 medical Microbiologists attended.

Lecture "Principles of isolation" at a Bristol and Bath Infection Control Nurse study day. About 60 infection control and other nurses attended.

2007

Lecturer on the Diploma in Infection Control Nursing at London South Bank University. Details as before.

Course organiser, lecturer and tutor. Engineering Aspects of Infection Control (a one week residential course), Eastwood Park Training Centre. DipHIC module: details as before.

Lecturer and convener. Hospital Infection Society/Health Protection Agency. Diploma in Hospital Infection Control course. DipHIC module: details as before.

Lecture on “Sterilisation and disinfection” to infection control link practitioners at the Chelsea & Westminster Hospital, London. Details as before.

Lecture “Hospital Hygiene” on the M.Sc. in Clinical and Public Health Bacteriology. London School of Hygiene & Tropical Medicine. Details as before.

Lecturer. “Ventilation and infection control”. M.Sc. in Clinical Microbiology. Royal London Hospital. Details as before.

Lecture “Tuberculosis, infection control and hospital design” at the seminar Problematic Pathogens In Health Care Settings, Birmingham. Details as before.

Lecture “Chemical disinfection in laboratories” at the 10th Annual Conference of the European Biosafety Association in Heidelberg. This was part of a pre-conference educational workshop. About 50 biosafety professionals attended.

Lecturers “Principles of infection control”, “The hospital environment” and “Disinfection” on a study day (“Advances in epidemiological surveillance, prevention and control of hospital infection”) at the Universita degli Studi de Molise, Campobasso, Italy in 2007. The audience was about 50 medical and nursing workers at the university and hospital in Campobasso. Also a tutorial on SARS and infection control to a postgraduate group (about 10) as a separate session.

Talk “Research and policy” at a workshop “Airpath”, an engineering based international group coordinated from University College, London exploring infection transmission by outdoor air. About 20 engineers, modellers, microbial ecologists and medical microbiologists attended.

Workshop presenter “Hospital construction: what is important for infection control?” at the 8th Congress of the International Federation of Infection Control, Budapest. Those attending were Medical Microbiologists, Infection Control Nurses, scientists, engineers and healthcare designers, about 80 people.

Lectures “Isolation” and “Infection control rituals in the operating theatre” to an Infection Control Nurse study day, East Surrey Hospital. About 40 Infection Control Nurses attended.

Lecture “Decontamination” to an Infection Control Nurse study day, Kingston. About 80 Infection Control Nurses attended.

Lecture “A microbiological view of ventilation for highly immunocompromised patients” at an isolation room study day, Erasmus University, Rotterdam. About 60 clinicians, engineers and nurses attended.

2008

Lecturer on the Diploma in Infection Control Nursing at London South Bank University. Details as before.

Course organiser, lecturer and tutor. Engineering Aspects of Infection Control (a one week residential course), Eastwood Park Training Centre. DipHIC module: details as before.

Lecturer and convener. Hospital Infection Society/Health Protection Agency. Diploma in Hospital Infection Control course. DipHIC module: details as before.

Lecture on "Sterilisation and disinfection" to infection control link practitioners at the Chelsea & Westminster Hospital, London. Details as before.

Lecture "Hospital Hygiene" on the M.Sc. in Clinical and Public Health Bacteriology. London School of Hygiene & Tropical Medicine. Details as before.

Lecturer. "Ventilation and infection control". M.Sc. in Clinical Microbiology. Royal London Hospital. Details as before.

Lecture "Tuberculosis, infection control and hospital design" at the seminar Problematic Pathogens In Health Care Settings, Birmingham. Details as before.

Lecture "Chemical disinfection in laboratories" at the 11th Annual Conference of the European Biosafety Association in Florence. This was part of a pre-conference educational workshop and was a repeat of the over-subscribed workshop at EBSA Heidleberg in 2007. About 50 biosafety professionals attended.

Lecture "Controlling airborne infections: what do Infection Control Teams need to know?" at the Hospital Infection Society's Spring meeting. About 120 Consultant Medical Microbiologists and Specialist Registrars attended.

Lecturer "The Environment: when is it important in infection control?" at an Infection Prevention Society National Study Day in Infection Prevention and Control in the Community. About 150 hospital and community Infection Control Nurses attended.

Talk "Outdoor environments and hospital-associated infections" at a workshop ("Airpath") an engineering based international group coordinated from University College, London exploring infection transmission by outdoor air. About 20 engineers, modellers, microbial ecologists and medical microbiologists attended.

Lecturer on the Stellenbosch University's Diploma in Infection Control, hospital design module, run every two years at Tygerberg Hospital, Cape Town. This involves a series of lectures, group projects, group discussions and site visits within Tygerberg Hospital and to other Cape Town hospitals. About 30 medical and nursing healthcare workers from around South Africa attended.

Lecture "Respiratory protection in healthcare – an infection control perspective" at the 14th International Conference of the International Society for Respiratory Protection, Dublin. About 200 attended, mainly occupational hygienists, physicists, industrial hygienists, modellers, testers, standards setters and manufactures.

Lecture "Sterilisation and disinfection" at Bart's and the Royal London Hospital. About 40 Infection Control Link Nurses attended.

Lecture “Sterilisation and disinfection in special treatments” in a study day Health, Safety and Hygiene in Special Treatments. Those attending were Environmental Health Officers, Community Infection Control Nurses, tattooists, body piercers, and beauticians. About 60 people attended.

2009

Lecturer on the Diploma in Infection Control Nursing at London South Bank University. Details as before.

Course organiser, lecturer and tutor. Engineering Aspects of Infection Control (a one week residential course), Eastwood Park Training Centre. DipHIC module: details as before.

Lecturer and convener. Hospital Infection Society/Health Protection Agency. Diploma in Hospital Infection Control course. DipHIC module: details as before.

Lecture on “Sterilisation and disinfection” to infection control link practitioners at the Chelsea & Westminster Hospital, London. Details as before.

Lecture “Hospital Hygiene” on the M.Sc. in Clinical and Public Health Bacteriology. London School of Hygiene & Tropical Medicine. Details as before.

Lecturer. “Ventilation and infection control”. M.Sc. in Clinical Microbiology. Royal London Hospital. Details as before.

Lecture “The environment: when is it important in infection control” to an infection control study day, Chichester. About 60 ward and Infection Control Nurses attended.

Lecture on “Sterilisation and disinfection” to infection control link practitioners, Croydon; about 30 attendees.

Lecture “Reducing infection transmission: the solution must match the problem” at a NHS Innovations Village study day by Mid-Essex Hospital Services. This program uses “Showcase Hospitals” as practical areas to assess novel technologies in combating healthcare-associated infections. This talk was to infection control practitioners, ward staff, specialist department staff and administrators in Showcase Hospitals as well as those designing and manufacturing the technologies used. About 100 people attended.

Lecture “Decontamination” as part of an Infection Control Nurse study day at St Peters Hospital, Chertsey. About 60 nurses attended.

Lecture “Infection control and the hospital environment” to a Hospital Infection Society study day for trainees in microbiology. This was the first such HIS trainee day. About 50 trainees (mostly SpRs) attended.

Lecture “Decontamination in practice” at the annual conference of the Infection Prevention Society. About 150, mostly Infection Control Nurses, attended.

Society membership

Hospital Infection Society
Central Sterilising Club
Infection Prevention Society (Associate member)

Journal commitments

Assistant Editor – Journal of Hospital Infection

On the International Education Council of the International Journal of Infection Control

Added 2024:

Awarded British Standards Institution International Standard Maker 2018 for contributions to EN 17169:2020 Tattooing. Safe and hygienic practice

Awarded Brendan Moore Award 2020 from the Infection Prevention Society

Awarded Honorary Membership of the Healthcare Infection Society 2020

Specialist Editor of the Journal of Hospital Infection and frequent reviewer for that journal – 442 submissions reviewed as of July 2024, 24 reviewed for its sister journal Infection Prevention in Practice plus a few for other journals.

Publications to 2020

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22. Member of steering group for: BMA (1989) A code of practice for sterilisation of instruments and control of cross infection. British Medical Association, London, (ISBN 0 7279 0274 1).

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