Bundle of documents for Oral hearings commencing from 19 August 2024 in relation to the Queen Elizabeth University Hospital and the Royal Hospital for Children, Glasgow

Bundle 27 – Volume 4

Miscellaneous Documents

SCOTTISH HOSPITALS INQUIRY

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Rev B RI	Size of Linac control rooms increased.	12.08.03
Rev C	MRI/CT Suite redesigned.	16.10.03
Rev D	Addendum highlighted	17.02.04
Rev E	Changing rooms to Linac treatment rooms redrawn to optimize useable space. Shared office No. TMP-001 wall moved 600mm to increase room size. Corridor leading to rooms TP-006, 010 and 011 door added to create a lobby. Stair No.2 re-planned, new partition and door added. Education Suite re-planned. Linac plant room adjacent to linac treatment room No. EBT-044 external wall chamfered to increase useable area. Rooms EBT-022, 023, 024 size revised, due to corridor to linac 4/5 repositioned. Plantroom M-003 and positions and sizes of electrical cupboards revised in line with DSSR requirements. Doors added to corridors C-015, C-017 and C-009.	25.03.04
	ISSUED FOR CLIENT APPROVAL	01.04.04
Rev F	Changing Rooms / waiting areas to linac treatment rooms 1, 2 and 3 replanned. Dis WC incorporated into changing room to linac treatment rooms 2, 3, 5 and 7. linacs 5 and 7 reduced in size. Changing, sub-waiting and control rooms to linacs 4, 5, 6 and 7 redeveloped, the orientation of these linacs has also changed. Technology medical physics 2 no. rooms added, general repositioning of partitions throughout dept. Computing dosimetry and treatment planning layout revised. Education suite, reception omitted, chair store room added, recess added to seminar room 1 for chair storage. Door omitted from Ch.Waiting to CT Scanner DI-002. Sub waiting area EBI-040 repositioned to make use of glazing into courtyard. 2 toilets deleted and 1 store added, surrounding Dis WC's replanned to suit. Stairs 1 and 2 amended layout incorporated. Window positions revised to suit redeveloped elevations. Amendments from shadow design team / Trust incorporated. Rooms at entrance corridor to linac 4 replanned to suit new corridor position. Toilet EBI-015 deleted and EBI-016 changed to Dis WC.	11.05.04
	ISSUED FOR 3RD STAGE APPROVAL / SIGN OFF.	11.05.04
Rev G	MR/CT suite. Revisions from user meeting on 12.05.04:- 2 control rooms revised to one large control room. Change areas now joint. Dis wc/change added. Additional preps/store added, equipment store deleted. Reception relocated to opposite side corridor. Additional window added to MRI scanner room. One recovery bay added. Additional storage cupboard added. Room numbers CT-006, 007, 008 adjusted to suit room requirements.	13.05.04
	ISSUED FOR 3RD STAGE APPROVAL / SIGN OFF.	13.05.04
Rev H	The internal layout of Linacs 1-7 have been updated in line with revised drawings from ARUP. Linacs 4-7 have been repositioned to suit structural movement joint between the linacs and the main building. Drawing updated following RPA meeting on 01/07/04, the wall at the entrance to the maze of each linac was reduced from 600mm to 500mm thick, the triangular mass of concrete at the entrance to each linac has been reduced to a uniform thickness of 500mm.	02.07.04
	ISSUED FOR CLIENT APPROVAL / SIGN OFF.	02.07.04

North Glasgow University Hospitals NHS Trust

Beatson Oncology Phase 2
West of Scotland Cancer Care Centre

Design & Build Contractor	Miller
Services Design & Build Contractor	Amec
Design Team	BMJ DSSR ARUP HIRST

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Date	1.9.03	Job No	2166
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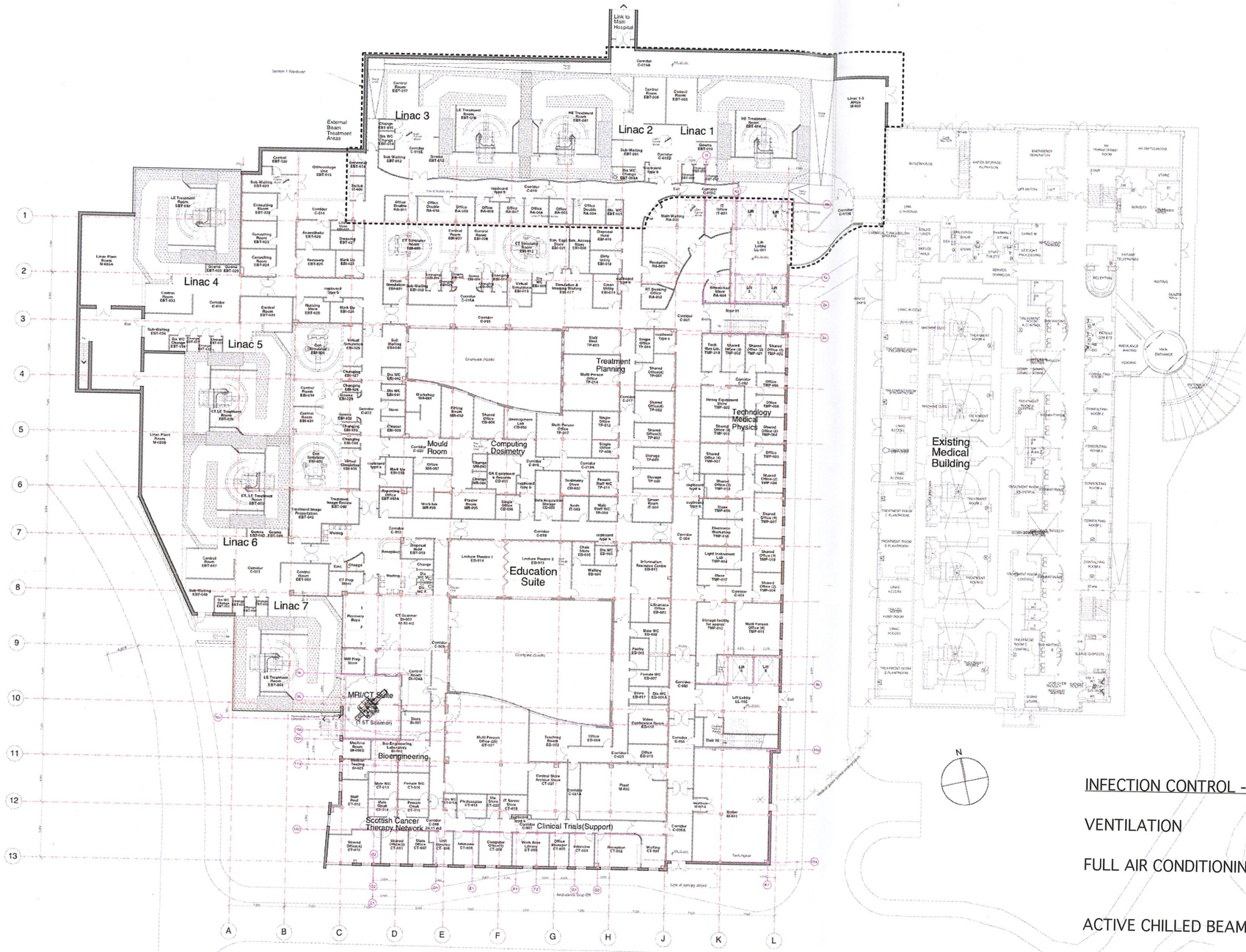

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Design & Build Contractor	Miller
Services Design & Build Contractor	Amec
Design Team	BMJ DSSR ARUP HIRST

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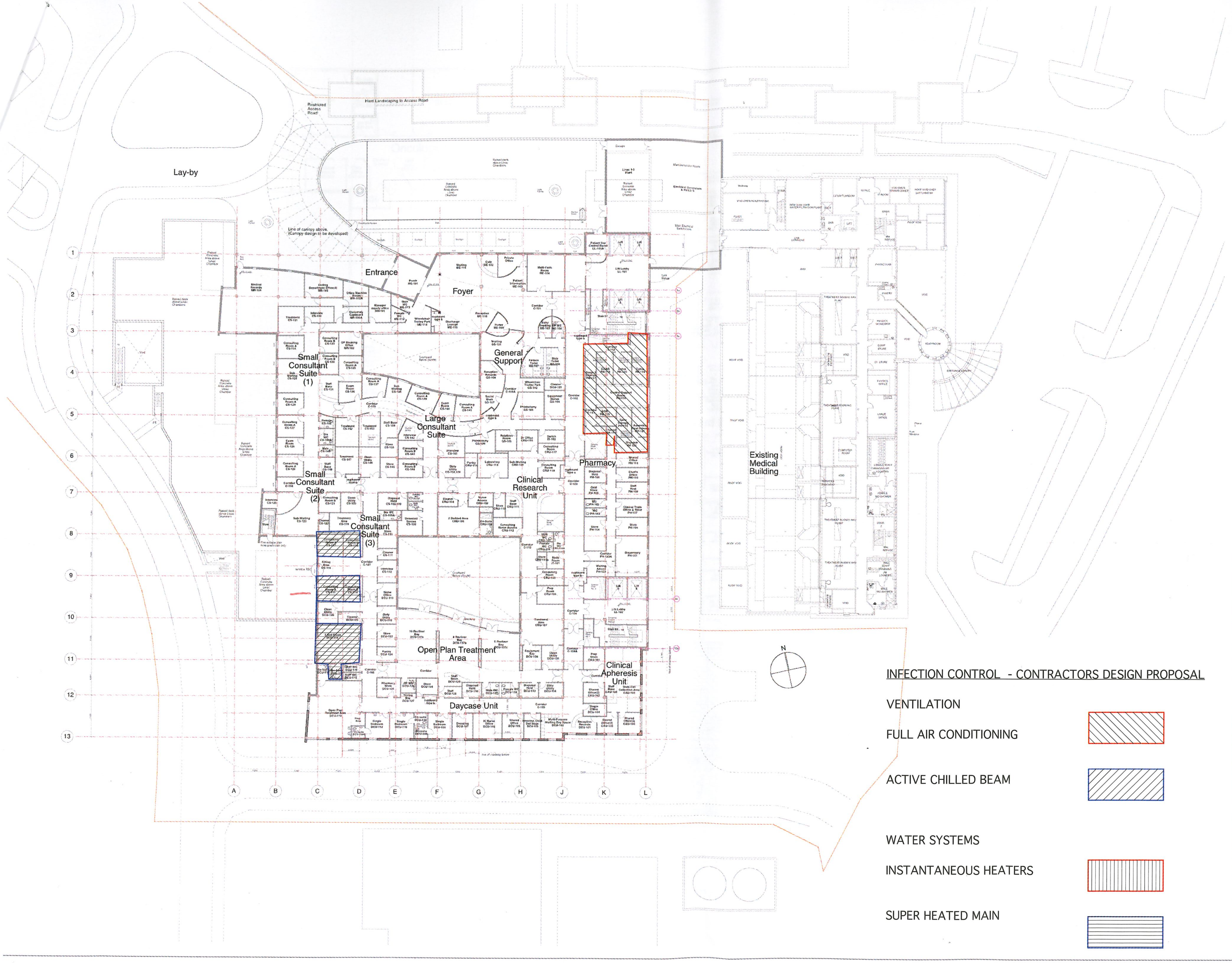

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Rev B RI	Linac plantrooms added.	[illegible]
Rev C NK	Pharmacy room areas added.	11.08.03
Rev D RI	Access stair from plantroom added. Key revised.	10.02.04
Rev E	Private office added entrance area, cafe and patient information areas redesigned to suit. General support area replanned, exam rooms CS - 136/140 doors leading to adjacent consulting rooms deleted. En-suite added to room DCU-112. Small Consultant Suite (2) rooms surrounding fire escape stair from plantroom replanned to suit new stair layout. Clinical research unit replanned. Fire escape door added to sub-waiting area CS-128. Fire escape stair added from linac roof garden to lower ground. Positions and sizes of electrical cupboards revised in-line with DSSR requirements.	09.04.04
	ISSUED FOR CLIENT APPROVAL	09.04.04
Rev F	Shadow design team comments incorporated. Medical records room replanned to create more useable working space, adjacent rooms replanned to suite this change. A second means of escape from the small consultants suite has been added leading to the front entrance. Some windows on the south and west elevations have been relocated to suite repositioned columns. Courtyard openings indicated. Pharmacy, Clinical Apheresis Unit & Small Consult. 3 areas replanned as per client comments.	26.05.04
	ISSUED FOR 3RD STAGE APPROVAL / SIGN OFF.	26.05.04
Rev G	Plan revised following additional comments from user meeting on 01.06.04. Various door swings changed in the Pharmacy. Isolator indicated in the following rooms, PH-115, 118, 119 and 120.	04.06.04
Rev H	Length of main entrance porch increased. Room LL-101A renamed as Patient line control room. 2 no. windows added to machine room MR-102A. Circular column cladding added to exposed column at staff base CS-154. Shower removed from en-suite rooms, DCU-108, 111 and 112A. rooms replanned to suit. Store CS-110 reduced in size and unsealed sources CS-120 increased in size.	10.06.04
	DRAWING SIGNED OFF.	08.06.04

North Glasgow University Hospitals NHS Trust

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Design & Build Contractor: **Miller**

Services Design & Build Contractor: **Amec**

Design Team: **BMJ** **DSSR** **ARUP** **HIRST**

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Date	1.9.03	Job No	2166
Drawn	RI	Dwg No	AL(00)04H
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	Suite layout revised as requested by Shadow Team.		
Rev D RI	Access stair from plant room added. Addendums highlighted.	10.02.04 17.02.04	
Rev E RI	Consultants Offices Suite replanned. Brachytherapy ward and theatre suite redesigned. Regeneration kitchen WS-202 enlarged and store WS-203 size reduced to suit. Oncology Inpatients ward 2, rooms surrounding fire escape stair from plant room replanned to suit new stair layout. Oncology Inpatients wards 1 & 2 area between grids G & J redeveloped. Disabled WC added to Brachytherapy Ward adjacent to room BR-250. Positions and sizes of electrical cupboards revised in-line with DSSR requirements.	23.04.04	
	ISSUED FOR CLIENT APPROVAL	23.04.04	
Rev F RI	Therapy treatment area redesigned. Consultants offices suite renamed Offices Suite 2A. Waiting room, LL-201A renamed smoking room. Staff bases ON1-220 and ON1-245 area increased, surrounding rooms size reduced to suit. Rooms around Admin ON2-202 replanned. Area surrounding staff base ON2-219 replanned. Sterile store and theatre Preparation rooms combined into one room.	11.06.04	
	ISSUED FOR 3RD STAGE APPROVAL	11.06.04	
Rev G RI	Note 'Unsealed' added to Single rooms BR-211, 220 and 227. Room ON2-202 renamed as Admin reception / Staff base. Splayed doorways into brachytherapy bedrooms omitted, doors repositioned flush with corridor.	23.06.04	
	DRAWING SIGNED OFF.	22.06.04	

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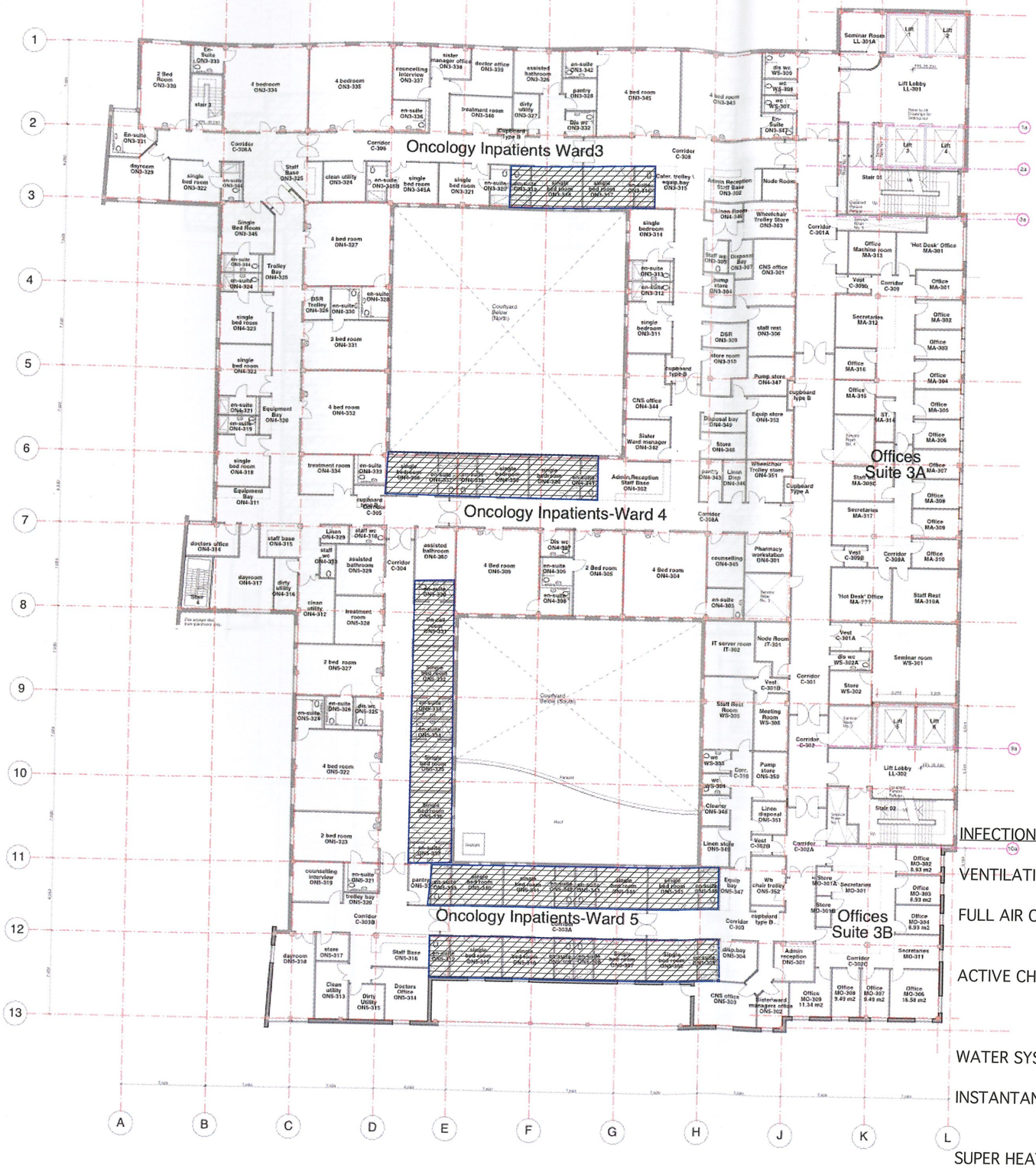

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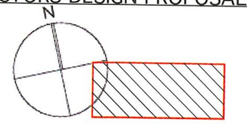

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Rev B RI	Drawing generally updated	19.08.03	
Rev C RI	Access stair from plantroom added Addendums highlighted.	11.08.03	
Rev D RI	Management offices suite replanned, Oncology inpatients ward 3 - rooms surrounding staff base redesigned. Oncology inpatients ward 5 - bottom left corner redesigned. Consultants office suite replanned, staff areas adjacent to stair 2 replanned. Oncology inpatients wards 3 & 4 - area between grids G - J redeveloped. Disabled WC added to corridor adjacent to room number WS-301 Seminar room. Rooms surrounding fire escape stair from plantroom replanned to suit new stair layout. Positions and sizes of electrical cupboards revised in-line with DSSR requirements.	09.04.04	
	ISSUED FOR CLIENT APPROVAL	09.04.04	
Rev E	Shadow design team comments incorporated. Some windows on the south and west elevations have been relocated to suite repositioned columns. Courtyard openings indicated. Serveral room names & no.s changed, replanning to ward 3 to provide 1 extra Bedroom, replan to area around WS-306, all as per client comments.	26.05.04	
	ISSUED FOR 3RD STAGE APPROVAL / SIGN OFF.	26.05.04	
Rev F	Plan revised following additional comments from user meeting on 01.06.04. Management Offices suite renamed Offices suite 3A, all individually named offices now named as 'office'. Staff rest room area reduced to make room for new 'hot desk' office. Room no. MA-301 renamed 'hot desk' office. Room no. WS-306 named as meeting room. Ward 4, area around admin-reception replanned. Disp bay ON4-7 and equip bay ON4-351 omitted. Trolley bay ON4-355 replaced by electrical cupboard allowing treatment room ON4-334 to become bigger. Windows added to single and 4 bed rooms facing into both courtyards.	04.06.04	
Rev G	Oncall room ON5-332 renamed as Single bed room.	11.06.04	
	DRAWING SIGNED OFF.	08.06.04	

North Glasgow University Hospitals NHS Trust

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Design & Build Contractor	**Miller**
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Date	1.9.03	Job No	2166
Drawn	RI	Dwg No	AL(00)06G
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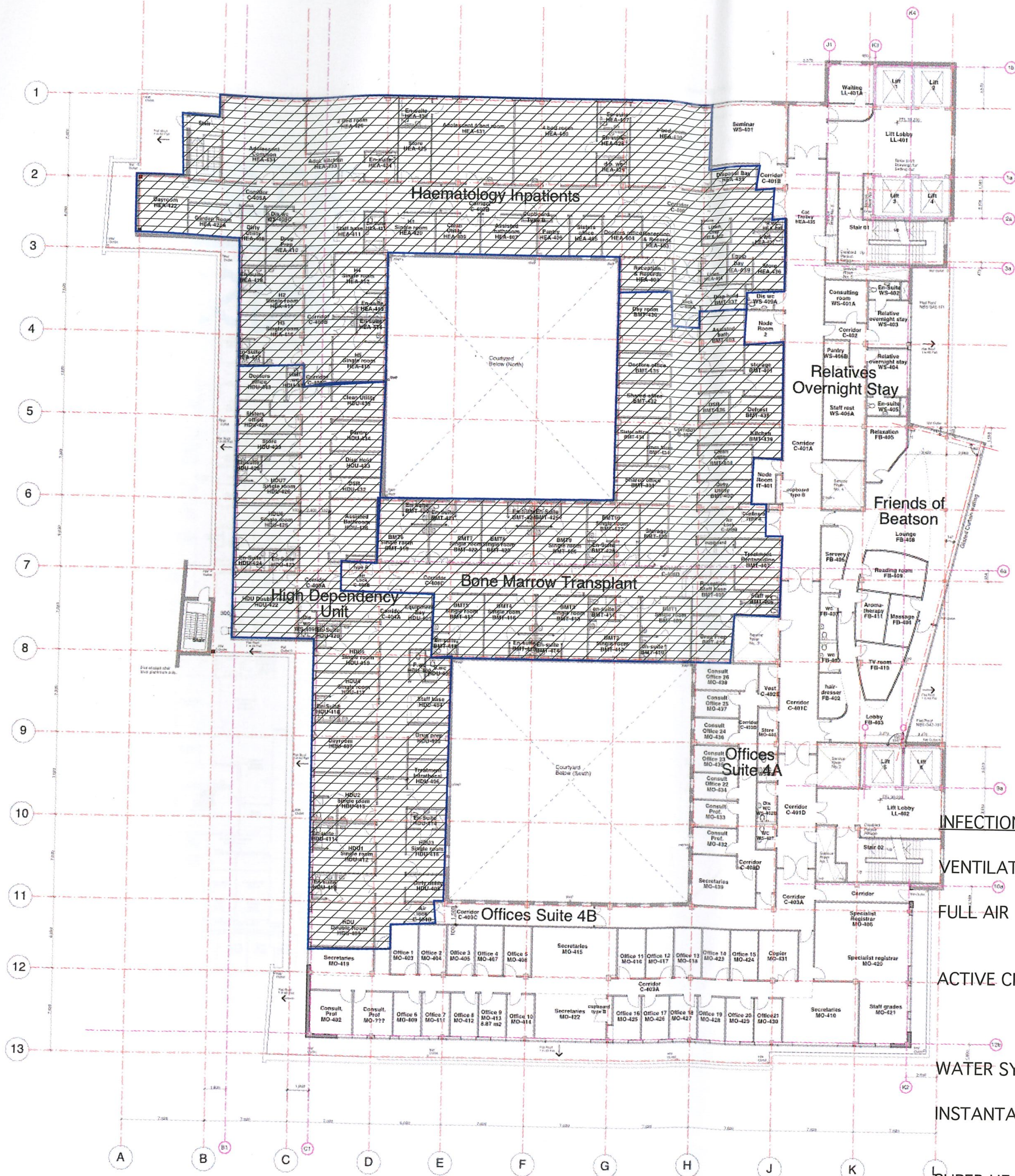
Rev	Description	Date	Checked By
Rev A RI	Drawing generally updated	30.07.03	
Rev B RI	Drawing generally updated	19.08.03	
Rev C RI	Access stair from plantroom added Addendums highlighted.	10.02.04	
Rev D RI	Haematology Inpatients Bone Marrow Transplant, areas between grids G & J redesigned. Air locks added to rooms BMT-412, 427. Consultants Rooms between grids H & L replanned. Relatives overnight stay, Pantry added to room WS-406, corridor C-402 reduced to suit. Dayroom HEA-422 and adjacent garden room replanned. Disabled WC added opposite staff base HEA-411. Disabled WC added adjacent to room HDU-422. Disabled WC added opposite room MO-432. Positions and sizes of electrical cupboards revised in line with DSSR requirements.	23.04.04	
	ISSUED FOR CLIENT APPROVAL	23.04.04	
Rev E CL	Rooms to the right of North courtyard Haematology & Bone Marrow Depts. replanned as per client comments. Consultants rooms renamed Offices Suite 4B and replanned. Stair and lift areas updated. Secretaries room MO-401 deleted.	11.06.04	
	ISSUED FOR 3RD STAGE APPROVAL	11.06.04	
Rev F RI	Consultants offices MO-425 to 430 renamed as Offices.	23.06.04	
	DRAWING SIGNED OFF.	23.06.04	



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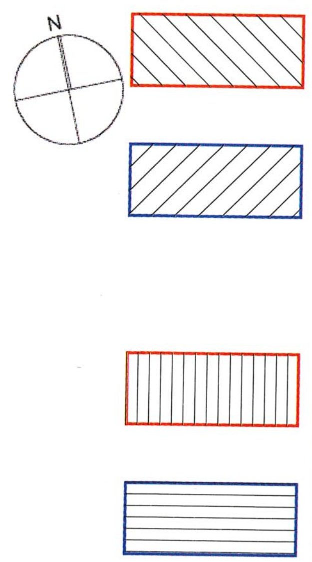

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INQUIRY into QEUH, RCH, Neurology services

Submission from Dr P J Redding

April 2019

Executive Summary

The focus of the document is written from an infection control perspective.

Patient safety has to be the driving force in understanding and resolving the issues at the QEUH campus hospitals.

Careful investigation is needed to understand the complexities of the processes followed from the first planning decisions, the building, the procurement, the construction and installation, the commissioning and handover, the maintenance, the operational management and the organisational behaviours. There are a lot of questions that need to be answered and understood as well as the complexities of how they are linked together. These questions can be found throughout this document.

Was there a risk assessment undertaken to understand having a new hospital so close to a water treatment plant? Were the concerns in raised in 2002 for "sewage nuisance" followed up? Was this and the poor rating of Glasgow's sewage works a risk to the quality of the water available to the building?

Were the right people, with the right knowledge, involved in all stages of the project?

Were the published Standards available at the planning stages met; in particular ventilation, water and drainage?

Were the appropriate checks made during the construction and commissioning phases?

What have the issues been since the hospitals opened? This would include:

1. Were there failures in meeting the Standards in place at the planning stages
2. Were there failures in the construction; for example did any of these result in leaks causing outbreaks?
3. Were there appropriate isolation facilities for all categories of patient ?
4. What outbreaks have taken place since the opening of the hospitals?
5. Hospital acquired infections
6. Impact on patient care and safety; bed pressures, waiting lists, outcomes etc.
7. Were there any failures in the monitoring processes?
8. Were there any failures in the cleaning processes?

Are there problems in the organisational behaviours, leadership and culture that have contributed to the challenges that are now faced?

Is the failure of the ICE theatres to open on schedule another example of planning / construction failures?

Have similar problems been encountered in other hospital construction projects across Scotland?

Introduction

I am a retired microbiologist who worked as an infection control doctor within NHS Greater Glasgow and Clyde (GGC) for nearly 25 years. I was aware of a number concerns in relation to infection control during my employment and these were repeatedly raised over time before and after the opening of the new hospitals. Problems in relation to the original infra-structure, such as the neurology building were also identified.

Patient safety and restoring public confidence needs be the primary drive of the inquiry. I hope that lessons can be learnt to ensure positive changes across NHS Scotland. The public need to understand that all hospital acquired infections cannot be prevented. Incidents do happen that have to be managed appropriately. The challenge is to have processes in place to minimize incidents with a pro-active infection control service. This reduces the number of time-consuming reactive incidents. **(Appendix 4).**

This document discusses the review process and have asked questions that, in my professional opinion, need to be answered. This should include the questions within **Appendix 1.**

This document concentrates on ventilation, asking questions that need to be answered. It also touches on some of the questions related to water and drainage etc.. I felt the document would become too long if I referenced all the other STHM documents. They are easily available to the committee. Obviously the Standards that should only relate to those available at the planning stages of the project.

I have quoted from and included the three anonymous submissions sent to the Health and Sports Committee **(Appendix 2-3-4).** They are clearly written by professionals who understand the infection control challenges that are being faced and their evidence should be considered. **Appendices 2 and 3** are up to date with the current position.

This paper considers the following:

1. Review process(es)
2. The Building from the inception to operational management
3. Organisational Culture and Leadership

Some of the concerns raised in the SBAR (Situation,Background,Assessment,Recommendation), written for the whistleblowing in September 2017, are touched on in this document. GGC should be able to provide the inquiry with this document and the minutes from the meeting in October 2017. (I do not have a copy of this as I am no longer employed by GGC).

I do **not** believe any person or organisation, who has been involved in the decision-making process for the building specifications, commissioning, addressing the problems since the opening of the hospitals etc, can be part of the inquiry committee. They, obviously, have to give evidence, I am sure that those responsible for the inquiry will not want to be open to the criticism that the inquiry was a whitewash **(Appendix 4).**

Statements given must be supported by evidence to ensure confidence in the accuracy of the facts being presented. The whistle blowers, in particular, need to have the opportunity to give the evidence to the inquiry. Staff and the public must be given the opportunity to present their evidence in the inquiry setting to ensure a full understanding of problems can be achieved. They must not feel that there will be consequences if they give evidence. There will obviously be differences of opinion and interpretations of the Standards. This is where all the facts and supporting evidence, if necessary with the help of external experts, will enable people to be confident in any recommendations that are made. Lessons can then be learnt for NHS Scotland and rolled out to improve patient care and safety. I believe that the challenges may not be unique to NHS GGC.

What a good outcome might look like from an Infection Control Professional's perspective.

The Queen Elizabeth University Hospital (QEUH) Glasgow opened in 2015. Several issues have arisen at the hospital since it opened including water hygiene, external cladding, the ventilation system and glazing failures which have raised concerns regarding patient safety.

From an Infection Control Professional's perspective what is required is :- a comprehensive review with recommendations implemented to improve patient safety and public confidence in patient safety through enhanced participation, engagement, ownership and accountability in areas of :

- **Building – design, commissioning and maintenance**
- **Processes and Systems -compliance, suitability, improvement**
- **Behaviours leadership and culture – listening and learning –constructive improvement versus blame and defensiveness.**

1. Review Process

Currently it appears that a series of inquiries with different scopes and activities are being instigated or in progress. These are useful in setting out the foundations for improvement and their short-term nature allows speed to implement immediate improvements and remediation measures. However, these are piecemeal and fragmented and reactive especially as new cases continue to emerge.

The Health and Safety Executive

The Health and Safety Executive is currently investigating the circumstances surrounding the outbreak of Cryptococcus infection at Queen Elizabeth University Hospital. This commenced in January 2019 to examine the range of control measures in place to reduce and mitigate the risks of such infections and will include the adequacy of ventilation systems but further on the detail of this ongoing investigation is unknown. Will the HSE investigate other more recent deaths from other infections? To what extent will HSE investigations be conjoined?

Health and Sport Parliamentary Committee

The Cabinet Secretary informed the Parliament on 22 January of the Cryptococcus Infection at the hospital and the mucoraceous mould infection. The Committee agreed on 29 January to undertake a short inquiry to identify the scale of any health problems acquired from the healthcare environment in Scotland whilst also considering the wider implications for health facilities across Scotland. An Oral evidence session on 19 March included:

- Health Facilities Scotland
- Health Protection Scotland
- Healthcare Environment Inspectorate
- Health and Safety Executive

A series of anonymous submissions were made to the Scottish Parliament, as part of an inquiry into hazards in healthcare settings. It is expected the committee, after they have considered the content of submissions, will invite the Health Board to give evidence. The committee has requested further information from the organisations giving evidence.

Healthcare Improvement Scotland

On 5 February The Cabinet Secretary indicated Healthcare Environment Inspectorate would undertake an inspection of the hospital site to provide independent assurance of the safety of the patient care environment. The HIS report, released on 8 March, will feed into the independent review into the design, commissioning, construction, handover and maintenance of Glasgow's Queen Elizabeth Hospitals

Health Facilities Scotland (HFS) position is still unclear

Health Protection Scotland (HPS)position is still unclear

Both organisations, while giving evidence to the Health and Sports committee, explained that their role was purely advisory. The advisory role played in the planning stages and the investigation of problems encountered after the opening of the hospitals needs to be understood. Concerns have been raised about the HPS report on the water contamination in the Royal Children's Hospital not being comprehensive **(Appendix 4).**

The Government states "robust measures" were in place to monitor "infections and other harm" and that Healthcare Improvement Scotland, Health Protection Scotland and Health Facilities Scotland "provide a robust mechanism to monitor and learn from outbreaks and incidents". **The adequacy and effectiveness of such measures and systems however requires to be independently tested.** Two submissions to the Health and Sports Committee, written by infection specialists, raised their concerns about the adequacy of the reporting systems **(Appendix 2 and 3).**

"Independent Expert Review"

The Cabinet Secretary set up an "independent expert review" to be jointly chaired by Dr Brian Montgomery, former medical director and interim chief executive of NHS Fife, and Dr Andrew Fraser, the director of public health science at NHS Health Scotland to look at the hospital's design, commissioning, construction, handover and maintenance, including how these matters support effective infection prevention and any other areas the chairs consider necessary.

The review's recommendations will be made public and the Scottish Government will inform the Parliament of its response to the review recommendations. The Cabinet Secretary also stated that "it is essential that all relevant information is available to the reviewers to ensure a robust, evidence-based assessment can be provided. It is expected that individuals involved in the design, construction, commissioning and maintenance of the hospital, along those providing healthcare (staff) and relevant expertise will input into the review."

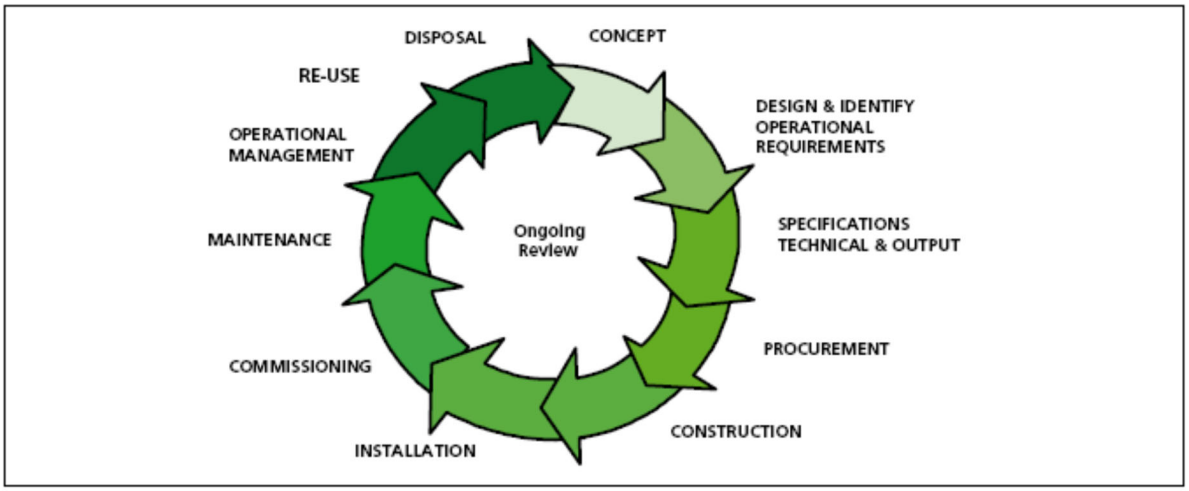
HIS inspectors, cited that "challenges in the working relationships between senior staff" must be resolved. It is reported that someone linked closely to infection control will be managing the health board's investigation into infection problems. This casts a shadow on the review being independent or balanced.

Further, while internal investigations are fully to be expected, it is good practice that this should be overseen by suitably experienced senior health professionals, not directly involved in the establishment. ***Otherwise it does NOT does constitute an "independent or expert inquiry"***. While both co -chairs are highly experienced and reputable individuals they are part of and employed by the healthcare system and ultimately answerable to the Cabinet Secretary. They can therefore never be truly independent or objective.

Conclusion: ***With continuing issues, deaths and complications involving infections linked to building issues occurring over a sustained period, even as recently as Thursday 14 March, in order to restore public confidence, I believe there must now be a full and comprehensive independent public inquiry chaired by a truly independent person such as a senior barrister/ judge or captain of industry.***

2. The Building Programme

A root and branch review is required into all aspects of the building from inception of new hospitals to its day to day operations ***to ensure the building is fit for purpose with flexibility to respond to changes and adaptability for future use.***



SHTM Healthcare building lifecycle

2.1 Site selection

General – usually an assessment of identified criteria with relevant weighting and an Environmental Impact Assessment is undertaken when choosing a site and especially if locating new large-scale hospitals in close proximity to a 'Bad Neighbour' such as industrial processes, sewage treatment works etc. The criteria would be ***assessed for potential impact on proposed use, patient safety and staff welfare.***

The impact of the proximity to the sewage works were identified in a report in 2002 (http://asrarchive.nhsggc.org.uk/Phase1/Report/11-south.htm for Glasgow NHS Board Revised 04/01/0202). –"-Sewage works nuisance being addressed by West of Scotland Water."

There are reports of 29 sewage plants across Scotland being rated as poor because of sewers overflowing, leaking and breaching environmental limits. Glasgow is included in this list. (www.robedwards.com/2014/11).

QEUH – what risk assessment and analysis was undertaken to understand the risks associated with the scale and proximity of Shieldhall WWTW when operating in optimal, normal or exceptional/ distressed conditions?

To what extent was it understood that natural ventilation might not be feasible thus increasing reliance on mechanical ventilation and the associated risks and cost when the site was selected?

2.2 Design specification

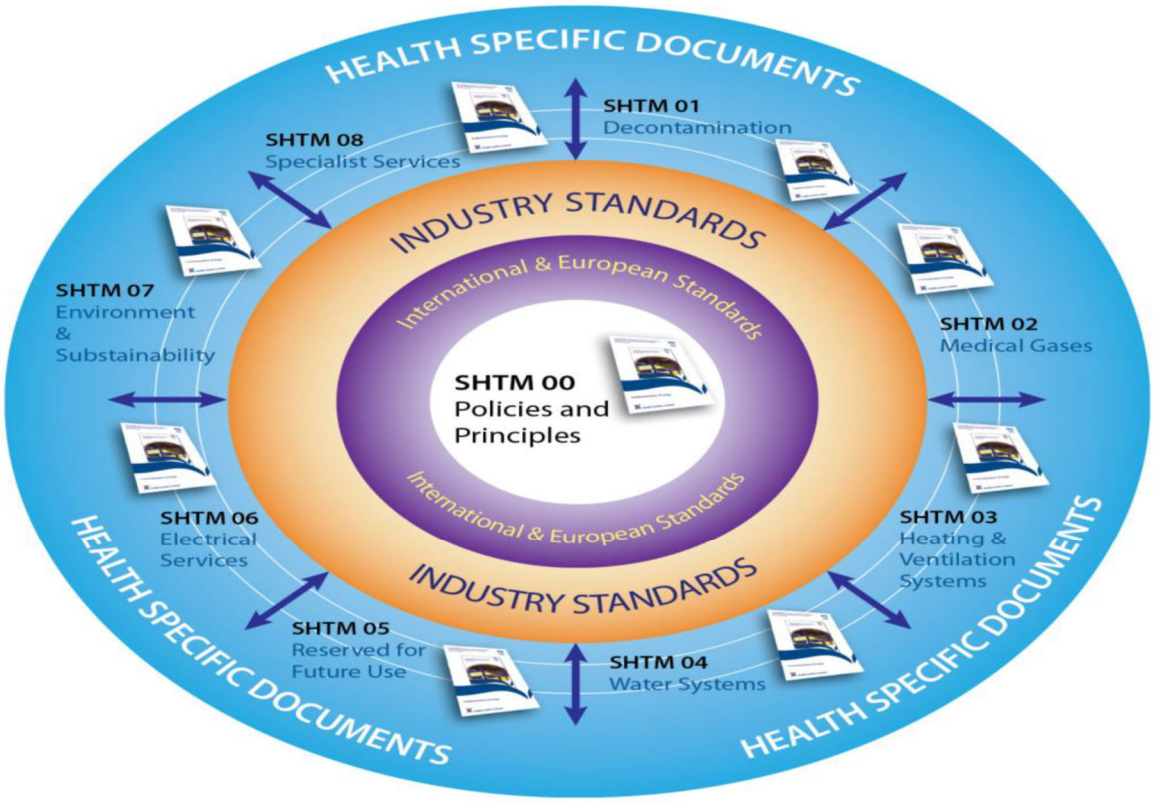
We live in an age of change. ***New buildings should be capable of adaptation to suit new technologies and changes in how the building might be used. There should be:***

- Ability to meet current known needs
- Flexibility to respond to emergency or temporary patterns in use.
- Future proofing to meet emerging and changing demands and needs from time to time.

What Design standards would the specification be expected to reflect? -

General: as a minimum Compliance with Building Standards Non-Domestic 2015 and SHTM guidelines (currently Version 2 2014)

The following process are extracted from SHTM guidelines:



SHTM 04 Water Systems 04 and SHTM 03 are particularly relevant.

Scottish Health Technical Memorandum 03-01 - Ventilation for healthcare premises
Part A – Design and validation
It is essential when undertaking the design of a specialised ventilation system that the project be considered as a whole. The process model set out below should ensure that all relevant factors are considered

Step	***Question***	***Design statement and information required***
1	*Why is the system required?*	*Healthcare applications* *Statutory elements* *Non-healthcare applications*
2	*What is the required system performance?*	*Room air flow pattern* *Air change rate* *Differential pressures* *Air quality* *Room air condition* *Noise limits*
3	*What are the constraints on the distribution system?*	*Location, Size, Materials* *Dampers, Access, Insulation* *Fire considerations* *Room terminals*
4	*What are the minimum requirements for the AHU(s)?*	*Intake / Discharge positions* *Legionella, Health and Safety* *Access, Fire, Electrical safety* *Leaks, Insulation, Cleanliness* *Filtration, Drainage*

5	*What control functions are required?*	*User control requirements* *Estates control functions* *Energy management* *Environmental conditions* *Control sequence logic* *Run, Set back, Off philosophy*
6	*How will the system performance be validated?*	*Validation methodology* *Instruments used* *Design information required* *[Design air flow rates* *Design air velocities* *Pressure differentials* *Noise levels* *Air quality* *Installation standard]*
7	*The system will only be acceptable to the client if at the time of validation it is considered fit for purpose and will only require routine maintenance in order to remain so for its projected life.*	
8	*Handover to client*	*Basic design information* *Commissioning results* *Validation report*

SHTM further states:

1.36 Ventilation will need to be provided:

- *as a requirement for patient care;*
- *in order to fulfil a statutory duty.*

1.37 In assessing the need for more specialised ventilation and the standards desired for patient care, ***managers will need to be guided by their medical colleagues and by information published by Health Facilities Scotland.***

1.38 The statutory need for ventilation falls into two categories:

- *in the first, the need for specialised ventilation and the standards to be adopted are clearly set out in specific pieces of legislation. An excellent example of this is the current legislation surrounding the manufacture of medicinal products in the European Community.* ***The managers of the departments affected by this type of legislative requirement should be aware of their needs and be able to advise on the standards to be achieved;***

- *the second type of statutory requirement arises due to the interpretation of both the Health and Safety at Work etc Act and the Control of Substances Hazardous to Health (COSHH) regulations. The person tasked with conducting COSHH assessments will be able to advise as to the need for, and standard of, ventilation in each particular case.*

QEUH : What was the extent of the consultation and engagement with relevant infection control professionals, clinicians, other health care professionals where appropriate, estates and contractors throughout the course of the design development? Was this sufficient?

Did the ventilation design meet the SHTM standard for standard patient's rooms, positive pressure ventilated lobbied rooms, negative pressure rooms?

Were HEPA filters fitted in all areas where they were required?

What additional design standards were included in the design specification from an infection control perspective?

Would an increased and more effective role for infection control professionals in the design and building of NHS facilities be an area where real improvements can potentially be made?
Should the project programme include additional time or resources to ensure adequacy of consultation of the relevant experts, including external experts where required?
Concerns about inadequate planning and design of the infrastructure of a hospital, which includes basic functions such as plumbing, ventilation and cleaning are fundamental for the safe and efficient working of all healthcare environments have been raised **(Appendix 2).** The risks of any derogation from the well established standards, such as STHM / SHBN, potentially increases the risk of infection acquisition **(Appendix 3).**

2.3 Procurement - Selection of contractor and specialist sub-contractors

General: Procurement assessments are well understood and the need for criteria and weightings to reflect the risks and desired outcomes in a project.

QEUH: To what extent was infection control expertise applied in the selection and assessment of contractors?
What weighting and thresholds were applied to the scoring of contractors and the ventilation aspects of the project?

Was there sufficient weighting attached to the importance of ventilation systems in the procurement phase?

2.4 Construction and installation phase

The lack of involvement by infection control in new medical projects was raised by BMA Scotland in submissions to the Scottish Government earlier this year, where they said:" It is an uncommon event for an infection control team to oversee a major build – although they are often consulted as the project progresses. However, there may not always be enough time and experience to optimally deliver this input despite expert knowledge clearly being needed. "Added to this, the NHS experts and the builder's experts often don't agree on points of design and how this may relate to infection risk."

General: It is not unusual for the client to instruct changes to the design in the course of construction to reflect changing requirements.

Contracts determine the transfer or retention of risk by the Client and contractor through means of input and /or output specifications and, until relatively recently, often determined the level of client supervision activity during the construction phase. The realisation that residual risk always remains with the client has meant the public sector has increased its level of oversight throughout construction to ensure that potential issues in course of construction can be identified and managed by clients more proactively. This requires the client to retain internal and external expert resources for this purpose.

QEUH: To what extent were infection control professionals and external experts, when required, actively consulted before changes were instructed which could impact of the adequacy of the ventilation system design?

How active was the Client in overseeing the requirements during the construction and installation phase? To what did extent did the client play an active role in the oversight of construction, for example checking the right size of ventilation pipes were installed to ensure the number of air changes and quality of the air met the Standards for all categories of patient?
Were the SHTM standards met for ventilation for standard patient rooms, positive and negative pressure room facilities where required?

Is the fact that the ICE theatres have not opened, after significant investment, another example of planning and construction failures?

2.5 Commissioning and handover

NHS Greater Glasgow and Clyde did not respond to specific enquiries regarding safety alarm failures or ducting being the wrong size.
SHTM states: 1.15 Records should be kept of equipment design and commissioning information. The Health and Safety Executive, Medicines Inspectorate and other interested bodies have a statutory right to inspect them at any time. All records should be kept for at least five years.

General: Commissioning and testing would normally take place over a period of time to ensure continual and consistent performance under different seasonal and other conditions.
SHTM states: *The system will only be acceptable to the client if at the time of validation it is considered fit for purpose and will only require routine maintenance in order to remain so for its projected life.*
A maintenance manual and training of maintenance staff would be made available during the commissioning phase.

QEUH: Was the testing and commissioning undertaken such that the system met the required performance standards?
What assurance was provided by the client before accepting the system?
When was it discovered that the sizing of the air ducts was incorrect? Would this be expected to have shown up at the time of commissioning?

A report into water contamination issues at the hospital site revealed there was "no documented evidence of NHSGGC Infection Prevention and Control Team involvement in the commissioning or handover process of the project" although infection control and prevention nurses had been seconded to work on the project team.

Were the risks associated with water, taps, shower heads, piping, bathrooms, sinks and drains understood? Were the Standards met? Any breakdown in design and commissioning will increase risks of waterborne infections (Appendix 2 and 3).

Were the correct taps fitted?

What processes were in place for the testing of water quality and were these adequate?

Were there testing failures during construction process of Edinburgh Children's hospital that resulted in construction being stopped? If so were they similar problems to those being identified at QEUH hospitals?

2.6 Maintenance

Systems and Processes must include inspection, sampling and maintenance regimes, audits, risk management, continuous review and compliance evidence, data and documentation.

General: The SHTM states:

Para 1.10 *Where specialised ventilation plant is provided as part of the protection measures there is a statutory requirement that it be correctly designed, installed, commissioned, operated and maintained. The local exhaust ventilation (LEV) section of the COSHH regulations requires that the plant be inspected and tested at least every 14 months by an independent organisation and that management maintain comprehensive records of its performance, repair and maintenance.*

Air Intake

*1.42 An uncontaminated air supply to the system is essential. In order to achieve this, the air intake will be positioned so that air discharged from extract systems or other dubious sources cannot be drawn in. Exhaust fumes from vehicles can present particular problems. The area surrounding the intake will need to be kept clean and free of vegetation and waste material in order to reduce the possibility of biohazards or fire**. The intake itself will be protected by a louvre and mesh screen to prevent rainwater, vermin and insects etc from entering the system***

A fully developed PPM and reactive maintenance system covering a suite of activities would be expected in all significant premises. As a minimum this would include prescribed activities to meet compliance with specific statutory requirements (eg LEV and Legionella etc) and general maintenance and inspection regimes relating to building fabric Health and Safety. It would be commonplace for ISO 9001 or other QMS standard to be met as a minimum. Specific statutory compliance regimes (eg Fire Risk, LEV, legionella and H&S) require to have a named duty holder and named responsible person(s) aimed at underpinning a culture of ownership and accountability throughout all organisations.

Building maintenance systems are becoming increasingly better developed throughout the UK in all sectors partly due to available technology to support such systems and processes and their ability to provide accurate data and reporting. More compelling however are the increased penalties and personal accountability of executives and officers in the courts for non-compliance with H&S requirements which serve to promote an enhanced conscious H&S culture nationally. Statutory regimes, with named duty holders and responsible persons, are designed that there is personal liability if resources are obstructed when risks are highlighted or where performance of maintenance processes and systems are inadequate. The plurality of persons who may be simultaneously prosecuted encourages team working between different layer of management, Board and maintenance teams.

What investigations have been undertaken by infection control since the hospitals opened, including any of the original infrastructure, such as the neurology building?
This should include both outbreaks and maintenance events. **(Appendix 2 and 3).**
Examples of any events associated with the following organisms should be investigated:

- *Serratia species*
- *Pseudomonas*
- *Non Tuberculous Mycobacteria*
- *Aspergillus species*
- *ESBLs*
- *Acinetobacter*
- *VRE*
- *Environmental gram positive and gram negative bacteraemias linked to water contamination*
- *Exophila dermatidis (a fungus)*
- *Cryptococcus*
- *Mucoraceous mould*

Examples of incidents include

- Contaminated water system resulting in bacteraemias
- Drain and backflow into sinks resulting in bacteraemias
- Fungal infections linked to contaminated showers and showers
- Water /dialysis point leaks on in intensive care linked to fungal /mould infections
- Construction work associated fungal infections
- *Legionella pneumophilla* contamination of water supply
- Sewage leaks in new and old hospital buildings

(as described in Appendices 2 and 3)

What remedial work has had to be undertaken in the new hospitals including poor installation and failure to meet Standards? In particular this should include ventilation, water and drainage.

Is there remedial work still to be undertaken?

Was has the cost been so far and what is the projected cost?

QEUH: What Building Management Systems (BMS) were put in place? Is there an overarching QMS? How are these systems and processes monitored and how frequently are they spot-checked or audited?
Is staff training adequate and are sufficient resources available?
Do statutory compliance regimes (eg Fire Risk, LEV, legionella and H&S) have named duty holders?
Is the level of accountability understood?
To what extent do the Board actively seek out maintenance data, review and seek to update associated risks?

2.7 Operational Management
Para 1.17 of the SHTM states :.

Increased health risks to patients will occur if the more specialised ventilation systems installed to supply high quality air to operating departments do not achieve and maintain the required standards. The link between post-operative infection and theatre air quality has been well established. Plants serving conventional operating departments, for instance, will be required to ensure the separation of areas within the suite by maintaining a specific direction of air flow between rooms, even when doors are opened. They will also maintain the selected operating department environmental conditions regardless of changes in the outside air conditions or activities within the space. In addition ultra-clean operating ventilation systems that are designed to provide an effectively particle-free zone around the patient while the operation is in progress, have been shown to reduce significantly post-operative infection in patients undergoing deep wound surgery. Their use for other forms of surgery may well be required.

General: risk assessments should be undertaken to determine where to locate particular categories of patients in particular areas of the building and recognising that there will be changing demands and requirements from time to time.
The escalation and reporting processes need to be understood. This will ensure that appropriate remedial and control measures are put in place without delay.
There also needs to be clear monitoring and checking systems in place. Estates, domestic services and infection control need to work closely together. There needs to be clear embedded and auditable governance for all these areas within the organisation.

QEUH: For example to what extent was a risk assessment of the air quality undertaken prior to relocating the Children from the Royal Hospital for Children into QEUH?
Why are there ongoing problems with sewage leaks in the Neurology building?

3. Organisational behaviours, leadership and culture.

NHS Education for Scotland (NES) *Developing leadership and management capabilities and capacity across NHS Scotland is a key priority in the 2020 Workforce Vision. It is an integral part of improving quality to enhance patient safety and people's experience of services, as reflected in the NES Strategic Framework for 2014-19*

Does the organisation have accountability at the right level? Or, does it operate a blame culture in which there is a climate of fear?

To what extent are ownership, support, coaching and learning role modelled by all senior staff? Are there consequences for senior staff not adopting defined behaviours?

How is the duty of candour received by Senior Management?

Healthcare Improvement Scotland inspectors picked up on the problems in their report last week, citing "challenges in the working relationships between senior staff" which they say must be resolved.

How is progress reported and what level of oversight is there by the main Board?

Difficulties are encountered within the organisation where staff feel intimidated and afraid to raise their concerns. In part this resulted in three microbiologists feeling they had no alternative but to start the whistleblowing process. There were concerns about “events” not being addressed and communication pathways within infection control. This resulted in all members of the infection control team not being kept up to date with the issues within the organisation. Stage 2 of the whistleblowing process was reached because of ongoing concerns. This required a lot of courage on the individuals part.
The reasons why microbiologists resigning from their infection control duties on three occasions, with the loss of vital expertise, needs to be understood. **(Appendix 4).**

Conclusion

This is a very complex investigation. Some questions may never be fully answered. It is possible that there are failures at different levels within the organisation and over a long period of time. This inquiry should be looking forward, learning lessons and not apportioning blame. There may be similar challenges across NHS Scotland.

Appendix 1

Suggestions on what should be included in the Inquiry?

Any inquiry should not focus on the problems and publicity that has been precipitated by the Cryptococcal infections and the Mucor infections. The inquiry needs to be wide ranging and identify all the problems relating to the South Glasgow Hospital campus. This includes the old infrastructure as well as the new hospitals. We need to understand why there are so many issues that need to be addressed.

The SBAR produced for the whistleblowing process in September 2017 includes a lot of the concerns that have been raised for some time.

A. Understand the Planning process from the beginning

1.What were the roles within GGC of?

- Facilities
- Contractors; including architects and builders.
- Clinicians
- Nursing staff
- Others as appropriate
- Infection control
- Outside Experts; e.g. ventilation

2.Were the national standards, including infection control, met?

3. Where is the evidence of commissioning checks?

Were all the required checks undertaken?
Where is the evidence that this was done?
Were standards met?
Who signed them off?
What was the involvement of infection control?

B. Understanding the issues and challenges

1. Identify ALL the problems / issues that have had to be addressed since the opening of the building; ventilation, contaminated water, leaks, mould / fungal problems, fire doors, falling panels, sewage leak at main entrance etc..

2. What has the cost been in resolving the issues so far?

3. What is the projected cost in resolving the issues?

4. Can the issues be resolved?

5. Is there an Action Plan to address the issues?

6. What is the time frame for addressing the issues?

7. What has the role of Facilities and Infection Control been in managing the problems that have arisen since the hospital opened?

8. When were the concerns in relation to ventilation and water issues first raised?

9. What was the timeline between concerns first being raised and an action plan being drawn up?

This should include listening or not to the professional concerns about patient safety

C. Outbreaks and number Resistant Organisms

1. Identify all outbreaks; including those related to Cryptococcus and Mucor.

2. Identify all resistant organisms within QEUH and RCH

3. The outbreak linked to the contaminated water in 2A and 2B must also be fully reported on. This should include how many patients were infected/ colonised.

Are the numbers above higher than those seen prior to the hospital opening?

4. What infection control investigations took place and what measures were put in place?

5. Look at HEAT Targets

D. ICE Theatres

There has been a huge investment in the ICE theatres. They were due to be opened in 2018, but have failed the commissioning process. Why has this happened and is this another failure of design or implementation or both?

SUMMARY

The inquiry must ensure that there is evidence to support all the information given.

Any inquiry needs to be independent with no cover up, understanding the involvement of all organisations involved in the planning, maintenance and outbreaks/ incidents.

What long term impact have these problems had on the patients who have had delayed chemotherapy?

Has there been an impact on waiting times, including pressures on beds resulting from the ward closures?

Staff, patients and relatives must be given the opportunity to voice their concerns. People need to re-assured that there will be no consequences of speaking out. The fear of speaking out must not be a factor in understanding the facts and getting to the truth. There is a culture and belief that speaking out will have consequences.

There may be action plans in place to address the issues. The inquiry needs to be sure that all the issues are being prioritised and actioned, as well as understanding the timeline for resolving them.

PJ Redding . March 2019

Appendix 2

REF NO. HS/S5/19/HHHE/A2
HEALTH AND SPORT COMMITTEE
HEALTH HAZARDS IN THE HEALTHCARE ENVIRONMENT
SUBMISSION FROM xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

What is the scale of health problems acquired from the healthcare environment in Scotland?

What and where are the main risks?

A. Water

The **water supply** can become contaminated due to biofilm formation on plumbing components including pipe work and taps; this is compounded by inadequate maintenance of outlets, drainage issues, failure to adequately commission the water supply and lack of chemical dosing and control measures from the outset.[1-4]

Water coolers in hospitals– these include both mains and stand alone coolers; coolers represent 'dead legs' in a system. They are not regularly cleaned and maintenance is poor. They can serve as a source of contamination to a water system.[5]

Little used outlets – there are too many sinks and showers unused by patients; this leads to inadequate flushing and quickly encourages contamination, chiefly with Legionella and Gram-negative organisms.[6]

Other water sources - dishwashers, need regular cleaning and maintenance and consideration given to inline filters; ice machines also present a risk.[7]

Taps

The design of taps in hospitals has become exceedingly complex and the array of different components is conducive to biofilm formation and retrograde contamination of the water supply.[8] In particular, flow straighteners inserted to direct flow and minimise splash cannot be decontaminated properly and offer a hidden reservoir for biofilm. IPCT involvement in tap selection is crucial, as is regular maintenance, replacement and a cleaning/disinfection regimen. Flow straighteners are associated with Pseudomonas and Stenotrophomonas infections in nearby ventilated patients.[9] The link between tap components and Pseudomonas was known as far back as 1966.[10]

Bathrooms

Bathrooms are a recognised source of mould.[11] Materials need to be water resistant, e.g. Gyproc, paint and finishes need to be of sufficient quality to be able to repel repeated moisture, stagnation and erosion. Shower curtains or partitions require constant attention. Daily cleaning and decontamination is required for patient, staff and visitor facilities, with additional spot checks and a monitoring (and feedback) system in place.

REF NO. HS/S5/19/HHHE/A2

Sinks and drains

Sinks and drains need to confirm to a design which minimises the risk of water splash for patients and surrounding environment.[12-14] There is evidence detailing transmission of Gram-negative organisms from these sources during, and after, use by staff, visitors and patients. This is especially likely with biofilm build-up in tap filters and sink traps.

Drains should contain non-corrosive materials which will discourage biofilm formation and should be cleaned regularly. It is not sufficient to irrigate with disinfectants since even the most powerful agents may fail to penetrate mature biofilm. There is also a risk that environmental organisms can develop tolerance to disinfectants on repeated exposure.

Sink hygiene is very important; staff should not decant anything down clinical hand wash basins and en-suite sinks as this similarly encourages biofilm formation. Emptying liquid waste down hand wash sinks is directly related to sluice access and inadequate education. Patient sinks should be kept free from clutter such as cosmetics and beauty products; this is specifically because these impede adequate cleaning.

Water damage/plumbing

There seems to be a general lack of understanding of the significance of water damage in the health care setting. The following have occurred at hospitals in which the authors have worked:

• Recurrent sewage leaks from plumbing in operating theatre and ward areas. This necessitated removal of water damaged mouldy material from the ceiling space above operating theatres.

• Removal and repair of a wall in the critical care unit as a result of a leaking dialysis point with extensive mould affecting the wall. This was in relation to (plumbing) connections not being adequately tightened.

• Removal of similar mould in the outpatient renal dialysis unit for the same reason.

• Poor plumbing design – there is a large drainage pipe with a horizontal bend situated above the first floor of a hospital. This was blocked by paper towels and leakage affected the staff canteen and main entrance, including various food outlets. This represents poor design strategy since high risk pipe work should always be diverted away from public and patient areas.

• A decontamination unit suffered mould on the ceiling void due to ingress of rainwater. Again, pipe work should be placed away from high-risk areas. A stoppage at this unit affected surgical services across the health board and further afield.

• Mould in a cardiac ward due to rainwater ingress from inadequately sealed windows and a flat roof design.

REF NO. HS/S5/19/HHHE/A2

B. Ventilation systems

General comments

Inadequate ventilation systems have been installed in new build hospitals; these are not fit for purpose for the specialist patient groups they are intended for, e.g. bone marrow transplant and haematology wards.[15-17] The systems did not supply sufficient air changes, pressures and HEPA filtration. Staff are not trained to be able to adjust settings in facilities with different air delivery systems.

There is a lack of negative pressure room facilities to reduce the risk of airborne transmission from isolated patients with potential to spread to other patients. This does not just apply to Infectious disease units. All large acute sites should have sufficient negative pressure facilities. A&E departments cannot choose presenting patients and patients cannot choose their infections. This means that every hospital should be able to safely isolate patients with TB, meningococcal meningitis, exotic respiratory infections (e.g. SARS; MERS), etc. The lack of these facilities was immediately apparent when Scotland hosted an unexpected case of viral haemorrhagic fever three years ago.

Likewise, the adoption of positive pressure ventilation rooms (PPVL) room design throughout a number of Scottish hospitals is inadequate to protect isolated immunosuppressed and/or vulnerable patients against airborne contamination from both inside the unit and outside the hospital, e.g. other patients; building and renovation.

Thermal wheel technology

Thermal wheel technology, whilst energy efficient, may lead to mixing of clean and dirty air, undesirable in a healthcare setting, and especially at sites where immunocompromised patients are present.

Chilled beam technology

Chilled beam technology is hailed as energy efficient but the system reduces air changes in patient rooms to <3/hour. This increases the risk from aerosol generating procedures since fewer air changes impede the dilution of microbial contamination. Furthermore, chilled beams drip condensation directly onto patients and beds. They also collect significant levels of dust and are physically difficult to access, making cleaning impossible by domestic staff. Cleaning cannot be undertaken while there is a patient present in the room.[18]

Vents

Air vents, similarly, can be very difficult to clean particularly in ICU settings.[16] These gather dust rapidly and annual cleaning regimens are far from sufficient. Dust quickly builds up within 3 months. Clinical ward staff, domestics and estates need to coordinate services in order to introduce and embed a planned programme of cleaning and maintenance of all air vents, internal and external filters, and air ducts adjacent to clinical and non-clinical areas.

REF NO. HS/S5/19/HHHE/A2

Building work

There is a constant stream of external building and repair work ongoing. This is rarely, if ever, discussed or signed off by infection control staff.[19] External building work and internal repairs can lead to generation of dust and release of fungal spores. This may necessitate re-routing of high-risk patients and administration of antifungal prophylaxis.

C. Cleaning

Current cleaning in one hospital conforms to a dynamic risk assessment for the first 3 days of a patient stay, i.e. if room appears visually clean, then cleaning is not carried out on that day. This is completely unacceptable. Visual monitoring cannot accurately gauge microbial dirt including pathogens.[20] Virtually all hospitals in the Western hemisphere, and further afield, clean patient rooms or bed spaces at least once per day.[21,22] Following recent clusters of environmentally associated HAIs it was decided to clean 'high risk' areas daily. However, once daily cleaning of frequently touched bedside sites should be done every day for **all** patients, not just those who are particularly vulnerable or where there have been infection incidents.

The current microfibre mop system for the same hospital appears to be ineffective since floors remain dirty; the mops lift the dust but then re-disperse it elsewhere.[23] The results from environmental sampling suggests that domestics have not been adequately trained in how to use mops or wipes, specifically, the 'one wipe; one site; one direction' system or frequency of use and/or management of cleaning fluids and disinfectants, as laid down by HPS decontamination guidelines.[24]

Hospitals require adequate domestic resources.[21] Cutting or failing to maintain the domestic work force increases the risk of HAI for patients, staff and visitors. It is also a highly contentious issue for patients and their visitors who will quickly comment on untidy and/or dirty healthcare wards.[25] High-risk units require extra cleaning hours and it is important that domestics work closely with ward staff and are included as part of the team. Moving domestic personnel around destroys ownership and erodes motivation.[20]

Plant rooms

Plant rooms at one hospital have become infested with pigeons and cockroaches. These

areas accommodate the water and ventilation systems that serve the entire hospital and ultimately reach all patients, staff and visitors. They may not be deemed 'clinical' areas or 'high-risk' but they should still be kept clean and free from vermin, insects, etc. [25] No one seems to have been designated responsible for cleaning and/or monitoring these areas.

Pest control

Bird control is very important particularly where there are bone marrow transplant and other
seriously immunocompromised patients. European haematology guidance recommends no birds should be nesting close to these units. The risks from pigeons and their droppings were documented over 50 years ago and there exist known strategies to protect buildings from roosting birds.[25]

REF NO. HS/S5/19/HHHE/A2

Outcome of stated risks

Specific incidents associated with environmental deficiencies are listed beneath. This list is not exhaustive, and other examples can be given;

1) Occurrence of a large outbreak of *Serratia marcescens* (environmental Gramnegative bacillus) in the neonatal intensive care unit in part related to inadequate cleaning of the environment. Eventually the outbreak terminated following the use of hydrogen peroxide vapour;

2) A large and significant water incident resulting in paediatric patients developing Gram-negative bacteraemia's. The contaminated water system likely relates to a combination of contaminated outlets and pipework, problems at the time of commissioning and lack of ongoing maintenance;

3) A significant incident with paediatric patients developing bacteraemias linked to drains and backflow into sinks;

4) Increased incidence of a fungus (Exophiala dermatidis) as a result of contaminated dishwashers and mould in showers;

5) Mucoraceous mould in intensive care patients, likely to be related to a leaking dialysis point;

6) Two cases of hospital acquired Cryptococcus relating to a pigeon infestation; this is undergoing investigation;

7) Colonisation of intensive care patients with the fungus Aspergillus and a source of water damage and mould traced to the ceiling void. The intensive care unit had to be closed for a number of weeks to facilitate safe removal and repair;

8) Colonisation of surgical patients with Aspergillus due to nearby construction work where there had been failure to implement HAI scribe and appropriate infection control measures;

9) Outbreak of Vancomycin resistant enterococci (VRE) in a renal unit related to unit design, patient flow and environmental contamination. Rates of VRE acquisition fell following a move to a new unit with single rooms;

10) Widespread contamination of a water system with Legionella pneumophila due to inadequate flushing of a ward that had been vacated and was unoccupied. This required installation of a chlorine dioxide system to provide control.

Are the current systems and processes in Scotland adequate for monitoring, reporting, eliminating or controlling these hazards?

Current systems and processes in Scotland are inadequate for managing environmental hazards; this is essentially because infection control personnel are either sidelined during

design planning or advice is circumvented due to ignorance, time and resource implications. The basis of all healthcare environmental new builds should incorporate advice and comments from experienced infection prevention staff.
It is vital that infection control teams are involved from the outset at the time of planning with the architects and design team. A lot of these issues detailed above could have been ameliorated if appropriate staff had been involved at the very beginning.
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It appears that the design brief for a new hospital is 'innovation'. The design brief for another is 'energy efficiency'. Quite simply, the design brief for any hospital needs to be 'patient safety' whether or not there is an ornamental pond or multiple restaurants.
For environmental incidents often patients are the 'samplers' and staff react to patient infections. There are robust infection control surveillance systems which will detect infections and alert organisms. The reporting structure is via the HIIAT process (as per the HPS national manual) to Health Protection Scotland (HPS) and the Scottish Government (SG) via submission of a HIIORT report.
This monitoring is designed for microbiologists and infection control teams, not estates personnel. Environmental incidents tend to be related to the estate/facility and control measures usually involve these aspects. Whilst there are clear reporting and governance structures for infection control teams, there is a paucity of governance for estates and facilities departments. There is a need to ensure all appropriate actions have been undertaken, in a timely fashion and that assurances and resources for continued maintenance are given for future prevention.
Infection prevention is a thankless task. It only becomes important once an outbreak or infection incident has hit the headlines. It is also difficult to cost because you cannot cost an outbreak or infection incident that does not happen.

Conclusion

Urgent action is required to ameliorate inadequate planning and design of the infrastructure of a hospital. Basic functions such as plumbing, ventilation and cleaning are fundamental for the safe and efficient working of all healthcare environments. There is plenty of evidence and guidance for appropriate installation, maintenance, decontamination and monitoring of all of these, so there is concern that recent new builds appear to have defaulted on vital systems. Indeed, it is likely that there are many hospitals in Scotland with these issues. The environment – air, water and surfaces- is a huge repository for potential pathogens, and with increasing concern over pan-resistance, this threat cannot be easily dismissed. The solutions lie with estates and domestic service managers in setting out a structural framework for checking, maintaining, monitoring, providing feedback and engaging with infection control. Close working between estates and infection control is imperative and the concept of prevention has to be embedded in routine protocol.
There is a danger that healthcare bosses introduce expensive novel cleaning technologies such as automated hydrogen peroxide and ultraviolet light robots. Such systems are seen to be particularly useful for high-risk units and resistant organisms such as carbapenemaseproducing
enterobacteriaceae (CPE) and other resistant Gram negatives such as *Acinetobacter* spp..These organisms, along with *Clostridium difficile* and vancomycinresistant
enterococci (VRE) are known to survive well in the environment.[21,26] However, sufficient, adequately trained and monitored domestic staff can be just as effective using

detergent wipes and bleach for targeted sites at the correct frequencies. Why should costly automated devices be introduced to 'sterilise' surfaces at risk of immediate recontamination from underlying problems with cleaning, ventilation and water outlets? Should we not try to sort out basic systems first, and then model the cleaning to clinical areas? It is not cost–effective to paper over the cracks in basic infrastructural deficiencies by use of powerful decontamination technologies. It is like pouring expensive disinfectant down a toilet without
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cleaning it first. These agents affect the environment in ways that we are only just beginning to understand.[27]

While management of water and air require urgent attention, cleaning remains the 'Cinderella' of infection control. As Florence Nightingale once said, 'Wet dirt is dangerous'; how right she was.[28]

References

1. Weinbren M. Down the drain and back up a drain. J Hosp Infect 2019, in press.
2. Flemming H-C, Wingender J, Szewzyk U, Steinberg P, Rice SA, Kjelleberg S. Biofilms: an emergent form of bacterial life. Nature Reviews 2016; 14: 563-575.
3. Breathnach AS, Cubbon MD, Karunaharan RN, Pope CF, Planche TD. Multidrugresistant *Pseudomonas aeruginosa* outbreaks in two hospitals: association with contaminated hospital waste-water systems. J Hosp Infect 2012; 82:19-24.
4. Hota S, Hirji Z, Stockton K, Lemieux C, Dedier H, Wolfaardt G, et al. Outbreak of multidrug-resistant Pseudomonas aeruginosa colonization and infection secondary to imperfect intensive care unit room design. Infect Control Hosp Epidemiol 2009; 30: 25-33.
5. Health Facilities Scotland, Provision of drinking water SUP 05, 2015
6. Gavalda L, Garcia-Nunez M, Quero S, Gutierrez-Milla C, Sabria M. Role of hot water temperature and water system use on Legionella control in a tertiary hospital : an *-year longitudinal study. Water Research 2019; 149:460-466.
7. Kanwar A, Cadnum JL, Xu D, Jenson AL, Donskey CJ. Hiding in plain sight: Contaminated ice machines are a potential source for dissemination of Gram negative bacteria and Candida species in healthcare facilities. Infect Control Hosp Epidemiol 2018; 39: 253-258.
8. Garvey MI, Wilkinson MAC, Holden LK, Martin T, Parkes J, Holden E. Tap out: reducing water borne *Pseudomonas aeruginosa* transmission in an intensive care unit. J Hosp Infect 2019, in press.
9. Walker JT, Jhutty A, Parks S, Willis C, Copley V, Turton JF, Hoffman PN, Bennett AM. Investigation of healthcare-acquired infections associated with *Pseudomonas aeruginosa* biofilms in taps in neonatal units in Northern Ireland. J Hosp Infect 2014; 86(1): 16-23.
10. Cross DG, Benchimol A, Dimond EG. The facuet aerator – A source of Pseudomonas infection. New England Journal of Medicine 1966; 274:1430-31.
11. Picot-Guéraud R, Khouri C, Brenier-Pinchart M-P, Saviuc P, Fares A, Sellon T, Thiebaut-Bertrand A, Mallaret M-R. En-suite bathrooms in protected haematology wards: a source of filamentous fungal contamination? J Hosp Infect 2015; 91: 244-249.
12. Kotay S, Chai W, Guilford W, Barry K, Mathers AJ. Spread from the sink to the patient: In situ study using green fluorescent protein (GFP)-expressing *Escherichia coli* to model bacterial dispersion from hand-washing sink-trap reservoirs. Appl Environ Microbiol 2017; 83: e03327-016.
REF NO. HS/S5/19/HHHE/A2

13. Decraene V, Phan H, George R, Wyllie D, Akinremi O, Aiken Z, et al. A large, refractory 1 nosocomial outbreak of Klebsiella pneumoniae carbapenemase (KPC)-producing *Escherichia coli* demonstrates carbapenemase gene outbreaks involving sink sites require novel approaches to infection control. Antimicrob Agents Chemother 2018; 62: e01689-18.
14. Aranega-Bou P, George R, Verlander N, Paton S, Bennet A, Moore G. Carbapenem-resistant enterobacteriaceae dispersal from sinks is linked to drain position and drainage rates in a laboratory model system. J Hosp Infect 2019, in press.
15. Dancer SJ, Hobday RA. Historical and current perspectives on the role of sunlight and natural ventilation for controlling infection. J Hosp Infect 2013; 84: 271-282.
16. Humphreys H, EM, Warnock DW, Willatts SM, Winter RJ, Speller DCE. An outbreak of aspergillosis in a general ITU. J Hosp Infect 1991; 18: 167-77.
17. Gray JW, Ludman LJ. The protected environment for high-risk haematology patients: as safe as we think? J Hosp Infect 2016; 92(3): 295.
18. Health Facilities Scotland. SHTM 03-01 Part A . Design and Validation. 2014
19. Balm MND, Jureen R, Teo C, Yeoh AEJ, Lin RTP, Dancer SJ, et al. Hot and steamy: outbreak of Bacillus cereus in Singapore associated with construction work and laundry practices. J Hosp Infect 2012; 81: 224-30.
20. Dancer SJ. The role of environmental cleaning in the control of hospital-acquired infection. Hosp Infect 2009; 73: 378-85.
21. Dancer SJ. Controlling hospital-acquired infection: focus on the role of the environment and new technologies for decontamination. Clin Microbiol Rev 2014; 27(4): 665-90.
22. Bogusz A, Stewart M, Hunter J, Yip B, Reid D, Robertson C, et al. How quickly do hospital surfaces become contaminated after detergent cleaning? Healthcare Infect 2013; 18: 3-9.
23. Bergen LK, Meyer M, Høg M, Rubenhagen B, Andersen LP. Spread of bacteria on surfaces when cleaning with microfibre cloths. J Hosp Infect 2009; 71(2): 132-7.
24. The NHS Scotland national cleaning services specification. Health Facilities Scotland: April 2009. Available at: https://www.hps.scot.nhs.uk/resourcedocument.aspx?id=2990
25. Dancer SJ. Mopping up hospital infection. J Hosp Infect 1999; 43: 85-100.
26. Inkster T, Coia J, Meunier D, Doumith M, Martin K, Pike R, et al. First outbreak of colonization by linezolid- and glycopeptide-resistant *Enterococcus faecium* harbouring the cfr gene in a UK nephrology unit. J Hosp Infect 2017; 97(4):397-402.
27. Voigt AM, Faerber HA, Wilbring G, Skutlarek D, Feld er C, Mahn R, et al. The occurrence of antimicrobial substances in toilet, sink and shower drain pipes of clinical units: A neglected source of antibiotic residues. Int J Hyg Environ Health 2019; in press.
28. Nightingale F. Notes on Nursing: What it is, and what it is not. 1859.

APPENDIX 3

REF NO. HS/S5/19/HHHE/A3
HEALTH AND SPORT COMMITTEE
HEALTH HAZARDS IN THE HEALTHCARE ENVIRONMENT
SUBMISSION FROM XXXXXXXXXXXXX
What is the scale of health problems acquired from the healthcare environment in Scotland?
I am not aware of any current system of data collection which would answer this crucial question, therefore I think the answer is "unknown" . However, based on experience and anecdotal evidence from peers it is my view that there is a significant, as yet unquantified, contribution of the environment to HAI rates in Scottish hospitals. Examples of outbreaks where the healthcare environment in Scotland has been *implicated* (not always *proven)* as a source or route of transmission include:
• Serratia
• Pseudomonas
• Non Tuberculous Mycobacterium species
• Aspergillus species
• Acinetobacter
• ESBLS
• Environmental gram positive and gram negative bacteraemia linked to water contamination
• Surgical site infections
In order to get a rapid idea of the burden of environmental outbreaks it may be possible to glean information from data already gathered - eg assess the reports to HPS of healthcare associated infection incidents which are graded green, amber, red to identify the cases that are deemed to have had an environmental element in the route of transmission. Numbers of cases and clinical impact could be quantified and reported. This would unfortunately miss cases that are not identified as part of an outbreak or "incident", and the detection of an outbreak relies on a high level of awareness of the importance of the environment as a reservoir by IPCTs and Estates teams; eg serratia and enterobacter may be mistaken as normal flora when they are also environmental organisms.
Unfortunately the nature of environmental source outbreaks is that they can rapidly cause infection to large numbers of patients (eg legionella) and therefore "steady state" statistics are not in themselves reassuring.
Evidence of compliance of the current NHS estate with standards that are already embedded in SHTMs and SHBN documents would be required for assurance that the
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healthcare environment is being built and maintained for reduction of infection risk. To my knowledge this is not readily available or systematically collected or reviewed nationally. There is a perceived difficulty in applying the building standards as there are different iterations with updates every few years. In my experience there are misconceptions that standards have radically changed and old estate is not expected to meet new standards. In terms of theatres for example the core parameters of pressure differentials, air exchange rates and clean to dirty air flow have remained static in guidance for many years, while it is true that the size and volumes of air have changed to accommodate ever more complex

procedures and increased sizes of surgical teams. Therefore the idea that old theatres do not require to meet current standards needs careful appraisal. In these circumstances it is absolutely critical that there is a clear understanding of public expectations with regard to risk mitigation in both old estate and upgrades, as well as new builds.

• **What/where are the main risks?**

Risk by Patient factors

It is important to note that patients have different levels of risk of infections based on immune status, procedures carried out, and medication, eg steroids and antibiotic use. Therefore different patients exposed to an identical environment will have different outcomes. Furthermore, minor changes to a stable environment can have large consequences depending on the setting. For example, pseudomonas colonisation of a tap in a standard ward may not cause immediate problems; however, pseudomonas at even low levels in a NICU tap could have rapid and serious consequences. Therefore strategies for prevention require a nuanced approach to risk and intervention - a purely guidelines based approach will not be sufficient for every setting. Efforts to mitigate risk should therefore be proportionate and directed to the patient specific risk status.

Main at risk patient groups requiring extra attention to risk management of the environment:

• Neutropenic and other immune suppressed states, can be stratified into very high, high and low risk groups
• Neonates
• Burns patients
• CF patients
• ITU
• Solid organ transplants
• All patients at time of surgery, especially “clean” procedures such as joint replacement

In addition patients can themselves present a risk of infection to others eg infectious TB, and the role in the environment in this setting is to prevent onward spread.

In order to understand the level of protection offered to these patient groups in NHS Scotland, evidence is required regarding patient placement policies and standards of environment for all these groups as well as audit data on infection rates in these particular patient groups.

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Risks of Environmental Routes of transmission

Airborne infections

Ventilation Systems

There are very well established parameters for ventilation in the health care environment that have been in place for decades. These cover all areas of the hospital and the most relevant areas are those where contaminated air causes significant risk of infection, which is mitigated by the provision of specialist ventilation:

• Theatres, including minor procedures and ultra clean technology
• Source isolation for infectious patients (requiring negative pressure rooms, and increased Air exchange rates)
• Protective isolation for immune compromised patients (requiring positive pressure rooms, HEPA filtration and increase Air exchange rates)
• NICU, ITU,
• Endoscopy suites

• Burns units
• Treatment rooms
• Clean rooms
• Decontamination suites
• Aseptic pharmacy
• Laboratories

Any derogation from SHTM/SHBN standards has the potential to increase the risk of infection acquisition and should be documented with rationale for the derogation.

In addition there are regional type services that have no UK Building standards, but which need specialist planning and design, using international guidance and evidence based data and first principles: infectious diseases units, bone marrow transplant units, and CF units. This requires a multi-disciplinary team of experts, and Infection Control should be central to this is already outlined.

Any breakdown in the design, commissioning or validation process poses a risk that the environment does not meet standards and therefore increases the risk of airborne infections.

Building works

Building work on a hospital premise is known to pose a risk of airborne fungal infections. The HAISCRIBE process which has been in place since 2007, is a critical tool for minimising risk of infections due to building work in the health care environment. There is anecdotal evidence that this process has been inconsistently applied and therefore this remains a priority area for monitoring and should be recognised as a patient safety issue.

Waterborne infections

Standards exist for water system commissioning, maintenance and microbiological testing, especially focussed on Legionella and pseudomonas. However, many organisms can

contaminate and colonise water systems and the component parts eg taps and shower heads and piping especially if there is any stagnation, certain pipe materials are used, or if there is a contamination event due to a breach in the system.There is a body of scientific literature that can be referred to that documents the role of water system associated HAIs Any breakdown in the design, commissioning and maintenance of these complex systems will increase risks of waterborne infections.

Physical accommodation

A key to reducing infection in hospital is to have a clean and clean-able environment. The drive to “design out” infection has been ongoing for many years. Therefore choices of furnishings, fittings and materials are all crucial for minimising infection risk and a wealth of advice is readily available. Any lack of maintenance or cleaning will also increase risk. When the monitoring and management of cleanliness and the state of the environment is entirely segregated from infection control input, there is potential for risks to arise and remain unidentified.

• Are the current systems and processes in Scotland adequate for monitoring, reporting, eliminating or controlling these hazards?

My view is that the systems are NOT currently adequate, however there are resource implications for any planned measures for improvements.

Monitoring

As described there is no current system which will adequately determine epidemiology of environmental infections as a cohesive entity.

There is inconsistency in the implementation of Scottish Health Building standards and no systematic monitoring.
Possible ways to address this gap are
1. Monitoring rates of HAIs acquired from the environment.
A specific surveillance system is unlikely to be practical given that this would require every HAI to be assessed for a contributory role of the environment in transmission with clear definitions and a whole system of surveillance targeted specifically to these infections. Current surveillance targets only *C difficile*, MRSA , SABS, and *E coli* bacteraemias, and is already resource intensive. Furthermore there are complexities in setting up specific surveillance for environmentally acquired infections :
• Novel outbreaks occur and previously set up alerts will not detect them (note the recent additions to the “alert organisms” lists over past few years), initial detection often relies on alert Microbiology and infection control practitioners, as well as clinical staff, and this is not always acknowledged
• Point prevalence studies do not capture infection burden of outbreaks which are by nature episodic.
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• Organisms that can be environmentally acquired can also have other routes of transmission, eg *Enterobacter sp,* and so surveillance cannot be simply organism based (indeed C diff and MRSA both have environmental components to routes of transmission)
• Proof of an outbreak source is rare in terms of matching organism typing results of clinical isolates to environmental isolates, especially for gram negative organisms. The weight of proof required in order to initiate interventions is very different from that used for research purposes in which a pre conceived hypothesis is tested and predetermined data gathered. The concept of a balance of probabilities, as well as the precautionary principle, need to be invoked in order to have effective infection prevention interventions in a timely manner.
• HAI may not present until after discharge from hospital, especially when duration of admissions is shortening, therefore point prevalence studies of inpatients will miss cases
A pragmatic monitoring system would rely on empowered local teams having good knowledge and expertise and being listened to particularly with regard to novel situations , along with HPS assessment of all reports for possible environmental sources.
2. Targeted assessment of NHS Estate with regard to compliance with Building standards and maintenance
This would be a surrogate measure for the level of risk in hospitals posed by the environment, and would have the benefit of identifying areas of actions for risk mitigation . For example ventilation and water quality are not addressed in the HAI standards, but are critical in preventing infections. Examples of numerics that could be utilised:
• Number of theatres with validation fails, and tabulated key parameters such as ACH, pressure differentials and notes on layouts of theatres being publicly reported.
• Percentages of theatres out with validation timeframe
• Percentage Planned Programmed maintenance schedule being met
• Number of negative pressure rooms available and numbers of fails in pressure differentials and reasons for fails
• Number of sewage leaks into healthcare environment, number of closures of theatres due to environmental issues,
• Number of capital projects opening without IPCT sign off, or delayed opening due to

IC related concerns
• Numbers of HAISCRIBES carried out in hospitals and evidence of IPCT sign off
• Number of taps with TMVs and statistics on the maintenance programmes for these
Records of areas requiring specialist ventilation and water supplies could be examined and audit-able data presented to support a view that these are built and maintained to
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standards (eg Bone marrow transplant, renal transplant, renal dialysis units, ITU, neonatal units, treatment rooms, endoscopy suites)
It should be noted that the importance of the environment design, ventilation and water standards are not new concepts, on the contrary these are very well established in literature and building standards. The current challenge is moving towards an embedded and auditable
system of governance to implement and monitor these standards.

Reporting

Mandatory reporting of outbreaks is well embedded in Scotland. However formal lessons learned and sharing of the reports is less well established.
A formal system to report building issues prior to outbreaks occurring (which would be in the spirit of prevention being better than cure) is non-existent or at least, not obvious.
In my experience there are barriers to the reporting of environmental issues that need to be addressed, lack of clarity regarding the most appropriate reporting route (HIS/HPS/HFS/SG), fears regarding publicity, financial implications of remediation, highly politicised context, and staff uncertainty that these issues pose real patient safety risks.

Eliminating/Controlling

While absolute elimination of infection risk is unlikely, there is increasing evidence that key interventions, good leadership and cultural changes can dramatically alter the rates of HAI, as NHS Scotland and UK wide data have already proved with MRSA and C diff. At the peak of these infections only a decade ago, the idea that we would see the 80% or so reductions seemed laughable. The repeated lesson in infection control is that levels of reduction are often determined by level of prioritisation and co-ordination of effort.
With regard to the environment in hospitals there is already a body of evidence regarding good practice and NHS Scotland has already invested in the production of excellent building standards and HAISCRIBE documents which has included HFS led training days in different health Boards. This excellent work needs to be consolidated and progressed to ensure patients benefit from the investment.
The importance of infection and outbreak prevention is becoming even more critical in the current age of extreme antibiotic resistance. As antibiotics run out, any breakdown in infection control will have potentially catastrophic consequences and investment in controlling these risks can be viewed as a corner stone to any strategy to fight antimicrobial resistance.
My view that there is much room for improvement in the current approach to managing risks
posed by the healthcare environment is based observations including:
1. Time lag for implementation of good practice - eg TMV taps have been a known risk with warnings internationally post Belfast pseudomonas NICU outbreak in 2012, yet have been installed in new hospitals after this date including high risk areas
2. Resource implications used as a counter argument for control measures being implemented. In the age of realistic medicine, it is crucial that there are open discussions

regarding which standards are basic enough to merit uncompromising enforcement, and which, if any, can be considered desirable but not necessary. Patient and public voice is critical in this.
3. Lack of planning for cost of implementing standards, Eg the cost of putting negative pressure in place as part of an HAI scribe should be detailed as a cost by contractors at the initial stages
4. Lack of clearly defined roles for members of IPCT, Public health, and Estates and HPS and HFS in managing and advising on these issues. Note: ICD job descriptions not nationally agreed to date, although this has been the subject of much discussion
5. Lack of timetabling of IPCT involvement in capital and estates projects,
6. Cleaning methodologies need rigorously monitored with regard to the details of the evidence for the methodology and the realities of the implementation,
7. Building validation is not comprehensive: eg PPVL isolation rooms require all the detailed parameters to be correct - not a pick and mix approach .The analogy a ventilation engineer once told me was if you got a car with a wheel missing, its not going to do the job is it?
8. The disbanding of the ICNETWORK a few years ago fragmented the Scottish IC community and that useful level of peer review, networking and discussion was not replaced with an alternative as was anticipated.

Conclusion

It should be noted that these issues are certainly not unique to NHS Scotland, however by building on the IPC infrastructure already in place we have an opportunity to excel in this area of patient safety and harm reduction by developing a national approach to this issue. An approach that puts prevention at the heart of policy could seek to quantify basic parameters regarding the Scottish healthcare estate in order to drive improvements and reduce the risk of outbreaks as well as sporadic infections.

Bibliography

Burke, John P. "Infection control--a problem for patient safety." *The New England journal of medicine* 348.7 (2003): 651.
Dykewicz, Clare A. "Hospital infection control in hematopoietic stem cell transplant recipients." *Emerging infectious diseases* 7.2 (2001): 263.
Anaissie, Elias J., Scott R. Penzak, and M. Cecilia Dignani. "The hospital water supply as a source of nosocomial infections: a plea for action." *Archives of Internal Medicine* 162.13 (2002): 1483-1492.
Loveday, H. P., et al. "Association between healthcare water systems and Pseudomonas aeruginosa infections: a rapid systematic review." *Journal of Hospital Infection* 86.1 (2014): 7-15.
Building Note 00-09: Infection control in the built environment
CEL 18 (2007) 13 December 2007 : HEALTHCARE ASSOCIATED INFECTION:SHFN 30 AND HAI-SCRIBE IMPLEMENTATION STRATEGY
REF NO. HS/S5/19/HHHE/A3
Health Building Note 00-01: General design guidance for healthcare buildings
SHPN 04: Supplement 1: Isolation Facilities in Acute Settings
Scottish Health Technical Memorandum 03-01:Ventilation for Healthcare premises
Scottish Health Technical Memorandum 04-01 Part A Water safety for healthcare premises.

SHFN 30 Part B: HAI-SCRIBE Implementation strategy

APPENDIX 4

HEALTH AND SPORT COMMITTEE

HEALTH HAZARDS IN THE HEALTHCARE ENVIRONMENT

INQUIRY into QEUH, RCH, Neuro-sciences (South Glasgow Hospitals)

I apologize for missing the 28th February deadline. However, having read the Sunday Herald report, I felt I needed to raise my concerns with the committee directly.

I am a retired microbiologist. I am prepared to provide further detailed information to the committee should I be invited to do so.

Concerns in relation to the building specifications and infection control were first raised in 2014 with senior management. Some of the issues were addressed, many others were not.

Microbiologists continued to highlight problems and concerns in 2015. There have been resignations of infection control doctors because of the difficulties faced. These resignations resulted in the loss of experienced infection control doctor expertise.

All microbiologists have some responsibility for infection control and need to communicate with the infection control team. Their workload and contribution to the infection control service cannot be considered in isolation from the duties of the infection control doctors. The resource pressures for clinical microbiology and infection control cannot be separated. Both are under pressure and the resource implications need to be looked at as a whole.

In September 2017, three microbiologists raised an SBAR and Stage 1 of the whistleblowing process raising some of our concerns. I will not outline any details here.

It was very disappointing that we felt we had no alternative but to go down the whistleblowing route. We felt this was a last resort option as a number of issues, some of which we felt to be critical, were not being fully addressed. The driving force was our concern for patient safety.

In February 2018 some microbiologists felt the need to go to Stage 2 of the whistleblowing process. NHS GGC could not provide us with the re-assurances and feedback that the concerns were being fully addressed. This was despite numerous requests for updates. We appreciated that some of the solutions were very challenging both from a practical and resource perspective. An action plan was required, including both short term and long-term plans. I believe this is being worked on by NHS GGC and I hope all the concerns are being examined.

After reading the article, I was astonished that the infection control manager is now the GGC project manager, involved in both the inquiry and internal investigations. He does have an important contribution to make and needs to provide information to any inquiry. However, I do not believe any person or organisation, who has been involved in the decision making process for the building specifications, commissioning, addressing the problems since the opening of the hospitals etc, can be part of the inquiry committee. I am sure that those responsible for the inquiry will not want to be open to the criticism that the inquiry was a whitewash.

I read the HPS report on the water contamination in the RCH. There were many good recommendations, but I believe the report was incomplete. It did not cover the period from the first case in 2016 until January 2018. The timeline for all cases needs to be understood. I would also have been interested to know if there were any bacteraemias with these organisms in the 12 months prior to the move into RCH. This is not difficult data to collect and analyse.

There will be many people who are frightened to speak out and raise their concerns because of the perception of the consequences that they will face. I hope that the committee will be able to re-assure staff, patients and relatives that they do not need to have any concerns. Staff have a professional responsibility to raise any concerns they might have for patient safety. Patients and their relatives have a lot of pressure to cope with but may feel it is helpful to discuss their concerns. As we know, patients sometimes feel that raising concerns may affect the treatment they receive and we must work to re-assure them.

This is a very difficult and worrying time for all involved. There are staff shortages at all levels within the organisation. This must be acknowledged. I believe that when the issues are understood it will uncover multi factorial problems across the organisation and probably not unique to NHS GGC.

While people need to understand what happened with the cryptococcal infections, this must not be at the expense of the other issues.

I hope the inquiry will be able to unravel this complex labyrinth of issues. It will be a challenge.

Patient safety and restoring public confidence needs be the primary drive of the inquiry. I hope that lessons can be learnt to ensure positive changes across NHS Scotland. The public need to understand that all hospital acquired infections cannot be prevented. Incidents do happen that have to be managed appropriately. The challenge is to have processes in place to minimize incidents with a pro-active infection control service. This reduces the number of time-consuming reactive incidents.

I hope the mistakes made during the planning, building, commissioning, maintenance etc of the QEUH and hospitals in south Glasgow will ensure that lessons are learnt and rolled out across NHS Scotland. This must also include a Board responding to concerns raised by experienced staff in a timely manner.

APPENDIX 1

13. WHISTLEBLOWING

13.1 Introduction

13.1.1 This section deals with the disclosure internally or externally by staff who have concerns about patient safety, malpractice, as well as illegal acts or omissions at work, commonly known as "whistleblowing". NHS Greater Glasgow & Clyde (NHSGG&C) wishes to ensure that its employees have the opportunity and confidence to raise such concerns. Through a Whistleblowing Policy, employees are encouraged to be open and are guaranteed to have their concerns considered. NHSGG&C believes that a responsible attitude to Whistleblowing assists in promoting a healthy workplace culture built on openness and accountability. Integral to achieving this is to encourage staff to raise any serious concern they may have about patient safety, malpractice, misconduct, wrongdoing or serious risk as early as possible.

13.1.2 The Whistleblowing Policy should be used by any member of staff to raise a qualifying disclosure under the Public Interest Disclosure Act 1998. This Policy is available to all staff, including full-time, part-time, temporary, agency and bank workers and ex-staff of NHSGG&C (all referred to as staff within this Policy) who have concerns about patient safety, malpractice, misconduct, wrongdoing or serious risk. Staff have a responsibility to protect patients from risk of harm posed by another colleague's conduct, performance or health by taking immediate steps to ensure their concerns are dealt with or raised for appropriate investigation. NHSGG&C promotes a culture in which staff can raise concerns openly and safely.

13.1.3 Staff may have concerns about what is happening at work. Usually these are easily resolved at a local level. However, when the concern feels serious because it is about a possible patient safety issue, malpractice, misconduct, wrongdoing or serious risk that might affect patients, colleagues or the organisation itself, staff are encouraged to raise such issues in the first instance with their Line Manager.

13.2 Legal Framework

13.2 1 The Public Interest Disclosure Act 1998 (PIDA) is designed to protect the public by providing a remedy for individuals who suffer a detriment by any act or any deliberate failure to act by their employer for raising a genuine concern, whether it be a risk to patient safety, malpractice, misconduct, wrongdoing or serious risk. These are called "qualifying disclosures". A qualifying disclosure is one made in good faith by a member of staff who had a reasonable belief that one of the following is being, has been, or is likely to be, committed:

- a criminal offence;
- a miscarriage of justice;
- an act creating risk to health and safety;
- an act causing damage to the environment;
- a breach of any other legal obligation; or
- concealment of any of the above.

13.2.2 The Public Interest Disclosure Act's tiered disclosure regime promotes internal and regulatory disclosures, and encourages workplace accountability and self-regulation.

13.2.3 Under the Act, workers who act honestly and reasonably are given automatic protection for raising a matter internally. In NHSGG&C, an internal disclosure can go up to the highest level. Protection is also readily available to those who make disclosures to prescribed regulators – see Section 13.13.

13.2.4 The Whistleblowing Policy authorises all staff, not just health and medical professionals, to raise a concern. Legal protection is important if staff are to be encouraged to raise a concern about wrongdoing or malpractice. NHSGG&C wishes to promote an open culture that recognises the potential for staff to make a valuable contribution to the running of public services, and to the protection of the public interest.

13.2.5 Where an individual is subjected to a detriment by their employer for raising a concern or is dismissed in breach of PIDA, they can bring a claim for compensation under PIDA to an Employment Tribunal.

13.3 Policy Statement

13.3.1 NHSGG&C are committed to achieving the highest possible standards of service and the highest possible ethical standards in public life in all of its practices. To achieve these ends, it encourages staff to use internal mechanisms for reporting any malpractice or illegal acts or omissions by its staff. The Board wishes to create a working environment which encourages staff to contribute their views on all aspects of patient care and patient services. All staff has a duty to protect the reputation of the service they work within.

13.3.2 The Board will not tolerate any harassment or victimisation of staff using this Policy, and may treat this as a serious disciplinary offence, which will be dealt with under the Board's Disciplinary Policy and Procedure.

13.3.3 The Director of Human Resources is responsible for ensuring implementation of the Whistleblowing Policy.

13.4 Key Principles and Values

13.4.1 When raising a concern the best way to raise it is to do so openly. Openness makes it easier for the organisation to assess the issue, work out how to investigate the matter, understand any motive and get more information.

13.4.2 A member of staff raises a concern confidentially if they give their name on the condition that it is not revealed without their consent. If NHSGG&C is asked not to disclose someone's identity, we will not do so without that person's consent unless otherwise required by law. Staff should however understand that there may be times when NHSGG&C will be unable to resolve a concern without revealing someone's identity, for example where personal evidence is essential. In such cases, it will discuss with the member of staff whether and how the matter can best proceed if staff does not disclose their identity. It will be much more difficult for NHSGG&C to look into the matter.

13.4.3 A member of staff raises a concern anonymously if they do not give their name at all. If this happens, NHSGG&C will assess the anonymous information as best it can, establish whether there is substance to the concern and whether it can be addressed. If no-one knows who provided the information, it will not be possible to reassure or protect them.

13.4.4 There may be occasions when a concern is raised either with an ulterior motive or maliciously. In such a case, the organisation cannot give the assurances and safeguards included in the policy to someone who is found to have maliciously raised a concern that they also know to be untrue. NHSGG&C will look at the concern and examine whether there is any substance to it. Every concern will be treated as made in good faith, unless it is subsequently found not to be. However, if it is found that the individual has maliciously raised a concern which they know is untrue, disciplinary proceedings may be commenced against that individual.

13.5 Other Policies and Procedures

13.5.1 Whistleblowing concerns generally relate to patient safety, malpractice, misconduct, wrongdoing or serious risk, and may be something which adversely affects patients, the public, other staff or the organisation itself. A grievance differs from a Whistleblowing concern as it is a personal complaint regarding an individual's own employment situation. A Whistleblowing concern is where an individual raises information as a witness whereas a grievance is where the individual is a complainant. Grievances are addressed using the Board's Grievance Policy and Procedure. It should be noted, however, that matters related to bullying and harassment are addressed by the Board's Dignity at Work Policy.

13.5.2 Examples of such matters that should be raised under this Whistleblowing Policy include:

- patient safety, malpractice or ill treatment of a patient by a member of staff;
- repeated ill treatment of a patient, despite a complaint being made;
- an unacceptable standard of patient/clinical care;
- a criminal offence is believed to have been committed, is being committed or is likely to have been committed;
- suspected fraud;
- disregard for legislation, particularly in relation to health and safety at work;
- the environment has been, or is likely to be, damaged;
- breach of standing financial instructions;
- showing undue favour over a contractual matter or to a job applicant;
- a breach of a code of conduct;
- Information on any of the above has been, is being, or is likely to be concealed.

13.6 Role of Trade Unions and Professional Organisations

13.6.1 NHSGG&C recognises staff may wish to seek advice on whether to use this Policy, require confidential advice at any stage and be represented by their trade union/professional organisation when using the provisions of this Policy, and acknowledges and endorses the role trade union/professional organisation representatives/officers play in this area.

13.7 Procedure to be followed in Raising a Concern

13.7.1 If staff has concerns in relation to the issues of the kind referred to above in paragraph 13.5.2, then they should follow the procedure set out below.

13.7.2 STEP ONE - if a member of staff has a concern about patient safety, malpractice, misconduct, wrongdoing or serious risk at work, they are encouraged to raise these with their Line Manager in the first instance. This may be done verbally or in writing.

13.7.3 STEP TWO – if a member of staff feels unable to raise the matter with their Line Manager or does not think that this would effectively address the concern, or where this action has been tried but has not led to action that addresses the action or addresses it within a reasonable period of time for whatever reason, they should then raise the matter with:

- a designated list of Senior Managers who have been trained to deal with any issues from staff raised under the Whistleblowing arrangements – namely -
  - Robin Wright, Director of Health Information & Technology;
    Tel No [redacted]
    E-mail – robin.wright[redacted]
  - Ms Catriona Renfrew, Director of Corporate Planning & Policy;
    Tel No [redacted] e-mail

catriona.renfrew[redacted]
- Dr Linda de Caestecker, Director of Public Heath;
  Tel No [redacted] e-mail
  linda.decaestecker[redacted]
- Ms Ros Crocket, Nurse Director.
  Tel No [redacted]
  E-mail – rosslyn.crocket[redacted]

- Address for all 4 Directors - J B Russell House, NHS Board Corporate Headquarters, Gartnavel Royal Hospital site, 1055 Great Western Road, Glasgow G12 0XH.

13.7.4 The designated Senior Managers have been given special responsibility for dealing with Whistleblowing concerns. If the matter is to be raised in confidence, then the staff member should advise the designated Senior Manager at the outset so that this can be taken into account when reviewing and investigating the concern rose.

13.7.5 STEP THREE - if Steps One and Two have been followed and the member of staff still has concerns, or if they feel that the matter is so serious that they cannot discuss it with any of the above, they should contact the nominated Non Executive Member (or deputy) of the NHS Board - Contact Details via – john.hamilton@[redacted] Tel No. [redacted] The nominated Non Executive Member of the NHS Board will receive appropriate professional support where relevant from the Medical Director, Nurse Director or any relevant Corporate Director.

13.8 Handling Concerns Raised – Steps One and Two

13.8.1 Once a concern has been raised at Step ONE or TWO, it will be acknowledged in writing within three working days. The Line Manager or designated Senior Manager will confirm with the individual concerned whether or not the matter is being raised in confidence and they will give consideration as to how the concern may be actioned appropriately. This may involve:

- an informal review – for matters not viewed as serious and have the potential to be resolved with normal line management action; ;
- an internal inquiry – for matters that require more serious consideration and there is a likely need to interview staff in order to gather facts and details of the case; or
- a formal investigation – for matters where there is a serious concern that there may have been a breach affecting patient safety, malpractice or an illegal act or omission and formal statements require to be taken from staff.

13.8.2 The Line Manager or the designated Senior Manager will determine which of the three processes to be followed depending on the circumstances of the concern raised and let the member of staff know how it will be taken forward as quickly as possible (and within a week of receiving the concern).

13.8.3 The member of staff raising the concern will be advised who will be handling the matter, how they can contact them and what further assistance may be needed. The Line Manager or the designated Senior Manager will write to the member of staff giving a summary of the concern raised to ensure clarity on what issues are to be taken forward and advise the member of staff how they propose to handle it, and providing a timeframe for feedback. If the concern has been misunderstood, or there is any information missing, the member of staff has the opportunity at this stage to highlight this.

13.8.4 When raising a concern, it will be helpful to know how the member of staff thinks the matter might best be resolved. If the member of staff has any personal interest in the matter, they

should confirm this at the outset. If it is felt that the concern falls more properly within the scope of one of the other of the Board's policies, this will also be explained to the member of staff.

13.8.5 The Line Manager or the designated Senior Manager will give feedback on the outcome of the informal review, internal inquiry or formal investigation. However, it should be noted that it may not be possible to give details of the precise actions taken, where this would infringe a duty of confidence owed to another person. While it cannot be guaranteed that all matters will be responded to in the way that the member of staff might wish, NHSGG&C will strive to handle the matter fairly and properly.

13.8.6 If at any time throughout the informal review, internal inquiry or formal investigation it becomes evident that formal disciplinary action may be a possible outcome, the informal review, internal inquiry or formal investigation will be conducted in accordance with the provisions of the Board's Disciplinary Policy and Procedure. Should it be thought necessary to suspend a member of staff during the course of any such informal review, internal inquiry or formal investigation, the procedure outlined in the Disciplinary Policy and Procedure will be followed.

13.8.7 The informal review, internal inquiry or formal investigation will be concluded without unreasonable delay. The Board will endeavour to complete the process within 28 days. However, dependent on the complexity of the concerns raised there may be a requirement for flexibility with regard to timescales. The timescales for completion and issuing feedback should be reasonable and communicated to all parties and regular updates provided if the intended timescale is not adhered to.

13.8.8 Employees have a right throughout the procedure and processes of this policy to be represented by their Trade Union/Professional Organisation representative (including full-time Trade Union Officers) or accompanied by a fellow member of staff, friend or relative not acting in a legal capacity.

13.9 Handling Concerns Raised – Step Three

13.9.1 Once a concern has been raised at Step THREE, it will be acknowledged in writing within three working days. The nominated Non Executive Director (or Deputy) will confirm with the individual concerned whether or not the matter is being raised in confidence and they will give consideration as to how the concern may be actioned appropriately. This may also involve (definitions for each are given in paragraph 13.8.1):

- an informal review;
- an internal inquiry or
- a formal investigation.

13.9.2 The Non Executive Member of the NHS Board will determine which process should be followed in considering the matter(s) raised and let the member of staff know as quickly as possible (and within a week of receiving the concern). The process will follow that for Steps One and Two. However if the Non Executive Member decides that an initial interview is required to assess the concerns raised, then a date for that interview will be organised within a week of deciding such an interview is necessary. The interview should be held as soon as possible and every attempt should be made to hold it within one month of deciding to have the interview. The Non Executive Member of the NHS Board will be provided with administrative support for the interview in order that a brief summary of the interview is written up and this should be agreed by both parties. The Non Executive Member of the NHS Board will determine thereafter what further investigation is required and will ensure the Board's policies are adhered

to. The Non Executive Member of the NHS Board shall secure appropriate professional/corporate advice from the Medical Director, Nurse Director or any relevant Corporate Directors.

13.9.3 The Non Executive Member of the NHS Board will arrange to write to the concerned member of staff to give feedback on any action taken. (This will not include details of any disciplinary action, which will remain confidential to the individual concerned). The feedback will be provided without unreasonable delay.

13.9.4 The informal review, internal inquiry or formal investigation will be concluded without unreasonable delay. The Board will endeavour to complete Step THREE of the process within 42 days. However, dependent on the complexity of the concerns raised there may be a requirement for flexibility with regard to the timescales. The timescales for completion and issuing feedback should be reasonable and communicated to all parties and regular updates provided if the intended timescale is not adhered to.

13.9.5 If the result of the investigation is that there is a case to be answered by any individual, the Board's Disciplinary Policy and Procedure will be used.

13.9.6 Where there is no case to answer, but the member of staff held a genuine concern and was not acting maliciously this will be accepted and fully acknowledged. The staff member will suffer no reprisals.

13.9.7 Only where malicious allegations are made, will it be considered appropriate to act against the concerned member of staff under the terms of the Disciplinary Policy and Procedure.

13.9.8 There may be occasions due to the complexity of an inquiry or formal investigation where it will not be possible to report back promptly. In these circumstances, the concerned member of staff must be made aware in advance of any delays and kept regularly informed of progress. The outcome of the inquiry or formal investigation will however still be communicated in writing to the staff member.

13.9.9 Employees have a right throughout the procedure and processes of this policy to be represented by their Trade Union/Professional Organisation representative (including full-time Trade Union Officers) or accompanied by a fellow member of staff, friend or relative not acting in a legal capacity.

13.10 Complaints About Chief Executive

13.10.1 If the concern raised is about the Chief Executive, then it should be made to the Nominated Non Executive Member of the NHS Board (for Contact Details see Para 13.7.5), who will decide on how the investigation will proceed, taking account of the processes described within this Policy.

13.11 External Contracts

13.11.1 While NHSGG&C believes that this Policy gives the reassurance needed to raise a concern internally, it is also recognised that there may be circumstances where a member of staff feels they need to properly report a concern to an outside body. NHSGG&C would rather staff raised a matter with the appropriate regulator than not at all. Trade unions/professional organisations will be able to advise on such a course of action.

13.11.2 A National Alert Line has been established to provide an additional level of support to staff who wish to raise a concern about practices within NHS Scotland. Public Concern At Work

will receive staff's calls and will offer free, confidential advice on how best to take forward any concerns. Contact Public Concern At Work on Freephone – 0800 008 6112.

13.12 Equal Opportunities

13.12.1 NHSGG&C is committed to the promotion of Equal Opportunities and to this end this Policy applies to all its staff irrespective of age, race, colour, religion, disability, nationality, ethnic origin, gender, gender reassignment, sexual orientation or marital status, domestic circumstances, social and employment status, HIV status, political affiliation or trade union membership.

13.12.2 All staff will be treated in a fair and equitable manner. As requested and where appropriate in connection with this Policy, reasonable adjustments with regard to access to premises/facilities will be made. In addition to making all policy documents available in large print, Braille and in alternative formats/languages, this also extends to the provision of interpreters/translators including signers for the deaf and hard of hearing.

13.13 Monitoring of Policy

13.13.1 The Board is responsible for this Policy and will arrange to have it reviewed and presented to the Audit Committee every two years. In addition, the operation of the Policy will be monitored by the Area Partnership Forum, and if members of staff have any comments or questions, these should be brought to the attention of trade union/professional organisation representatives.

13.14 Further Information

13.14.1 Further information may be available from:

- BSI Code of Practice on Whistleblowing Arrangements Organisations can download a free copy of the 2008 British Standards Institution's Code of Practice on Whistleblowing Arrangements from www.pcaw.co.uk/bsi
- Public Concern at Work For information about the Public Interest Disclosure Act 1998, please visit: www.pcaw.co.uk/law/uklegislation.htm
- NHSScotland Counter Fraud Service (CFS) Fraud Hotline on - 08000 15 16 28 cfs.scot.nhs.uk
- Health Improvement Scotland Elliott House 8-10 Hillside Crescent Edinburgh EH7 5EA Call 0131 623 4300 www.healthcareimprovementscotland.org
- Audit Scotland 110 George Street Edinburgh EH2 4LH Tel: 0845 146 1010 www.audit-scotland.gov.uk/
- General Chiropractic Council 44 Wicklow Street London WC1X 9HL www.gcc-uk.org Tel: 020 7713 5155
- General Dental Council 37 Wimpole Street London W1G 8DQ www.gdc-uk.org Tel: 020 7887 3800 19
- General Medical Council GMC Scotland 5th Floor The Tun 4 Jackson's Entry Edinburgh EH8 8PJ www.gmc-uk.org Tel: 0131 525 8700

- General Optical Council 41 Harley Street London W1G 8DJ www.optical.org Tel: 020 7580 3898

- General Osteopathic Council 176 Tower Bridge Road London SE1 3LU www.osteopathy.org.uk Tel: 020 7357 6655

- Health Professions Council 184 Kennington Park Road London SE11 4BU www.hpc-uk.org Tel: 0845 300 4472 or 020 7840 9802

- Nursing and Midwifery Council 23 Portland Place London W1B 1PZ www.nmc-uk.org

- Royal Pharmaceutical Society of Great Britain 1 Lambeth High Street London SE1 7JN www.rpsgb.org.uk Tel: 020 7735 9141

- Scottish Government Health Directorate, St Andrew's House, Edinburgh, EH1 3DG Tel: (0131) 556 8400

June 2013

CODE OF CONDUCT FOR STAFF: WHISTLEBLOWING

This single Code of Conduct for staff incorporates the following:

Part 1: The Standards of Business Conduct
Detailed instructions to support these Standards and working with suppliers of clinical products.

Part 2: The Fraud Policy
All staff, including permanent post-holders, Bank staff, Agency staff, Locums, other temporary staff and Honorary Consultants are required to adhere to the Code of Conduct – any advice on the application of this Code should be sought from your Line Manager/Head of Department/Director.

This Code of Conduct forms part of the NHS Board's standard contract of employment for all staff and will be formally reviewed again in April 2108. The Whistleblowing section has been **extracted** from the main Code of Conduct Policy for ease of reference.

13. NHSGGC WHISTLEBLOWING POLICY

13.1 Introduction

13.1.1 This section deals with the disclosure internally or externally by staff who have concerns about patient safety, malpractice, as well as illegal acts or omissions at work, commonly known as "whistleblowing". NHS Greater Glasgow & Clyde (NHSGG&C) wishes to ensure that its employees have the opportunity and confidence to raise such concerns. Through a Whistleblowing Policy, employees are encouraged to be open and are guaranteed to have their concerns considered. NHSGG&C believes that a responsible attitude to Whistleblowing assists in promoting a healthy workplace culture built on openness and accountability. Integral to achieving this is to encourage staff to raise any serious concern they may have about patient safety, malpractice, misconduct, wrongdoing or serious risk as early as possible.

13.1.2 The Whistleblowing Policy should be used by any member of staff to raise a qualifying disclosure under the Public Interest Disclosure Act 1998. This Policy is available to all staff, including full-time, part-time, temporary, agency and bank workers and ex-staff of NHSGG&C (all referred to as staff within this Policy) who have concerns about patient safety, malpractice, misconduct, wrongdoing or serious risk. Staff have a responsibility to protect patients from risk of harm posed by another colleague's conduct, performance or health by taking immediate steps to ensure their concerns are dealt with or raised for appropriate investigation. NHSGG&C promotes a culture in which staff can raise concerns openly and safely.

13.1.3 Staff may have concerns about what is happening at work. Usually these are easily resolved at a local level. However, when the concern feels serious because it is about a possible patient safety issue, malpractice, misconduct, wrongdoing or serious risk that might affect patients, colleagues or the organisation itself, staff are encouraged to raise such issues in the first instance with their Line Manager.

13.2 Legal Framework

13.2 1 The Public Interest Disclosure Act 1998 (PIDA) is designed to protect the public by providing a remedy for individuals who suffer a detriment by any act or any deliberate

failure to act by their employer for raising a genuine concern, whether it be a risk to patient safety, malpractice, misconduct, wrongdoing or serious risk. These are called "qualifying disclosures". A qualifying disclosure is one made in good faith by a member of staff who had a reasonable belief that one of the following is being, has been, or is likely to be, committed:

- a criminal offence;
- a miscarriage of justice;
- an act creating risk to health and safety;
- an act causing damage to the environment;
- a breach of any other legal obligation; or
- concealment of any of the above.

13.2.2 The Public Interest Disclosure Act's tiered disclosure regime promotes internal and regulatory disclosures, and encourages workplace accountability and self-regulation.

13.2.3 Under the Act, workers who act honestly and reasonably are given automatic protection for raising a matter internally. In NHSGG&C, an internal disclosure can go up to the highest level. Protection is also readily available to those who make disclosures to prescribed regulators – see Section 13.13.

13.2.4 The Whistleblowing Policy authorises all staff, not just health and medical professionals, to raise a concern. Legal protection is important if staff are to be encouraged to raise a concern about wrongdoing or malpractice. NHSGG&C wishes to promote an open culture that recognises the potential for staff to make a valuable contribution to the running of public services, and to the protection of the public interest.

13.2.5 Where an individual is subjected to a detriment by their employer for raising a concern or is dismissed in breach of PIDA, they can bring a claim for compensation under PIDA to an Employment Tribunal.

13.3 Policy Statement

13.3.1 NHSGG&C is committed to achieving the highest possible standards of service and the highest possible ethical standards in public life in all of its practices. To achieve these ends, it encourages staff to use internal mechanisms for reporting any malpractice or illegal acts or omissions by its staff. The Board wishes to create a working environment which encourages staff to contribute their views on all aspects of patient care and patient services. All staff have a duty to protect the reputation of the service they work within.

13.3.2 The Board will not tolerate any harassment or victimisation of staff using this Policy, and may treat this as a serious disciplinary offence, which will be dealt with under the Board's Disciplinary Policy and Procedure.

13.3.3 The Director of Human Resources is responsible for ensuring implementation of the Whistleblowing Policy.

13.4 Key Principles and Values

13.4.1 When raising a concern the best way to raise it is to do so openly. Openness makes it easier for the organisation to assess the issue, work out how to investigate the matter, understand any motive and get more information.

13.4.2 A member of staff raises a concern confidentially if they give their name on the condition that it is not revealed without their consent. If NHSGG&C is asked not to disclose someone's identity, we will not do so without that person's consent unless otherwise required by law. Staff should however understand that there may be times when NHSGG&C will be unable to resolve a concern without revealing someone's identity, for example where personal evidence is essential. In such cases, it will discuss with the member of staff whether and how the matter can best proceed if staff do not disclose their identity. It will be much more difficult for NHSGG&C to look into the matter.

13.4.3 A member of staff raises a concern anonymously if they do not give their name at all. If this happens, NHSGG&C will assess the anonymous information as best it can, establish whether there is substance to the concern and whether it can be addressed. If no-one knows who provided the information, it will not be possible to reassure or protect them.

13.4.4 There may be occasions when a concern is raised either with an ulterior motive or maliciously. In such a case, the organisation cannot give the assurances and safeguards included in the policy to someone who is found to have maliciously raised a concern that they also know to be untrue. NHSGG&C will look at the concern and examine whether there is any substance to it. Every concern will be treated as made in good faith, unless it is subsequently found not to be. However, if it is found that the individual has maliciously raised a concern which they know is untrue, disciplinary proceedings may be commenced against that individual.

13.5 Other Policies and Procedures

13.5.1 Whistleblowing concerns generally relate to patient safety, malpractice, misconduct, wrongdoing or serious risk, and may be something which adversely affects patients, the public, other staff or the organisation itself. A grievance differs from a Whistleblowing concern as it is a personal complaint regarding an individual's own employment situation. A Whistleblowing concern is where an individual raises information as a witness whereas a grievance is where the individual is a complainant. Grievances are addressed using the Board's Grievance Policy and Procedure. It should be noted, however, that matters related to bullying and harassment are addressed by the Board's Dignity at Work Policy.

13.5.2 Examples of such matters that should be raised under this Whistleblowing Policy include:

- patient safety, malpractice or ill treatment of a patient by a member of staff;
- repeated ill treatment of a patient, despite a complaint being made;
- an unacceptable standard of patient/clinical care;
- a criminal offence is believed to have been committed, is being committed or is likely to have been committed;
- suspected fraud;
- disregard for legislation, particularly in relation to health and safety at work;
- the environment has been, or is likely to be, damaged;
- breach of standing financial instructions;
- showing undue favour over a contractual matter or to a job applicant;
- a breach of a code of conduct;
- information on any of the above has been, is being, or is likely to be concealed.

13.6 Role of Trade Unions and Professional Organisations

13.6.1 NHSGG&C recognises staff may wish to seek advice on whether to use this Policy, require confidential advice at any stage and be represented by their trade union/professional organisation when using the provisions of this Policy, and acknowledges and endorses the role trade union/professional organisation representatives/officers play in this area.

13.7 Procedure to be Followed in Raising a Concern

13.7.1 If staff have concerns in relation to the issues of the kind referred to above in paragraph 13.5.2, then they should follow the procedure set out below.

13.7.2 STEP ONE - if a member of staff has a concern about patient safety, malpractice, misconduct, wrongdoing or serious risk at work, they are encouraged to raise these with their Line Manager in the first instance. This may be done verbally or in writing.

13.7.3 STEP TWO – if a member of staff feels unable to raise the matter with their Line Manager or does not think that this would effectively address the concern, or where this action has been tried but has not led to action that addresses the action or addresses it within a reasonable period of time for whatever reason, they should then raise the matter with:

- a designated list of Senior Managers who have been trained to deal with any issues from staff raised under the Whistleblowing arrangements – namely -

  Dr Linda de Caestecker, Director of Public Health;
  Tel No [redacted]
  Email linda.decaestecker[redacted]

  Mr William Edwards, Director of eHealth
  Tel No [redacted]
  Email william.edwards[redacted]

- Address for the Directors - JB Russell House, NHS Board Corporate Headquarters, Gartnavel Royal Hospital site, 1055 Great Western Road, Glasgow G12 0XH.

13.7.4 The designated Senior Managers have been given special responsibility for dealing with Whistleblowing concerns. If the matter is to be raised in confidence, then the staff member should advise the designated Senior Manager at the outset so that this can be taken into account when reviewing and investigating the concern raised.

13.7.5 STEP THREE - if Steps One and Two have been followed and the member of staff still has concerns, or if they feel that the matter is so serious that they cannot discuss it with any of the above, they should contact the nominated Non Executive Member (or deputy) of the NHS Board - Contact Details via –Tel No. [redacted] The nominated Non Executive Member of the NHS Board will receive appropriate professional support where relevant from the Medical Director, Nurse Director or any relevant Corporate Director.

13.8 Handling Concerns Raised – Steps One and Two

13.8.1 Once a concern has been raised at Step ONE or TWO, it will be acknowledged in writing within three working days. The Line Manager or designated Senior Manager will confirm with the individual concerned whether or not the matter is being raised in confidence and they will give consideration as to how the concern may be actioned appropriately. This may involve:

- an informal review – for matters not viewed as serious and have the potential to be resolved with normal line management action; ;
- an internal inquiry – for matters that require more serious consideration and there is a likely need to interview staff in order to gather facts and details of the case; or
- a formal investigation – for matters where there is a serious concern that there may have been a breach affecting patient safety, malpractice or an illegal act or omission and formal statements require to be taken from staff.

13.8.2 The Line Manager or the designated Senior Manager will determine which of the three processes to be followed depending on the circumstances of the concern raised and let the member of staff know how it will be taken forward as quickly as possible (and within a week of receiving the concern).

13.8.3 The member of staff raising the concern will be advised who will be handling the matter, how they can contact them and what further assistance may be needed. The Line Manager or the designated Senior Manager will write to the member of staff giving a summary of the concern raised to ensure clarity on what issues are to be taken forward and advise the member of staff how they propose to handle it, and providing a timeframe for feedback. If the concern has been misunderstood, or there is any information missing, the member of staff has the opportunity at this stage to highlight this.

13.8.4 When raising a concern, it will be helpful to know how the member of staff thinks the matter might best be resolved. If the member of staff has any personal interest in the matter, they should confirm this at the outset. If it is felt that the concern falls more properly within the scope of one of the other of the Board's policies, this will also be explained to the member of staff.

13.8.5 The Line Manager or the designated Senior Manager will give feedback on the outcome of the informal review, internal inquiry or formal investigation. However, it should be noted that it may not be possible to give details of the precise actions taken, where this would infringe a duty of confidence owed to another person. While it cannot be guaranteed that all matters will be responded to in the way that the member of staff might wish, NHSGG&C will strive to handle the matter fairly and properly.

13.8.6 If at any time throughout the informal review, internal inquiry or formal investigation it becomes evident that formal disciplinary action may be a possible outcome, the informal review, internal inquiry or formal investigation will be conducted in accordance with the provisions of the Board's Disciplinary Policy and Procedure. Should it be thought necessary to suspend a member of staff during the course of any such informal review, internal inquiry or formal investigation, the procedure outlined in the Disciplinary Policy and Procedure will be followed.

13.8.7 The informal review, internal inquiry or formal investigation will be concluded without unreasonable delay. The Board will endeavour to complete the process within 28

days. However, dependent on the complexity of the concerns raised there may be a requirement for flexibility with regard to timescales. The timescales for completion and issuing feedback should be reasonable and communicated to all parties and regular updates provided if the intended timescale is not adhered to.

13.8.8 Employees have a right throughout the procedure and processes of this policy to be represented by their Trade Union/Professional Organisation representative (including full-time Trade Union Officers) or accompanied by a fellow member of staff, friend or relative not acting in a legal capacity.

13.9 Handing Concerns Raised – Step Three

13.9.1 Once a concern has been raised at Step THREE, it will be acknowledged in writing within three working days. The nominated Non Executive Director (or Deputy) will confirm with the individual concerned whether or not the matter is being raised in confidence and they will give consideration as to how the concern may be actioned appropriately. This may also involve (definitions for each are given in paragraph 13.8.1):

- an informal review;
- an internal inquiry or
- a formal investigation.

13.9.2 The Non Executive Member of the NHS Board will determine which process should be followed in considering the matter(s) raised and let the member of staff know as quickly as possible (and within a week of receiving the concern). The process will follow that for Steps One and Two. However if the Non Executive Member decides that an initial interview is required to assess the concerns raised, then a date for that interview will be organised within a week of deciding such an interview is necessary. The interview should be held as soon as possible and every attempt should be made to hold it within one month of deciding to have the interview. The Non Executive Member of the NHS Board will be provided with administrative support for the interview in order that a brief summary of the interview is written up and this should be agreed by both parties. The Non Executive Member of the NHS Board will determine thereafter what further investigation is required and will ensure the Board's policies are adhered to. The Non Executive Member of the NHS Board shall secure appropriate professional/corporate advice from the Medical Director, Nurse Director or any relevant Corporate Directors.

13.9.3 The Non Executive Member of the NHS Board will arrange to write to the concerned member of staff to give feedback on any action taken. (This will not include details of any disciplinary action, which will remain confidential to the individual concerned). The feedback will be provided without unreasonable delay.

13.9.4 The informal review, internal inquiry or formal investigation will be concluded without unreasonable delay. The Board will endeavour to complete Step THREE of the process within 42 days. However, dependent on the complexity of the concerns raised there may be a requirement for flexibility with regard to the timescales. The timescales for completion and issuing feedback should be reasonable and communicated to all parties and regular updates provided if the intended timescale is not adhered to.

13.9.5 If the result of the investigation is that there is a case to be answered by any individual, the Board's Disciplinary Policy and Procedure will be used.

13.9.6 Where there is no case to answer, but the member of staff held a genuine concern and was not acting maliciously this will be accepted and fully acknowledged. The staff member will suffer no reprisals.

13.9.7 Only where malicious allegations are made, will it be considered appropriate to act against the concerned member of staff under the terms of the Disciplinary Policy and Procedure.

13.9.8 There may be occasions due to the complexity of an inquiry or formal investigation where it will not be possible to report back promptly. In these circumstances, the concerned member of staff must be made aware in advance of any delays and kept regularly informed of progress. The outcome of the inquiry or formal investigation will however still be communicated in writing to the staff member.

13.9.9 Employees have a right throughout the procedure and processes of this policy to be represented by their Trade Union/Professional Organisation representative (including full-time Trade Union Officers) or accompanied by a fellow member of staff, friend or relative not acting in a legal capacity.

13.10 Complaints About Chief Executive

13.10.1 If the concern raised is about the Chief Executive, then it should be made to the Board Chair (Contact Details - John Brown jjbrown[redacted]), who will decide on how the investigation will proceed, taking account of the processes described within this Policy.

13.11 External Contracts

13.11.1 While NHSGG&C believes that this Policy gives the reassurance needed to raise a concern internally, it is also recognised that there may be circumstances where a member of staff feels they need to properly report a concern to an outside body. NHSGG&C would rather staff raised a matter with the appropriate regulator than not at all. Trade unions/professional organisations will be able to advise on such a course of action.

13.11.2 A Whistleblowing Alert and Advice Services (AALS) has been established to provide an additional level of support to staff who wish to raise a concern about practices within NHS Scotland. Public Concern at Work will receive staff's calls and will offer free, confidential advice on how best to take forward any concerns. Contact Public Concern At Work on Freephone – 0800 008 6112.

13.12 Equal Opportunities

13.12.1 NHSGG&C is committed to the promotion of Equal Opportunities and to this end this Policy applies to all its staff irrespective of age, race, colour, religion, disability, nationality, ethnic origin, gender, gender reassignment, sexual orientation or marital status, domestic circumstances, social and employment status, HIV status, political affiliation or trade union membership.

13.12.2 All staff will be treated in a fair and equitable manner. As requested and where appropriate in connection with this Policy, reasonable adjustments with regard

to access to premises/facilities will be made. In addition to making all policy documents available in large print, Braille and in alternative formats/languages, this also extends to the provision of interpreters/translators including signers for the deaf and hard of hearing.

13.13 Monitoring of Policy

13.13.1 The Board is responsible for this Policy and will arrange to have it reviewed and presented to the Audit Committee every three years. In addition, the operation of the Policy will be monitored by the Area Partnership Forum, and if members of staff have any comments or questions, these should be brought to the attention of trade union/professional organisation representatives.

13.14 Further Information

13.14.1 Further information may be available from:

- BSI Code of Practice on Whistleblowing Arrangements Organisations can download a free copy of the 2008 British Standards Institution's Code of Practice on Whistleblowing Arrangements from www.pcaw.co.uk/bsi
- Public Concern at Work For information about the Public Interest Disclosure Act 1998, please visit: www.pcaw.co.uk/law/uklegislation.htm
- NHSScotland Counter Fraud Service (CFS) Fraud Hotline on - 08000 15 16 28 cfs.scot.nhs.uk
- Health Improvement Scotland Elliott House 8-10 Hillside Crescent Edinburgh EH7 5EA Call 0131 623 4300 www.healthcareimprovementscotland.org
- Audit Scotland 110 George Street Edinburgh EH2 4LH Tel: 0845 146 1010 www.audit-scotland.gov.uk/
- General Chiropractic Council 44 Wicklow Street London WC1X 9HL www.gcc-uk.org Tel: 020 7713 5155

NHS Greater Glasgow & Clyde

AICC (Amended version)

Infection Prevention and Control Team 5th March 2018

Report on Concerns Raised re Queen Elizabeth University Hospital (QEUH) and Royal Hospital for Children (RHC)

Recommendation:- The committee are asked to note the concerns raised in relation to the QEUH and RHC and review the current status and actions being progressed.

Purpose of Paper:-

During September 2017 three consultant microbiologists in the South Sector raised a series of concerns about the facilities in QEUH and RHC and the structure of the Infection Prevention and Control (IPCT) Service within NHS Greater Glasgow and Clyde.

On the 4th of October 2017 Board and Acute Directors including the Board Director of Facilities, the Chief of Medicine for Diagnostics and members to the IPCT Senior Management team met with the consultants to discuss these concerns. The consultant microbiologists tabled a list of concerns and this paper identifies each with an action plan setting out the current situation and the steps taken or in progress to address the issues identified. The minutes of the October meeting are appended to this document with each specific issues raised identified and cross referenced to the action plan.

Key Issues to be considered:-

As above

Any Patient Safety /Patient Experience Issues:- yes

Any Financial Implications from this Paper:- no

Any Staffing Implications from this Paper:- no

Any Equality Implications from this Paper:- no

Any Health Inequalities Implications from this Paper:-no

Has a Risk Assessment been carried out for this issue? If yes, please detail the outcome:-

Highlight the Corporate Plan priorities to which your paper relates:- improving quality efficiency and effectiveness

Below is a list of the key themes raised by the Consultants.

Themes

- Positive Pressured Ventilated Lobbied (PPVL) Isolation Rooms.
- Royal Hospital for Children (RHC) – Protective Isolation – Haematology Oncology Unit.
- RHC – HEPA filters in Paediatric Intensive Care Unit (PICU).
- Queen Elizabeth University Hospital (QEUH) – Ward 4B – Upgrade to the Haematology Ward.
- Single Room Specification and Location of Areas that can be used for Protective Isolation.
- Cleaning of QEUH, RHC and Office Block
- Cleaning of Dishwashers in QEUH and RHC linked to a potential outbreak of exophiala
- Water Quality and Water Testing
- Plumbing in the Neurosurgical Block
- Decontamination of Respiratory Equipment
- Structure of the Infection Prevention and Control Team

Each specific item has been identified in the minute of the meeting and cross referenced in the associated action plan which is tabulated below.

Action Plan

Item	Issue	Current Position	Future Actions
1	PPVL rooms not compliant with SHTM standards	Facilities colleagues confirmed that there are 10 air changes per hour and a positive pressure of 10 pascals in the PPVL rooms which is consistent with SHBN 04-01. HFS reviewed these facilities in 2016 and noted some modifications to the design in relation to extract ventilation .	Nil . These rooms can be used for non airborne infections and for protective isolation of immunocompromised patients.
2	PPVL rooms do not provide appropriate protection for patients with infectious diseases of high consequence (IDHC) e.g. MERS, SARS This issue also exists in the Royal Hospital for Children	HFS concluded these rooms were unsuitable for patients with highly infectious patients . Alternative pathways were developed for patients with MERs and MDR/XDRTB in the adult setting in conjunction with Infectious Diseases and Respiratory clinicians. On call microbiologists were informed of this pathway and need for patients to go to either GRI or MDGH Paediatric pathway for airborne infections complete and attached.	Heath Protection Scotland (HPS) have been sent information on these rooms and we await their advice on whether they can be used for patients with IDHC or if not what actions could be taken to modify these rooms to provide negative pressure. This advice was sought in 2016 & 17. Meetings with engineers, clinical , estates and infection control colleagues will be held in February 2018 to identify suitable rooms for upgrading.
3	Lack of isolation rooms in the emergency department.	ED was designed with input from clinical staff and observation of patients was a priority. There are single rooms in ED but not negatively pressured isolation rooms.	Property Procurement Facilities Management (PPFM) has commissioned a feasibility study to ascertain if negatively pressured rooms are technically feasible
4	Rooms not built to the standard expected as a tertiary referral centre.	Plans to upgrade PPVL rooms to negative pressure facilities are underway. See item 2	
5	Microbiologists not aware of plans to upgrade areas.	Lead Infection Control Doctor (ICD) requested HPS/HFS review in 2016 and emailed colleagues re alternative pathway for patients with airborne infections citing need for external review. Plans to upgrade paediatric BMT were discussed at QEUH Consultant meeting on 28/4/17.	Work continues with input from the lead ICD/HPS/HFS

6	HEPA filters in PICU for the protection of patients in the Bone Marrow Transplant Unit (BMTU) that might need critical care during treatment. The BMTU is ward also referred to as ward 2A.	HEPA filters were installed within PICU/Ward 2a week commencing 6 November 2017, within room numbers 12 and 17 – previously installed within room 18. HEPA filter still to be fitted in room 5 (access to be agreed with clinical colleagues). HEPA filters were also fitted into RHC Ward 3c week commencing 13 November 2017 within rooms 9 & 10.	Work commenced mid November 2017, therefore ahead of May 2018, as noted above.

Item	Issue	Current Position	Future Actions
7	HEPA filters in prep room	HEPA filters have not been routinely fitted (as standard) within prep rooms, however HEPA filters are fitted within QEUH Ward 4b. Instruction required to determine whether HEPA filter should be fitted into RHC Ward 2a prep room.	As part of phase 2 of the BMT room upgrade a HEPA filter will be fitted to the prep room in 2A – commencing Feb 18th 2018
8	IVs prepared in treatment room.	IVs are prepared in the preparation room but not chemotherapy which is prepared in a specialist unit.	CN paediatrics confirmed that this was the standard practice.
9	Outbreak of Aspergillus associated with poor air quality	A single case of hospital acquired Aspergillus is an alert and is investigated by the IPCT. There was an increased incidence of Aspergillus infections in 2016-2017 in non BMT paediatric patients. Air sampling assisted with the detection of mould in a ceiling void following a leak which was rectified. Sampling also suggested poor air quality as a result of demolition, construction and wind direction . Filtration in the ward was increased to as close to HEPA as possible and portable HEPA units were utilised. This was fully reported as per Chapter 3 of the National Infection Prevention and Control Manual to Health Protection Scotland. HPS were involved with this investigation	HPS have been contacted for advice on what would be an appropriate regime for air monitoring in this area. As this is non HEPA filtered area there are no agreed standards for air quality.
10	Concern that the statement issued advised that BMT services in RHC were unaffected by issues identified in the adult BMTU.	Clarification from the NHSGGC Comms Team “To the recollection of colleagues involved, the Communications team were not briefed at the time of the release about the adult BMT move of any testing underway at the Royal Hospital for Children. The final line of the press release of 8th July 2015 “Bone Marrow Transplant Service Temporary Relocation” was written to make clear to media that the move of the adult service did not include the paediatric service at the Royal Hospital for Children and that the latter was not moving. “	Clarification issued to the meeting attendees. No further action required. This perhaps appears to be misinterpretation of the media communication.

11	HEPA filters not in place in PICU	Action complete as previously agreed and noted within point 6.	

Item	Issue	Current Position	Future Actions
12	Increase in the number of line infections in Ward 2A	The ICT were alerted by clinical colleagues to an increase in line infections and meetings were held with an action plan. Following discussions between lead ICD and Surgical team it was agreed Consultant Surgeon would lead on QI work to give clinicians ownership. ICT continue to have input to the group. Two years' retrospective data were analysed in May 2017 and it was noted that there was an increase in line related infection. The initial baseline infection rate per 1000 total line days was 3.25 and this had risen to 6.33. A group first met in **May 2017** to review this information and put actions in place to reduce this incidence. The last 4 months (July to October) have shown improvement in infection rates. CN Paediatrics presented a paper to the Board Infection Control Committee on the 27 November 2017 outlining several work streams and the most recent infection rates in this area.	There are currently four work streams in place to look at key initiatives to reduce line infections in BMTU, these include: • Line Insertion and access in theatre. • Access and Maintenance of lines • Staff Education • Patient and Parent engagement Next Steps From 1st December 2017 every CLABSI (line associated infections) will be subject to rigorous review utilising Event Cause Analysis methodology within 72 hours of a reported CLABSI
13	Increase in the number of line infections	IPCT participating in above work. Line related surveillance was subsequently picked up by the Directorate.	Ongoing assessment of surveillance activity and resource within the IPCT to enable IPCT to respond to local clinical needs.
14	Dr Redding concerned that the ongoing work would not accurately pick up any concerns.	• As above work streams in place re line infections. • IPCT audit process is in place and ongoing; this includes audit of the environment, audits of line and urinary catheter care. Audits of standard Infection Control Precautions (SIPS). • IPCT twice weekly visits. • GGC compliant with the National IPCT Manual – this lists all types of infections that should be reviewed and what should be reported if an outbreak or incident occurs. • Weekly report to Board and Acute Directors weekly on an IPC issues throughout GGC.	IPCT and CN Paediatrics will continue to have a clear focus on this area.

15	Microbiologists do not have the information to advise clinical staff on where to place immunocompromised patients.	Director of Regional Services stated that this had never been raised as an issue by clinicians within his service that care for patients who are immunocompromised. Most patients who are immunocompromised are cared for within this directorate. It was agreed by the group that placement of immunocompromised patients was a decision that should be taken by the clinical team looking after the individual patients.	Dr Peters agreed to circulate a document she had used in another board area. David Loudon (Director of PPFM) agreed to send the microbiologists a list of where the PPVL rooms were in the QEUH and RHC. It was agreed that this would be reviewed at the Regional Services Governance Forum Lead ICD has written a guideline for placement of patients requiring isolation in QEUH/RHC

Item	Issue	Current Position	Future Actions
16	Infection rates are not being monitored.	• GGC compliant with the National IPCT Manual – this lists all types of infections that should be reviewed and what should be reported if an outbreak or incident occurs. • Every patient with a notifiable infection is reviewed and monitored. • NHSGGC is fully compliant with all elements of the national Mandatory Surveillance of Infection Programme (mainly specific surgical site and blood stream infections. • Weekly report on exceptions is sent to the Board Directors. • Monthly reports are sent to Senior Management teams. • All outbreak and incidents are reviewed by the Board, Partnership and Acute Infection Control Committees. • The most recent National Point Prevalence Survey in 2016 indicated that both the QEUH and RHC were under the national average in terms of the incidence of Hospital Acquired Infections.	ICM has invited HPS to review the NHSGGC systems for surveillance and reporting of infections – this assessment took place on the 29.11.17, the initial feedback was positive but we await the full report.
17	There are three air changes and chilled beam technology instead of the 6 air changes recommended.	There are three air changes in the single rooms within both QEUH and RHC. This was documented in an SBAR in June 2016 and risk assessment was undertaken with additional infection control measures recommended .	Director of Facilities agreed to take this issue forward with NHS D&G to share learning with regards to this type of technology and draw to their attention concerns regarding cleaning of the beams. Action complete.
18	Use of cleaning agents.	NHSGGC has for several years changed the cleaning regimens each winter to include a chlorine based detergent as a strategy to reduce norovirus outbreaks. This switch commences on the 1st of November and continues until the 30 April each year or longer if the season is prolonged. This is not recommended in the National Infection Control Manual because of lack of scientific evidence but is put in place in GGC based on local site knowledge.	This policy and practice will continue unless new evidence emerges

Item	Issue	Current Position	Future Actions
19	Roles and responsibilities with regards to cleaning of the dishwashers in the ward pantries was not clear.	IPCT held an Incident Management team Meeting (IMT) on 22nd of September. Dishwashers were removed from use until they could be serviced and re-sampled.	Catering staff agreed to assume the responsibility for cleaning of the dishwashers going forward.
20	Issue with dishwasher not picked up during routine monitoring.	GGC fully compliant with the National Monitoring of Domestic Services	Roles and responsibilities had been clarified and a process in now in place.
21	Cleaning of Temperature Control Values (TCVs)	TCVs are maintained in all high risk areas and plans are in place to carry this out in all areas despite this not being mandatory. Protocols are in place to manage this process.	Agreed works within QEUH-plant room 31, almost complete and being led by Site Maintenance Manager. Anticipated date of completion by end of January 2018.
22	Water testing is not as per national guidance	Board water safety is in place and water systems and processes are monitored as per national guidance. Prior to BMT patients moving into ward 4B this ward did not meet the definition of high risk. Testing has been commenced prior to BMT patients moving for Pseudomonas and Legionella.	None
23	Sewage leaks in institute not reported to microbiologists	Acknowledged .	Leaks in any clinical areas will be reported by the ICN team to the site ICD . A draft water damage policy is being developed with estates colleagues .
24	Plumbing not replaced in Neuro Surgical Block	The Director of Regional Services advised that there is ongoing work in the neuro building that would because of its complexity, take several years to complete, in the meantime the new operating theatres were due to open in January 2018. This is on the Regional Services risk register	Works are ongoing as planned.

25	Perceived Increase in surgical site infections	Regional Services has funded 1.5 WTE surveillance nurses to carry out prospective surgical site surveillance in this area. For context, there are 3 surveillance nurses that provide this service for the rest of GGC therefore the investment in the INS to monitor SSI is significant. Although it is difficult to obtain benchmark rates for SSI in this area, continuous surveillance will pick out trends and therefore any increase. This is monitored via a group unique to Regional Services – the RS Surgical Site Infection Group. The group in turn reports into the Regional Service Clinical Governance Group	Continue to monitor trends in surgical site infection in this area.

Item	Issue	Current Position	Future Actions
26	Decontamination facilities	Most decontamination of equipment is conducted in the central Decontamination Unit or Endoscopy facilities. Respiratory equipment is easily damaged and advice from manufacturers is often difficult to implement. There should be dedicated facilities with established work flow patterns (dirty to clean). At this point in time the Decontamination group (which is a sub group of the Board Infection Control Committee) has give advice on many items of equipment and had obtained room designs which could be used if space was identified in QEUH and RHC. This has been submitted to management colleagues for consideration. In addition a list of specialist equipment that we require national advice on has been submitted to Health Protection Scotland.	Pursue HPS for advice regarding the list of equipment provided. Establish status of planning for new decontamination areas. HFS have provided a specification – suitable area to be identified .
27	Roles of IPCT have changed	The current IPCT all have Job Descriptions which have been in place for several years. There is a clear documented governance structure that has been reviewed by Price Waterhouse Cooper and approved by the Infection prevention Committees within NHSGGC. There is a clear management structure which complies with the recommendations contained within the Vale of Leven Report and the Healthcare Environment Inspectorate Standards	A review of the roles and responsibilities of the Infection Control Doctors in South Glasgow will be undertaken by the Chief of Medicine for Diagnostics. The ICM has invited HPS to undertake a review of IPC surveillance and reporting systems in place.

Minutes of Meeting
Meeting Room L02-001, Teaching & Learning Centre
Queen Elizabeth University Hospital

Wednesday 4th October 2017 at 8:00am

PRESENT

Dr Jennifer Armstrong (**Chair**)	JA	Medical Director
David Loudon	DL	Director of Property, Procurement & FM
Morag Gardner	MG	Chief Nurse
Sandra McNamee	SMcN	Associate Nurse Director IPC
Ian Powrie	IP	Depute General Manager, Estates
Professor Brian Jones	BJ	Head of Service, Microbiology
Tom Walsh	TW	Infection Control Manager
Anne Harkness	AH	Director, South Sector
Jonathan Best	JB	Acting Chief Operating Officer
Gary Jenkins	GJ	Acting Director, North Sector
Dr Penelope Redding	PR	Consultant Microbiologist
Dr Christine Peters	CP	Consultant Microbiology
[redacted]	[redacted]	[redacted]
Dr Rachel Green	RG	Chief of Medicine, Diagnostics

In Attendance

Ann Lang	(Minutes) PA, Infection Prevention and Control

Item	Action

1. Welcome & Introductions

Dr Armstrong welcomed everyone to today's meeting to discuss Infection Control and estates issues at QEUH and RHC and round the table introductions were made. The group noted that colleagues from Women's and Children's Directorate were not in attendance but were aware of the issues raised and had helpfully submitted information via email which could inform the relevant areas of the discussion.

2. Purpose, Format and Conduct of Meeting

Dr Armstrong advised that a series of emails have been received from Dr Redding and Dr Peters regarding Infection Control and estates issues on the QEUH and RHC site. Dr Armstrong had requested a document setting out the issues of concern and thanked Drs Redding and Peters for providing the SBAR document which provided a helpful basis for the discussion. Dr Armstrong proposed that the meeting is focused on patient safety and a review and update on the current status of the issues identified.

She asked that if there are any comments during the meeting if these could be addressed through the chair and to adhere to the GMC and Board guidance regarding respect, professionalism and working as part of a team. The group agreed the importance of issues raised being discussed in the context of the appropriate roles, responsibilities and governance structures.

Item		Action
3.	**Review of SBAR / Concerns** It was agreed to go through the items detailed in the SBAR from Dr Redding and Dr Peters, to look at the points raised and address any outstanding issues. • <u>Patient Placement</u> Dr Redding outlined that there are challenges for the microbiologists regarding source isolation of infected patients. She said the current situation is that the positive pressure ventilated lobby rooms were not built to SHTM standard and she and others were concerned that they do not provide appropriate protection when managing a small number of patients with significant respiratory pathogens of high consequence such as MERS and MDRTB **(Items 1&2)**. Dr Peters advised that Microbiologists and ICDs and ID colleagues feel there is a lack of provision for isolation rooms in A&E **(Item 3)**. David Loudon replied that this specification was signed off by the board and clinical teams; he also confirmed that remedial work had been carried out due to issues raised at the snagging stage of the build. David also stated that although there were some modifications to the design the rooms did conform to SHTM 04-01 and that it was incorrect to state that this was not the case. Ian Powrie addressed specific points raised in respect of the ventilation specification and agreed to provide the detailed information to support this. Sandra McNamee commented that the inclusion of the Infectious Diseases service was a late amendment to the QEUH project and therefore not commissioned as an ID unit at the outset. The group noted that the Brownlee Clinical Team put a strong clinical case to the board to be co-located on QEUH site with the Intensive Care Unit and other critical clinical services. The issues identified were discussed with HPS at the time and they agreed to advise the Board on what standard these rooms would need to be to accommodate these patients. When this information has been received, estates colleagues will review the advice to determine if these modifications were feasible. Dr Redding stated she would like to see the evidence relating to this. Sandra advised that a follow up meeting took place with HPS on Monday 2nd October and that the relevant information was expected in the next few weeks, however in the meantime a patient pathway has been in place which routes these patients to appropriate isolation rooms in other hospitals. Dr Peters reported that these patients with significant airborne pathogens are being sent from A&E to the isolation rooms in ITU before being transferred to other hospitals as reported by ID colleagues. The group noted that this would be the case for other hospitals within NHSGGC and across NHS Scotland. Dr Peters however intimated that there is a risk of exposure to a large number of patients and staff and reiterated that, in her opinion, the ITU isolation rooms are not adequate for these types of patients. Furthermore other hospitals have not been recently built and are not a tertiary ID referral centre such as the QEUH **(Item 4).** Dr Redding also recognised that work may be ongoing but the microbiologists are not aware of this **(Item 5).** Anne Harkness advised that as these issues were raised she met with Directors and ID Physicians and they agreed a pathway for these patients to be transferred to other sites. She also commented that based on the external advice, unless the existing rooms can be modified in some way the only alternative was to build a new Infectious Disease Unit which would require a significant resource. David Loudon confirmed that changing the specification to negative pressure would be reviewed to assess technical feasibility.	

Item	Action
It was agreed to await the response from HPS and to deal with any further issues via the Acute and Board Infection Control Committees and the relevant Directorate Governance Committees.	
• <u>Protective Isolation</u> Currently HEPA filters are not fitted in PICU isolation rooms **(Item 6)** and in the prep rooms in Ward 2A **(Item 7).** Dr Redding also commented that IVs are prepared in the treatment room **(Item 8).** She stated that there has been a perceived high rate of infections in immune compromised patients in Ward 2A and air quality has remained an issue in this ward since it opened. She also commented that there was an outbreak of Aspergillus **(Item 9)** in the unit and that there is still a risk to patients.	
Dr Peters said there was a public statement made by NHSGGC that BMT services at RHC are separate and unaffected and that both she and an ICD colleague had objected to the wording of the statement at the time and had asked to step down from ICD roles immediately after it was released. Dr Armstrong advised that she will check with the Comms team regarding the wording in the statement as this required some additional clarity around context **(Item 10).**	**JA**
With regards to the cases of Aspergillus, Sandra McNamee updated that there were two cases in March and April associated with a leak in the ceiling space. This was investigated and the tiles were removed and replaced with no further cases of Aspergillus. Ian Powrie advised that the HEPA filters were installed in two of the rooms in adult ITU but there has been no request to add these to isolation rooms throughout the adult or children's hospital. Work in RHC, Ward 2A is scheduled to start this month and with the scribe being signed off he can now contact the contractors to start the work. Sandra McNamee confirmed that this was raised at a meeting she attended yesterday and that she was aware that there is a plan to put HEPA filters in two of the rooms in PICU as contingency. (this action is complete) Ian Powrie said that the only reason this had not been done is that there was a requirement for the rooms to be unoccupied for 24 hours whilst this work was done and validation carried out and that up to this time it was not possible because the beds had been fully occupied and that there were ongoing discussions with the team in Ward 2A as to whether these patients could be accommodated in isolation rooms within other wards where HEPA Filters could be fitted to address the overspill contingency. Dr Peters commented that this was necessary in PICU, not just as an overspill for Ward 2A, but for these extremely vulnerable patients if they required intensive care treatment because of their illness **(Item 11).** Dr Redding advised that the clinical team in Ward 2A have reported that in their experience there seemed to be an increase in the number of line related infections and Sandra advised that this was investigated by Infection Prevention Control and the clinical team when first raised and work had been ongoing for several months **(Item 12)**.	

Item	Action
She also reported that IPCT and the Clinical Team were working with Timothy Bradnock, Consultant Paediatric Surgeon to look at improvement work. Sandra noted that there was no effective benchmark available for this area. Dr Peters noted that rates of line infection were important to determine and that IPCT had stated there was no resource to do this (**Item 13**). Jen Rodgers, Chief Nurse has an improvement group looking at PVC and CVC bundles and Sandra said that this should have an impact on the number of infections. Dr Armstrong added that there has been a focused piece of work carried out in Ward 2A and they were on a weekly reporting process to ensure compliance with infection control standards had improved. Dr Redding was concerned that this may not accurately pick up any concerns **(Item 14).**	
In relation to the chemotherapy being prepared in the treatment rooms Gary Jenkins advised the group that chemo was prepared in a designated area and there was an audit process to confirm this. He also commented that this process had been reviewed recently and offered to provide Dr Redding the document that was produced. Dr Armstrong confirmed that chemo is not being made up in these rooms and is carried out in the Aseptic Dispensing unit. Dr Armstrong agreed to confirm this with Pharmacy.	**JA**
With regards to safe placement of immunocompromised patients, Dr Peters asked if there was a list of which rooms were of the standard that would be acceptable for this group of patients. She commented that when she worked in Crosshouse Hospital they had a list of where these particular patients could be placed. She said the microbiologists receive calls asking this question by clinical staff (**Item 15**).	
The group debated the definition and severity of immunocompromised patients and agreed, with input from Sandra McNamee and Prof Jones that this was a decision best considered by the clinical team looking after the individual patients. Dr Armstrong advised that this should be discussed at AICC and Gary Jenkins commented that this has not been raised as an issue via his Regional Clinical Governance Committee. Dr Armstrong recommended that this be addressed through the Regional Clinical Governance Committee. She also said it would be helpful to have a copy of the document that Dr Peters used in Crosshouse. Dr Redding reiterated that Microbiologists need to know which rooms are the most suitable for different categories of patients.	**GJ** **CP**
Dr Redding commented that she feels the infection rates are not being monitored **(Item 16)** and Dr Armstrong replied that the Board and Acute Directors receive a weekly report of all outbreaks and infection control incidents.	
Dr Armstrong agreed to ask the Women & Children directorate to take forward the points raised above.	**JA**
• <u>Single Side Room Accommodation</u> Dr Redding outlined that air changes per hour for all clinical accommodation in QEUH and RHC are 3 instead of 6 as per guidelines with the inclusion of chilled beam technology. The grills also collect dust as air is entrained over chilled beams which she suggested is not recommended in a healthcare setting **(Item 17).** Dr Peters advised this initially came to light when investigating issues regarding CF patients.	

Item	Action
David Loudon advised that Dumfries and Galloway have chilled beam technology and Dr Peters stated that Monklands Hospital is at the commissioning stage of a new build and suggested that we share our learning with them. It was agreed that it was important to share the GGC knowledge around chilled beam technology with colleagues in other Boards and David Loudon agreed to take this forward. Ian Powrie informed the group that all chilled beams on site are being cleaned and maintained and Dr Redding asked if the air changes can be changed from 3 to 6 in some rooms but not in all areas and David Loudon advised this was not realistically possible. Ian Powrie confirmed that cleaning and monitoring is being carried out to determine how quickly dust has built up and once this has been established a cleaning schedule will be organised and this can be shared with other hospitals. Dr Redding suggested involving Microbiologists regarding cleaning to look at the microbiological counts. Dr Jones suggested that rates of infection may also be a useful indicator. In this context Sandra McNamee reported that during the point prevalence survey QEUH was under the national average for infections and that all alert organism/conditions were monitored by the IPCT and that there were no indications that this site had a higher than average infection rates. It was noted that infections occurring post discharge would not be picked up by the point prevalence survey.	**DL**
• <u>Cleaning</u> In relation to cleaning Dr Redding stated that cleaning agents were not being used on floors in clinical areas **(Item 18).** Dr Redding also outlined that dishwashers had not been cleaned, installed or operated according to manufacturing instructions **(Item 19).** This was brought to light with the investigation into CF patients with Exophiala. Sandra McNamee updated regarding the occurrence of Exophiala in CF patients and said this was referred to HPS as an amber HIIAT score but they downgraded this to a green HIIAT as this is considered to be a ubiquitous organism and the modes of spread, incubation period and occurrence in the population and environment was largely unknown. Dr Peters stated that she had already discussed the outbreak in her role as CF Microbiologist with mycology experts and given the striking epidemiology of increasing numbers, it is a reasonable hypothesis to assume a link to the dishwashers as a possible source. She had also discussed the HIIAT rating with HPS and agreed with green rating as the intervention with dishwasher was rapidly and appropriately dealt with. With reference to the cleaning agents Sandra McNamee responded that Actichlor cleans are used throughout the winter norovirus season which normally runs from November to April. She also stated that Actichlor was used in specific areas at the recommendation of IPCT, for example. Actichlor was used in GGH for a month in the summer due to an increase in CDI across the site. This has also been introduced for general cleaning into the wards with CF patients in QEUH and RHC, PICU, NICU and Ward 2A. At a recent meeting with HPS Sandra said HPS have found no evidence that using Actichlor is effective but further guidance was awaited. With regards to dishwashers in the ward area there had been some debate in the ward regarding whose responsibility it was to clean these but Sandra said this has been addressed. The manufacturer has come in to check the dishwashers and Catering Services have confirmed they will commence a cleaning programme for the dishwashers. It was also noted that Environmental Health Officers prefer dishwashers to be used over hand washing in sinks/ basins.	

Item	Action

Dr Peters commented that the audit system did not pick up this problem **(Item 20),** and raised concerns about gaps in the environmental audit programmes and this was possibly the same with regards to ward refrigerators or other equipment. Sandra McNamee advised that nursing staff have a requirement to check the temperature in fridges and stated again that the catering department have agreed to take responsibility for the ward dishwashers. The group noted that dishwasher maintenance had been overlooked in the overall system but that this had now been rectified.

- Water Quality and Testing

  In the SBAR it stated that all taps are fitted with TMVs and the cleaning and maintenance policy has not been reported and Dr Redding stated that we need to ensure this is up-to-date **(Item 21)** She also commented that the water in Ward 4B has not been tested to a high standard **(Item 22).**

  The group was assured that there was a Board Water Safety Policy in place that is approved by the appropriate governance committees.

  David Loudon reported that we have strict guidance on how to monitor water systems and processes are in place to comply with ECOPs. Ian Powrie also confirmed that water testing is carried out as per protocol and only exceptions are reported to the Infection Control Teams and this was previously agreed with Dr Inkster.

  He said testing is mainly carried out in high risk areas. David Loudon stated that we are not required to test all taps but a sample and that this was in accordance with guidance. He also confirmed that if requested by an ICD additional sampling was undertaken. [redacted] said that Dr Inkster was managing the water testing and [redacted] perceived there was a problem with the environment. [redacted] said that [redacted] requested gram negative testing but did not receive the results from Estates. Ian Powrie replied that recent changes in staff in both estates and IPC could have been the reason why [redacted] did not receive the information. It was agreed that GGC are compliant with the water testing protocol. Dr Peters stated that the issue was not the overall testing protocols but the ICD role in requesting and receiving the results in a timely manner in exceptional circumstances where a water source of infection needed to be investigated.

  In relation to TMVs Ian Powrie advised that these are maintained in all high risk areas and they are working towards carrying this out in all areas. He said the end piece of the taps cannot be removed and an SBAR is in place for this. Estates are finalising the installation of a heat sanitation system and once complete this will be sent to the Board Water Safety Committee for approval.

  In terms of serratia Ian said they would test the water for this if requested by a clinician.

- Plumbing in Neuro Surgical Block

  Dr Redding stated that there has been sewage leaking in the theatre suite since before 2015 and is still ongoing and not all incidents have been reported to ICDs **(Item 23).**

  Gary Jenkins advised that there is ongoing work in the neuro building that would, because of its complexity, take several years to complete. In the meantime the new operating theatres were due to open in January 2018.

Item	Action

He stated that his directorate has a specific focus on IPC and that they had a dedicated group to look at surgical site infection. He said they funded 1.5 WTE surveillance nurses to carry out prospective surgical site surveillance in this area. Dr Armstrong updated that Dr Inkster carried out a detailed inspection of the area previously and she suggested that SSI surveillance was carried out here. Sandra McNamee advised for context that there are 3 surveillance nurses that cover all of GGC so the resource to actively do this in the INS was significant.

She acknowledged that the ICDs were concerned about infections in EVD and stated that the clinical teams were currently developing an EVD bundle. Ian Powrie reported that remedial work was carried out in this building over the past year but that there had been an incident with sewage last week.

There has been a delay in the opening of the ICE theatres as GGC were not satisfied with the standard but a programme of work has been agreed with the clinicians.

Dr Peters said she requested to know the number of instances from when the theatres closed two years ago due to problems with the pipe work to date and she stated that she was told at the time of the initial problems that the plumbing was to be replaced **(Item 24)**. Gary Jenkins responded that that the pipes run through multiple floors and a process is in place with IPC and Capital Planning to take this forward in stages.

Anne Harkness commented that increases in SSI should be discussed at the Regional Clinical IPC Group which [redacted] is a representative of **(Item 25).** Ian Powrie advised that he has arranged to meet with [redacted] and Dr Balfour to discuss the INS theatre issue.

- <u>Decontamination Provision for Respiratory Clinics</u>
  The SBAR also stated that the decontamination facilities in both Paediatric and adult respiratory clinics have been identified as inadequate on a number of occasions **(Item 26).** Sandra McNamee informed that remedial actions have been put in place and a list of items has been sent to HPS for advice on how to decontaminate them.

  Dr Peters stated that QEUH ICD had not been informed of timeline for revision works to decontamination area to take place.

- <u>Infection Control Structure</u>
  Dr Redding advised that the ICDs in the South Sector had stated that the roles within the Infection Control team are unclear and appear to have changed **(Item 27)**. Dr Armstrong proposed that consideration is given to having a further separate meeting to discuss the issues referred to in this section. Jonathan Best offered to support this discussion.

Item		Action
4.	**Agreement of Further Actions / Next Steps** - Ian Powrie to provide documents supporting work on PPVL rooms - David Loudon to liaise with colleagues re GGC experience with chilled beams - In relation to safe patient placement and availability of isolation rooms, this is to be raised via the Regional Clinical Governance Committee. - Dr Peters to issue the group a copy of the document listing isolation rooms from Crosshouse Hospital. - Dr Armstrong to relay issues pertaining to Ward 2A to Women & Children directorate. - Dr Armstrong to confirm chemotherapy preparation in Aseptic Unit. - Consideration to be given to a further meeting with a smaller group to discuss the issues contained in the Infection Control Structure section of the SBAR. - Dr Armstrong to check with the Comms team regarding the wording in the public statement regarding BMT services	
5.	**A.O.C.B.** Nil. Dr Armstrong thanked everyone for their attendance today.	

Whistleblowing Case
Ventilation at the Queen Elizabeth University Hospital and Royal Hospital for Children

1. Introduction

On 8 February 2018, an email was sent to me from Dr Penelope Redding, Consultant Microbiologist, regarding a number of concerns about ventilation at the Queen Elizabeth University Hospital (QEUH) and the Royal Hospital for Children (RHC). In her email, Dr Redding requested that these issues were taken forward for a Stage 2 investigation under the Whistleblowing Policy.

The main points of the complaint were:

1. The standard rooms at the QEUH and RHC should have 6 air changes per hour (ACH/hr). No room meets this standard. There are only 3 ACH/hr. This is clearly a breach of the standard.

2. Positively Pressurised Ventilated Lobby (PPVL) rooms are not suitable for the isolation of patients with air borne infections and they cannot be housed in this new hospital.

3. There are not sufficient rooms for the isolation of immunocompromised / Bone Marrow Transplant (BMT) patients at RHC.

4. The current management of immunocompromised adult patients.

5. Query on whether issues around ventilation are on the NHSGGC Risk Register?

2. Background

I met with Dr Penelope Redding (PR), and she brought with her Dr Christine Peters (CP) (Consultant Microbiologist), who shared her concerns. They stated that they felt the ventilation issues were only part of many concerns about infection control. They also said they felt isolated, with tarnished reputations due to raising the issues. Dr Redding felt that there had been lack of involvement of infection control doctors in the design and building of the QEUH, despite being involved at the very early stages of planning.

CP had first contacted Theresa Inkster (TI) who was covering the lead Infection Control Doctor ICD) in the summer of 2015 about the bone marrow transplant unit. Air quality sampling revealed problems and they jointly wrote to David Stewart identifying the issues. The service was transferred to the Beatson until the situation was considered safe. Around the same time, concerns were also raised about the paediatric unit.

During this time there were changes in the lead ICD as Dr Craig Williams left, TI resigned and CP took over and tried to change the whole IC structure and she resigned.

During the discussion with CP and PR, concerns were raised that the type of rooms used for both immunocompromised and infectious patients were inadequate. Drs Redding and Peters noted that there had been debate even amongst experts on the adequacy of PPVL rooms, but also concerns that PPVL rooms had not been built to standard. Although negative pressure and positive pressure rooms are now being built, they did not know if, or when, everything would be fixed.

Dr Peters also reported that sewage leaks were happening in the Institute of Neurological Sciences (INS) due to plumbing issues. She noted that Healthcare Improvement Scotland (HIS) had been involved and recommended rapid action, but reported that when she kept raising this as an issue, she was accused of bullying.

Both Dr Redding and Dr Peters felt that the roles in Infection Control were not clear, and that infection control should be a doctor led service, and there was poor Infection Control teamwork and communication.

Dr Peters said she investigated mycobacterium abscesses and identified a previously unknown outbreak in Cystic Fibrosis (CF) patients. She sent a Situation Background Assessment Recommendation (SBAR) to Dr Jennifer Armstrong, Medical Director for NHSGGC, and also contacted General Medical Council and Medical and Dental Defence Union of Scotland (MDDUS) as she felt action was not being taken.

3. Investigation

I interviewed the following people:

- Dr Iain Kennedy, Consultant in Public Health Medicine
- Dr Brian Jones, Head of Service, Diagnostics Directorate
- Mr Tom Walsh, Infection Control Manager
- Ms Sandra Devine (accompanied by her Royal Collage for Nursing representative), Associate Nurse Director for Infection Control
- Dr Rachel Green, Chief of Medicine, Diagnostics
- Dr Theresa Inkster, Consultant Microbiologist
- Ms Mary Anne Kane, Interim Director of Facilities (interviewed by Jennifer Haynes, Interim Corporate Services Manager, on my behalf)

Information was also given via email from the Director, Chief Nurse and General Manager responsible for the INS to cover the issues which relate to this aspect of the case.

I also reviewed the following documentation:

- Health Building Note 04-01 on isolation facilities for infectious patients in acute settings
- Minutes of meeting to discuss infection control estates issues at QEUH and RHC on 4/10/17
- Clinical and Care Governance Committee paper about the concerns raised re QEUH and RHC facilities December 2017
- emails and letters on organisation of infection control

4. Findings

Drs Redding and Peters have clearly identified their concerns regarding infection control and estates issues on the QEUH and RHC site over 3 years, and they sent an SBAR to Dr Armstrong which set out the issues. These were the subject of a meeting on 4 October 2017 chaired by Dr Armstrong. The minutes, which include a full list of attendees, are included in Appendix 1. External advice on the issues was also sought.

It appears there were 3 sets of issues:

- one set of deficiencies in the building, such as lack of High Efficiency Particulate Air (HEPA) filters, not fitted in places they should have been;
- a second set in which changes had been made to the building specification without sign-off from infection control experts;
- a third set that arose because Infectious Diseases and the High Dependency Unit were moved to the QEUH when not intended at the initial planning stage.

I am reassured from the notes of the meeting, the Board paper and my discussions with interviewees that the concerns raised by Drs Redding and Peters are being addressed. The RHC changes are now complete and the QEUH adaptations and new rooms are on schedule to be in place by end of October 2018.

I discussed with the lead infection control doctor the 3 versus 6 air changes. The Scottish hospital building note recommends 6 air changes per hour. However, the infection control team consider that the additional risk to patients in standard accommodation is negligible as 3 air changes brings contamination down to 5% and it is single accommodation. There has been no transmission of the higher risk pathogens and there are now alternative pathways in place for the very high risk ones such as MERS or MDR-TB. The risk in aerosol generating procedures is reduced by advising to keep FFP masks on whilst in the room and for period of time after end of procedure. 1 hour normally, but extended to 2 hours in QEUH/RHC on basis of recent SBAR.

In addition, Ms Kane has confirmed that an expert in this field is being recruited on a part time fixed term basis to specifically look at ventilation in the QEUH and RHC, and to make any recommendations for improvement.

During my meeting with Drs Redding and Peters, the problems in the INS with sewage due to pipe size were raised. These problems will take longer to resolve although they have been acknowledged with plans in place, including replacing the pipes (over the next 2 years). Four of the 6 theatres in the INS will move to the Imaging Centre of Excellence (ICE) building. There is not a confirmed timescale for this at the moment. There are plans to upgrade the remaining theatres in the INS – this is currently on hold to allow further discussion on the long term capital programme for the INS, and is a matter covered at the local Capital Board meetings.

HIS were involved in the issues regarding the sewage ingress. Extensive drainage surveys and remedial works were undertaken after that incident. HIS asked for a number of updates – most recently in November 2017 – and were happy with the measures taken and progress made.

Despite the legitimate concerns about patient safety raised by Dr Redding and Peters, there were no increased levels of infection and the recent national prevalence survey showed that RHC had lower rates than Edinburgh Children's Hospital, and for adults the rates were also under the national average.

Regular communication for on call microbiologists is organised weekly by the infection control team so that those on call are up to date with any infection control issues. There are regular microbiology team meetings where issues can be raised.

Drs Redding and Peters raised concerns that they were not being updated on progress to resolve their concerns. I discussed these concerns with everyone interviewed. I heard an unfortunate but consistent circumstance about the situation summarised below:

- Dr Peters is very knowledgeable about infection control including ventilation. She finds it difficult to accept balance of risk (e.g. if theatres or wards need to close, patients may be put at greater risk)
- She is no longer an infection control doctor having resigned from this role
- She does not accept being part of team and listening to views of others
- She does not accept that infection control is a nurse led service
- She sends frequent requests for updates which are not directly relevant to her role
- She has caused great anxiety to colleagues by her styles of communication particularly the persistent stream of emails to the IC team and to TI

Dr Redding has now retired.

I could find no evidence of the issues of ventilation being on the Risk Register through an analysis of Datix. Risk of flooding sits on the Regional Services Risk Register for the INS. There is no issue regarding ventilation on the Facilities Risk Register, as when the QEUH project was underway, the chilled beam system (with a reduced number of air changes) was noted to be a recognised and accepted standard. Ms Kane noted that Infection Control doctors were very much part of this process.

Dr Inkster, the current lead ICD, is reassured that all actions possible are in place. She agreed that the whistleblowers were right to alert the concerns and their diligence and insight should be acknowledged and respected.

She also confirmed that Dr Peters' behaviour is a problem in needing to know too much detail on issues not within her remit. This causes stress and takes time away from the main job. She would welcome an instruction to say it is not appropriate to keep answering the multiple emails.

Organisational development and mentoring support have been organised by Dr Rachael Green due to concerns on behaviours within microbiology and infection control teams.

5. Conclusion

The whistleblowing concerns about ventilation and patient safety were real but had already been dealt with in the main with action plans for the rest.

As Dr Peters is not an infection control doctor she must be informed and accept that she has no role in the day-to-day management. She should be asked to cease sending multiple emails, and the infection control team given permission to respond that they will not be answered in details as the actions are in hand. Infection control nurses should be reassured that the behaviours will be managed.

Timescale for some of the improvements required are not sufficiently clear.

There is now agreed policy that any changes from building regulations or original specifications must be signed off by infection control.

6. Recommendations

- Explicitly acknowledge to CP that she raised legitimate and important IC issues and was instrumental in ensuring they were dealt with

- Diagnostic Management colleagues should progress the already agreed OD and mentoring support for Dr Peters, the senior microbiology team and the IC team regarding roles, responsibilities and behaviours;

- The Infection control team should be supported to deal with multiple emails from Dr Peters about issues in which she has no direct role with a standard response;

- Follow up in 6 months time regarding progress with INS theatres moving to ICE / being upgraded;

- Follow up in 6 months time progress with expert being recruited to give a view on ventilation in QEUH / RHC.

- The issues raised in this complaint should be appropriately entered onto risk registers

Linda de Caestecker
Director of Public Health
May 2018

Notes of Whistleblowing Meeting
Infection Control – QEUH/RHC
4 December 2019 at 09:00 – JB Russell House, Board Headquarters

Present: Mr Ian Ritchie, Non-Executive Director
Mr William Edwards, Director of eHealth
Ms Jennifer Haynes, Board Complaints Manager
Dr Penelope Redding, retired Consultant Microbiologist

1. Introduction

The purpose of the meeting was to further explore concerns raised in a letter from Dr Redding regarding the reported infection issues the QEUH and RHC. Dr Redding had asked that this be considered at Step 3 of the Whistleblowing Policy.

As per the Whistleblowing Policy, Mr Ritchie was in attendance to consider the concerns, with support from Mr Edwards, as an Executive Director experienced in investigating whistleblowing concerns. Mrs Haynes was present to support the process, and take notes of the meeting.

It was agreed that Mr Edwards and Mr Ritchie would listen to Dr Redding's concerns and document the areas she required further information and clarity and would propose to write back and seek agreement of actions discussed.

2. Notes

a. Background

All Dr Redding's concerns relate to patient safety. She only became involved with the whistleblowing process to support colleagues who were under pressure and stressed with concerns relating to infection control.

Dr Redding explained that she and colleagues had previously submitted concerns at Step 1 of the Whistleblowing Policy via an SBAR to Dr Jennifer Armstrong, Medical Director, in September 2017. These were in relation to infection control across the QEUH campus (including the Institute of Neurological Sciences). Dr Redding noted that concerns had been raised previous to this – as far back as 2014 – but she and colleagues did not feel these were being fully listened to.

On receipt of the SBAR for Step 1 in September 2017, a meeting was convened with a range of key senior colleagues to discuss the content, and an action plan was produced thereafter. Dr Redding noted that she and colleagues did not fully agree with the minutes of this meeting and submitted amendments. Concerns with the Action Plan were also raised, but she was unsure whether the present Action Plan reflect these concerns.

After the meeting, Dr Redding said that she and colleagues tried to get updates on the actions being taken but did not receive satisfactory answers or regular communication on the progress in resolving actions.

In February 2018, Dr Redding and Dr Christine Peters, Consultant Microbiologist, submitted concerns under Step 2 of the Whistleblowing Policy. They had a meeting at an early stage with Dr Linda de Caestecker, the named Executive Director who would be investigating the concerns. Dr Redding noted that these concerns were also about a wide range of infection control issues related to the QEUH campus. Dr Redding noted that this was submitted immediately before her retirement, and so she was not fully clear on what had happened since

the Step 2 of the whistleblowing. She had received a letter from Dr de Caestecker explaining that she was no longer involved in the whistleblowing process.

b. Current Concerns

i. Factual Accuracies regarding Water Testing

Dr Redding noted that she was raising concerns now as a result of all that she heard in the media with relation to infection issues at QEUH/RHC, and the factual accuracy of what NHSGGC has responded to the media.

Dr Redding noted that when she and colleagues raised concerns at Step 1 of the Whistleblowing Policy, part of this was around water testing, as one of her infection control doctor colleagues had explicitly and repeatedly asked for the water to be tested in Summer 2017. When Dr Redding heard of a particular patient case in the media and the link with water infection and the fact that water testing had not been felt necessary, she knew this was clearly inaccurate. This drove her to submit her current concerns.

Action 1: Mr Edwards & Mr Ritchie to investigate if supporting evidence exists around water testing being carried out in summer 2017 and beyond

ii. Planning Stages of new QEUH/RHC

Dr Redding noted that at the early stages of planning for the new QEUH/RHC, Infection Control staff were fully involved and engaged with the process. She noted that the level of involvement appeared to have changed during the planning process after the appointment of the lead infection control doctor. She worried that the perceived reduction in infection control input may have had a negative impact, and she felt this could be linked to the current issues with the building. She felt this needed to be investigated as part of the Review and Inquiry to see if the input complied with the guidelines. She suspected that there might be multifactorial factors in what happened.

Examples of the concerns Dr Redding and others had raised in Step 1 were the number of air changes in standard rooms (3, when there should be 6 according to guidelines) and rooms not being appropriately sealed, resulting in problems which included moulds and risks to immunocompromised patients.

Dr Redding outlined that learning should have been applied to the ICE theatres as this may have prevented delays to opening and so on. Errors with ventilation appear to have been made again.

Action 2: Mr Edwards & Mr Ritchie to investigate if actions have been undertaken to address ventilation as a result of the SBAR submitted in 2017

iii. Cryptococcus

Dr Redding said that common sense would tell you that if there were pigeons in the plant room, that was a problem. She raised concerns that the plant room may only have been tested after it was cleaned and not before. She felt that it should have been tested before cleaning, as well as after. Otherwise you cannot say that it was not

linked to the problems because of negative cultures. It should be Crytococcus is also very difficult to grow from the environment.

Action 3: Mr Edwards & Mr Ritchie to gather further information around the plant room and any associated testing and review carried out relating to the reported pigeon fowling problems

iv. Data

Dr Redding noted concern about data being considered from HPS and HFS, which states that infection rates in QEUH/RHC are reasonable and in line with other sites. Appendix 3 and 4 submissions to the Health and Sports committee raised the concerns about reports. She had submitted concerns to the Health and Sport Committee about how an HPS report, with regard to the water associated bacteraemias, was collected. She felt that inaccurate data had been submitted to them by omitting the figures for 2016 and 2017. Some of the cases reported in the media recently were probably included in these omitted figures. She felt, when this becomes public, it causes distress to families and does not help the public trust in the credibility of investigations and GGC. She felt it is not helpful for conflicting information to come out in the Press, Review or the Inquiry.

v. Bullying / Culture

Dr Redding described a negative atmosphere in Infection Control / Microbiology, and that many of her consultant microbiology colleagues had resigned from their infection control doctor duties as a result of perceived bullying within infection control. She made reference to Dr Teresa Inkster's recent resignation as Lead Infection Control Doctor, and worried that Dr Inkster and Dr Peters had a negative reputation and were not listened to, despite being the consultants with the most infection control knowledge, expertise and experience within GGC, including ventilation.

Dr Redding suggested it might be helpful for Mr Edwards and Mr Ritchie to contact other microbiologists to seek their views on the concerns of infection control doctors.

Dr Redding felt one example of the problems that Infection Control Doctors / Microbiologists had, when she was working, was being put under pressure to sign off on things without being given the requested appropriate evidence and information that was required.

Action 4: Mr Edwards and Mr Ritchie felt it would be beneficial if Dr Redding was able to provide some further evidence as this would allow a more detailed review to be carried out. It was also requested that if Dr Redding felt the current discussion to be productive that it would be helpful if other whistleblowers who shared concerns would be both encouraged and supported to come forward to commence a dialogue with Mr Edwards and Mr Ritchie .

Dr Redding noted several times that Dr Peters and Dr Inkster would be helpful colleagues to talk to regarding the concerns she had raised, as they would hold detail and evidence that she no longer had access to. She noted that she was the only person who had the courage to raise these most recent concerns as Step 3. She committed to encouraging colleagues to contact Mr Ritchie and Mr Edwards (via Mrs Haynes) with any concerns.

3. Desired Outcomes

When asked what she would like to see as an outcome from raising these concerns, Dr Redding said:

- Reassurance / evidence that infection control issues relating to patient safety were being addressed
- The reasons all the resignations of infection control doctors were investigated and understood.
- The GGC infection control structure was reviewed and the problems resolved
- For information from NHSGGC into the public domain to be accurate
- For GGC to ensure that the expertise of Dr Inkster and Dr Peters is used to investigate and resolve the infection issues and concerns raised
- For colleagues with the relevant infection control knowledge / expertise to be listened to
- For GGC to be confident that any decisions being made at the moment cannot be challenged

Action 5 : Mr Edwards and Mr Ritchie to provide further information to Dr Redding against the SBAR of Sept 2017 and the existing 27 point action plan that was formed as a result of the initial SBAR.

Mr Ritchie noted his confidence in the senior team, and how reassured he was, particularly through the Clinical Care and Governance Committee, of the commitment and dedication to resolve the current issues.

4. Actions

Mr Ritchie and Mr Edwards committed to:

- Getting further information and an update on what happened at Step 2 of the Whistleblowing Policy
- Confirming in writing to Dr Redding how her most recent concerns would be taken forward by addressing the actions detailed above

Board C&CG(M)17/04
Minutes: 49-61

GREATER GLASGOW AND CLYDE NHS BOARD

**Minutes of a Meeting of the
Board Clinical & Care Governance Committee
held in the Boardroom, J B Russell House,
Corporate Headquarters, Gartnavel Royal Hospital,
1055 Great Western Road, Glasgow, G12 0XH
on Tuesday 5 December 2017 at 1.30pm**

PRESENT

Ms S Brimelow OBE - in the Chair

Dr D Lyons
Ms D McErlean
Mr I Ritchie
Ms A Thompson

IN ATTENDANCE

Dr J Armstrong	Medical Director
Mr A Crawford	Head of Clinical Governance
Mrs S Devine	Nurse Director Infection Control (Item 8)
Mr R Groden	Director, Glasgow City CHP (Item 6)
Mr D Loudon	Director, Facilities (Item 8)
Ms J Miller	Service Manager Prison Healthcare (Item 6)
Dr M McGuire	Nurse Director
Ms C MacIver	Secretariat
Mr I Powrie	Deputy General Manager, Facilities (Item 8)
Ms E Frame	Chief Midwife (Item 7)
Dr C Bain	Consultant Obstetrician and Gynaecologist (Item 7)

ACTION BY

49. APOLOGIES & WELCOME

Apologies for absence were intimated on behalf of Mr A Cowan and Dr Dominiczak and Mrs J Grant.

Ms Brimelow will contact Cllr McColl directly as no apologies were received and has not yet attended a meeting. **Ms Brimelow**

NOTED

50. DECLARATION(S) OF INTEREST(S)

No declaration(s) of interest(s) were raised in relation to any of the agenda items to be discussed.

NOTED

51. MINUTES

Ms Thompson proposed that the minute of the meeting (which took place on 5 September 2017) was an accurate record (subject to minor amendment) and this was seconded by Ms McErlean. **Secretary**

NOTED

52. MATTERS ARISING FROM THE MINUTES

(a) Rolling Actions List

Several actions were agreed for closure

Secretary to update the list **Secretary**

NOTED

53. OVERVIEW

Dr Armstrong provided a verbal update on the PWC audit into the process of implementing the mental health risk assessment. The report will be first considered by the Audit Committee and then come to this committee in due course. It is expected that this committee will be responsible for the oversight of the improvement plan.

Action: The report action plan will be added to the forward plan for the Committee Agenda **Secretary**

Dr Armstrong also advised the members of current fieldwork by PwC looking at the role and ways of working for this Committee, to make sure it is functioning optimally. The report will be presented once completed. It was noted that committee felt this was a good idea to support learning and improvement.

Action: The report will be added to the forward plan for the Committee agenda **Secretary**

Dr Armstrong then gave an update on actions taken following the emergence of concerns relating to an Acute Mental Health Ward. Immediate steps were taken to provide additional support for the ward and ensure the quality of care to patients is appropriate. A process to review the issues has also been set up, the findings of which will be reported to the committee on its conclusion.

Action: Dr Armstrong will provide further updates on this situation **Dr Armstrong**

Action: The final report and action plan will be presented to a future meeting of the Committee **Secretary**

Dr Armstrong advised of correspondence on organ donation which confirmed the Board policy approach was generally positive, though some aspects which could be improved were also referenced. Mr Ritchie confirmed that members of organ donation committee held the same view, they were pleased with report but also recognised areas in which we could do better.

Dr McGuire gave an update on older people's inspection at RAH. She advised that all actions were now complete from the Action Plan; however ongoing improvement work was continuing with staff and within wards. The publication date for the report is 14th

February.

Dr Armstrong then advised committee of an ongoing child protection case.

NOTED

54. PRISONER HEALTHCARE

Ms J Miller, Service Manager Prison Healthcare, presented a report on HMP Low Moss which addressed issues raised in the recent inspection into HMP Low Moss relating to prison healthcare, for which the HSCP has a hosting responsibility. Ms Miller advised the inspection of HMP Low Moss took place between 29 May and 9 June 2017. The final written report published on 3 October 2017; Ms Miller advised that the report was disappointing; out of 21 standards 5 were reported as poor.

Ms Miller advised that there was an ongoing rolling action plan which addressed every issue of the report. Ms Miller went on to advise that the biggest risk and challenge prison health care face is recruitment and retention which is ongoing issue. Ms Miller advised this challenge was common across all prisons, across all health boards. The action plan reflects this priority

Other issues which cause difficulty providing services included prison lock downs; there can be up to 6 lockdowns a day which disrupts the flow of providing healthcare services.

Discussion followed. Committee members wanted to know if progress was being made, how was it being evidenced and how it would be known that actions were making a difference. The Committee was advised that inspectors were coming back to re-inspect on 24th January and it was expected that significant improvement would be demonstrated. Robust evidence would be in place to show inspectors.

The Committee noted the contents of the report, and noted an ongoing robust action plan was in place and being monitored, however they were concerned regarding the underlying issue of staffing problems.

In terms of ongoing governance Dr Armstrong advised Dr S Sutton, Clinical Director, Renfrewshire HCP has been asked to monitor the improvement action plan via the Primary Care Clinical Governance Forum and to ensure updates are made at the Board Clinical Governance forum.

Committee members pointed out that the Prison Healthcare paper and other papers on the agenda had no covering sheet with it explaining what committee was expected to do. Committee need to know what they are looking at and what is expected from them.

Dr McGuire advised that all reports coming to committee should be clear on why & what they are for; need purpose background and recommendation so committee know what they are to consider. This would be addressed for future items.

Action: A template should be agreed to ensure the Committee are directed to the key issues and recommendations in every submission

Secretary

NOTED

55. MATERNITY SERVICES

Dr McGuire introduced Ms E Frame, Chief Midwife & Dr C Bain who were in attendance to provide an overview of Maternity Services within GGC and their Clinical Governance Structure and also to update committee on work progressing in relation to;

- Clinical Risk Management
- Significant Clinical Incidents
- National Maternity Reports
- GGC Stillbirth Review
- MCQIC SPSP
- Patient Experience
- Service Developments

Ms Frame explained that Maternity Services with support of the Clinical Governance Support Unit have focussed on continuing to develop their clinical risk management processes and in translating the learning on Significant Clinical Incidents (SCI) to ensure the recommendations generated from each case are implemented. The service now has the capability through the actions module on DATIX to monitor and close recommendations. This is done at a local unit level and overseen but transferralble across all sites under the Obstetric Clinical Governance Group feeding into the Women and Children's CG group. Learning summaries and clinical risk updates are being developed in cases where there is identified systemic learning.

Discussion followed, committee felt assured by the report and the amount of detail provided however the pace of improvement was unclear.

Committee agreed a report with robust timescales should come back to a future meeting

NOTED

56. INFECTION CONTROL

Dr Armstrong introduced S Devine, LN Infection Control, Mr I Powrie, Estates, Deputy General Manager & Mr D Loudon, Director of Facilities.

It was confirmed that infection rates on the QUEH site are some of the lowest on the board and are in line with Scottish infection rates standards.

However it was recognised that the QUEH was planned and designed in 2007/08 which has meant a number of structural changes link to changes in case mix form the original planning assumptions are required. Committee were advised that there has been a series of issues raised by a small number of micro biologists associated with the facilities in QEUH and RHC and the structure of the Infection Prevention and Control (IPCT) Service within NHS Greater Glasgow and Clyde.

Ms Devine explained the Chief of Medicine for Diagnostics and members to the IPCT Senior Management team met with the consultants to discuss all the concerns raised. The consultant microbiologists tabled a list of concerns and it was confirmed that all of the issues have been reviewed and where required acted upon to address all concerns

The Committee noted that the paper was clear and gave assurances.

Committee thanked Mrs Devine, Mr Louden and Mr Powrie for attending.

NOTED

57. CORPORATE RISK REGISTER

Mr Crawford presented the Corporate Risk Register paper and explained the Audit Committee suggested that the Standing Sub-committees of the Board, including the Clinical and Care Governance Committee, take direct oversight of the relevant corporate risks.

Committee noted the contents of the report. It was agreed it was a work in progress. Discussion followed; it was agreed that agenda items should be linked/themed around risks. It was also agreed to bring to committee every 6 months and review annually. **Future Agenda**

NOTED

58. CLINICAL & CARE GOVERNANCE – OVERVIEW REPORT

A report from the Head of Clinical Governance (paper 17/26) asked Committee to review the content and advise on areas where the information supports assurance or requires further action.

Mr Crawford led members through the paper, giving an update on the most recent publication of HSMR. Mr Crawford advised the group that HIS visited VoL on the 30th November; he advised that the Clyde team provided an impressive presentation on their approach to addressing the issue which received good feedback. Mr Crawford advised findings of the visit would be confirmed formally by HIS and brought back to the group, at a later date.

An update was given on Mental Health Safety Programme. There are a number of different workstreams active with the programme. Mental Health Services have been running a patient safety programme for some years. A significant focus of the local programme is the development of a strong safety climate as an area of collective leadership. A number of formal interventions are in place as part of the approach. An annual staff survey is conducted in participating wards with the help of the Clinical Governance Support Unit. Eleven 2017 staff surveys have been completed to date with 1 currently in progress and the remaining 4 scheduled. Wards are able to compare each year's results with previous year's results, and act individually on the findings. Mr Crawford advised work was ongoing and an update would be brought back to a future meeting as part of routine reporting.

Members advised they were assured by the paper Ms Brimelow thanked Mr Crawford for the paper.

NOTED

59 BOARD CLINICAL GOVERNANCE FORUM - UPDATE

A routine report from the Head of Clinical Governance (Paper 17/27) summarised the key topics considered within the most recent meeting of the Board Clinical Governance Forum.

Committee noted the contents of the report.

NOTED

60. FUTURE LOOK

Members noted Future dates for 2018 Board Clinical& Care Governance Meetings and proposed items for discussion.

Members were advised to contact Chair or Secretary if they would like to see any items added.

Members noted the content of the paper.

NOTED

61. DATE OF NEXT MEETING

Date: Tuesday 6th March 2018
Venue: Boardroom, J B Russell House
Time: 1.30pm

The meeting ended at 4.55

Board C&CG (M) 19/01
Minutes: 01 - 14

GREATER GLASGOW AND CLYDE NHS BOARD

Minutes of a Meeting of the
Board Clinical & Care Governance Committee
held in the Boardroom, J B Russell House,
Corporate Headquarters, Gartnavel Royal Hospital,
1055 Great Western Road, Glasgow, G12 0XH
on Tuesday 5th March 2019 at 1.00pm

PRESENT

Ms S Brimelow OBE - in the Chair

Dr D Lyons
Mr S Carr
Mr I Ritchie
Cllr Caroline Bamforth
Mrs A Thompson

IN ATTENDANCE

Mrs J Grant	Chief Executive
Dr J Armstrong	Medical Director
Mr A Crawford	Head of Clinical Governance
Ms E Vanhegan	Head of Corporate Governance and Administration
Mr T Steele	Director of Estates and Facilities
Ms M Gardner	Chief Nurse, South Sector
Dr D Dodds	Chief Of Medicine, Regional Services
Ms S Devine	Interim General Manager for Infection Control Team
Dr T Inkster	Lead Clinician for Infection Control Team
Mrs G Mathew	Secretariat Manager

		ACTION BY
01.	**APOLOGIES & WELCOME**	
	Ms Brimelow welcomed everyone to the meeting and introductions were made. Ms Brimelow noted that, due to other commitments, Mr Carr would only be in attendance for 1 hour. Ms Brimelow welcomed Ms Morag Gardner, Chief Nurse, South Sector, who was in attendance on behalf of Dr Margaret McGuire. Ms Brimelow welcomed Dr David Dodds, Chief of Medicine, Regional Services, who was in attendance to provide an update on Item 10 – Interventional Neuro-radiology. Ms Brimelow also welcomed Dr Teresa Inkster, Lead Infection Control Doctor, and Ms Sandra Devine, Associate Nurse Director, Infection Prevention and Control, who were in attendance to provide an update on Item 6 – Recent Infection Incidents Update, and Item 9 – Report on Concerns raised regarding QEUH and RHC – Updated Position.	

		ACTION B
	Apologies for absence were intimated on behalf of Professor Dame Anna Dominiczak, Dr Margaret McGuire, and Mrs Dorothy McErlean. NOTED	
02.	**DECLARATION(S) OF INTEREST(S)**	
	No declaration(s) of interest(s) were raised in relation to any of the agenda items to be discussed.	
	NOTED	
03.	**MINUTES**	
	The Committee considered the minute of the meeting which took place on Tuesday 11th December 2018 [Paper No. CCG (M) 18/04]. On the motion of Mrs Thompson, seconded by Dr Lyons, the Committee approved the minute as an accurate record of the meeting, subject to the following amendment: Page 2, Item 48 – Matters Arising from the Minutes – a) Rolling Action List – Minute 40 – HSMR Figures – the second last sentence of the paragraph should read "Dr Armstrong agreed to share the HIS response with the Committee once available". Page 5, Item 50 – HEI Visit to Inverclyde Royal Hospital (IRH) – this should read "OPAH Visit to Inverclyde Royal Hospital (IRH). APPROVED	
04.	**MATTERS ARISING FROM THE MINUTES**	
a)	Rolling Action List	
	The Committee reviewed the items detailed on the Rolling Action List [Paper No. 19/01] and the following updates were provided. Minute 54 – Governance and Quality of Care Dr Armstrong clarified that this item was in relation to the previous paper considered by the Committee at the meeting of 11th December 2018, in relation to assurance of the quality of surgical care. Ms Brimelow recommended the closure of this action, given that this was a matter for the Board. The Committee were content with this. Minute 57 – Future reports to be linked/themed around Clinical Risk Register The Committee were content to close this action. **Other Matters Arising**	**Secretary** **Secretary**

	Cowlairs Decontamination Unit Mrs Grant noted that a full review of the incident was underway. A report would be presented to the Acute Services Committee in due course. PVC Procedure Packs Dr Armstrong noted that this would be covered under the main report. NOTED	
05.	**OVERVIEW**	
	Dr Armstrong provided an overview of topics not included on the agenda. Dr Armstrong advised the Committee of the HPS report on the water at Royal Hospital for Children (RHC) and the Queen Elizabeth University Hospital (QEUH), which was published on 22nd February 2019. Dr Armstrong advised that further information would be detailed within the main report under Item 9. Dr Armstrong noted the recent announcement by the Health Secretary, Jeane Freeman, of the appointment of two co-chairs to lead the independent external review of the QEUH, Dr Brian Montgomery, former Medical Director and Interim Chief Executive of NHS Fife; and Dr Andrew Fraser, Director of Public Health Science, NHS Health Scotland. An internal review by NHSGG&C had also commenced. Ms Brimelow thanked Dr Armstrong for the update. NOTED	
06.	**RECENT INFECTION INCIDENTS UPDATE**	
	The Committee considered a paper 'Recent Infection Incidents Update' [Paper No. 19/02], presented by Infection Prevention and Control Team, Dr Teresa Inkster, Lead Clinician for Infection Control Team and Ms Sandra Devine, Interim General Manager for Infection Control Team. The report asked the Committee to note the contents of the paper which provided an update on recent outbreaks or incidents which scored Amber or Red using the National Healthcare Infection Incident Assessment Tool. There had been four significant incidents/outbreaks across NHSGGC between December 2018 and February 2019. The paper summarised the incidents which had occurred and the actions taken to control them and prevent further infection. Dr Teresa Inkster, Consultant Microbiologist, went on to provide an overview of each of the incidents. *Cryptococcus neoformans* Two cases were identified between 21st November 2018 and 9th December 2018. This was considered an exceptional infection episode and was therefore reported, managed and controlled as per Chapter 3 of the National Infection and Prevention Control Manual. The incident was downgraded to green on the 15th February. There have been no further cases reported since 11th December 2018. Dr Inkster described a number of actions completed and the outcomes of each including a review of drugs given to patients by the aseptic pharmacy, a review of the plant room on the roof of the adult hospital, professional clean of plant rooms, air sampling of ward areas, prescribing of antifungal prophylaxis medication,	

	installation of HEPA air filters and samples of bird droppings obtained and sent for testing. A number of samples had revealed the presence of Cryptococcus albidus, but not Cryptococcus neoformans. The initial hypothesis suggested a plant room could have been a source, however air sampling results did not support this. A short life expert advisory group with input from UK experts was set up to explore a number of hypotheses as to the source of the Cryptococcus. Ms Brimelow thanked Dr Inkster for the update and invited questions from Committee members. In response to questions from Committee members in relation to the existing air filters, Dr Inkster advised that following the learning points from this incident, a review of air filters had been undertaken. She also confirmed that HEPA air filters were being installed in Wards 2a and 2b. In response to questions from Committee members in relation to national recommendations and guidance about the use of HEPA air filters, Dr Inkster noted that HEPA air filters were recommended for patients undergoing bone marrow transplant and those with acute lymphoblastic leukaemia. These patients had been moved to the adult BMT unit. Dr Inkster noted that installation of portable HEPA filters had been extended to include haemato-oncology patients within QEUH. In response to questions from Committee members in relation to the fungus, Dr Inkster advised that whilst exposure to the fungus is common, infection following exposure was rare and usually in patients with severe immuno-compromised system. Following discussion, Dr Inkster noted that the short life expert advisory group continued to explore all possible hypotheses to identify the source, however stressed that the safety of patients and the prevention of further infections remained the highest priority. <u>Mucoraceous Mould</u> Two cases of infection were identified within the QEUH ICU department on 18th January 2019 and results on January 21st confirmed them as Mucoraceous. Dr Inkster noted a number of actions undertaken to identify the source, including samples taken from a dialysis point in Room 23, review of near patient equipment, linen swabs taken, and air sampling. There were no further cases reported since 18th January 2019. There had been no source identified. This fungus is widespread in the environment generally. <u>Stenotrophamonas maltophilia</u> Four confirmed cases of S.maltophilia had been identified within the ITU/HDU at Royal Alexandra Hospital (RAH). Dr Inkster described a number of actions undertaken including a deep clean, twice daily enhanced cleaning, hard surface environmental swabbing carried out, screening of all patients in the unit, water outlets sampled pre and post flush, and an audit of hand hygiene. There had been no further cases since 22nd February. Ms Brimelow invited questions from Committee members. In response to questions from Committee members regarding the hand hygiene audit, Ms Devine noted that the results of the audit highlighted improvements	

	required in technique used. Hand hygiene audits were regularly undertaken in all areas, and the Hand Hygiene Coordinator conducted random audits across NHSGG&C. Dr Lyons was interested to note that the results of the hand hygiene audit conducted at RAH ITU/HDU were reported as two distinct categories: - opportunity and technique, however the routine hand hygiene audit results were not usually recorded in this way. In response to questions from Committee members in relation to bank and agency staff and hand hygiene audits, Ms Devine assured the Committee that hand hygiene audits include a proportion of all staff groups present in the department at that time. In response to questions from Committee members in relation to vacancies reported within the domestic teams, Mr Steele assured Committee members that work was underway with both HR and the Recruitment Team to improve the pace of the recruitment process. <u>Staphylococcus aureas Bacteraemia (SABs)</u> Seven confirmed cases and one possible case of an unusual strain of Staphylococcus aureaus Bacteraemia (SAB) had been identified within the Neonatal Intensive Care Unit at Princess Royal Maternity Hospital, and subsequently, the Royal Alexandra Hospital (RAH). Dr Inkster noted the actions underway to address this including a full terminal clean using hydrogen peroxide vapour, increased daily cleaning measures, hand hygiene audits, environmental screening, staff screening and weekly screening of all babies in all units. Dr Inkster also noted the communications process followed to inform parents of babies within the affected units. Ms Brimelow invited questions from Committee members. In response to questions from Committee members in relation to the hand hygiene audits carried out and the outcomes of these, Ms Devine agreed to share information with the Committee. Ms Brimelow thanked Dr Inkster and Ms Devine for the assurance provided. The Committee would expect a further report from Ms Devine in relation to hand hygiene audits at the next Committee meeting. <u>NOTED</u>	**Ms Devine** **Ms Devine**
09.	**REPORT ON CONCERNS RAISED REGARDING QEUH AND RHC – UPDATED POSITION**	
	The Committee considered the paper 'Report on Concerns raised regarding QEUH and RHC – Updated position' [Paper No. 19/05] authored by the Infection Control Management Team. The paper provided an overview of the progress being made in relation to a number of issues highlighted in the previous report of 5th December 2017 [Paper No.17/24]. Key areas of progress were noted including the inclusion of 34 rooms on the PPVL schedule; compliance with SHFN 30 HAI Scribe Programme and process for refurbishment; the 12 month capital plan for upgrade of the ventilation system of Ward 2a at RHC; significant reduction in Central Line Associated Bacteraemia Infections (CLABSI) due to improvement work carried out since 2017; compliance with SHTM 04-01 Part B- operational Management testing for Legionella and HSE Legionnaires disease "Microbiological Monitoring" HSG 274;	

	establishment of local water safety groups and testing including exception reporting and escalation; and review of ICD roles and responsibilities including development of ICD Job Description. In response to questions from Committee members in relation to the issues associated with the Adult and Paediatric Bone Marrow units moving into the QEUH when the facility opened in 2015, Dr Armstrong set out that in the case of the Adult BMT, the unit had higher than optimal particle counts. As patient safety is paramount, patients were moved back to the Beatson while extensive refurbishment took place. Patients were not moved back until extensive air testing and engagement with clinical directors, clinicians, infection control and estates colleagues had been undertaken. In response to questions from Committee members regarding the number of vacancies within the Estates Team, and the level of training and experience requirements, Mr Steele noted that extensive work was underway in partnership with universities, to develop expertise in required areas and create modern apprenticeship and management opportunities. Work was being progressed with HR and Recruitment colleagues to streamline the recruitment process. Mr Ritchie asked if colleagues were reassured by the actions that had been taken to address the issues and if there were any further concerns raised in relation to recent events. Dr Inkster advised that one colleague had since retired; other colleagues had not raised any further issues with her. The Committee were assured of the actions being undertaken to address the issues and to ensure the safety of patients. The Committee commended the efforts of the Medical Director who asked the Microbiologists to document all concerns in 2017 with all meeting and developing an action plan to address concerns directly. The Committee noted thanks to the various teams work to address these issues. In summary, the Committee noted that progress had been made, were content that patient safety remained the top priority and were pleased to note that there had been no further water incidents in the last 6 months. NOTED	
10.	**UPDATE ON INTERVENTIONAL NEURO-RADIOLOGY REPORT**	
	The Committee considered the paper 'Update on Interventional Neuro-radiology Report' [Paper No. 19/06] presented by the Medical Director, Dr Jennifer Armstrong. An action plan has been developed to address the recommendations following the external review of the INR service. Dr Armstrong introduced Dr David Dodds, Chief of Medicine, Regional Services. Dr Dodds provided an overview of the areas within the action plan to address the three areas of recommendation following the review including staff governance, establishment of a national service and national governance. Ms Brimelow thanked Dr Armstrong and Dr Dodds for the update and invited questions from Committee members.	

	In summary, the Committee noted the report, noted the tabled Action Plan, and would await further updates to the Committee as this work progressed. NOTED	
07.	**UPDATE ON RAPID ACCESS CLINIC FOR PAEDIATRIC DENTISTRY**	
	In the absence of a written report, Mrs Grant provided a verbal update to the Committee. Mrs Grant noted the significant challenges for a number of specialties in relation to anaesthetic support. Mrs Grant advised that 2 additional Paediatric Anaesthetists had been recruited, in addition to the 2 vacant posts, which had now been filled. Additional support from other NHS Board areas had also been received. The number of patients waiting over 12 weeks had been significantly reduced, and there were currently a total of 134 patients waiting longer than 12 weeks. Work was also being progressed to identify the underlying causes of the increase in numbers of children requiring treatment. In summary, the Committee were content to note the recruitment of 2 additional Paediatric Anaesthetists, along with the recruitment of the 2 vacant posts and noted that there were currently 134 patients waiting over 12 weeks. The Committee were content that this issue would be considered by the Acute Services Committee as part of the overall waiting times report, and therefore recommended the closure of this item. NOTED	**Secretary**
08.	**HEI VISIT TO ROYAL ALEXANDRA HOSPITAL**	
	The Committee considered the paper 'Unannounced Healthcare Associated Infection (HAI) Inspection RAH 4th – 6th Dec 18' [Paper No. 19/04[presented by the Chief Nurse, South Sector, Ms Morag Gardner, on behalf of the Director of Nursing. The paper highlighted the requirements and recommendations of the report, details the action plan and progress of improvements made. Following the visit, there were 8 requirements and 1 recommendation made and the Board have completed and returned improvement action plans to address these. Ms Gardner noted that all requirements highlighted had been addressed, including the removal of the damaged clinical waste bin; replacement of the fridges for breast milk; removal of bladeless fans; cleanliness issues within Emergency Department rectified and continuity of domestic services being addressed by the Facilities Manager; review of all chairs and transport chairs for damage and added to cleaning schedule; immediate work carried out to replace damaged wooden surfaces within theatre areas; and immediate reorganisation of storage area within theatres to allow additional storage for sterile trays. Ms Gardner described the positive feedback received following the visit including feedback received from patients; standard of equipment; cleanliness; hand hygiene; and use of personal protective equipment. Ms Brimelow thanked Ms Gardner and Ms Devine for the update and invited questions from Committee members.	

	In response to questions from Committee members in relation to the current domestic staff capacity at RAH, Mr Steele advised the Committee that the issues related to access to areas in order to carry out cleaning. Committee members were disappointed to note a high volume of low level estates matters; however Mr Steele provided assurances that this was being addressed, along with a review of the cleaning processes. In response to questions from Committee members in relation to a potential gap within the Emergency Department between 1.30pm and 4pm, Mr Steele assured the Committee that work was underway to address this. In summary, the Committee were content to note the report and thanked Ms Gardner, Ms Devine and Mr Steele for the assurances provided. NOTED	
11.	**UPDATE ON HISTORICAL CHILD ABUSE INQUIRY**	
	The Committee considered a paper 'Scottish Child Abuse Inquiry – Lennox Castle Hospital' [Paper No. 19/07] presented by the Head of Corporate Governance and Administration, Ms Elaine Vanhegan. The Inquiry commenced in October 2015, and in September 2018, NHSGG&C were notified that Lennox Castle Hospital would be included within the Inquiry. Ms Vanhegan described the 4 sections required in the response and noted that sections A & B had been submitted on 1st March 2019. Sections C & D require to be submitted by 31st May 2019 and work continued in partnership with the Central Legal Office and the Local Authority, to gather the information required. Ms Brimelow thanked Ms Vanhegan for the update. In summary, the Committee were content to note the report, the progress made, and the submission of sections A & B. NOTED	
12.	**COMPLAINTS AND PATIENT EXPERIENCE FEEDBACK REPORT**	
	The Committee considered a paper 'Patient Experience Report – Quarter 3 – 1st October to 31st December 2018' [Paper No. 19/08] presented by the Chief Nurse, South Sector on behalf of the Director of Nursing. Complaints Ms Gardner noted the areas included within the report including Acute, Partnerships and Prisons. She advised the Committee of the common complaint themes and highlighted that clinical treatment was the most common theme reported, followed by date of appointment; communication; and attitude of staff. Ms Gardner noted an increase in the number of complaints received related to prisons and across the Board area. She advised that a series of training sessions had been organised by Complaints colleagues to encourage early resolution of complaints. Ms Brimelow thanked Ms Gardner for the update and invited questions from Committee members.	

	In response to questions from Committee members in relation to the percentage of complaints related to interactions with staff, Ms Gardner advised that work was underway to include complaints and communications with patients as part of the induction process for new members of staff. Newly qualified nursing staff were being trained on how to respond to conflict; how to break down communication barriers; and the empowerment of staff to encourage early resolution. Feedback Ms Gardner provided an overview of the positive areas of note within patient feedback including examples of care and compassion and access. She also noted the negative feedback received in relation to attitude and behaviours. Ms Gardner noted that in addition to the induction programme as mentioned, a positive behaviours video was being developed for staff and would be available soon. Ms Gardner described recent postal surveys conducted, and the key themes emerging from this, notably patients wishing to be more involved in their care and decisions about their care. Actions have been developed following this survey and were detailed within the report. In summary, the Committee were content to note the report, and wished to thank Mrs Haynes for her production of the report and the teams involved in delivering the actions noted. NOTED	
13.	**BOARD CLINICAL GOVERNANCE FORUM**	
	The Committee considered the minute of the Board Clinical Governance Forum Meeting held on Monday 3rd December 2018 [Paper No. BCGF (M) 18/12]. Mr Crawford noted the key points from the meeting including a presentation given on the Scottish Stroke Improvement Programme, CQI Project Update, Healthcare Quality Strategy, Inverclyde OPAH Inspection Report, and the five main service area reports. In response to questions from Committee members in relation to the concerns raised by foundation Orthopaedic trainees, Mr Crawford advised that a full report would be presented to the Acute Clinical Governance Committee, before being presented to the Board Clinical Governance Forum, to consider the matter fully. The Committee felt it would be helpful to hear the presentation by Ms Marie Farrell on the Scottish Stroke Implementation Programme and Dr Armstrong would be happy to ask Ms Farrell to attend a future meeting. This item would be included on the forward planner. Ms Brimelow thanked Mr Crawford for the update. The Committee were content to note the minute. NOTED	**Secretary**
14.	**DATE OF NEXT MEETING**	

	Date: Tuesday 11th June 2019 Venue: Boardroom, JB Russell House Time: 1.00pm The meeting concluded at 4.30pm.	

Board C&CG (M) 19/02
Minutes: 15 - 30

GREATER GLASGOW AND CLYDE NHS BOARD

Minutes of a Meeting of the
Board Clinical & Care Governance Committee
held in the Boardroom, J B Russell House,
Corporate Headquarters, Gartnavel Royal Hospital,
1055 Great Western Road, Glasgow, G12 0XH
on Tuesday 11th June 2019 at 1.00pm

PRESENT

Ms S Brimelow OBE - in the Chair

Dr D Lyons
Mr S Carr
Mr I Ritchie
Cllr Caroline Bamforth

IN ATTENDANCE

M McGuire present for start and finish of meeting

Dr J Armstrong	Medical Director
Mr A Crawford	Head of Clinical Governance
Ms E Vanhegan	Head of Corporate Governance and Administration
Mrs D McErlean	Non-Executive Board Member
Mrs P Ralphs	Planning Manager
Ms J Rodgers	Chief Nurse, Paediatrics and Neonates
Mrs G Mathew	Secretariat Manager
Mrs L Russell	Secretariat Officer

		ACTION BY
15.	**APOLOGIES & WELCOME**	
	Ms Brimelow welcomed everyone to the meeting and introductions were made. Apologies for absence were intimated on behalf of Professor Dame Anna Dominiczak and Mrs Audrey Thompson. <u>NOTED</u>	
16.	**DECLARATION(S) OF INTEREST(S)**	
	One declaration of interest was raised. Mr I Ritchie declared an interest as Chair of the Organ Donation Committee for Item 29, Board Clinical Governance Forum.	
	<u>NOTED</u>	

		ACTION B
17.	**MINUTES**	
	The Committee considered the minute of the meeting which took place on Tuesday 5th March 2019 [Paper No. CCG (M) 19/01] and were content to approve this as an accurate record, subject to the following amendments: The Committee received correspondence from Dr Teresa Inkster, Lead Infection Control Doctor NHSGGC, in relation to information provided at the Committee meeting in March regarding the recent infections (item 6) and the report on concerns raised regarding QEUH and RHC (item 9). The Committee considered the amendments suggested by Dr Inkster, in addition to the secretaries written notes of the meeting, and, following reflection, agreed to the following amendments:- Item 6 – Cryptococcus neoformans – Paragraph 6 "Dr Inkster noted that installation of portable HEPA filters had been extended to include haemato-oncology patients within QEUH" Item 6 – Mucoraceous mould – Paragraph 1 "It is possible the dialysis point was the source as mould was grown from the area. No cases have been reported since the 18 January 2019 and this source has been remedied. Alternatively, this fungus is ubiquitous and may have been present in the air at the time". Item 9 – Report on concerns raised regarding QEUH and RHC –Updated Position – Paragraph 4 "Mr Ritchie asked if colleagues were reassured by the actions that had been taken to address the issues and if there were any further concerns raised in relation to recent events. Dr Inkster advised that one colleague had since retired; other colleagues had not raised any further issues with her" APPROVED	
18.	**MATTERS ARISING FROM THE MINUTES**	
a)	Rolling Action List	
	The Committee reviewed the items detailed on the Rolling Action List [Paper No. 19/08] and were content to accept the recommendation that 7 actions be closed. **Other Matters Arising** Paediatric Dentistry Dr Armstrong noted that an update had been given at the Committee meeting in March and the matter was subsequently closed. The Committee agreed however that a further update would be requested at a future meeting. Short Life Expert Advisory Group – Air Samples Mr Carr requested assurance of the reporting mechanisms for the above group. It was clarified that the group would report findings via the Internal Review of the QEUH/RHC structures. NOTED	

ACTION B

19.	**REVIEW OF COMMITTEE TERMS OF REFERENCE**	
	The Committee considered the paper 'Review of Clinical and Care Governance Committee Terms of Reference' [Paper No 19/09] presented by Head of Corporate Governance and Administration, Ms Elaine Vanhegan. Members were asked to review the current remit of the Committee and ensure it remains, at this stage, fit for purpose. Following the national process to implement 'A Blueprint for Good Governance' and the publication of the Ministerial Strategic Group (MSG) Review of Progress of Integration with Health and Social Care, the proposed amendments to the Committees Terms of Reference take account of these priorities by ensuring that the Board's corporate governance framework suitably applies a 'whole system' approach to oversight of the Board's functions. Committee members noted the inclusion of clinical governance of the West of Scotland Research Ethics Committee. Clarity has been provided on the format of the minute of a meeting and rolling action list and the addition of a Chairs Report template for providing feedback to the Board. Ms Vanhegan agreed to circulate the Scheme of Delegation following approval at the next Audit and Risk Committee meeting on Tuesday 18th June 2019. Mr Crawford suggested some amendments including the addition of Duty of Candour, and Clinical Governance Strategy. Ms Vanhegan and Mr Crawford agreed to discuss this further following the meeting. In summary, the Committee were content to endorse the revised Terms of Reference, subject to amendments as discussed by Mr Crawford and Ms Vanhegan, for submission to the Audit and Risk Committee, and final approval by the Board. NOTED	**Ms Vanhegan** **Ms Vanhegan/Mr Crawford**
20.	**OVERVIEW**	
	Dr Armstrong provided an overview of topics not included on the agenda. Interventional Neuro-Radiology (INR) Dr Armstrong provided an update on activities underway following the development of an action plan to address the recommendations made by the external review. These included ongoing discussions with colleagues in Edinburgh and Glasgow, training placements and additional locum support. Dr Armstrong was pleased with the progress made to implement improvements. In relation to INR, Dr Armstrong advised that a proposal would be presented to the Managed Service Network this week, requesting support from the Managed Service Network to support INR and establish a lead clinician to provide clinical leadership to the service. NOTED	

21.	**INTERNAL REVIEW OF QEUH/RHC – CLINICAL REVIEW**	
	The Committee considered the paper 'QEUH/RHC – Internal Review – Interim Report on Clinical Outcomes' [Paper No 19/10] presented by Head of Clinical Governance, Mr Andy Crawford. The paper provided an update on progress to date in relation to the internal review of clinical outcomes and provided further information on additional commissioned areas of review including Deanery feedback from the recent visit to QEUH in February 2019. A Programme Board was recently established to coordinate the review of the QEUH/RHC. The internal review encompasses 3 workstreams: Review of the facilities and environmental issues, review of capacity and flow to assess position now against the original model and planning assumptions and review of clinical quality and outcomes. Committee members noted that the interim report focused on the latter. The internal report will be used to provide local assurance. In response to questions from the Committee in relation to cross over with the external review, Mr Crawford assured members that the team working on the external review will be updated with reports and the internal review will inform parts of the external review. Dr Armstrong informed Committee members that a review of estates was underway. Mr Jonathan Best will also carry out a review and prepare a report on whether the original capacity assumptions made remain adequate. Committee members reviewed the report and noted the following comments: • Administrative errors with the calculation of the indicators on page 5 of the report. Mr Crawford will check the calculations. • Include more detail on team working and highlight some of the different issues. Mr Crawford agreed to include more detail on SCI's and confirm if they were resolved • Broaden on tissue viability to drill down instances of pressure ulcers. Assurance was required that avoidable pressure ulcers were not occurring. In response to a question from the Committee on including accreditation of laboratories in the report, Mr Crawford agreed to discuss this with Dr Armstrong. Dr Armstrong informed Committee members that a letter was received from General Medical Council addressed to the Chairman in relation to the volume of admissions to Intermediate Assessment Unit (IAU) at the QEUH. This issue will be included in the report. The issues were mainly in relation to availability of beds and that the unit was very busy. Additional beds had been identified for use by IAU. The Committee noted that a review of the front door was carried out in March 2018 and no SCI's were noted. The report, and the full response from the Chairman, will be shared with the Committee in due course. The Committee was assured by the update provided that the internal review being carried out will offer an accurate account of developments. <u>NOTED</u>	**Mr Crawford** **Mr Crawford** **Mr Crawford**

		ACTION B
22.	**HEI INSPECTIONS – UPDATE REPORTS**	
	a) RAH INSPECTION	
	The Committee considered the paper 'Unannounced Healthcare Associated Infection (HAI) Inspection RAH 4th – 6th Dec 18 Progress Update' [Paper No 19/11a] presented by the Director of Nursing, Dr Margaret McGuire. The paper highlighted the requirements and recommendations from the report, detailed the action plan and progress of improvements being made. Dr McGuire informed the Committee that the post inspection 16 week ward and theatre action plans were submitted to Healthcare Improvement Scotland on 23rd April 2019. Following the recommendation of removal of bladeless fans, Dr McGuire informed the Committee that in the interim suitable bladed fans, which could be cleaned, have now been sourced. The issues identified with environmental cleanliness within ED have been rectified. The gap in cleaning staff has been resolved and a 24/7 cleaning service for ED was being maintained. Following the recommendation to review storage options, in particular the stacking of sterile trays, immediate action was taken to reorganise storage to allow additional storage for sterile trays. An alternative location to store less frequently used equipment was in the process of being identified. In response to questions from Committee members in relation to continuity of domestic services, staff levels and recruitment and retention of staff, Dr McGuire informed members that this was being addressed through the healthcare quality improvement strategy. The importance of staff feeling valued at work was recognised. Mrs Dorothy McErlean informed the Committee that the Staff Governance Committee was reviewing the cultural framework to address issues. In response to questions from Committee members in relation to the reporting of broken and fatigued equipment and current backlogs, Dr McGuire assured members that work was being carried out to address this. Dr McGuire assured members that staff were more aware of prompting when actions were outstanding and working in conjunction with the Estates team. Dr McGuire informed members that the Director of Facilities and Estates, Mr Tom Steele was considering ways to manage risk associated with ensuring adequate staffing. Chief Nurse for Paediatrics and Neonates, Ms Jennifer Rodgers, informed Committee members that a successful Learning for Excellence test had been carried out. The main aims were to improve staff morale and promote excellence. Reporting good pieces of work has been very positive and was improving performance. The Committee noted completed actions and the progress made. NOTED	

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	b) QEUH INSPECTION	
	The Committee considered the paper 'Unannounced Safety and Cleanliness Inspection QEUH (including Institute of Neurosciences and Royal Hospital for Children) 29th – 31st January 2019 Progress Update' [Paper No 19/11b] presented by the Director of Nursing, Dr Margaret McGuire. The paper highlighted the requirements and recommendations from the HIS report, and updates on further progress reports submitted to Healthcare Improvement Scotland (HIS) 12th April and 10th May. Dr McGuire informed the Committee that monthly update reports were being submitted to Healthcare Improvement Scotland, for onward submission to the Scottish Government. Following the recommendation to consider the use of red/amber/green indicators, these have been amended to include percentage and clear explanation of where points have been lost. In response to questions from Committee members about governance issues highlighted by the inspection, Dr Armstrong assured members that work was progressing to address these issues. A Built Environment Group was in the process of being created to provide oversight to three Sub-Groups which were theatres, ventilation and water. This group will be chaired by Director of Facilities and Estates, Mr Tom Steele. The Terms of Reference for the group were in the process of being drafted. Dr Armstrong reported that Mr Steele was also carrying out a review of all estates issues. Some concerns were noted by Committee members in relation to the timescale in addressing these issues. Ms Rodgers assured members that actions for the Royal Hospital for Children were complete within 4 weeks. Mr Donald Lyons requested that acronyms were explained in the document. Ms Brimelow thanked Dr McGuire for the assurance provided and noted the progress made and close scrutiny from the Scottish Government. The Committee expect a further report with a detailed action plan for addressing the outstanding governance issues to be presented in due course. The Director of Facilities and Estates will be invited to attend the meeting to provide an update on the report. NOTED	**Secretary**
23.	**PURSUING EXCELLENCE IN HEALTHCARE**	
	The Committee noted the paper 'Pursuing Excellence in Healthcare' [Paper No 19/12]. The Pursuing Excellence in Healthcare: NHS GGC Healthcare Quality Strategy has been revised in line with feedback received from the NHS Board on 19th February 2019, and was remitted to the Committee by the Board, for approval. The Committee noted the amendments made and were content to approve the Strategy.	

	APPROVED	
24.	**HAND HYGIENE AUDITS UPDATE**	
	The Committee considered the paper 'Update on Hand Hygiene Audits' [Paper No 19/13] presented by Dr Armstrong and Ms Rodgers, Chief Nurse, Paediatrics and Neonates. The paper provided additional information in relation to the Hand Hygiene Audits discussed at the Committee meeting in March 2019. Ms Rodgers assured members that hand hygiene audits were carried out routinely on a number of different levels. Committee members noted the two different percentage targets, one for opportunity and one for technique. Mrs Brimelow thanked Ms Rodgers for the assurance provided and the Committee were content to note the update. NOTED	
25.	**STROKE IMPROVEMENT PROGRAMME UPDATE**	
	The Committee considered the paper 'Stroke Improvement Programme Update' [Paper No 19/14] presented by Planning Manager, Mrs Pamela Ralphs on behalf of the Clyde Sector Director. The paper highlighted progress of the NHSGGC Stroke Improvement Plan. Mrs Ralphs highlighted the key points. Scanning targets changed in January 2019 from 95% access within 24 hours to achieving 90% within 12 hours of presenting. Following this the bundle performance had improved. Mrs Ralphs reported that there have been some continuing challenges in Royal Alexandra Hospital (RAH) and work had begun to review activity against the current bed model with a view to redesigning this within the sector. Mrs Ralphs provided an update on changes to the Acute Stroke Pathway for Inverclyde residents. The proposed pathway change would see QEUH take an average of 16 direct patient admissions per month from the Inverclyde area. To date, the changes have not yet been implemented and no timescale has been agreed to implement these. Discussions remain ongoing with the Scottish Ambulance Service to agree the pathway for the repatriation of patients. The front door responsibility target is 100% in 4 hours which is challenging. Mrs Ralphs reported that GG&C was achieving 85%. Staff training continued to be rolled out and exception reporting carried out. Dr Armstrong noted that positive progress has been made on the Stroke Improvement Plan. Work was ongoing with the TIA pathway and planning for Thrombectomy. A Standard Operating Procedure for Water Swallow has been drafted and will be approved by the Stroke Improvement Group. Mrs Ralphs agreed to circulate this to Committee members following approval. Following the redesign of the South Glasgow clinic, the process was still being	**Mrs Ralphs**

	embedded. There was local ambition to move to a 24 hour target to prevent/reduce incidences of strokes. In response to a question raised by the Committee regarding adequate staffing levels for INR to provide the service, Dr Armstrong informed members that the team were not at full compliment. There was discussion about ensuring thrombolysis pathways are clearer. For this reason, the lead clinician for stroke for Clyde was working with the Chief of Medicine and the Stroke Review Group to develop this pathway. Mrs Brimelow thanked Mrs Ralphs for the report and update. Committee members requested further updates on clinical input from Professor Keith Muir, SINAPSE Professor and Consultant Neurologist. The Committee members noted the significant work being carried out to improve quality, and noted the national work being carried out to develop a national stroke Thrombectomy service. NOTED	
26.	**UPDATE ON LEARNING STRATEGY FOR CHILD PROTECTION**	
	Ms Rodgers presented the paper 'Update on the Implementation of NHSGGC Child Protection Learning and Education Strategy 2019' [Paper 19/15] which provided an update on the development and implementation of a Child Protection Learning & Education Strategy (CPLES) for 2019, to be delivered by the Child Protection Service (CPS). The Strategy aims to deliver high quality learning opportunities that meet the needs of staff protecting children. Ms Rodgers reported that the learning strategy has been well received by medical and nursing teams. Between January 2019-March 2019, 629 members of staff have received face to face training. Sessions have been well received however releasing staff from their day to day role has been challenging. Work was taking place with CPS to develop a dynamic approach to delivery of training in order for staff to attend the training course. In response to Committee members questions seeking assurance that staff were being given the opportunity to attend training, Ms Rodgers informed members that training courses were available board wide. The courses were being delivered locally to allow more members of staff the opportunity to attend the course. The Committee noted the development and implementation of the Strategy however, the Committee requested a more detailed report on the Strategy and learning for the future. More detail was required on evaluation, in particular how the University West of Scotland (UWS) level 4/5 CP experts were being evaluated. NOTED	**Ms Rodgers**
27.	**EXTRACT FROM CORPORATE RISK REGISTER**	
	Mr Crawford presented the paper 'Extract from Corporate Risk Register' [Paper 19/16]	

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	The risk register identifies 5 key areas. Mr Ritchie sought assurance that the controls in place to mitigate the risk of failure to comply with recognised policies and procedures in relation to infection control were effective. The work done in relation to Peripheral Venous Catheter's (PVC) was recognised, however further actions were required. The Committee noted that nurses do remove cannulas as soon as it is no longer required, however they do not make the decision on whether the cannula is required. Nurses are encouraged to change cannulas as quickly as possible. Mr Crawford noted that more detail will be added regarding patient standards as this does not reflect current practice. Committee members noted that a Public Protection Forum has been established for Adult and Child Protection. This will help to ensure actions were joined up however members suggested that another item around adult protection should be added to the risk register. Committee members noted that Health and Social Care Partnerships (HSCP's) were involved in the formulation of the risk register. Ms Brimelow thanked Mr Crawford for the update. NOTED	
28.	**UPDATE ON HISTORICAL CHILD ABUSE INQUIRY**	
	Committee members noted the paper 'Scottish Child Abuse Inquiry – Lennox Castle Hospital [Paper 19/17] which provided the Committee with a further update of work undertaken in relation to the Scottish Child Abuse Inquiry. Sections A & B of the response were submitted to the Scottish Child Abuse Inquiry on 1st March 2019 and Sections C & D were submitted on 31st May 2019. Directors and senior Councillors reviewed section C & D prior to submission. In summary, the Committee were content to note the report and the submission of Sections C & D. NOTED	
29.	**BOARD CLINICAL GOVERNANCE FORUM**	
	The Committee considered the minute of the Board Clinical Governance Forum Meeting held on Monday 4th February 2019' [Paper No. BCGF (M)19/01] and Monday 8th April 2019 [Paper No. BCGF (M)19/02] In response to questions from Committee members in relation to Clinical Governance Support Unit (CGSU) staffing issues, Mr Crawford informed members that the high turnover of staff was mainly due to staff moving to promoted posts, out with NHSGG&C. Nine members of staff have recently moved on to promoted roles. The team use iMatters and have team and individual sessions to ensure awareness of any staff issues. No underlying issues have been highlighted. Committee members noted that Women and Children's (W&C) Services remain below the 70% target for completed actions from closed SCI's. This has been flagged and engagement has been made with W&C Services.	

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	Committee members noted positive reports were received from the Mental Health Welfare Commission visits. Members were assured that updates from the Mental Health Welfare Commission were visible through the Board Clinical Governance Forum minutes. Any concerns can be highlighted to members and drawn as an individual action. The Committee noted, as per the minute of Board Clinical Governance Forum of 8th April 2019, that there had been an increase in the number of solid organ donors in the period April to September 2018, compared with the same period of the previous year. However, concerns were raised regarding the below average performance in NHSGGC for SNOD (Specialist Nurse Organ Donation) presence when approaching families about organ donation. Mr Crawford advised that the Acute Clinical Governance Team were aware of this issue and had requested an update from Professor Rooney to the next meeting in August. Questions were raised about the most appropriate governance reporting route for organ donation matters, and Ms Vanhegan advised that this was a matter being considered as part of the recent review of governance. Mr Crawford added that the operational issues regarding organ donation remained within the remit of the Acute Clinical Governance, with Clinical and Care Governance Committee retaining oversight of this on behalf of the Board, via the Board Clinical Governance Forum. Ms Brimelow thanked Mr Crawford for the update. The Committee were content to note the minute. NOTED	
30.	**DATE OF NEXT MEETING**	
	Date: Tuesday 3rd September 2019 Venue: Boardroom, JB Russell House Time: 1.00pm The meeting concluded at 4.30pm.	

Whistleblowing Report
Step 3
Infection Control (case 9-2019/20)

1. Introduction

On 21 November 2019, Dr Penelope Redding, a retired Consultant Microbiologist, emailed a report to Ms Jennifer Haynes, Board Complaints Manager for NHS Greater Glasgow and Clyde (GGC), who supports the whistleblowing process. In her cover email, Dr Redding noted that the purpose of her report was to escalate concerns she had to Step 3 of the Whistleblowing Policy, meaning investigation by a Non-Executive Director of the Board. Dr Redding copied Ms Rona Sweeney, Non-Executive Director and Whistleblowing Champion at that time, into her email.

Within the report submitted, Dr Redding advised that she had followed Step 1 and 2 of the Whistleblowing Policy prior to her retirement, and now felt she had to pursue Step 3, following publicity in the media, regarding infection issues at the Royal Hospital for Children (RHC) and Queen Elizabeth University Hospital (QEUH). She believed there to be issues with the factual accuracy of statements issued by NHSGGC in relation to this matter, noting a particular patient's case which had featured in media stories, and also made reference to the culture in the Microbiology Department, and their involvement in Infection Control.

Given Dr Redding's desire to proceed with Step 3 of the Whistleblowing Policy, Mr Ian Ritchie, Non-Executive Director, investigated the concerns raised, with appropriate professional support from Mr William Edwards, Director of eHealth, experienced in investigating Step 2 whistleblowing cases.

2. Background

a. Previous whistleblowing concerns

Dr Redding advised that she had first raised concerns under Step 1 of the Whistleblowing Policy on 27 September 2017, regarding issues with the NHSGGC Infection Control structure. At this time, the concerns were brought to the attention of the Medical Director, Dr Jennifer Armstrong, who requested a Situation, Background, Assessment, Recommendation (SBAR) document was compiled, which it duly was, and was then discussed at a meeting convened specifically for the issues raised. This meeting took place on 4 October 2017, and was attended by a range of senior managerial and clinical colleagues. A 27 point Action Plan was created, to cover issues discussed at this meeting. These particular concerns, and the process by which they were dealt with, is described more fully in section 5b of this report.

On 8 February 2018, Dr Redding sent an email to Professor Linda de Caestecker, Director of Public Health, and named investigating Director within the Whistleblowing Policy, with concerns she wished to be considered under Step 2 of the Whistleblowing Policy. Within this email, Dr Redding made reference to the above noted SBAR and meeting, and also stated that on 6 October 2017, she had put in a formal request in relation to concerns about ventilation at the QEUH and RHC. Dr Redding confirmed in her 8 February 2018 email to Professor de Caestecker that she had only received a response recently, despite reminders, and that she did not think the response she received from Dr Teresa Inkster, Infection Control Doctor, satisfactorily answered her questions about ventilation in these hospitals. This was the reason Dr Redding wrote to Professor de Caestecker, and a Step 2 investigation was initiated under the Whistleblowing Policy.

The Step 2 Whistleblowing Report was completed in May 2018. It covered the specific questions around ventilation, and also some other concerns related to infection control – such as the sewage ingress in the neurosurgical theatres – which Dr Redding, and her colleague, Dr Christine Peters, Consultant Microbiologist – raised with Professor de Caestecker when they met with her as part of the whistleblowing process.

The initial concerns raised, followed by Steps 2 and 3, all noted issues about infection control. Within these, there was some overlap and escalation of issues, and other points that had not been raised in the previous step. For example, Step 3, as described above, noted concerns about issues in the media regarding the infection issues, that had not been raised at a previous stage. Other issues were a continuation, such as concerns over the chilled beam heating/cooling system throughout the hospital, which emerged on meeting with Dr Redding as part of the Step 3 investigation.

b. Meeting with Dr Redding on 4 December 2019

On initial receipt of the Step 3 correspondence, Dr Redding was invited to meet with Mr Ritchie and Mr Edwards, so that they could further understand the exact nature of her concerns, in order to be able to proceed with the investigation in a meaningful way. A meeting took place on 4 December 2019 (Ms Haynes was also present), when it was agreed that the issues to be considered were:

i. Factual accuracies in media statements regarding water testing;

ii. Issues with the new QEUH/RHC;

iii. Whether the plant room was tested for Cryptococcus;

iv. Concern about data being considered from HPS and HFS, which stated that infection rates in QEUH/RHC are reasonable and in line with other sites;

v. Culture and bullying issues within in Infection Control / Microbiology.

The following actions were also agreed at this meeting:

- Mr Ritchie and Mr Edwards were to investigate if supporting evidence existed around water testing being carried out in Summer 2017 and beyond;

- Mr Ritchie and Mr Edwards were to investigate if actions had been undertaken to address ventilation as a result of the SBAR submitted in 2017;

- Mr Ritchie and Mr Edwards were to gather further information around the plant room and associated testing, and review carried out relating to the reported pigeon excrement problems;

- Mr Ritchie and Mr Edwards felt it would be beneficial if Dr Redding was able to provide some further evidence for the issues she had raised if available, as this would allow a more detailed review to be carried out. It was also requested that if Dr Redding felt the discussion was productive, that that she encourage other current staff members she had mentioned, who she advised shared concerns, to come forward to commence a dialogue with Mr Ritchie and Mr Edwards.

Minutes of this meeting were taken, and shared with Dr Redding.

c. Meeting with Dr Redding on 29 January 2020

A further meeting took place on 29 January 2020, to report on progress so far. Present at this meeting were:

- Dr Redding;
- A friend of Dr Redding named Lorna McGregor, there for support;
- Mr Ritchie;
- Mr Edwards;
- Dr Scott Davidson, Deputy Medical Director;
- Mr Tom Steele, Director of Estates and Facilities;
- Ms Jennifer Haynes.

At this meeting, updates were provided on some of the key areas of concern (each issue will be covered in full in Section 4 of this report). Dr Redding was also asked what she felt would be a satisfactory outcome from the whistleblowing investigation, to which she replied she wished a written response to the points raised, and reassurance from evidence that issues had been addressed, and would not be repeated. There was also some discussion about accountability, the role and of the whistleblowing investigation, and the role of the Public Inquiry. At the conclusion of this meeting, it was agreed that:

- Dr Redding would be given copies of previous and the current action plan (from the SBAR submitted) – these were sent to Dr Redding on 23 January 2020 and 11 March 2020;

- A timeline would be sought of requests for water testing – this was sent to Dr Redding on 21 February 2020;

- A report would be prepared, which would refer to evidence, address each of the points made by Dr Redding, and would also make recommendations. This is the purpose of this report.

Minutes of this meeting were taken, and shared with Dr Redding.

3. Investigation

To complete this investigation, information was sought from a wide range of sources, in order to answer the points Dr Redding raised. Many of the documents looked at are referenced throughout this report, but a full list can be provided if required.

4. Findings

i. Factual accuracies in media statements regarding water testing

Dr Redding noted that she was raising concerns regarding the factual accuracy of NHSGGC statements in stories she had heard in the media about infection issues at the QEUH and RHC.

These concerns specifically related to water testing. Dr Redding described that one of her clinical colleagues had explicitly and repeatedly asked for the water to be tested in Summer 2017. Dr Redding then heard of a particular patient case in the media, and the link with water related infection, and described hearing NHSGGC's response that water testing had not been necessary.

To address this issue, a timeline of water testing was reviewed, and confirmed that the water was tested in 2017, at the point of time in question. There were 661 water tests overall, and 118 in September 2017 which looked for Stenotrophomonas, which is the bacteria related to the water that has been the subject of many of the media reports. The Stenotrophomonas tests were undertaken at the request of Infection Control Doctors, and the results confirmed that Stenotrophomonas was not present in the water samples.

The media reports in 2019, which were the source of Dr Redding's concern, noted lines such as:

> *NHS Greater Glasgow and Clyde (NHSGGC) has insisted it was impossible to determine the source of [redacted]'s infection because there was no requirement to test the water supply at the time.*

It is extremely regrettable that media lines imply that NHSGGC did not test the water for Stenotrophomonas at the time in question. Although it is true there was no requirement to test the water for particular types of bacteria, this was requested and acted upon in 2017, and Stenotrophomonas was not found. The aforementioned timeline for water testing was sent to Dr Redding on 21 February 2020.

ii. Issues with the new QEUH/RHC

Much of this point relates to the issues raised at Step 2 of the Whistleblowing Policy, which were investigated by Professor de Caestecker.

Dr Redding made reference to concerns about the number of air changes within rooms, particularly for immunocompromised patients. The Scottish hospital building note recommends 6 air changes per hour. However, the Infection Control Team considered that the additional risk to patients in standard accommodation is negligible, as 3 air changes brings contamination down to 5% and it is single accommodation. There are now alternative pathways in place for very high risk pathogens such as MERS (Middle East Respiratory Syndrome) or MDR-TB (Multi Drug Resistant Tuberculosis). The risk in aerosol generating procedures is reduced by advising to keep FFP masks on whilst in the room and for a period of time after the end of the procedure. 1 hour normally, but extended to 2 hours in QEUH/RHC on the basis of the SBAR that was submitted.

The most recent iteration of the Action Plan (which is a live document) was dated February 2019, and was sent to Dr Redding during the Step 3 whistleblowing investigation. Dr Redding noted specific concerns about item 15: 'Microbiologists do not have the information to advise clinical staff where to put immunocompromised patients'. As part of the investigation into the concerns, a patient placement document for haematology and airborne infections was reviewed, which gives very clear advice on what rooms (broken down by room number and beds) are suitable for what type of patients, and includes whether there is a HEPA filter, the number of air change and the air pressure. This document is on the Infection Prevention and Control Website, so is widely available.

The position in January 2019, as noted within the Action Plan, was 'Guidance has been provided to microbiologists and clinicians about which rooms were suitable for which patients in relation to infection control' – this refers to the aforementioned patient placement document. Whilst it is noted that Dr Redding is concerned, it has to be taken into consideration that she is not a practicing Microbiologist within NHSGGC, and therefore cannot comment from experience on current communications and arrangements, of which she does not have first-hand knowledge. From this investigation, there is no evidence to suggest that microbiologists or clinicians do not know which rooms are suitable for which patients, and no current member of staff has raised this as a concern.

Dr Redding raised concerns about the chilled beams within the RHC and QEUH during the course of the communications with her as part of this whistleblowing case. At the meeting on 29 January 2020, Dr Redding described concerns that the chilled beam system had a potential link to environmental infections. An excerpt from the minutes is noted below:

> *TS (Tom Steele) confirmed that chilled beams were a recognised technology that could be deployed in a health care setting, and this was confirmed in guidance. TS further noted that there was more limited guidance in deploying the technology, as the more air you push over a chilled beam device, the less the efficacy. This was a particular issue in the extreme weather conditions in Summer 2018. A number of sensors had therefore been deployed, and the control system for the chilled beams was remapped. Terminal devices were a push fit, and these were replaced with a mechanical fit. This was a recommendation of the IMT.*
>
> *TS confirmed that the newly refurbished Ward 2A would not have chilled beams. This was not a requirement, but was being done to ensure every possible measure was being taken for high risk patients.*

In addition, as part of the investigation, Dr Redding was sent an email on 7 February 2020 to confirm that based on Scottish Government guidance (SHTM 03-01, 2014), it appeared to be the case that active chilled beams are acceptable, as the re-circulation is only present within the one space, and is not being transported to different areas within the hospital, as found in central plant re-circulation.

iii. Whether the plant room was tested for Cryptococcus

Dr Redding explained that she was explicitly asking whether the plant room was tested for Crypococcus prior to being cleaned, or only after. Mr Steele answered this question in full at the meeting on 29 January 2020. Material (pigeon excrement) taken from the floor prior to cleaning was sampled, but there had not been air sampling. Air samples continue to be tested extensively, both internally and externally.

iv. Concern about data being considered from HPS and HFS, which states that infection rates in QEUH/RHC are reasonable and in line with other sites.

From the evidence reviewed as part of this investigation, including data sets of infection rates, there is no evidence that the Board had presented false data, and all relevant data was shared. The infection issues particularly related to the RHC, and most specifically, paediatric haemato-oncology patients, who, very unfortunately, because of their conditions and treatment, are immunosuppressed, and more prone to infection. When compared to the two other Children's Hospitals in Scotland, while the RHC did have a higher rate of positive blood cultures for environmental pathogens, there was no difference in the rate of infections for the gram negative or environmental organisms.

All infection control issues were appropriately reported and led to the formation of both Problem Assessment Groups and Incident Management Teams.

This is an issue that will undoubtedly be under scrutiny by the Public Inquiry.

i. Culture / bullying issues within Infection Control / Microbiology

This point related to allegations around bullying within the Microbiology Department, which were discussed in detail with Dr Redding at both the December 2019 and January 2020

meetings. This was a very concerning matter, as a culture of openness and respect is vital in any organisation, but particularly in a health care setting, where patient care is delivered.

Rather than investigate these concerns as part of the whistleblowing process, it was felt a more thorough and detailed approach may be a more useful way forward. This should take a comprehensive approach in reaching out to all those within the department. This was discussed with Dr Redding during the meeting on 29 January 2020, and then followed up via email with her on 17 February 2020, with a message from Mr Ritchie that read:

> *As promised, I have had a conversation with Professor Bain about the whistleblowing process regarding the concerns you raised some years ago. I also spoke to her about the topic of bullying that you raised.*
>
> *Prof Bain explained to me that aside from her investigation of the infection control systems, her work has revealed some concerns generally about teamwork and relationships more widely in Microbiology and Infection Control in the Health Board. She plans to get some external advice on the problem which she believes will be more effective in the long run at addressing many of the concerns that you have raised.*
>
> *As you know the Scottish Government have escalated the Board to Level 4 and have provided additional support so that these questions can be dealt with timeously. I hope that will assure you that the answers you seek will be available soon.*
>
> *If that is not acceptable, then there are established processes within the Board's policies for dealing with bullying. However, I personally feel that the approach being taken by Prof Bain is more likely to be ultimately successful in ensuring that Infection Control and Microbiology are ultimately high performing teams that contribute to patient safety.*
>
> *I suspect that that lies at the bottom of your concerns and why you took the difficult step of beginning the whistleblowing process.*
>
> *I know that William Edwards has been working hard to acquire the information that we agreed should be available to you at our last meeting. I hope the information I have provided gives you some more assurance that your concerns are being taken very seriously.*

There was also discussion at the meeting on 29 January 2020 with Dr Redding regarding bullying. It was emphasised that there are organisational processes around how we deal with such issues in a formal sense, but that these could only be utilised if those affected come forward.

Dr Redding made several references to members of current staff feeling similarly to her, with regards to culture and atmosphere within the Microbiology Department. Mr Ritchie and Mr Edwards noted that they would welcome the view of others if they wished to come forward, and also raise concerns. Whilst a bigger exercise will be undertaken, as described above, to do some focused work on this area, it would not have been appropriate in the context of this investigation to pursue individuals, asking them if they wished to add their concerns to the whistleblowing, as that is a decision that only they could make, and would need to do so of their own accord, rather than be asked. Mr Ritchie and Mr Edwards did, however, on several occasions, clearly covey to Dr Redding that they welcomed the views of others if they wished

to express concerns, and that they would be treated sensitively, with dignity and respect if they did so. This investigation can only consider Dr Redding's concerns, as no other member of the team came forward.

There was another whistleblowing process (raised anonymously), concluded in December 2019 (a Step 2, whereby the investigation was carried out by Professor de Caestecker, and Ms Barbara Ann Nelson, Director of Workforce in NHS Fife, who was brought in to provide an impartial perspective, which looked into issues related to infection control concerns, specifically around the Incident Management Team set up to deal with the infection situation linked to the environment in paediatric haemato-oncology. This also considered relationships, and a clear finding was a divergence of views, and at times, different opinions were not expressed in a professional or respectful manner. A number of staff interviews were undertaken as part of that whistleblowing investigation, and in particular, the behaviour of one individual within the Microbiology Team came through as a recurring theme. That individual was described as aggressive and confrontational, having a consequential impact on the culture within the Microbiology Team. Given that Dr Redding has also described team dynamics as an issue within the department, this could be a contributing factor to both culture, and to Dr Redding's concerns regarding involvement with individuals within Microbiology.

5. Other issues

a. Concerns of others

As alluded to earlier in this report, in the meetings with Dr Redding, she described current members of staff within the Microbiology Team having concerns of a similar nature to her. Dr Redding was encouraged to ask those acquaintances to make contact with Mr Ritchie and Mr Edwards, and reassured that any concerns would be dealt with in confidence, and with respect. No current members of staff contacted Mr Ritchie or Mr Edwards.

b. Step 1 Whistleblowing

Although not the main subject of the Step 3 whistleblowing concerns, Dr Redding raised concerns throughout the investigation regarding the original concerns raised in 2017, and whether these constituted Step 1 of the Whistleblowing Policy. Dr Redding was very clear that she had presented these concerns as Step 1 under the Whistleblowing Policy.

Mr Ritchie and Mr Edwards requested that Dr Redding provide details, for the record, that the concerns had been raised formally within Dr Redding's management structure as a Step 1 under the Whistleblowing Policy, although Dr Redding did note in her submission of the Step 3 that she did not have access to the documents linked to Step 1 or 2. However, Mr Ritchie and Mr Edwards also reassured Dr Redding that the end result would have undoubtedly been the same: i.e. the meeting and actions to address the multi-facetted concerns raised by Drs Redding, Peters and [redacted]. This is because Step 1 of the Whistleblowing Policy notes that this stage is for informal review of matters which have the potential to be resolved with normal managerial action.

In respect of whether these concerns constituted Step 1 of the Whistleblowing Policy, a thorough review of relevant documents and correspondence has been undertaken. On this review, emails were found from Dr Redding on 27th September 2017 where Dr Redding outlined that she:

> *"would like to avoid going to stage 2 of the GG&C Whistle Blowing policy. I need to be sure that the infection control concerns of several consultant microbiologists are understood by the senior infection control management*

team. This obviously, includes the Medical Directors with responsibility for Clinical Governance"

It is evident from this review that Dr Armstrong was keen to act immediately on the issues raised, which is why she requested an SBAR to be undertaken by Drs Redding, Peters and [redacted] and, as previously noted in this report, convened a meeting on 4 October 2017 to discuss the issues, which was attended by multidisciplinary senior colleagues. From this, all group attendees outlined actions, and Dr Armstrong asked staff to progress with the Action Plan, and to ensure it was progressed through a managerial and governance process, namely by taking the Action Plan to the Clinical Care and Governance Committee of the Board, so there was appropriate and high level reporting and scrutiny. The concerns raised were considered by the Clinical and Care Governance Committee in December 2017. These actions are consistent with Step 1 of the Whistleblowing Policy, with the relevant actions designed to address the concerns.

On 4th January 2018, Dr Redding wrote to Dr Armstrong, Dr Rachel Green (Chief of Medicine for Diagnostics), Dr Brian Jones (Head of Service within Diagnostics, and also covering the Lead Infection Control Doctor's duties whilst she was on sick leave at the time) and Mr Tom Walsh (Infection Control Manager at the time) and noted that she was trying to decide whether or not to escalate her concerns to Step 2 of the Whistleblowing Policy, as she outlined:

"I am trying to decide whether or not I need to escalate my concerns to stage 2 of the whistle blowing policy. I feel that more progress should have been made by now. It is possible that I am unaware of improvements that have been made.'

Mr Walsh replied to Dr Redding on 9 January 2018, and there were emails back and forth thereafter on progress with the Action Plan.

The updated Action Plan was taken through the Clinical and Care Governance Committee again in March 2019, by the Lead Infection Control Doctor, Dr Teresa Inkster, at that time. An extract of the discussion from the minutes of the meeting that took place is noted below, and is the response when the committee asked if colleagues were content with the overall position:

Mr Ritchie asked if colleagues were reassured by the actions that had been taken to address the issues and if there were any further concerns raised in relation to recent events. Dr Inkster advised that one colleague had since retired; other colleagues had not raised any further issues with her"

Whilst it would have made no material difference to how the concerns were handled or the outcome from that, it is worthy of note that there is no requirement in the current Whistleblowing Policy for Steps 1-3 to be completed in sequence (a whistleblowing concern may go straight to Step 2 or 3, without any need for the previous Step/s to have been completed in the first instance). Acknowledging mention of whistleblowing in the subsequent emails referred to above, it may have been useful if clarity had been sought at the time, if it had been the intention that the Whistleblowing Policy be used, given the lack of explicit written reference to raising the original concerns under the auspices of this Policy. However, this was arguably implied given the references to escalation to Step 2. It is therefore unfortunate that there appears to have been confusion in this area, and whilst there is no evidence of any ill intent or a lack of willingness to address the issues (given the SBAR, meeting and Action Plan), it has, retrospectively, caused avoidable concern over how the issues were handled.

There are new National Standards for Whistleblowing, produced by the Scottish Public Services Ombudsman (who will also become the Independent National Whistleblowing Officer

for Scotland). These were due to 'go live' in July 2020, however, this will be delayed due to the COVID-19 pandemic. As part of the action plan that will be produced to ensure NHSGGC is fully compliant with the new standards, the learning from this particular situation will be addressed. In particular, there will regularly be scenarios where staff will take concerns to line managers, and have no intention or desire to whistleblow. There will be other occasions where a member of staff will raise a concern with a line manager, and are doing this under the current Step 1 of the Whistleblowing Policy. A recommendation around this matter as a result of the learning from this case will be included at the end of this report.

In addition to this, Dr Redding raised concern about Board papers stating that whistleblowing policy had not been followed. This was in relation to a separate case, and was not related to the concerns that Dr Redding had raised following the recognised Whistleblowing process within NHSGGC. Dr Redding was reassured of this in an email dated 11 March 2020.

6. Conclusion

The subject matter of the concerns raised by Dr Redding is clearly vitally important. This refers not only to the infection control points, which directly affect patients, but also to issues relating to process, culture and bullying. These too, can affect patient care. Dr Redding was thanked by Mr Ritchie and Mr Edwards for her courage in bringing her concerns forward, especially as she made clear that these matters had impacted her significantly, and that her motivation was patient safety.

Within the findings of this report, detail has been provided on all points of concern and on the outcome of the investigation. From this, there are areas where lessons can be learned, particularly around communication. When it is not done effectively, it can lead to loss of trust. Similarly, the importance of effective working relationships was highlighted as central to ensuring safe and effective delivery of services. Reports of bullying and poor culture were hugely worrying. It is essential that work is undertaken to ascertain if this is a concern shared by current members of staff in Infection Control and Microbiology. If it is, action must be taken to remedy the situation.

It should be noted that much of the clarification sought and information shared has, to a degree, been covered in the 27 point action plan. Feedback from the external review on this action plan and its appropriateness in responding to the concerns raised in 2017 would be most useful. This may offer independent closure to Dr Redding.

In addition, Professor Bain's initiatives to work with the current team is important, as the organisation's risk appetite, and feeling of continued improvement works, needs to be gauged by feedback and dialogue from those currently working in the system, given that we aspire to be a learning organisation.

7. Recommendations

	Issue	Person/s Responsible	Due date
1	Review of culture and team working within Microbiology	Marion Bain	October 2020
2	Feedback the issues regarding media lines to the Director of Communications, to allow for reflection and learning	Jen Haynes / Sandra Bustillo	May 2020
3	Use the learning from this case to inform the action plan to implement the new National Whistleblowing Standards in NHSGGC.	Jen Haynes / Elaine Vanhegan	TBC – National Whistleblowing Standards implementation date postponed due to COVID-19 pandemic

Mr Ian Ritchie
Non-Executive Director

Mr William Edwards
Director of eHealth

May 2020

STEP 3 Whistle blow Greater Glasgow and Clyde

I believe that a GGC Board member or members have attempted to cover up the formal whistleblowing process which was started in September 2017. I am using Step 3 of the whistleblowing policy as an ex-employee to address this.

Over the past weeks it has become clear that there has been an attempt to cover up the fact that in September 2017 three consultants, having failed to have the concerns addressed by following the normal management channels, took the difficult decision to go to Step 1 of the GGC whistleblowing policy and also to cover up Step 2. Some might take the view that raising matters with the board executives since 2015 and then CEO was de facto Step 1 or Step 2 although this was not formalised as such.

There are several reasons why this is my belief that there has been an attempt to cover up the whistle blow:

1. The minutes of the meeting to discuss the SBAR, we had been asked for, when we raised Step 1 of the whistle blow in September 2017 made no mention in the meeting relating to a whistle blow.
2. The Action Plan written following the meeting did not mention that the concerns had been raised as part of a whistle blow.
3. Minutes of Board and Clinical Governance meetings given to me by the Board never mentioned that concerns had been raised as part of a whistle blow.
4. When I felt the need to go to Step 3 of the whistle blow, I had to vigorously defend and prove the fact that myself and two colleagues had started Step 1 of a whistle blow in September 2017. Two of us went to Step 2 in February 2018. It was clear that the executive and non-executive member of the Board had been briefed that a whistle blow had not been raised. This was despite the fact, that I had made it clear that Step 3 was a follow on from both Step 1 and Step 2. I am waiting for the formal confirmation that the Board has accepted the WB policy was followed.
5. Finalising my evidence, the Independent Review they asked me to provide the details of the whistle blow procedure that had been followed. GGC appears to have informed the Review that the whistle blowing process had not been followed.
6. When I was interviewed by the Review the whistle blowers were criticised. I think the definition of a whistle blower is open for debate. It is the responsibility of GGC to support whistle blowers to follow the whistleblowing process and not use any technical failures to cover up any intent to whistle blow. There has never been a formal acknowledgment by the Board that this WB process was started.
7. However, I believe the process I followed with others complied with the policy. This is the route that should always be followed before going outside the organisation. This is why, I followed the three steps of the GGC policy, after the normal management lines of reporting had failed. Senior managers and Board members had been alerted weeks prior to both Step 1 and Step 2 that this was a route we were considering. This was to give them the opportunity to address the concerns.

I feel it is important to remind ourselves that the function of whistleblowing is to afford protection to employees when raising matters of concern, including those relating to patient safety, and that we should not allow the process to mask the gravity of substantive issues raised and the effectiveness of responses.

Process is of course relevant and particularly so in a culture that operates in a climate of fear I feel there are some questions that need to be addressed:

1. **The organisational culture.** Is this one in which employees either fear or are prevented from raising concerns? Do employees feel they can raise issues freely or will they only do so in the belief they will be afforded statutory whistleblowing protection? Does QEUH need to change its culture?

2. **Effectiveness of the current policy.** Is the existing policy and procedure on whistleblowing fit for purpose? Does it lead to confusion? What is its true purpose and does its design match that? To what extent have whistle-blowers using the process been surveyed and asked for improvement suggestions?

3. **What distinction is made when using different channels for raising concerns** – eg, informally raising concerns with senior managers or executives (verbally or in writing), SBARs, Risk Register, W/B Steps 1,2 or 3? Is there a danger that categorisation based on HOW concerns are raised internally, might lead to opportunity for cover up, inaction or an attempt to deny individuals their statutory whistleblowing protection rights?

   To what extent have whistle-blowers' concerns been raised using alternative processes and thus not been reported or escalated for Board visibility?
   Should a register be kept for all patient safety concerns similar to the idea behind reporting of accidents and near misses with Board level visibility?

4. **Effectiveness.** On raising concerns, either through the formal whistleblowing process or otherwise, are individuals' concerns listened to and acted upon, then given feedback, with evidence provided that their concerns are being treated seriously? If the concerns cannot be fully addressed to their satisfaction (as may often be the case due to operational, budgetary or other constraints) should issues automatically be escalated to a board member without any requirement for individuals themselves to do so?

In relation to the whistle blow started in September 2017 by myself and others, was everyone, within the GGC Board who should have known, informed that the issues raised and those in the Action Plan were part of a whistleblowing process? I was told that the February 2019 Action Plan, I was sent as part as Step 3, was the most up to date version. (I did ask if this really was the most up to date version, I would have expected it to be updated regularly as the actions were completed).

I believe there was an intentional attempt to cover up the whistle blow by not recording it in any of the Board minutes I have read?

Dr de Caesteker, as part of Step 2, did say her response was for Step 2. I still have that letter. This appears not to be widely acknowledged by the Board.

Neither William Edwards, Ian Ritchie nor the Review understood that a formal whistle blowing process had been followed. I can only assume this means that the official view of the Board is that it did not happen.

Is there a clear reporting structure to ensure the Board is fully briefed on any whistleblowing process that has been raised through the policy? Surely a whistle blow that results in an Action Plan being discussed at the Board Clinical Governance meetings should make it clear that it is linked to a whistle blow process.

The outcome I would like is an assurance that all GGC Board members have been informed that a formal whistle blowing process was started in September 2017 and that this resulted in an Action Plan last updated in February 2019, which appears still to be in place.

As this is a whistle blow against Board members, it should not be investigated by any board members who have had any previous knowledge of the earlier whistle blow or related investigations.

Penelope Redding

20.4.2020

Extracts from Whistleblowing Report

Step3

Infection Control (case 9-2019/20)

These are the extracts that I believe support the fact that a Step 1 whistle blow was raised in 2017.

2 Background

a. Previous whistleblowing concerns

Dr Redding advised that she had first raised concerns under Step 1 of the whistleblowing policy on 27th September 2017---

This fact was undisputed in the report.

However an email, sent (23rd January 2020 from Jennifer Haynes)during the process of investigating Step 3, said ' In relation to previous concerns, and following the SBAR submitted by yourself and colleagues, while not viewed as stage 1 whistlleblowing, the concerns were actioned by the introduction of a 27 point action plan which was subsequently discussed at various governance committees including the Clinical and Care Governance Committee of the Board in December 2017'. I believe that this is what William Edwards and Ian Ritchie had been told.

5. Other issues

b. Step 1 Whistleblowing

----The concerns raised were considered by the Clinical and Care Governance Committee in December 2017. These actions are consistent with Step 1 of the Whistleblowing Policy, with the relevant actions designed to address the concerns.

If the fact that we raised a whistle blow is undisputed and the Board agree that they took actions consistent with the whistleblowing policy, why were others told that a Step 1 had not been raised. This included the Independent Review.

I believe that the only reason not to acknowledge that this was a whistle blow is to cover it up.

Penelope Redding 15/5/20

Process followed at the start of whistleblowing process in 2017

Background

Problems arising about numerous issues relating to infection control and patient safety had been raised through the normal management reporting lines. Some concerns were not being resolved or progressed .

In summer 2017 three consultant microbiologists felt they had to consider the difficult decision to start the whistle blowing process. The whistleblowing policy was carefully assessed and there was discussion about whether to start with Step 1 or go straight to Step 2 or even Step 3. GGC senior management had been alerted that this was a route that was being considered. The hope was that this alert would enable actions to be taken to prevent the whistleblowing process being started. Unfortunately nothing changed and the difficult decision was taken to start the whistleblowing process from the beginning, Step 1.

Dr Redding, Dr Peters and [redacted] put the concerns to Dr Armstrong, as medical director with responsibility for infection control. This was following Step 1 instructions in the whistleblowing policy. We believe that our concerns fulfilled some of the criteria described in the policy; patient safety, unacceptable standard of patient/clinical care, disregard for legislation.

Dr Redding wrote to Dr Armstrong just before going on annual leave. She firmly believes she did this following the Step 1 policy in September 2017 on behalf of herself, Dr Peters and [redacted]. While she was on annual leave DR Peters called her to say that there would be a meeting the day after her return from annual leave and Dr Armstrong had asked for the concerns to be put in an SBAR. The SBAR was sent the evening before the meeting on the 4th October.

Dr Redding, Dr Peters and [redacted] sat at this meeting with whistle blowing policy siting on the table next to them. This was to ensure that it could be referred to if the need arose. All three consultants believe they were taking part in Step 1 of the whistleblowing process, which was believed to be the correct process for raising concerns when normal process had not brought satisfaction.

At the very beginning of the decision making process whether to start the whistleblowing policy or not, we were clear that the policy had to be followed to the letter so that no confusion could arise in the future and there could be a distraction from the issues by having to argue that the policy was not followed. We believe that Step 1 was started and this resulted in the request for an SBAR .

Dr Redding no longer has access to her emails to confirm exactly what she did, but she firmly believes she started the whistleblowing process as described in the policy, and after taking advice from HR and the Clinical Director.

When Dr Redding and Dr Peters started Step 2 they firmly believed that this was an escalation of Step 1 and this is what they said to Dr de Caesteker.

Dr P J Redding Dr C Peters May 2020

NHS Greater Glasgow & Clyde	
Meeting:	**Staff Governance Committee**
Date of Meeting:	**Thursday 15 April 2021**
Purpose of Paper:	**For discussion**
Classification:	**Board Official Sensitive**
Sponsoring Director:	**Mr Charles Vincent, Whistleblowing Champion and Non Executive Director**

Whistleblowing Review

1. Recommendation

1.1 The Staff Governance Committee is asked to:

- note the findings and recommendations of the Review which are set out in the attached paper, and endorse the recommendations made.
- approve the paper to go to the NHSGGC Board for consideration and approval, at its meeting on 27th April 2021.

2. Purpose of Paper

2.1 The launch of the National Whistleblowing Standards in April 2021 provided NHS Greater Glasgow and Clyde with an opportunity to update and further develop the Whistleblowing Policy.

2.2 In support of this, the Staff Governance Committee commissioned a retrospective 3-year Review of individual and management experience of Whistleblowing to inform the development of the Policy. The Terms of Reference for the Review were set out in a Paper approved at the Staff Governance Committee on 18th August 2020.

2.3 The Review objectives were to consider the current approach to Whistleblowing in NHS Greater Glasgow and Clyde and identify any actions required to ensure the ongoing effectiveness of the existing systems and processes, including any that will also improve the implementation of the new Whistleblowing Standards for NHS Scotland.

2.4 The attached paper outlines the findings of the Review and the recommendations made.

2.5 This Review and recommendations will be further considered at the NHSGGC Board on 27th April 2021.

3. Key Issues to be considered

3.1 The Review identified eight headline recommendations that are designed to improve the Whistleblowing process within NHS Greater Glasgow and Clyde.

3.2 The recommendations are set out in full in Section 6 of the paper. Recommendation 6.8 was approved in November 2020 by the Staff Governance Committee as an interim recommendation and has already been implemented.

Any Patient Safety /Patient Experience Issues – Yes

Any Financial Implications from this Paper – Yes
The review includes recommendations that are expected to increase whistleblowing workload, which could have cost implications to be determined by the CMT as part of implementation.

Any Staffing Implications from this Paper – Yes
The review includes recommendations that are expected to increase whistleblowing workload, which could have cost implications to be determined by the CMT as part of implementation.

Any Equality Implications from this Paper – No

Any Health Inequalities Implications from this Paper – N/A

Has a Risk Assessment been carried out for this issue? If yes, please detail the outcome. N/A

Highlight the Corporate Plan priorities to which your paper relates - Better workplace

Author: Diana Hudson
Date: 31 March 2021

1. Contents

2. Executive Summary

Introduction:

The launch of the National Whistleblowing Standards in April 2021 provided NHSGGC with an opportunity to update and further develop the Whistleblowing Policy.

In support of this, the Staff Governance Committee commissioned a retrospective 3-year Review of individual and Management experience of Whistleblowing to inform the development of the Policy.

The Review has been supported by the Board's Executive Team. Their high level of engagement and acceptance of the Review's Draft Recommendations is helpful. This will ensure the early and effective implementation of improvement in the Whistleblowing Policy and the Whistleblowing experience.

Effective Management of the Whistleblowing Process:

Feedback from those involved in the Review established that the Whistleblowing experience can be a time of significant stress and can result in negative perceptions of the workplace. It is unlikely that this can be easily eradicated, but good Governance arrangements and effective management can be combined to ensure that the act and outcome of Whistleblowing can make a positive contribution to continuous improvement. The Recommendations in the Whistleblowing Review focus on achieving this.

Members of staff directly involved in administration of the Whistleblowing process and staff leading investigations of Whistleblowing cases are clearly focussed on the diligent and effective discharge of their associated responsibilities. In the interviews conducted in the course of the Review, much evidence was presented which demonstrated the complexity and multifaceted nature of Whistleblowing concerns.

Classification of Cases:

It became clear that it would be greatly helpful to introduce and communicate the use of clear guidance on the classification of cases to ensure that the most appropriate NHSGGC Policy and Procedure is adopted in the management and disposal of each case. Classification categories will include Whistleblowing, Grievance, Dignity at Work and Disputes.

Importance of the Step 1 Process:

The Review recognises the important value to both the Whistleblower and NHSGGC through increased use of Step 1 investigations in the Whistleblowing Process. The opportunity to fully investigate, engage relevant colleagues, and communicate with all concerned should be optimised in the context of close management proximity to the subject of the Whistleblowing concerns.

This approach provides the valuable opportunity for examination and consideration of the concerns raised with local understanding of context.

Local skills, experience and capacity to conduct such investigations are essential in the effective, responsive and timely management of investigations. Effective communication and engagement with staff are also particularly important. A key learning drawn from staff interviews is that staff would welcome a clear understanding of the issues to be discussed prior to their attendance of a Whistleblowing interview.

The Whistleblowing Policy must provide clarity on delegated management responsibilities for investigation and decision-making at each Step of the investigatory process. Decisions and the rationale for decisions must be confirmed in writing and recorded on file for potential future reference.

Performance Management of Whistleblowing Cases:

The logging and tracking of Whistleblowing cases must be well-managed. Performance management of the implementation of Recommendations following investigation should be improved. At all stages of Whistleblowing, ownership must be established for decisions taken; and they must be documented with clear arrangements established to ensure follow-through on actions and outcomes.

Recommendations from Whistleblowing Case Reports at any Stage must be recorded on a Corporate Database and be held subject to performance management until complete.

The National Whistleblowing Standards:

The introduction of the National Whistleblowing Standards in April 2021 provides an opportunity to promote and refresh knowledge and awareness of the NHSGGC Whistleblowing Policy throughout the organisation. This must include awareness of the (new) 2 Step internal process and the increasing importance of effective utilisation of Step 1. Education will be important to promote Step 1 investigation and understanding how it can be used to resolve significant disagreements in a formal, structured way locally within a Department. Managers must also be made more aware of the legal requirement to record Whistleblowing cases.

There would be real benefit to NHSGGC in the production and wide distribution of a clear and comprehensive Whistleblowing Flowchart to provide advice, support and understanding of the comprehensive process.

Support for those Involved:

Finally, it is important for NHSGGC to recognise and provide appropriate levels of psychological and practical support for all staff involved in Whistleblowing processes. Acceptance of support should be widely encouraged for all. The impact on both Whistleblowers and Managers was found to be significant, and while New Standards put in specific supports for Whistleblowers by way of Confidential Contacts, no additional support for Managers is included.

3. Introduction

The Staff Governance Committee commissioned the NHSGGC Non-Executive Whistleblowing Champion to conduct a Review into Whistleblowing. The Terms of Reference for the Review were set out in a Paper approved at the Board's Staff Governance Committee on 18th August 2020.

The Review Objectives were:

> To consider the current approach to Whistleblowing in NHS Greater Glasgow and Clyde and identify any actions required to ensure the ongoing effectiveness of the existing systems and processes, including any that will also improve the implementation of the new Whistleblowing Standards for NHS Scotland.

The Review undertook a retrospective assessment of experiences of staff participating in NHSGGC's Whistleblowing processes between 1st April 2017 and 31st March 2020.

The Review did not conduct retrospective or refreshed Case Reviews but had a clear focus on the procedures, processes and the practical experiences of involvement in Whistleblowing for all staff who volunteered to participate.

The Review was also asked to consider and report on accuracy of historical classification of Whistleblowing cases.

The key areas investigated in the Review include:

- A review of historical cases within the reference period which were not categorised as Whistleblowing, and formation of a view on the reasonableness of such decisions;
- Staff awareness of the Whistleblowing Process;
- The quality and effectiveness of investigations and reporting of Whistleblowing cases;
- Experience of colleagues (throughout NHSGGC) who were involved in the Whistleblowing cases;
- Implementation of Case Recommendations generated from the Whistleblowing investigations.
- Assessment of whether all cases not classified as Whistleblowing have a logged rationale providing an explanation for classification as such. *

***Note:** No additional work should be generated by enactment of this approach. The introduction of a single Whistleblowing Log will reduce and simplify recordkeeping. Indeed, a Recommendation on this sensible, important development was approved in October 2020 and has been implemented.

The Review was led by Charles Vincent, Non-Executive Director and Whistleblowing Champion, NHS Greater Glasgow and Clyde, with professional support from Kenneth Small, (formerly) Director of Human Resources, NHS Lanarkshire.

Grateful thanks from the Review Team are due to all staff and former staff of NHS Greater Glasgow and Clyde who volunteered to willingly and helpfully participate in the work of the Review; and to Jennifer Haynes, Corporate Services Manager – Governance (formerly Board Complaints Manager), Elaine Vanhegan, Head of Board Administration and Corporate Governance, Emma Cardenas, Admin Assistant to Ms Haynes, and Gail Smith, Corporate Operational Support Manager, for their advice, support and hard work.

4. Methodology

Through helpful access to the NHSGGC Whistleblowing Database, the Review Team identified 23 cases that had been recorded and classified for investigation under the Whistleblowing Policy during the retrospective Review period. The cases were classified according to the levels in the Policy as follows:

Step	Number of Cases
1	1
2	20
3	2

The origins of Case submission were as follows:

Anonymous	11
Named Whistleblower	12

This resulted in the following numbers of staff or former members of staff who were invited for interview in the conduct of the Review. It should be noted that the numbers do not match the number of cases as each case may involve multiple Whistleblowers/Managers; and similarly, Investigators and Managers can be involved in multiple cases.

Type	Number of Individuals
Whistleblower	20
Manager	46
Investigator	8
Involved	Approx. 50

All concerned were invited to participate in a structured interview, which in most cases involved both Charles Vincent and Kenny Small. In a limited number of cases where Kenny or Charles were deemed to hold a conflict of interest, the interviews were conducted solo. This was also the case where special considerations were being given to an individual.

5. Findings

5.1 Investigations into Whistleblowing Cases were conducted in a way that was viewed as a positive experience by all involved.

Whistleblowers and Managers expressed a broadly positive experience in the course of interviews with the investigators. Staff universally felt that they were listened to and that they were treated well. Some commented that the investigators did not have the specialist knowledge required to fully understand the complexity of some aspects of the case, but when probed, this was never beyond what could have been reasonably expected of an outside investigator. There was evidence that on such occasions, investigators sought additional specialist support as necessary.

5.2 There are cases being incorrectly classified as not whistleblowing.

The Review assessed 16 cases that were not classified as Whistleblowing from the following sources:

- 15 cases from the Complaints Team;
- 1 unsolicited case from an individual who contacted the Review Team directly.

In accordance with the Terms of Reference, the Review Team looked at existing guidance documentation on Whistleblowing to establish whether or not the classification of each of these cases was correct. The following observations were made:

- Other than the NHSGGC Whistleblowing Policy (and the external linked documents), there is currently limited written guidance to assist in the classification process for Whistleblowing;
- The Whistleblowing Policy does not specify who holds delegated responsibility for decisions on the classification of Whistleblowing;
- Only cases classified as Whistleblowing are added to the Whistleblowing Log reported to the Staff Governance Committee;
- There is therefore no Governance scrutiny on the quality of classification decisions if the decision is that the case is not deemed Whistleblowing;
- The Staff Governance Committee (or other Governance Committee) is not able to deliver assurance as to the quality of such decisions.

In relation to the 16 reviewed cases, it was determined that 50% had been incorrectly classified, specifically that:

- 7 of the 15 cases provided by the Complaints Team should have been classified as Whistleblowing;
- The case that was submitted in an unsolicited manner should have been recorded as Whistleblowing.

In the interests of reassurance, it should be noted that Management provided assurance that action had been taken in response to these cases. The Review Team are therefore not recommending that a Whistleblowing investigation is commissioned for these cases.

The rationales for not classifying cases as Whistleblowing include:

- An allegation of fraud, where the case was passed to the central Fraud Team. Policy states fraud as one of the concerns that should be classified and recorded as Whistleblowing prior to disposal for investigation by the central Fraud Team. It is worthy of note that there is complexity here relating to the Once for Scotland conduct policy relating to fraud. The way this complexity has been navigated has however resulted in individuals not receiving the protection that whistleblowing status affords them.
- Lack of evidence following an initial investigation. Establishing the existence of relevant evidence is a key part of a Whistleblowing investigation. Such cases should initially have been recorded as Whistleblowing and then a decision taken on investigation.
- The individual submitting the concern did not explicitly say that it was a Whistleblowing case. The definition of Whistleblowing in the Policy does not require the individual to explicitly say they want to Whistleblow.
- The concern was submitted anonymously. The classification decision on this occasion was based on a misunderstanding of the new Whistleblowing Standards. The correct Policy for application was the current NHSGGC Whistleblowing Policy – not the New Standards. However, had the New Standards been in place, they do not stipulate that anonymous concerns should not be investigated – the New Standards suggest it is best practice to do so. The protections afforded in the New Standards cannot however be applied in anonymous cases as there is no identifiable individual for application of protections.
- Complex cases where there is clear overlap with other processes, such as Grievance or Disciplinary investigation.

The Review has only been able to review cases logged by the Complaints Department or by unsolicited submission.

5.3 The current Whistleblowing experience has not been positive for many Whistleblowers, Managers and others involved.

Concerning evidence of the personal impact of being involved in a whistleblowing process by both Whistleblowers and Managers is the reported impact on their health. It was not possible to separate views of an individual Whistleblower or the experience of having Whistleblowing in your area of work, so the impacts were considered together.

Sixty percent of Whistleblowers reported that their mental health was negatively impacted by being involved in Whistleblowing. Given the sensitivity of some of the issues being discussed, only minimal probing was done beyond asking the standard questions in Appendix B – Review Questions. The main personal impact reported related to stress, including individuals that required treatment through access to Talking Therapies (such as Counselling) or medication in some instances.

Approximately 33% of the Managers interviewed also experienced impact on their Mental Health. Again, stress was reported as the main cause of this. Managers reported feeling “accused” of having done something wrong and feelings of uncertainty relating to this. With Managers less directly involved and Senior Managers, feelings of stress appeared to

relate to a strong sense of responsibility for something having gone wrong in their workplace.

The Review was unable to identify any systematic support provided by NHSGGC to either group. Managers did however more frequently report that they were able to get support from their Line Manager. Whistleblowers reported that they never received support from their Managers.

It was of concern to the Review Team that a quarter of Whistleblowers stated that they would not Whistleblow again given their experience. As this was not one of the core questions in the Review, the actual percentage could be higher as this was only recorded if volunteered by Whistleblowers.

5.4 The Whistleblowing process is being used to investigate matters that are not Whistleblowing.

Given the confidential nature of Whistleblowing, it is not considered appropriate to provide real-life examples in support of this Finding. However, examples set out below are indicative of real Whistleblowing cases.

Whistleblowing cases almost always contain multiple claims. A simplified example of a reported Whistleblowing case might be:

I. A change is being made to a clinical process that is unsafe for patients;
II. There is a culture of bullying within our department;
III. I was not permitted to take my holiday as I wanted last year;
IV. My Manager received a trip to a conference paid for by a supplier in a manner contrary to Policy.

In many of the cases examined, the number of concerns included was higher than four issues.

To be considered as Whistleblowing under the Policy, the concerns must relate to:

- a criminal offence;
- a miscarriage of justice;
- an act creating risk to Health and Safety;
- an act causing damage to the environment;
- a breach of any other legal obligation; or
- concealment of any of the above.

Within a Healthcare setting, examples include:

- patient safety, malpractice or ill treatment of a patient by a member of staff;
- repeated ill treatment of a patient, despite a complaint being made;
- an unacceptable standard of patient/clinical care;
- a criminal offence is believed to have been committed, is being committed or is likely to have been committed;

- suspected fraud;
- disregard for legislation, particularly in relation to Health and Safety at Work;
- the environment has been, or is likely to be, damaged;
- breach of Standing Financial Instructions;
- showing undue favour over a contractual matter or to a job applicant;
- a breach of a Code of Conduct;
- information on any of the above has been, is being, or is likely to be concealed.

In the classification of all the Whistleblowing cases considered by the Review Team, it is likely that all of the four concerns set out in the simplified example above would have been included in the remit for the Whistleblowing investigation. In reality, only concerns I and IV should be considered as a legitimate inclusion, with concern I being an issue of patient safety and concern; and concern IV possibly fraud or a breach of Standing Financial Instructions. Concerns II and III should be classified and managed through alternative Policies and Procedures such as Dignity at Work or Grievance.

It is inappropriate to expect the Whistleblowing process to deal with complex HR issues and it was clear from a number of interviews that much of the conflict and negativity from Whistleblowers and Managers related to concerns that were not actually Whistleblowing.

In many cases, the Whistleblowing process would likely have been a better experience had legitimate Whistleblowing concerns been considered under the Whistleblowing Policy, and other concerns classified and addressed according to alternative, appropriate Policies.

Due to the nature of many Whistleblowing Claims, it is difficult to provide a detailed analysis of the number and nature of concerns raised and managed within Whistleblowing. However, the Review Team concluded that over 50% of Whistleblowing cases considered in the Review included concerns which should more appropriately have been investigated and considered under an alternative Policy or Procedure.

5.5 Knowledge and Understanding of the Whistleblowing Process and Procedures.

It was disappointing that only two interviewees (excluding Investigators) were aware of the ability to undertake a Step 1 Whistleblowing Investigation. By nature of their role, both of these interviewees were routinely involved in Whistleblowing processes.

Of the 23 cases considered in the Review, only 1 case was investigated at Step 1.

Most of the Whistleblowers and Managers interviewed professed awareness and knowledge of the Whistleblowing Policy and Procedures, but in reality, this was limited and patchy in nature.

Following an explanation to Managers of the existence of Step 1 within the Whistleblowing Policy, strong support was expressed to better utilise this as a first stage to facilitate local, timeous investigation and response, seeking to resolve concerns and limit the need for further escalation.

It is worthy of note that in some cases, Managers had investigated some of the issues contained in the Whistleblow in a manner that partially aligns with a Step 1. However, the Managers were not aware of this at the time.

The survey of some staff uninvolved in whistleblowing that was conducted gave little valuable information other than demonstrating that there is no consistent understanding of what whistleblowing is, even if they are aware of it. A good example of this would be the results to the question "What is whistleblowing?" which gave the following diverse answers:

Reporting Malpractice	**33%**
Media Involvement	**27%**
Internal Escalation	**15%**
Unknown	**15%**
Policy	**7%**
Anonymous Reporting	**7%**
Miscellaneous	**7%**

***Note:** Total is greater than 100% as individuals could give multiple answers.

5.6 Recommendations from Investigation Reports are not rigorously Performance Managed with resultant potential loss of Shared Learning.

At present, Corporate oversight of the Whistleblowing process does not include performance management of Recommendations resulting from Whistleblowing Reports. Recommendations are not centrally recorded and there is no Corporate process to follow up on progress in the implementation of Recommendations.

There is also no Governance process to ensure scrutiny of the implementation and Corporate learning from Recommendations.

There is also no local process or practice of sharing Recommendations with other relevant areas, resulting in potential loss of quality or performance improvement.

In almost all cases included in the Review, individual Recommendations do not have specific owners.

The current Whistleblowing Policy does not define to whom the final Reports, Findings and Recommendations should be presented.

The result of this is that in the interviews, despite being identified as being involved in a Whistleblowing case, some Managers and Whistleblowers reported not having seen the Final Report or Recommendations from the investigation. The variety of situations encountered by the Review Team was extensive, despite the relatively small number of cases. After additional investigation, matters of relevance included:

- Individuals saying that Reports were not received despite evidence presented of the Reports having been sent;
- Only 'Draft' versions of Reports ever received;

- Reports being sent to a “lead” Whistleblower in the expectation that it would be passed on. to colleagues – it wasn’t.
- Reports being sent to a Manager who then did not circulate the Report, in full or part, when it would have reasonably been expected for that to happen.

Due to lack of knowledge or information from interviewees, it was not possible to identify the overall percentage of Recommendations which were ultimately completed. However, the review did not find any case where all agreed that the Recommendations had been completed in full.

The Review Team concluded that there is potential for real improvement and benefit to NHSGGC through enhanced performance management in this area.

Examples include two cases where it was openly stated by Managers that they were aware of no attempts made to implement the Recommendations. In discussions, these appeared to relate to an opinion that the investigation had concluded that the concerns raised were unfounded and therefore no action was to be taken on the Recommendations.

The emergent view from the interviews was that significant improvements could be made by NHSGGC in the allocation, ownership and performance management of implementation and shared learning from the Recommendations in Whistleblowing Reports.

5.7 Organisational Perceptions of Whistleblowing and Whistleblowers.

The Review Team developed a (recognised) subjective opinion that Managers in general do not believe that Whistleblowing should be promoted in support of the culture of being a learning organisation. The Review Team sensed an underlying tone which at times was reinforced by unguarded comment from Managers that Whistleblowing cases were viewed by NHSGGC as reflecting negatively on a Department. In a small number of cases, this appeared to manifest itself in a less than positive attitude towards Whistleblowers.

5.8 There is a lack of ownership of Whistleblowing within Departments.

In a number of interviews with Managers involved in Whistleblowing processes, a clear view was expressed that the conduct of Whistleblowing investigations felt that Executive Directors had been parachuted into their part of the organisation without warning or contextual briefing. For many, this was their first interaction with a Board Director.

Although the interactions were generally viewed as positive, there was a distinct feeling amongst Managers that they did not own such a process and that they felt they would have been better served trying to resolve the concerns locally in the first instance. As interviews progressed, this matter was more thoroughly assessed; and with guidance and information, Managers increasingly sought the opportunity to be invited to attempt to resolve concerns locally using the Step 1 process.

5.9 Managers are committed to following the NHSGGC Whistleblowing Process.

All interviewees spoke positively to the Review Team about Managers, Investigators and the Corporate Administrative support staff in their commitment to implement the established NHSGGC Whistleblowing Policy and process. Investigations were generally

agreed by all to be detailed and of high quality – recognising that not all parties were in agreement with the outcomes.

5.10 Early and Effective Management of Cases.

It is clear that there would be benefits from additional work reviewing and analysing Whistleblowing cases prior to investigation and ensuring informed closure on completion. Limitations on this appears to have had a negative impact on participants in a number of ways. Feedback on this gathered by the Review Team is set out below in a perceived order of importance.

Most of the Managers interviewed perceived that the contents of the Whistleblowing case presented to them were “accusations” (this is how they articulated it). They often did not receive a full copy of the formal written complaint(s) or even verbal details. This significantly increased the stress, frustration and ‘threat’ felt by the Managers.

They also felt unable to adequately prepare for what, for most, was their only opportunity to respond to the “allegations” (again a word used by more than one individual).

The complexity and time-consuming nature of redacting the original Whistleblowing submissions to protect confidentiality was explained in mitigation of this practice.

It is worth noting that the Investigators had little or no perception of the Manager’s feelings of ‘accusation’ and this probably contributed to the lack of importance placed on fully informing Managers of the nature of the case.

Final Investigation Reports on Whistleblowing cases were not received by all involved. This is an important omission and has contributed to feelings of lack of closure and understanding by Managers and Whistleblowers alike.

While there was no direct evidence of this, it is reasonable to expect that reducing the negative feelings of Managers towards Whistleblowing will also have a significant positive impact on their feelings towards Whistleblowers which, if even on an unconscious basis, is likely to have a positive impact on all involved.

The Review Team concluded that it would be a useful investment of time to proactively manage the Whistleblowing process to ensure important, comprehensive communication and engagement with all concerned throughout the process

5.11 Support Offered to Whistleblowers, Managers and Others Involved.

NHSGGC has a well-established professional support network for staff which includes Occupational Health Services, an Employee Counselling Service and an HR Advice Line. It may be useful to review arrangements for access to such support services in the context of involvement in a Whistleblowing case. Given the significant Mental Health impacts described in Section 5.3, it is likely that proactive promotion of options for support would have benefited a number of individuals.

It is important to note that some of the individuals who were significantly affected were not those who would have been instinctively identified as those needing help. It was clear that colleagues responsible for administering and investigating the Whistleblowing process did

so in a compassionate manner, however their roles do require a level of objective detachment, which may preclude offering the kind of support that individuals required.

5.12 No documented process to highlight serious, urgent issues to the appropriate Manager for immediate consideration or rectification.

The Review Team did receive an example of where urgent, necessary escalation of concerns did happen. However, it was clear that this relied on the diligence and initiative of those involved rather than a formal, established process to risk assess Whistleblowing concerns and escalate as necessary.

5.13 Clear Process Chart for Whistleblowing.

The current Whistleblowing process appears to rely heavily on the knowledge and experience of the Corporate Services Manager for Governance to ensure correct decision-making through engagement with Executive Directors, as necessary, on important matters such as classification, allocation for investigation, management of conflict and overall performance management – a responsibility which may be enhanced as a consequence of this Report.

The Review Team believe that NHSGGC should invest in the design and publication of an agreed, clear, understandable Flowchart which sets out the Step process for Whistleblowing, setting out rights, responsibilities, routes for decision-making and the context for access to the new National Whistleblowing Standards. This will assist in communication and understanding of the Whistleblowing Policy and process to Managers, Staff, Staff Governance Committee, and the NHS Board.

6 Recommendations to Improve Whistleblowing at NHSGGC

The Review has identified 8 headline Recommendations (each with sub-Recommendations) that are designed to improve the Whistleblowing process within NHSGGC. Recommendation 6.8 was approved in November 2020 by the Staff Governance Committee as an interim Recommendation.

The Recommendations are designed to promote:

- An environment where everyone involved feels supported by the organisation;
- Clear processes that detail how Whistleblowing cases should be progressed with clear actions and ownership of decision making throughout the Whistleblowing process;
- Effective recording of all decisions taken in Whistleblowing processes to inform effective performance management by the Executive Team and Governance scrutiny by the Board.

The implementation of all recommendations should sit with the Corporate Management Team, who should provide implementation updates to the Staff Governance Committee who should retain governance oversight on behalf of the board.

6.1 Active management of cases with particular emphasis at commencement and conclusion.

The investment of time and resources from the outset in the active management and classification of cases will pay dividends throughout the Whistleblowing process.

Investment of management time completing proper classification, Stage/Step allocation, identification/agreement/support of Investigator(s) and effective, confidential communication/engagement with all concerned to establish necessary awareness of the case is of significant importance.

Additional areas for consideration in the effective management of cases include production and provision of appropriate confidential case summaries to inform and assist witnesses called for interview, ensuring confidential circulation of the full or précis version of the case Report and ensuring knowledge of and the process to be followed exercising the right to escalate.

NHSGGC should design and implement a managed process to regularly survey all those involved in Whistleblowing cases to monitor experience and inform continuous improvement.

6.2 Classification of Cases for Investigation / Consideration under the Whistleblowing (or other appropriate) Policy.

There are clear definitions in the NHSGGC Whistleblowing Policy for classification and inclusion of cases under Whistleblowing. Additional guidance on this matter is provided in the National Whistleblowing Standards which go live on 1st April 2021.

Important, early access to similar, clear definitions and professional advice (as necessary) will inform the managed process for classification and inclusion of cases or partial cases

under alternative, appropriate Human Resources Policies (Grievance, Dignity at Work, Disputes, etc.).

It is not uncommon for Whistleblowing cases to include multiple matters of concern and it can be challenging to appropriately separate and investigate concerns.

Each concern should be assessed through a managed process resulting in more effective classification and disposal of concerns – informed by the Policy definitions previously referenced.

Formal communication with the Whistleblower will follow on the classification and Policy route for investigation, consideration and decision making relating to the concerns raised. This will include any further actions required of the Whistleblower at that time.

The process above does not impact on or delay the obligation placed on the first Manager to receive Whistleblowing concerns set out in Recommendation 6.7 below – on the immediate escalation to senior management of any concerns deemed sufficiently serious to require immediate action.

6.3 Whistleblowing Cases should be Investigated at Step 1 unless Specific Reasons not to.

NHSGGC Whistleblowing Policy and the National Whistleblowing Standards promote that cases should be investigated and responded to at Step 1 in the process whenever possible unless there is a specific reason to immediately move to the Step 2.

Information from Whistleblowers interviewed during the Review confirmed that Whistleblowers may seek an immediate Step 2 process in the belief that their concerns will be investigated more objectively and by a more senior manager.

The contrary position in favour of promoting increased use of a Step 1 process was also articulated – in recognition of the potential benefits of the Investigator's likely application of local knowledge, understanding of local context and easier access to relevant witnesses etc.

It is proposed that following classification a Step 1 investigation should be the default allocation stage for all Whistleblowing cases unless:

- The Whistleblower is able to demonstrate good reasons for direct allocation to a Step 2 investigation and this is agreed with the NHSGGC Whistleblowing Manager.
- The significance of the concerns raised dictate that they be considered at Step 2 in the first instance.

Guidance should be developed and implemented by NHSGGC on the seniority of the Investigation Manager for Step 1 investigations. Given the increased importance placed on credible and effective Step 1 investigations it is proposed that Step 1 Investigators will, whenever possible, hold a role one level more senior in NHSGGC than the Whistleblower's Line Manager. Where this is not possible the reason why it is not possible should be documented.

In all cases, appropriate consideration should be given to:

- Support for the Investigator based on their seniority, knowledge and experience of the area(s) of concern raised;
- The importance of maintaining confidentiality in communication and engagement with the Whistleblower and minimising the number of individuals who are aware of the existence of the concerns raised;
- Agreement always being sought from the Whistleblower if it is found necessary to inform anyone of their identity.

6.4 Corporate Arrangements to Ensure the Logging and Tracking of all Whistleblowing Arrangements.

It is important to establish and maintain a contemporary and comprehensive, Corporate Database of all Whistleblowing activity throughout the Board. This will support effective performance management of the process and Governance reporting and scrutiny.

Proactive management of the Whistleblowing process through use of the Corporate Database will ensure that all Whistleblowing Investigations are properly concluded, that Case Reports are properly produced and issued to all those concerned, that implementation of Case Report Recommendations and Actions are owned by a named individual against recorded deadlines for delivery and that potential wider corporate learning and improvement generated in Case Reports can be shared. The comprehensive Database should also facilitate ease of Corporate Whistleblowing Performance Management Reporting.

To compile a list of all whistleblowing recommendations from the start of the review period (Apr 2017) and seek an update from relevant area as to progress or why the recommendation is no longer valid. Recommendations that remain valid should be performance managed to completion with progress reported to the Staff Governance Committee. Recommendations that are no longer valid should have reasons attached for review by the Staff Governance Committee.

All key decisions should be recorded with a note of who made the decision and the reason/justification for the decision. Key decisions include:

- What Step the whistleblow is to be investigated at;
- Why all or part of the whistleblow will not be considered under the Policy;
- Who the investigator allocated is.

6.5 Staff Education on Whistleblowing.

In the work of the Review, clear evidence was presented by Whistleblowers, Managers and staff of a very poor understanding of the NHSGGC Whistleblowing Policy and process. Awareness of the important Step 1 process was found to be particularly poor.

Given the (almost) parallel launch of the National Whistleblowing Standards in April 2021, the opportunity should be taken by NHSGGC to urgently design and launch a comprehensive Whistleblowing Policy and process staff education campaign – similar to that deployed in the past in support of awareness of HR Policies and procedures.

It is recommended that this campaign should be prioritised in the NHSGGC Corporate Education and Training Plan for 2021/22 to reflect the low starting point of understanding and awareness compared to other Policies and processes. The staff Whistleblowing education campaign should include important reference to the significant changes introduced in the new National Whistleblowing Standards.

6.6 Support for all Concerned.

It is apparent from the Review that Whistleblowers, Managers and staff have had poor experience of NHSGGC explaining or directing to appropriate psychological or personal support in the course of their Whistleblowing experience. A significant majority of those interviewed described a detrimental psychological personal impact through involvement in a Whistleblowing case – and were not guided to Occupational Health or an Employee Counselling Service for support.

There is a clear need for early access to support services by those involved in a Whistleblowing process.

The support should be confidential and formally brought to the attention of all staff involved in a Whistleblowing process, with a written offer of support provided at least once during the process separate from any other communication.

6.7 Formal Procedure for Escalation of Serious Concerns to Senior Management.

The seriousness, urgency and potential broader service impact of Whistleblowing concerns argues for an urgent, clear documented process to be established for the escalation of such serious concerns to Senior Management for immediate assessment and Corporate response, as necessary.

6.8 Potential Whistleblowing cases should be Logged on the Corporate Database irrespective of the Determination of Validity as a Whistleblowing case.

It is recommended that:

- All cases that could potentially be classified as Whistleblowing should be recorded on the Whistleblowing Corporate Database;
- All cases that are not then classified as Whistleblowing are marked as such on the Whistleblowing Database with a rationale for this decision also recorded.

***Note:** This Recommendation was approved at the November 2020 Staff Governance Committee and has already been implemented.

7 Appendix A – Terms of Reference

NHS Greater Glasgow & Clyde	
Meeting:	**Staff Governance Committee – Paper No 20/17**
Date of Meeting:	**Tuesday 18 August 2020**
Purpose of Paper:	**For approval**
Classification:	**Board Official**
Sponsoring Director:	**Mr Charles Vincent, Whistleblowing Champion and Non-Executive Director**

Whistleblowing Review – Terms of Reference

1. Recommendation

The Staff Governance Committee is asked to discuss and approve the Terms of Reference (ToR) for the internal Whistleblowing Review.

2. Purpose of Paper

The role of the Staff Governance Committee is to ensure oversight of the review, and to agree the proposed timescales and reporting requirements for the review.

3. Key Issues to be considered

3.1 National plans to introduce an Independent National Whistleblowing Officer (a role to be undertaken by the Scottish Public Services Ombudsman) and accompanying Standards, Principles and Procedures, have been put on hold until 2021, as a result of the COVID-19 pandemic.

3.2 In the meantime, Whistleblowing continues to be managed by NHSGGC's existing systems and processes. The Board Chair has commissioned a review of the current arrangements for Whistleblowing, to ensure they remain effective and fit for purpose. The review will be conducted by Mr Charles Vincent, Whistleblowing Champion and Non-Executive Director, who will be advised and supported by Mr Kenneth Small, an independent Human Resource Management Specialist.

3.3 The full Terms of Reference (ToR) are contained within Appendix 1. Extensive dialogue has taken place regarding the development of the ToR document.

Any Patient Safety /Patient Experience Issues: No

Any Financial Implications from this Paper: No

Any Staffing Implications from this Paper: No

Any Equality Implications from this Paper: No

Any Health Inequalities Implications from this Paper: N/A

Has a Risk Assessment been carried out for this issue? If yes, please detail the outcome: N/A

Highlight the Corporate Plan priorities to which your paper relates: Better Workplace

Author: Jennifer Haynes

Date: 6th August 2020

Appendix 1

Review of the Approach to Whistleblowing in NHS Greater Glasgow and Clyde

Terms of Reference

1. Background

New whistleblowing standards for NHS Scotland were due to come into force in July 2020. This revised approach to responding to whistleblowing in the NHS aims to put in place a legal framework with a clear set of rules regarding the management and reporting of whistleblowing. This includes Step Three whistleblowing being investigated by the Scottish Public Sector Ombudsman (SPSO).

Unfortunately, the implementation of these new arrangements has been delayed indefinitely due to the Coronavirus pandemic and until the new standards are introduced, whistleblowing continues to be managed by NHS Greater Glasgow and Clyde (NHSGGC) utilising the existing systems and processes.

Therefore, the Board has commissioned a review of the current arrangements for whistleblowing to ensure that they remain effective and fit for purpose until the new standards are introduced.

The terms of reference for this review have been drafted following discussions between the Board Chair, the Whistleblowing Champion, the Co-Chairs of the Staff Governance Committee, the HR Director, and the Head of Corporate Governance & Board Administration. The Staff Governance Committee is responsible for approving the terms of reference of the review on behalf of the Board.

2. Review Objectives

The objectives of the review have been proposed by the Board Chair as follows:

"To consider the current approach to whistleblowing in NHS Greater Glasgow and Clyde and identify any actions required to ensure the ongoing effectiveness of the existing systems and processes including any that will also improve the implementation of the new whistleblowing standards for NHS Scotland."

3. Review Scope

The review will cover a three-year period and include all cases initially raised as whistleblowing that were first initiated by the whistleblowers during the period from April 2017 to March 2020.

Therefore, the review will also consider any cases that were not accepted as whistleblowing and come to a view on the reasonableness of that decision.

The review will consider and report on the following key areas of the NHSGGC whistleblowing system:

- Staff awareness of the whistleblowing process.

- Investigations and reporting of whistleblowing cases.
- Experience of individuals involved in whistleblowing cases.
- Implementation of recommendations from whistleblowing investigations.

The following paragraphs describe more details of how these areas will be reviewed.

3.1 Staff Awareness

No member of staff expects to become a whistleblower and over the course of a career very few will. The confidentiality of the process also means that there is minimal ability for peer learning of the process.

The review will therefore look at the level of awareness of the whistleblowing system and processes across NHSGGC. This will include how staff are kept informed of the purpose and availability of the whistleblowing system and, where possible, assess the effectiveness of the communication approach adopted by NHSGGC.

3.2 Investigations and Reporting

The review will assess how effectively whistleblowing issues are investigated, processed and reported. This will primarily be a review of the management processes undertaken and will include looking into how confidentiality is maintained for whistleblowers.

A review of the available data around the numbers of whistleblowing cases will be conducted and this will include benchmarking against other similar organisations where comparative data is available.

The review will also consider the process utilised to decide who investigates whistleblowing cases at Steps One, Two and Three and how NHSGGC ensures that these individuals have relevant experience or have access to the appropriate training and support to thoroughly investigate and make reasonable decisions on cases under investigation, in line with the extant policy and procedures.

Consideration will also be given to whether effective arrangements are in place to quality assure and confirm that the outcomes of whistleblowing cases are consistent with correct processes having been followed and all available evidence having been examined at the time of the investigation.

How information on whistleblowing cases and the effectiveness of the whistleblowing system is reported to the Staff Governance Committee, the Board and the Scottish Government will also be considered as part of the review.

3.3 Experience of Individuals

The whistleblowing safety valve is essential for a Health Board trying to listen to the voice of its employees and ensuring the safety of its patients and service users. It can also help managers learn from mistakes and improve the quality of the services being delivered.

However, the response to whistleblowing can have a negative impact on everyone involved and this this can be particularly significant in the case of the whistleblowers. As a result, the current employment legislation has been designed to protect whistleblowers. This recognition of the position of whistleblowers is also a key part of the new standards being introduced by NHS Scotland.

In considering this particular aspect of whistleblowing, the review will seek feedback from whistleblowers, managers and investigators involved in whistleblowing on their experience of the whistleblowing system within NHSGGC. Where relevant, the review will also consider the impact of the whistleblowing case on other staff in the areas involved in the investigation.

It is recognised that being involved in a whistleblowing issue can be extremely stressful for the individual whistleblower, their colleagues and the managers concerned. How well this is fed back to individuals involved can help minimise this stress.

Therefore the review will specifically consider how those involved and affected by the whistleblowing case are given timely information during and on completion of the investigation.

Due to the confidential nature of whistleblowing, those asked for feedback will have the option not to respond or to provide anonymous written feedback.

3.4 Implementation of Recommendations

The implementation of findings is an essential part of the whistleblowing process, with over 80% of whistleblowing investigations within NHSGGC resulting in recommendations.

The review will investigate how recommendations have been acted upon over the past three years. It will also look into how the implementation of recommendations has been reported back to the Staff Governance Committee and the Board.

Where recommendations in a particular case have wider implications and may be applicable to other areas of NHSGGC, the review will consider how the lessons learned have been implemented and changes made across the organisation.

4. Review Methodology

A variety of methods will be utilised to complete the review. These will include:

- Analysis of the number and types of cases initiated through the NHSGGC whistleblowing system.
- Desk-top reviews of cases investigated and other written evidence submitted to the review team.
- Face to face interviews with whistleblowers, other staff, managers and investigators involved in the cases being reviewed.
- Examination of reports and updates on whistleblowing to the Staff Governance Committee, the Board and the Scottish Government.

5. Review Timescales

The review process will examine each of the key areas for review (see paragraph 3) and this programme of examinations will be conducted over the period from July 2020 to December 2020 with regular updates being brought to the Board via the Staff Governance Committee's meetings scheduled for 2020/21.

A high-level plan describing the timescales of the different stages of the review and when they will be reported to the Staff Governance Committee and the Board will be submitted for their agreement to the Staff Governance Committee on 18th August 2020.

6. Review Team

The review will be led by the Whistleblowing Champion, Charles Vincent, who will be advised and supported by Kenneth Small, an Independent Human Resource Management Specialist.

In addition to providing advice and support on the methodology and conduct of the review, Mr Small will assist in the examination of the cases and other information available to the review team. This will include reviewing those cases concerning the impact of the design, build, handover, and maintenance of the QEUH campus on the Infection Prevention & Control arrangements in the South Sector of NHSGGC. This reflects Mr Vincent's declaration of interest in one of the whistleblowing cases concerning these issues.

Further support and guidance to the review team will be provided by Elaine Vanhegan, Head of Corporate Governance and Board Administration.

7. Review Report

The Whistleblowing Champion and the Independent HRM Specialist will co-author a report to record their findings for each of the areas described in paragraph 3 of the Terms of Reference.

The report will detail their findings, highlighting any trend and themes that have emerged and make recommendations to the Staff Governance Committee on any areas requiring improvement.

The report will also highlight the impact of the new standards on any issues identified by this review.

Following scrutiny by the Staff Governance Committee, the final report of the review team will be considered by the Board and published on the NHSGGC website.

29 July 2020

Version 3.2

8 Appendix B – Review Questions

The questions used with all participants and provided prior to interview.

Introduction

Below is an outline of the questions that will be utilised during all meetings with those involved with whistleblowing regardless of their role:

- Whistleblowers;
- Managers;
- Investigators;
- Other Involved Individuals.

As a result, some questions may not be appropriate to all individuals. Those managing the meeting may also phrase or alter questions in line with previous responses and the specific concerns of the individuals.

This will however be the key elements being discussed in a meeting.

Review Purpose (From Terms of Reference)

Background

New whistleblowing standards for NHS Scotland were due to come into force in July 2020. This revised approach to responding to whistleblowing in the NHS aims to put in place a legal framework with a clear set of rules regarding the management and reporting of whistleblowing. This includes Step Three whistleblowing being investigated by the Scottish Public Sector Ombudsman (SPSO).

Unfortunately, the implementation of these new arrangements has been delayed indefinitely due to the Coronavirus pandemic and until the new standards are introduced, whistleblowing continues to be managed by NHS Greater Glasgow and Clyde (NHSGGC) utilising the existing systems and processes.

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systems and processes including any that will also improve the implementation of the new whistleblowing standards for NHS Scotland."

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- Staff awareness of the whistleblowing process.
- Investigations and reporting of whistleblowing cases.
- Experience of individuals involved in whistleblowing cases.
- Implementation of recommendations from whistleblowing investigations.

Author **Charles Vincent**

Tel No [redacted]

Date

Whistleblowing Questions Outline

Interviewer will take individuals through the Terms of Reference and ensure they understand purpose of the review. Interview will reinforce the fact that this is not a case review and the outcomes of whistleblows will not be changed as part of this review. Also reinforce that no answers will be taken forward in a way that will identify the individual giving the answer.

Personal Context

Seek an explanation of the individual's involvement in a WB Case(s), asking the individual to provide a high-level summary of the background to the Case and the nature of their involvement (Whistleblower, Witness etc).

Raising the Whistleblow –

Same Questions to be asked for each logged whistleblow where multiple are involved.

Whistleblower:

- Did you raise the concerns with managers or others including peers prior to raising your whistleblow? If so with who and when in relation to your whistleblow, days, weeks, months. Roles rather than names are fine.

Others:

- Were the concerns in the whistleblow raised with you prior to the whistleblowing process? If so when in relation to your whistleblow (days, weeks, months)

If the concerns were raised prior to the whistleblow was any action taken or response given, if so what and when.

Whistleblower:

- Did you feel encouraged or discouraged to raise a whistleblow? If so by who and how.

Others:

- Did you encourage or discourage the whistleblower to take the whistleblow forward? If so how and why?

- Did you, prior to the logged whistleblow [interviewer to make clear which case(s) are being discussed at this point], raise any concerns in a way that you believe should have been logged as whistleblowing that were not. If so, please provide details.

Personal Experience

Opportunity for the individual to describe their experience of involvement in the WB process. Prompt questions to include:

- Prior to this involvement did you have knowledge/awareness of the WB Policy and procedure process?

- Did you feel you understood and were clear on the WB Policy and procedure/process?

- Did you have any help or support understanding this or participating in the process?

- Were you consulted and any domestic commitments/needs taken into account in making the arrangements for the WB investigation meeting?

- Was any relevant paperwork provided to you or by you in advance of the WB investigatory interview?

- Were you provided with a full opportunity to express yourself and make a full contribution meeting what you wanted to contribute to the case?

- Did you feel you the Panel listened to you?

- Did the members of the Panel appear knowledgeable about the case?

- Did the Panel members ask relevant and searching questions?

- How would you describe your overall experience of participation in the WB case?

Communication

Opportunity for the individual to discuss or comment on the quality and reliability of the communication process associated with the WB Case. Prompt questions to include:

- Was the correspondence you received in relation to the Case clear, understandable, relevant to the Case and received timeously?

- At the Investigatory interview, did Panel members speak using language that you understood (or did you experience use of ‘management speak’, technical/clinical terms or jargon)?

- Did you feel relaxed, at ease, uncomfortable, challenged (or even) intimidated by the manner in which people communicated with you in the process?

- Were you promised feedback on the outcome of the investigation process?

- Were you provided with information about the likely timescales for due process and completion of the investigation and the associated Report?

- Did you receive any feedback or information in relation to the outcome of the investigation?

Personal Impact:

Opportunity for the individual to share thoughts on any personal impact through participation in the WB process. Prompt questions to include:

Would you view participation in the WB process as a straightforward experience or would you describe the experience differently, if so how?

Have you experienced any impact on your health (physical or mental health) as a direct consequence of participation in the process? (If so) Did you suffer from any related such health issues prior to participation in the process?

The National Support Framework 2017

The National Support Framework ('the Framework') is a structure that sets out the roles and responsibilities of organisations in the event that a healthcare infection outbreak/incident, data exceedance or Healthcare Environment Inspectorate (HEI) report deems additional support to a NHS Board is required. This framework supersedes CNO algorithm (2015).

The National Support Framework may be invoked by the Scottish Government HAI /AMR Policy Unit or by a NHS Board to optimise patient safety during or following: any healthcare incident/outbreak(s)/data exceedance or HEI inspectorate visit/report.

Section 1: Criteria for invocation

Healthcare infection incident/outbreak(s)/data exceedance

This is contained within the National Infection Prevention and Control Manual (NIPCM) Chapter 3:

- an infectious agent that has major infection control/public health implications and control measures put in place locally have been unsuccessful; or
- a higher than expected number of cases in a given healthcare area over a specified period of time and control measures put in place locally have been unsuccessful; or
- ongoing exposure of individuals to infectious agent as a result of healthcare system failure.
- three consecutive mandatory surveillance data exceptions e.g. *clostridium difficile.*

HEI Inspection

If as part of the inspection process:

- it is observed that there are serious HAI issues that have a direct impact on care provision which cannot be addressed through local resolution or warrants direct escalation or;
- there is a pattern of failure to implement sufficient actions to resolve HAI related issues or;
- there is a pattern of unsustainable improvements that cause concern to the inspectorate that cannot be resolved or;
- there are concerns regarding the implementation of national policies throughout the Board area which require resolution at a national level.

Section 2: Actions and Communication

When the SG HAI/AMR Policy Unit invoke the Framework they will:

1. Inform the appropriate NHS Board Executive Lead or deputy that the National Support Framework is being invoked and the rationale for this.
2. Inform Health Protection Scotland (HPS) of the invocation citing the reason: this would normally be to the Lead Consultant for HAI or Associate Director who will then assign to a NCIC. The NCIC will inform the HPS HAI IPCT.
3. Request HPS action, a healthcare infection situation needs assessment to be completed within 5 working days http://www.nipcm.hps.scot.nhs.uk/web-resources-container/sbar-hai-situation-needs-assessment/.
4. Instruct HPS on the expected leadership and coordination of all national activity and communicate with the SG HAI/AMR Policy Unit accordingly.

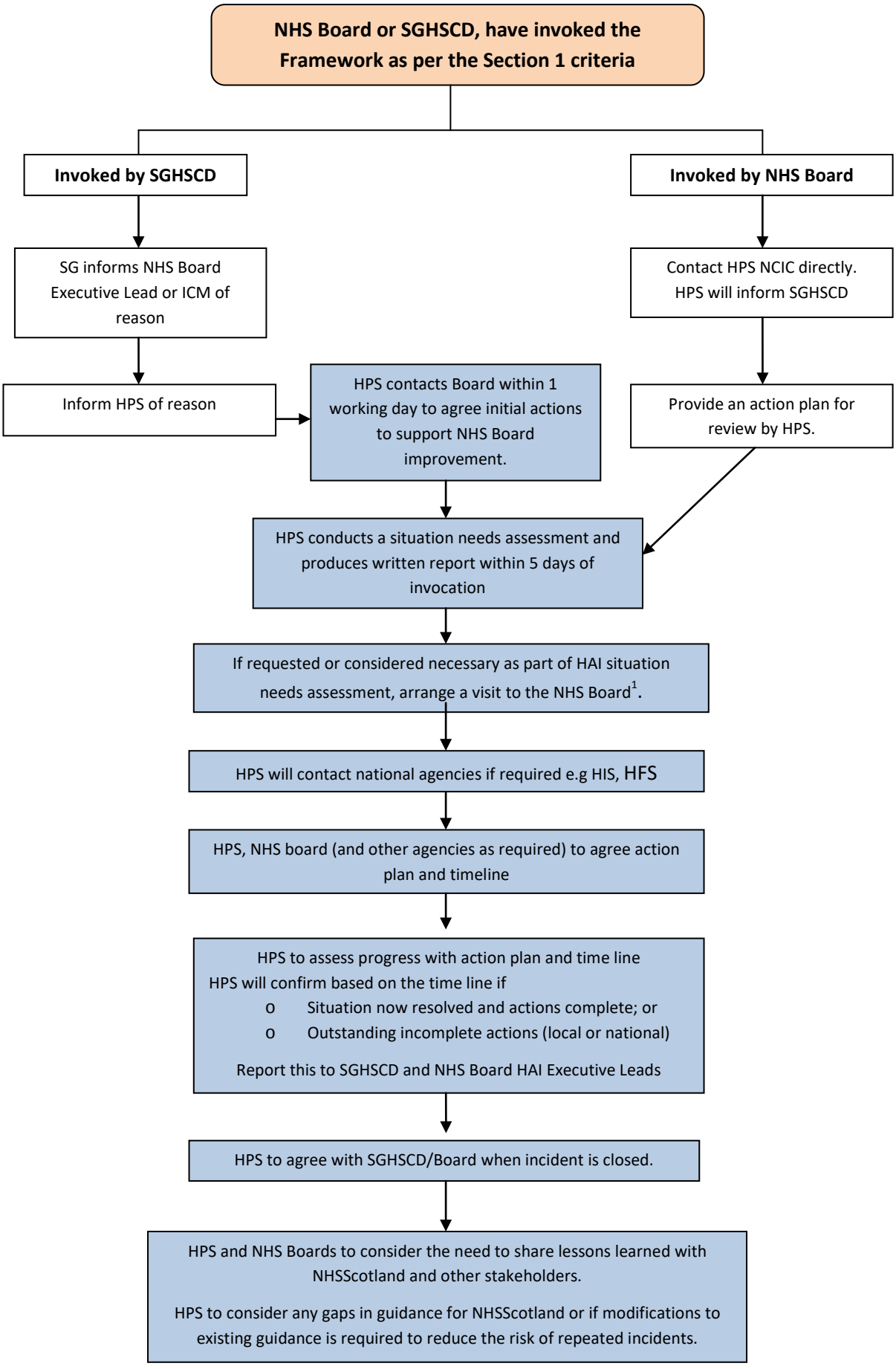
When the Framework has been invoked by SG HAI/AMR Policy Unit**, HPS will:**

1. Contact the NHS Board within one working day and agree initial actions to determine if sufficient actions have been planned to support NHS Board improvement
2. Produce a written assessment – healthcare infection situation needs assessment - within 5 working days of any invocation. This will be sent to SG HAI/AMR Policy Unit and appropriate NHS Board Executive lead or deputy for information.
3. If requested or considered necessary, as part of HAI situation needs assessment, arrange a visit to the NHS Board. This visit will take place within 10 working days of invocation. The NHS Board should be informed of all urgent recommendations on the day of visit either verbally or written.
4. Send a written report of the visit to the NHS Board within 5 working days. The NHS Board will have 2 working days to respond before HPS forwards the agreed report to SG HAI/AMR Policy Unit and the NHS Board. The report should be sent to SG HAI/AMR Policy Unit within 10 working days of the visit. Any variation in timeline will be agreed on behalf of SG HAI/AMR Policy Unit by HPS.
5. Contact other national agencies e.g. Health Facilities Scotland (HFS), Healthcare Improvement Scotland (HIS), HEI to request support or clarification if required.
6. Support the NHS Board until all actions is completed, identifying any gaps in national guidance and tools as appropriate.
7. Support the board with management of any/all subsequent incident(s)/outbreak(s)/data exceedance within the same ward/area that occur while the original incident(s)/outbreak(s)/data exceedance is still under investigation
8. Report any failures to complete actions as planned/agreed to SG HAI/AMR Policy Unit and appropriate NHS Board Executive Lead.
9. Agree/confirm with SG HAI/AMR Policy Unit when the incident is closed and lessons to reduce risk have been made and/or update SG HAI/AMR Policy Unit on any residual risk/incomplete actions.
10. Consider the need to share lessons with NHSScotland and other stakeholders.

When a NHS Board invokes the Framework they will:

1. Contact HPS ICT nurse consultant directly to declare that they are invoking the Framework and the rationale for this. HPS will inform SG HAI/AMR Policy Unit .
2. Provide a related action plan, any relevant epidemiological data, incident/outbreak reports and/or requested information for review by HPS.
3. HPS will produce a written situation needs assessment within 5 working days of any invocation. This will be sent to SG HAI/AMR Policy Unit for information
4. Consider and discuss with HPS the need for a Board visit. This visit will take place within 10 working days of invocation.
5. Agree specific objective(s) of the site visit and agree a timeline of actions with HPS.
6. Implement urgent recommendations (written and verbal) provided by HPS and agree a timeline for any further recommendations/actions identified.
7. Discuss and agree with HPS the need for other national agency support or clarification e.g. HFS, HIS, HEI.
8. Liaise and communicate with HPS until all actions are completed and identify any gaps in local guidance, tools as appropriate.
9. Agree that HPS include in their support any/all subsequent incident(s)/outbreak(s)/data exceedance within the same ward/area that occur while the original incident(s)/ outbreak(s)/ data exceedance is still under investigation.
10. Report any incomplete planned/agreed actions to HPS.
11. Agree/confirm with HPS when the incident is closed and lessons to reduce risk have been made. HPS will inform SG HAI/AMR Policy Unit of any residual risk/incomplete actions.
12. Consider the sharing of lessons with NHSScotland and other stakeholders.

The National Support Framework Algorithm



[1] This visit will take place within 10 working days of invocation: on the day of the visit the NHS Board will be informed of urgent recommendations with a written report sent to them within 5 working days. The Board will then have 2 working days to respond before the report is forwarded to SGHSCD. Any variation to timescales must be agreed by HPS on behalf of SGHSCD.

National Infection Prevention and Control Manual

Introduction

Coronavirus (COVID-19) There are 2 appendices available within the NIPCM for acute and community settings which summarise the remaining pandemic measures which exist in addition to the NIPCM and provide links to helpful resources, guidance and policy documents.

For pathogen specific guidance see the A-Z of pathogens.
Public Health Scotland COVID-19 guidance is available.
The NHSScotland National Infection Prevention and Control Manual (NIPCM) was first published on 13 January 2012, by the Chief Nursing Officer (CNO (2012)1), and updated on 17 May 2012 (CNO (2012)1 Update).
The NIPCM provides IPC guidance to all those involved in care provision and is considered best practice across all health and care settings in Scotland.
The re-launch of the NIPCM by the CNO on 11 July 2022 emphasises the ongoing importance of application of Infection Prevention and Control (IPC) guidance within health and care settings across Scotland.
Video of Chief Nursing Officer re-launching the NIPCM

Find out more about the NIPCM

You can find out more about the NIPCM by watching the animation or going to the About the manual webpage.

Disclaimer
When an organisation e.g. when a health and care setting uses products or adopts practices that differ from those stated in this National Infection Prevention and Control Manual, that individual organisation is responsible for ensuring safe systems of work including the completion of a risk assessment approved through local governance procedures.

Responsibilities

Responsibilities for the content of this manual

ARHAI Scotland must ensure

- that the content of this manual remains evidence based or where evidence is lacking, content is based on consensus of expert opinion.

Stakeholders of the ARHAI Scotland programmes must ensure

- full participation in the working groups and oversight programmes including full engagement with the consultation process outlined in the Terms of Reference associated with each group

Responsibilities for the adoption and implementation of this manual

Organisations must ensure:

- the adoption and implementation of this manual in accordance with their existing local governance processes
- systems and resources are in place to facilitate implementation and compliance monitoring of infection prevention and control as specified in this manual in all care areas
    - compliance monitoring includes all staff (permanent, agency and where required external contractors)
- there is an organisational culture which promotes incident reporting and focuses on improving systemic failures that encourage safe infection prevention and control working practices including near misses

Managers of all services must ensure that staff:

- are aware of and have access to this manual
- have had instruction/education on infection prevention and control through attendance at events and/or completion of training (for example via NHS Education for Scotland (NES) and/or local board or organisation)
- have adequate support and resources available to enable them to implement, monitor and take corrective action to ensure compliance with this manual. If this cannot be implemented a robust risk assessment detailing deviations from the manual and appropriate mitigation measures must be undertaken and approved through local governance procedures.
- with health concerns (including pregnancy) or who have had an occupational exposure relating to the prevention and control of infection are timeously referred to the relevant agency, for example General Practitioner, Occupational Health or if required Accident and Emergency
- have undergone the required health checks or clearance (including those undertaking Exposure Prone Procedures (EPPs)
- include infection prevention and control as an objective in their Personal Development Plans (or equivalent)

Staff providing care must ensure that they:

- understand and apply the principles of infection prevention and control set out in this manual
- maintain competence, skills and knowledge in infection prevention and control through attendance at education events and/or completion of training, for example NHS Education for Scotland (NES) and/or local board or organisation
- communicate the infection prevention and control practices to be taken to appropriate colleagues, those being cared for, relatives and visitors without breaching confidentiality
- have up to date occupational immunisations/health checks/clearance requirements as appropriate
- report to line managers and document any deficits in knowledge, resources, equipment and facilities or incidents that may result in transmission of infection including near misses e.g sharps or PPE failures
- do not provide care while at risk of potentially transmitting infectious agents to others - if in any doubt they must consult with their line manager, Occupational Health Department, Infection Prevention and Control Team (IPCT) or Health Protection Team (HPT)
- contact HPT/IPCT if there is a suspected or actual HAI incident/outbreak

Infection Prevention and Control Teams (IPCTs) and Health Protection Teams (HPTs) must:

- engage with staff to develop systems and processes that lead to sustainable and reliable improvements in relation to the application of infection prevention and control practices
- provide expert advice on the application of infection prevention and control in all care settings and provide support to develop individual or organisational risk assessments where deviations from the NIPCM are necessary
- have epidemiological or surveillance systems capable of distinguishing patient case or cases requiring investigations and control
- complete documentation when an incident/outbreak or data exceedence is reported (IPCTs should ensure application of the HIIAT where applicable and report incidents and outbreaks using the ORT as outlined by the HIIAT).

Last updated: 4 October 2021

Chapter 1 - Standard Infection Control Precautions (SICPs)

Standard Infection Control Precautions (SICPs), covered in this chapter are to be **used by all staff, in all care settings, at all times, for all patients[1] whether infection is known to be present or not** to ensure the safety of those being cared for, staff and visitors in the care environment.
The Hierarchy of Controls detailed in appendix 20 should also be considered in controlling exposures to occupational hazards which include infection risks.

SICPs are the basic infection prevention and control measures necessary to reduce the risk of transmission of infectious agent from both recognised and unrecognised sources of infection.
Sources of (potential) infection include blood and other body fluids secretions or excretions (excluding sweat), non-intact skin or mucous membranes, any equipment or items in the care environment that could have become contaminated and even the environment itself if not cleaned and maintained appropriately.
The application of SICPs during care delivery is determined by an assessment of risk to and from individuals and includes the task, level of interaction and/or the anticipated level of exposure to blood and/or other body fluids.
To be effective in protecting against infection risks, SICPs must be applied continuously by all staff. The application of SICPs **during care delivery** must take account of;

- risk to and from the individual for whom care is being provided
- the task to be undertaken
- level of interaction
- the anticipated level of exposure to blood and/or other body

Doing so allows staff to safely apply each of the 10 SICPs by ensuring effective infection prevention and control is maintained.
SICPs implementation monitoring must also be ongoing to demonstrate safe practices and commitment to patient, staff and visitor safety.
Further information on using SICPs for Care at Home can be found on the NHS National Education Scotland (NES) website.

[1]The use of the word 'Persons' can be used instead of 'Patient' when using this document in non-healthcare settings.

Last updated: 10 May 2022

1.1 Patient Placement/Assessment for infection risk

Patients must be promptly assessed for infection risk on arrival at the care area (if possible, prior to accepting a patient from another care area) and should be continuously reviewed throughout their stay. This assessment should influence patient placement decisions in accordance with clinical/care need(s).
Patients who may present a particular cross-infection risk should be isolated on arrival and appropriate clinical samples and screening undertaken as per national protocols to establish the causative pathogen. This includes but is not limited to patients:

- With symptoms such as loose stools or diarrhoea, vomiting, fever or respiratory symptoms. This includes COVID-19 (see COVID-19 respiratory symptom assessment questions and testing requirements within Appendix 21 COVID-19 Pandemic controls)
- With a known (laboratory confirmed) or suspected infectious pathogen for which appropriate duration of precautions as outlined in A-Z pathogens are not yet complete.
- Known or suspected to have been previously positive with a Multi-drug Resistant Organism (MDRO) e.g MRSA, CPE.
- Who have been a close contact of a person who has been colonised or infected with CPE in the last 12 months.
- Who have been hospitalised outside Scotland in the last 12 months (including those who received dialysis).

For assessment of infection risk see Section 2: Transmission Based Precautions.
Further information can be found in the patient placement literature review.

1.2 Hand Hygiene

Hand hygiene is considered an important practice in reducing the transmission of infectious agents which cause infections.
Hand washing sinks must only be used for hand hygiene and must not be used for the disposal of other liquids. (See Appendix 3 of Pseudomonas Guidance)
Before performing hand hygiene:

- expose forearms (bare below the elbows)
- remove all hand/wrist jewellery* including any embedded jewellery (a single, plain metal finger ring or ring dosimeter (radiation ring) is permitted but should be removed (or manipulated) during hand hygiene); bracelets or bangles such as the Kara which are worn for religious reasons should be able to be pushed higher up the arm and secured in place to enable effective hand hygiene which includes the wrists;
- ensure fingernails are clean, short and that artificial nails or nail products are not worn; and
- cover all cuts or abrasions with a waterproof dressing.

Hand washing should be extended to the forearms if there has been exposure of forearms to blood and/or body fluids.
*For health and safety reasons, Scottish Ambulance Service Special Operations Response Teams (SORT) in high-risk situations require to wear a wristwatch.
To perform hand hygiene:
Alcohol Based Hand Rubs (ABHRs) must be available for staff as near to point of care as possible. Where this is not practical, personal ABHR dispensers should be used. Application of sufficient volume of ABHR to cover all surfaces of the hands is important to ensure effective hand hygiene. Manufacturer's instruction should be followed for the volume of ABHR required to provide adequate coverage for the hands. In the absence of manufacturers instructions, volumes of approximately 3ml are recommended to ensure full coverage.
Perform hand hygiene:
The World Health Organization's '5 moments for hand hygiene' should be used to highlight the key indications for hand hygiene.

1. before touching a patient
2. before clean/aseptic procedures. If ABHR cannot be used, then antimicrobial liquid soap should be used
3. after body fluid exposure risk
4. after touching a patient
5. after touching a patient's immediate surroundings

Some additional examples of hand hygiene moments include but are not limited to:

- before handling medication
- before preparing food
- before donning (putting on) and after doffing (taking off) PPE
- after visiting the toilet
- between carrying out different care activities on the same patient
- after cleaning and disinfection procedures
- after handling waste

Download and print the 5 moments of hand hygiene poster.
Wash hands with non-antimicrobial liquid soap and water if:

- hands are visibly soiled or dirty
- hands are potentially contaminated with blood, other body fluids or excretions
- caring for patients with vomiting or diarrhoeal illnesses;
- caring for a patient with a suspected or known gastro-intestinal infection, for example Norovirus or a spore forming organism such as *Clostridioides difficile*

Hands should be washed with warm/tepid water to mitigate the risk of dermatitis associated with repeated exposures to hot water and to maximise hand washing compliance. Compliance may be compromised where water is too hot or too cold. Hands should be dried thoroughly following hand washing using a soft, absorbent, disposable paper towel from a dispenser which is located close to the sink but beyond the risk of splash contamination.
In all other circumstances use ABHRs for routine hand hygiene during care.
Staff working in the community should carry a supply of ABHRs to enable them to perform hand hygiene at the appropriate times.
Where staff are required to wash their hands in the service user's own home they should do so for at least 20 seconds using any hand soap available.
Staff should carry a supply of disposable paper towels for hand drying rather than using hand towels in the individual's own home. Once hands have been thoroughly dried, ABHR should be used.
The use of antimicrobial hand wipes is only permitted where there is no access to running water. Staff must perform hand hygiene using ABHR immediately after using the hand wipes and perform hand hygiene with soap and water at the first available opportunity.
(The video above demonstrating Hand Washing and Drying Technique was produced by NHS Ayrshire and Arran)
For how to:

- wash hands see Appendix 1
- hand rub see Appendix 2

Skin care:

- Alcohol based hand rubs when used for hand hygiene should contain emollients in their formulation.
- Warm/tepid water should be used to reduce the risk of dermatitis; hot water should be avoided.
- Pat hands dry thoroughly after hand washing using disposable paper towels; avoid rubbing which may lead to skin irritation/damage.
- Use an emollient hand cream during work and when off duty.
- Do not use refillable dispensers or provide communal tubs of hand cream in the care setting.
- Staff with skin problems should seek advice from Occupational Health or their GP.

Surgical Hand Antisepsis
Surgical scrubbing/rubbing: (applies to persons undertaking surgical and some invasive procedures)
Perform surgical scrubbing/rubbing before donning sterile theatre garments or at other times e.g. prior to insertion of central vascular access devices.

- Remove all hand/wrist jewellery.
- Nail brushes should not be used for surgical hand antisepsis.
- Nail picks (single-use) can be used if nails are visibly dirty.
- Soft, non-abrasive, sterile (single-use) sponges may be used to apply antimicrobial liquid soap to the skin if licensed for this purpose.
- Use an antimicrobial liquid soap licensed for surgical scrubbing or an ABHR licensed for surgical rubbing (as specified on the product label).
- ABHR can be used between surgical procedures if licensed for this use or between glove changes if hands are not visibly soiled.

- For surgical scrubbing technique see Appendix 3.
- For surgical rubbing technique see Appendix 4.

Hand Hygiene posters/leaflets can be found at Wash Your Hands of Them Resources.
Information on the WHO World Hand Hygiene Day 2022 with the theme 'Unite for safety - clean your hands' is available.
Further information can be found in the Hand Hygiene literature reviews:

- Hand washing, hand rubbing and indications for hand hygiene
- Hand hygiene products
- Skin care
- Surgical hand antisepsis in the clinical setting

1.3 Respiratory and Cough Hygiene

Respiratory and cough hygiene is designed to minimise the risk of cross-transmission of respiratory illness (pathogens):

- Cover the nose and mouth with a disposable tissue when sneezing, coughing, wiping and blowing the nose. If a disposable tissue is not available use elbow to cover the nose and mouth when coughing or sneezing.
- Patients showing symptoms of respiratory illness should be encouraged to wear a surgical (TYPE II R FRSM) face mask where it is clinically safe and tolerated by the wearer.
- Dispose of used tissues and face masks promptly into a waste bin.
- In the absence of disposable tissues and hand hygiene facilities only, individuals should cough or sneeze into their elbow/sleeve.
- Wash hands with non-antimicrobial liquid soap and warm water after coughing, sneezing, using tissues, or after contact with respiratory secretions or objects contaminated by these secretions.
- Where there is no running water available or hand hygiene facilities are lacking, staff may use hand wipes followed by ABHR and should wash their hands at the first available opportunity.
- Keep contaminated hands away from the eyes nose and mouth.

Staff should promote respiratory and cough hygiene helping those (e.g. elderly, children) who need assistance with this e.g. providing patients with tissues, plastic bags for used tissues and hand hygiene facilities as necessary.
Further information can be found in the cough etiquette/respiratory hygiene literature review.

1.4 Personal Protective Equipment

Before undertaking any care task or procedure staff should assess any likely exposure to blood and/or body fluids and ensure PPE is worn that provides adequate protection against the risks associated with the procedure or task being undertaken.
All PPE should be:

- located close to the point of use;
- stored to prevent contamination in a clean/dry area until required for use (expiry dates must be adhered to);
- single-use only items unless specified by the manufacturer;
- changed immediately after each patient and/or following completion of a procedure or task; and
- disposed of after use into the correct waste stream i.e. healthcare waste or domestic waste.

Reusable PPE items, e.g. non-disposable goggles/face shields/visors must have a decontamination schedule with responsibility assigned.
Further information on best practice for PPE use for SICPs can be found in Appendix 16.

Gloves must:

- be worn when exposure to blood, body fluids, (including but not limited to secretions and/or excretions), non-intact skin, lesions and/or vesicles, mucous membranes, hazardous drugs and chemicals, e.g. cleaning agents is anticipated/likely. (**Scottish National Blood Transfusion Service (SNBTS) adopt practices that differ from those stated in the National Infection Prevention and Control Manual)**;
- Gloves are a single-use item and should be donned immediately prior to exposure risk and should be changed immediately after each use or upon completion of a task;
- never be worn inappropriately in situations such as; to go between patients, move around a care area, work at IT workstations;
- be changed if a perforation or puncture is suspected or identified;
- be appropriate for use, fit for purpose and well-fitting;
- not be worn as a substitute to hand hygiene.

Double gloving is only recommended during some Exposure Prone Procedures (EPPs) e.g. orthopaedic and gynaecological operations or when attending major trauma incidents and when caring for a patient with a suspected or known High Consequence Infectious disease. Double gloving is not necessary at any other time.
For appropriate glove use and selection see Appendix 5.
Further information can be found in the Gloves literature review.
Aprons must be:

- worn to protect uniform or clothes when contamination is anticipated/likely
- when in direct care contact with a patient or their immediate environment e.g providing toileting support or changing bed linen; and
- changed between patients and following completion of a procedure or task.

Full body gowns/Fluid repellent coveralls must be:

- worn when there is a risk of extensive splashing of blood and/or other body fluids e.g. in the operating theatre;
- worn when a disposable apron provides inadequate cover for the procedure/task being performed;
- changed between patients and immediately after completion of a procedure or task.

The choice of apron or gown is based on a risk assessment and anticipated level of body fluid exposure. Routine sessional use of gowns/aprons is not permitted.
Sterile surgical gowns must be:

- worn by all scrubbed members of the operating theatre surgical team;
- worn for insertion of central venous catheters, insertion of peripherally inserted central catheters, insertion of pulmonary artery catheters and spinal, epidural and caudal procedures.

Reusable gowns must:

- not be worn in the operating theatre environment or for aseptic surgical procedures;
- be appropriately processed between uses based on manufacturer's instructions.

If hand hygiene with soap and water is required, this should not be performed whilst wearing an apron/gown in line with a risk of apron/gown contamination; hand hygiene using ABHR is acceptable.
Further information can be found in the Aprons/Gowns literature review.
Eye/face protection must:

- be worn if blood and/or body fluid contamination to the eyes/face is anticipated/likely and always during Aerosol Generating Procedures.
- be worn by all scrubbed members of the surgical team for all surgical procedures;
- not be impeded by accessories such as piercings/false eyelashes;
- not be touched when worn;
- cover the full peri-orbital region and wrap around the sides of the face;
- be removed or changed in accordance with manufacturer's instructions, if vision is compromised through contamination with blood or body fluids, if the integrity of the equipment is compromised, at the end of a clinical procedure/task and/or prior to leaving the dedicated clinical area.

Regular corrective spectacles and safety spectacles are not considered eye protection.
Further information can be found in the eye/face protection literature review.
Fluid Resistant Type IIR surgical face masks must be:

- worn by a patient known or suspected to be infected with a micro-organism spread by the droplet or airborne route when leaving their room or when moving between clinical areas including transfers by portering staff and ambulance services.
- worn if splashing or spraying of blood, body fluids, secretions or excretions onto the respiratory mucosa (nose and mouth) is anticipated/likely; (as part of SICPs a full face visor may be used as an alternative to fluid resistant Type IIR surgical face masks to protect against splash or spray.)
- worn in combination with a full face shield, integrated half face shield or goggles for AGPs on non-infectious patients;
- worn to protect patients from the operator as a source of infection when performing invasive spinal procedures such as myelography, lumbar puncture and spinal anaesthesia ,inserting a Central Vascular Catheter (CVC), performing intra-articular (joint) injections;
- worn by all scrubbed members of the theatre surgical team for all surgical procedures;
- worn by non-scrubbed members of the theatre surgical team if deemed necessary following a risk assessment of exposure to blood and/or body fluids;
- well fitting and fit for purpose (fully covering the mouth and nose);
- removed or changed;
  - at the end of a procedure/task;
  - if the integrity of the mask is breached, e.g. from moisture build-up after extended use or from gross contamination with blood or body fluids; and
  - in accordance with specific manufacturers' instructions.

Transparent face masks
Transparent face masks may be used to aide communication with patients in some settings
Transparent face masks must;

- meet the specification standards of the Transparent face mask technical specification (Department of Health and Social Care - November 2021);and
- have been approved by the UK Transparent Mask review group for use within health and social care settings
- only be worn in areas where Fluid Resistant Type IIR surgical face masks are used as personal protective equipment.

Further information can be found in:

- aerosol generating procedures literature review
- surgical face masks literature review

- section 2.4 of the NIPCM
- appendix 11 of the NIPCM

During the ongoing COVID-19 pandemic please also refer to the Scottish Government Extended Use of Facemask Guidance. The extended use of facemask guidance is not considered an element of SICPs but an additional mitigation measure applied in response to the ongoing COVID-19 pandemic response.

Footwear must be:

- non-slip, impervious, clean and well maintained, and support and cover the entire foot to avoid contamination with blood or other body fluids or potential injury from sharps
- removed before leaving a care area where dedicated footwear is used e.g. theatre. Employees must clean and decontaminate footwear upon removal and when visibly soiled with blood and/or body fluids following manufacturers recommended instructions for cleaning and disinfection
- dedicated for use in settings such as theatres and stored in a designated area when not in use
- Footwear found to be defective should be repaired or replaced before further use.
- Overshoes/shoe covers should not be used in the general health and care environment.

Further information can be found in the footwear literature review.

Headwear must be:

- worn in theatre settings/restricted and semi-restricted areas;
- worn as PPE for procedures where splashing/spraying of body fluids is anticipated, and as source control when performing clean/aseptic procedures where risk of infection is deemed to be high.
- well fitting and completely cover the hair;
- changed/disposed of at the end of a single clinical procedure/task; or at the end of a theatre session (for sessional use); immediately if contaminated with blood and/or body fluids;
- removed before leaving the theatre/clean room.

Further information can be found in the headwear literature review

For the recommended method of putting on and removing PPE see video below and Appendix 6.

COVID-19 - the correct order for donning, doffing and disposal of PPE for HCWs in a primary care setting from NHS National Services Scotland on Vimeo.

Sessional use of PPE

Typically, sessional use of any PPE is not permitted within health and care settings at any time as it may be associated with transmission of infection within health and care settings.

Due to the much wider and frequent use of FRSMs eye/face protection (where required) by HCWs during the ongoing COVID-19 pandemic and during periods of increased respiratory activity in health and care settings both as part of service user direct care delivery and extended use of facemasks guidance, sessional use of FRSMs and eye/face protection is permitted at this time.

This means that FRSMs and eye/face protection (where required) can be used moving between service users and for a period of time where a HCW is undertaking duties in an environment where there is exposure to patients with suspected or confirmed respiratory infection. A session ends when the healthcare worker leaves the clinical setting or exposure environment. When using FRSMs and eye/face protection sessionally it is important to note the following;

- FRSMs/FFP3/Eye/Face protection must be replaced if visibly contaminated, wet, damaged, uncomfortable, when moving between patients with suspected or confirmed respiratory infection and those without.
- FRSMs must be replaced following procedures where splash/spray is generated
- HCWs must not touch their FRSM, eye/face protection or FFP3 respirator whilst in situ. If they inadvertently do so, they must perform hand hygiene immediately afterwards

The above measures in conjunction with safe donning and doffing of PPE ensure the safety of the HCW and the service user.

No other PPE is permitted to be worn sessionally moving between service users or care tasks. This includes gloves, aprons and gowns.

PPE for Visitors

PPE may be offered to visitors to protect them from acquiring a transmissible infection. If a visitor declines to wear PPE when it is offered then this should be respected and the visit must not be refused. PPE use by visitors can not be enforced and there is no expectation that staff monitor PPE use amongst visitors. Below is the PPE which should be worn where it is appropriate to do so and when the visitor chooses to do so.

Visitors do not routinely require PPE unless they are providing direct care to the individual they are visiting. In line with extended use of face mask guidance, visitors are strongly recommended to continue to wear a face covering when visiting a healthcare setting. Should they arrive without one, they can be provided with a FRSM.

The table below provides a guide to PPE for use by visitors if delivering direct care.

IPC Precaution	Gloves	Apron	Face covering/mask	Eye/Face Protection
Standard Infection Control Precautions (SICPs)	Not required*1	Not required*2	Where splash/spray to nose/mouth is anticipated during direct care Encourage the use of face covering (or provide with Type IIR FRSM if visitor arrives without a face covering) in line with Extended use of face masks guidance	Not required*3

IPC Precaution	Gloves	Apron	Face covering/mask	Eye/Face Protection
Transmission Based Precautions (TBPs)	Not required*1	Not required*2	If within 2 metres of service user with suspected or known respiratory infection Encourage the use of face covering (or provide with Type IIR FRSM if visitor arrives without a face covering) in line with Extended use of face masks guidance	If within 2 metres of service user with suspected or known respiratory infection

*1 unless providing direct care which may expose the visitor to blood and/or body fluids i.e. toileting.
*2 unless providing care resulting in direct contact with the service user, their environment or blood and/or body fluid exposure i.e. toileting, bed bath.
*3 Unless providing direct care and splashing/spraying is anticipated

1.5 Safe Management of Care Equipment

Care equipment is easily contaminated with blood, other body fluids, secretions, excretions and infectious agents. Consequently it is easy to transfer infectious agents from communal care equipment during care delivery.
Care equipment is classified as either:

- **Single-use** – equipment which is used once on a single patient and then discarded. Must never be reused even on the same patient. The packaging carries the symbol below.
  - Needles and syringes are single use devices. They should never be used for more than one patient or reused to draw up additional medication.
  - Never administer medications from a single-dose vial or intravenous (IV) bag to multiple patients.

- **Single patient use** – equipment which can be reused on the same patient.
- **Reusable invasive equipment** - used once then decontaminated e.g. surgical instruments.
- **Reusable non-invasive equipment (often referred to as communal equipment)** - reused on more than one patient following decontamination between each use e.g. commode, patient transfer trolley.

Before using any sterile equipment check that:

- the packaging is intact
- there are no obvious signs of packaging contamination
- the expiry date remains valid

Decontamination of reusable non-invasive care equipment must be undertaken:

- between each use
- after blood and/or body fluid contamination
- at regular predefined intervals as part of an equipment cleaning protocol
- before inspection, servicing or repair

Adhere to manufacturers' guidance for use and decontamination of all care equipment.
All reusable non-invasive care equipment must be rinsed and dried following decontamination then stored clean and dry.
Decontamination protocols should include responsibility for; frequency of; and method of environmental decontamination.
An equipment decontamination status certificate will be required if any item of equipment is being sent to a third party e.g for inspection, servicing or repair.
Guidance may be required prior to procuring, trialling or lending any reusable non-invasive equipment.
Further information can be found in the management of care equipment literature review.
For how to decontaminate reusable non-invasive care equipment see Appendix 7.

1.6 Safe Management of Care Environment

It is the responsibility of the person in charge to ensure that the care environment is safe for practice (this includes environmental cleanliness/maintenance). The person in charge must **act** if this is deficient.
The care environment must be:

- visibly clean, free from non-essential items and equipment to facilitate effective cleaning
- well maintained and in a good state of repair
- routinely cleaned in accordance with the Health Facilities Scotland (HFS) National Cleaning Specification:
  - A fresh solution of general purpose neutral detergent in warm water is recommended for routine cleaning. This should be changed when dirty or at 15 minutes intervals or when changing tasks.
  - Routine disinfection of the environment is not recommended. However, 1,000ppm available chlorine should be used routinely on sanitary fittings.

Staff groups should be aware of their environmental cleaning schedules and clear on their specific responsibilities.
Cleaning protocols should include responsibility for; frequency of; and method of environmental decontamination.
When an organisation adopts decontamination processes not recommended in the NIPCM the care organisation is responsible for governance of and completion of local risk assessment(s) to ensure safe systems of work
Further information can be found in the routine cleaning of the environment in hospital setting literature review.

1.7 Safe Management of Linen

Clean linen

- Should be stored in a clean, designated area, preferably an enclosed cupboard.
- If clean linen is not stored in a cupboard then the trolley used for storage must be designated for this purpose and completely covered with an impervious covering that is able to withstand decontamination.

Linen used during patient transfer

- Any linen used during patient transfer e.g. blankets, should be categorised at the point of destination.

For all used linen (previously known as soiled linen):

- Ensure a laundry receptacle is available as close as possible to the point of use for immediate linen deposit.
- Do not:
  - rinse, shake or sort linen on removal from beds/trolleys;
  - place used linen on the floor or any other surfaces e.g. a locker/table top;
  - re-handle used linen once bagged;
  - overfill laundry receptacles; or
  - place inappropriate items in the laundry receptacle e.g. used equipment/needles.

For all infectious linen (this mainly applies to healthcare linen) i.e. linen that has been used by a patient who is known or suspected to be infectious and/or linen that is contaminated with blood and/or other body fluids e.g. faeces:

- Place directly into a water-soluble/alginate bag and secure; then place into a plastic bag e.g. clear bag and secure before placing in a laundry receptacle. This applies also to any item(s) heavily soiled and unlikely to be fit for reuse.

- Used and infectious linen bags/receptacles must be tagged e.g. ward/care area and date.
- Store all used/infectious linen in a designated, safe, lockable area whilst awaiting uplift. Uplift schedules must be acceptable to the care area and there should be no build-up of linen receptacles.

Local guidance regarding management of linen may be available.
All linen that is deemed unfit for re-use e.g torn or heavily contaminated, should be categorised at the point of use and returned to the laundry for disposal.
Further information can be found in the safe management of linen literature review and National Guidance for Safe Management of Linen in NHSScotland Health and Care Environments - For laundry services/distribution.
Further information about linen bagging and tagging can be found in Appendix 8.
Scottish Government uniform, dress code and laundering policy is available.

1.8 Safe Management of Blood and Body Fluid Spillages

Spillages of blood and other body fluids may transmit blood borne viruses.
Spillages must be decontaminated immediately by staff trained to undertake this safely.
Responsibilities for the decontamination of blood and body fluid spillages should be clear within each area/care setting.
If superabsorbent polymer gel granules for containment of bodily waste are used these should be used in line with national guidance. In Scotland refer to Safety Action Notice - SAN(SC)19/03 | National Services Scotland (nhs.scot)
For management of blood and body fluid spillages see Appendix 9.
Further information can be found in the management of blood and body fluid in health and social care settings literature review.

1.9 Safe Disposal of Waste (including sharps)

Scottish Health Technical Note (SHTN) 3: NHSScotland Waste Management Guidance contains the regulatory waste management guidance for NHSScotland including waste classification, segregation, storage, packaging, transport, treatment and disposal.
The Health and Safety (Sharp Instruments in Healthcare) Regulations 2013 outline the regulatory requirements for employers and contractors in the healthcare sector in relation to the safe disposal of sharps.
Categories of waste:

- **Healthcare (including clinical) waste** – is produced as a direct result of healthcare activities e.g. soiled dressings, sharps.
- **Special (or hazardous) waste** – arises from the delivery of healthcare in both clinical and non-clinical settings. Special waste includes a range of controlled wastes, defined by legislation, which contain dangerous or hazardous substances e.g. chemicals, pharmaceuticals.
- **Domestic waste** – must be segregated at source into:
  - Dry recyclates (glass, paper and plastics, metals, cardboard).
  - Residual waste (any other domestic waste that cannot be recycled).

Waste Streams:

- **Black – Trivial risk:**
  - **Domestic waste or yellow and black stripes** (small quantities of hygiene waste).
  - Final disposal to Landfill.
  - Clear/opaque receptacles may also be used for domestic waste at care area level.
- **Orange, Light Blue (laboratory)** – Low risk
  - **Orange** - consists of items which are contaminated or likely to be contaminated with blood and/or body fluids including saliva . Final disposal following heat disinfection is to landfill.
  - **Light Blue** – laboratory/microbiological waste that must be autoclaved before disposal via the orange stream.
- **Yellow– High risk:**
  - Waste which poses ethical, highly infectious or contamination risks.
  - This includes anatomical and human tissue which is recognisable as body parts, medical devices and sharps waste boxes that have red, purple or blue lids.
  - Disposal is by specialist incineration.
- **Red – Special waste**
  - Chemical waste.

For care/residential homes waste disposal may differ from the categories described above and guidance from local contractors will apply. Refer to SEPA guidance.
Safe waste disposal at care area level:
Always dispose of waste:

- immediately and as close to the point of use as possible; and
- into the correct segregated colour coded UN 3291 approved waste bag (either orange/yellow for healthcare waste or black/clear/opaque for domestic) or container (sharps box).

Liquid waste e.g. blood must be rendered safe by adding a self-setting gel or compound before placing in an orange lidded leak-proof bin.
Waste bags must be no more than 3/4 full or more than 4 kgs in weight; and use a ratchet tag/or tape (for healthcare waste bags only) using a 'swan neck' to close with the point of origin and date of closure clearly marked on the tape/tag.
Store all waste in a designated, safe, lockable area whilst awaiting uplift. Uplift schedules must be acceptable to the care area and there should be no build-up of waste receptacles.
Sharps boxes must:

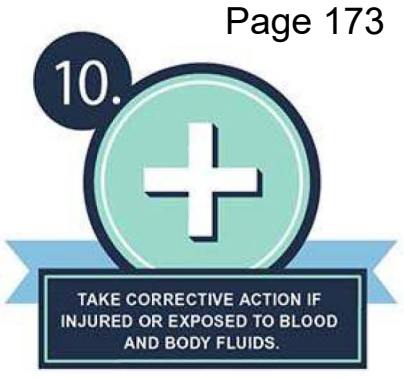
- have a dedicated handle
- have a temporary closure mechanism, which must be employed when the box is not in use
- be labelled with date of assembly, point of origin and date of closure.
- be disposed of when the manufacturers' fill line is reached or following 3 months of assembly (whichever is first)

Local guidance regarding management of waste at care level may be available.
Further information can be found in the safe disposal of waste literature review.

1.10 Occupational Safety: Prevention and Exposure Management (including sharps)

Exposure in relation to blood borne viruses (BBV) is the focus within this section and reflects the existing evidence base.
The Health and Safety (Sharp Instruments in Healthcare) Regulations 2013 outline the regulatory requirements for employers and contractors in the healthcare sector in relation to:

- arrangements for the safe use and disposal of sharps
- provision of information and training to employees
- investigations and actions required in response to work related sharps injuries



Sharps handling must be assessed, kept to a minimum and eliminated if possible with the use of approved safety devices.
Manufacturers' instructions for safe use and disposal must be followed.

Needles must not be re-sheathed/recapped.[4]
Always dispose of needles and syringes as 1 unit.
If a safety device is being used safety mechanisms must be deployed before disposal.
An occupational exposure is a percutaneous or mucocutaneous exposure to blood or other body fluids.
Occupational exposure risk can be reduced via application of other SICPs and TBPs outlined within the NIPCM.

A significant occupational exposure is a percutaneous or mucocutaneous exposure to blood or other body fluids from a source that is known, or found to be positive for a blood borne virus (BBV).
Examples of significant occupational exposures would be:

- a percutaneous injury e.g. injuries from needles, instruments, bone fragments, or bites which break the skin; and/or
- exposure of broken skin (abrasions, cuts, eczema, etc); and/or
- exposure of mucous membranes including the eye from splashing of blood or other high risk body fluids.

There is a potential risk of transmission of a Blood Borne Virus (BBV) from a significant occupational exposure and staff must understand the actions they should take when a significant occupational exposure incident takes place. There is a legal requirement to report all sharps injuries and near misses to line managers/employers.
Additionally, employers are obligated to minimise or eliminate workplace risks where it is reasonably practicable. Immunisation against BBV should be available to all qualifying staff, and testing (and post exposure prophylaxis when applicable) offered after significant occupational exposure incidents.
For the management of an occupational exposure incident see Appendix 10
Exposure prone procedures (EEPs) are invasive procedures where there is a risk that injury to the healthcare worker may result in the exposure of the patient's open tissues to the blood of the worker (bleed-back).
There are some exclusions for HCWs with known BBV infection when undertaking EPPs. The details of these and further information can be found in the occupational exposure management (including sharps) literature review.

[4] **A local risk assessment is required if re-sheathing is undertaken using a safe technique for example anaesthetic administration in dentistry.**

Chapter 2 - Transmission Based Precautions (TBPs)

SICPs may be insufficient to prevent cross transmission of specific infectious agents. Therefore additional precautions TBPs are required to be used by staff when caring for patients with a known or suspected infection or colonisation.
Clinical judgement and decisions should be made by staff on the necessary precautions. This must be based on the:

- suspected or known infectious agent
- transmission route of the infectious agent
- care setting and procedures undertaken
- severity of the illness caused

TBPs are categorised by the route of transmission of infectious agents (some infectious agents can be transmitted by more than one route): Appendix 11 provides details of the type of precautions, optimal patient placement, isolation requirements and any respiratory precautions required. Application of TBPs may differ depending on the setting and the known or suspected infectious agent.

Contact precautions

Used to prevent and control infections that spread via direct contact with the patient or indirectly from the patient's immediate care environment (including care equipment). This is the most common route of cross-infection transmission.

Droplet precautions

Used to prevent and control infections spread over short distances (at least 3 feet or 1 metre) via droplets (greater than 5µm) from the respiratory tract of one individual directly onto a mucosal surface or conjunctivae of another individual. Droplets penetrate the respiratory system to above the alveolar level.

Airborne precautions

Used to prevent and control infections spread without necessarily having close patient contact via aerosols (less than or equal to 5µm) from the respiratory tract of one individual directly onto a mucosal surface or conjunctivae of another individual. Aerosols penetrate the respiratory system to the alveolar level.
Further information on Transmission Based Precautions can be found in the definitions of Transmission Based Precautions literature reviews.

Last updated 4 October 2021

2.1 Patient Placement/Assessment for Infection Risk

The potential for transmission of infection must be assessed at the patient's entry to the care area. If hospitalised or in a care home setting this should be continuously reviewed throughout the stay/period of care. The assessment should influence placement decisions in accordance with clinical/care need(s).
Patients who may present a cross-infection risk in any setting includes but is not limited to those:

- With symptoms such as loose stools or diarrhoea, vomiting, fever or respiratory symptoms. This includes COVID-19 (see also COVID-19 respiratory symptom assessment questions within the Appendix 21 COVID-19 Pandemic Controls).
- With a known (laboratory confirmed) or suspected infectious pathogen for which **appropriate** duration of precautions as outlined in A-Z of pathogens are not yet complete.
- Known or suspected to have been previously positive with a Multi-drug Resistant Organism (MDRO) e.g MRSA, CPE.
- Who have been hospitalised (inpatient) outside Scotland in the last 12 months (including those who received dialysis) .

Isolation facilities should be prioritised depending on the known/suspected infectious agent (refer to Aide Memoire - Appendix 11). All patient placement decisions and assessment of infection risk (including isolation requirements) must be clearly documented in the patient notes.
When single-bed rooms are limited, patients who have conditions that facilitate the transmission of infection to other patients (e.g., draining wounds, stool incontinence, uncontained secretions) and those who are at increased risk of acquisition and adverse outcomes resulting from HAI (e.g., immunosuppression, open wounds, invasive devices, anticipated prolonged length of stay, total dependence on HCWs for activities of daily living) should be prioritised for placement in a single-bed room. Single-bed room prioritisation should be reviewed daily and the clinical judgement and expertise of the staff involved in a patient's management and the Infection Prevention and Control Team (IPCT) or Health Protection Team (HPT) should be sought particularly for the application of TBPs e.g. isolation prioritisation when single rooms are in short supply.
Hospital settings:

- Patients who present a cross-infection risk should be isolated in a single room or for patients with a known or suspected pathogen spread by the airborne route, in a specialised negative pressure isolation facility where available.
- Isolation of infectious patients can be in specialised isolation facilities, single room isolation, cohorting of infectious patients where appropriate, ensuring that they are separated by at least 2 metres with the door closed.
- Signage should be used on doors/areas to communicate isolation requirements and prevent entry of unnecessary visitors and non-essential staff.
- Infectious patients should only be transferred to other departments if medically necessary. If the patient has an infectious agent transmitted by the airborne/droplet route, then if possible/tolerated the patient should wear a surgical face mask during transfer.
- Receiving department/hospital and transporting staff must be aware of the necessary precautions.

Cohorting in hospital settings
Cohorting of patients should only be considered when single rooms are in short supply and should be undertaken in conjunction with the local IPCT.
Patients who should not be placed in multi bed cohorts;

- Patients with **different** infectious pathogens/strains and patients with unknown infectious pathogens (laboratory confirmation still awaited)
- Patients considered more vulnerable to infection
- Patients with a known or suspected infectious pathogen spread by the droplet/airborne route who will undergo an AGP
- Patients who are unlikely to comply with TBPs

Staff cohorting; consider assigning a dedicated team of care staff to care for patients in isolation/cohort rooms/areas as an additional infection control measure during outbreaks/incidents. This can only be implemented through planning of staff rotas if there are sufficient levels of staff available to ensure consistency in staff allocation (so as not to have a negative impact on non-affected patients' care).
Before discontinuing isolation; individual patient risk factors should be considered (e.g. there may be prolonged shedding of certain microorganisms in immunocompromised patients). Clinical and molecular tests to show the absence of microorganisms may be considered in the decision to discontinue isolation and can reduce isolation times. The clinical judgement and expertise of the staff involved in a patient's management and the Infection Prevention and Control Team (IPCT) or Health Protection Team (HPT) should be sought on decisions regarding isolation discontinuation.
Primary care/out-patient settings:

- Patients attending these settings with suspected/known infection/colonisation should be prioritised for assessment/treatment e.g. scheduled appointments at the start or end of the clinic session. Infectious patients should be separated from other patients whilst awaiting assessment and during care management wherever possible.
- If transfer from a primary care facility to hospital is required, the ambulance service should be informed of the infectious status of the patient.

Further information can be found in the patient placement literature review.

2.2 Safe Management of Patient Care Equipment in an Isolation Room/Cohort Area

- Use single-use items if possible.
- Reusable non-invasive care equipment should be dedicated to the isolation room/cohort area and decontaminated prior to use on another patient Section 1.5. Safe Management of Care Equipment
- An increased frequency of decontamination should be considered for reusable non-invasive care equipment when used in isolation/cohort areas.

If an item cannot withstand chlorine releasing agents staff are advised to consult the manufacturer's instructions for a suitable alternative to use following or combined with detergent cleaning.
For how to decontaminate non-invasive reusable equipment see Appendix 7.
Note: Scottish Ambulance Service (SAS) and Scottish National Blood Transfusion Service adopt practices that differ from those stated in the National Infection Prevention and Control Manual.

2.3 Safe Management of the Care Environment

Routine environmental decontamination
Hospital/Care home setting:
Patient isolation/cohort rooms/area must be decontaminated **at least daily**, this may be increased on the advice of IPCTs/HPTs. These areas must be decontaminated using either:

- a combined detergent/disinfectant solution at a dilution of 1,000 parts per million available chlorine (ppm available chlorine (av.cl.)); or
- a general purpose neutral detergent in a solution of warm water followed by disinfection solution of 1,000ppm av.cl.

Manufacturers' guidance and recommended product "contact time" must be followed for all cleaning/disinfection solutions .
Increased frequency of decontamination/cleaning schedules should be incorporated into the environmental decontamination schedules for areas where there may be higher environmental contamination rates e.g.

- toilets/commodes particularly if patients have diarrhoea; and
- "frequently touched" surfaces such as door/toilet handles and locker tops, over bed tables and bed rails.

Patient rooms must be terminally cleaned following resolution of symptoms, discharge or transfer. This includes removal and laundering of all curtains and bed screens.
Vacated rooms should also be decontaminated following an AGP.
Primary care/Out-patient settings:
The extent of decontamination between patients will depend on the duration of the consultation/assessment, the patients presenting symptoms and any visible environmental contamination.
Equipment used for environmental decontamination must be either single-use or dedicated to the affected area then decontaminated or disposed of following use e.g. cloths, mop heads.
Terminal decontamination
Following patient transfer, discharge, or once the patient is no longer considered infectious:
Remove from the vacated isolation room/cohort area, all:

- healthcare waste and any other disposable items (bagged before removal from the room);
- bedding/bed screens/curtains and manage as infectious linen (bagged before removal from the room); and
- reusable non-invasive care equipment (decontaminated in the room prior to removal) Appendix 7.

The room should be decontaminated using either:

- a combined detergent disinfectant solution at a dilution (1,000ppm av.cl.); or
- a general purpose neutral detergent clean in a solution of warm water followed by disinfection solution of 1,000ppm av.cl..

The room must be cleaned from the highest to lowest point and from the least to most contaminated point.
Manufacturers' guidance and recommended product "contact time" must be followed for all cleaning/disinfection solutions .
Unless instructed otherwise by the IPCT there is no requirement for a terminal clean of an outpatient area or theatre recovery.
Note: Scottish Ambulance Service (SAS) and Scottish National Blood Transfusion Service adopt practices that differ from those stated in the National Infection Prevention and Control Manual.
When an organisation adopts practices that differ from those recommended/stated in the NIPCM with regards to cleaning agents, the individual organisation is fully responsible for ensuring safe systems of work, including the completion of local risk assessment(s) approved and documented through local governance procedures.

2.4 Personal Protective Equipment (PPE)

2.4.1 Surgical masks

A type IIR fluid resistant surgical mask should be worn when caring for a patient with a suspected/confirmed infectious agent spread by the droplet route.
Surgical masks worn by patients with suspected/confirmed infectious agents spread by the droplet or airborne routes, as a form of source control, should meet type II or IIR standards.
During the ongoing COVID-19 pandemic please also refer to the Scottish Government Extended Use of Facemask Guidance. The extended use of facemask guidance is an additional mitigation measure applied in response to the ongoing COVID-19 pandemic response.

2.4.2 Eye/face protection

A face visor or goggles should be used in combination with a fluid resistant type IIR surgical mask when caring for symptomatic patients infected with droplet transmitted infectious agents.
A face visor or goggles should be used in combination with a fluid resistant FFP3 respirator when caring for symptomatic patients infected with an airborne transmitted infectious agent.
Eye/face protection should be worn

- by all of those in the room when potentially infectious AGPs are conducted
- for the care of patients with novel infectious agents including pandemic influenza

2.4.3 Aprons/Gowns

An apron should be worn when caring for patients known or suspected to be colonised/infected with antibiotic resistant bacteria including contact with the patient's environment.
Plastic aprons should be used in health and social care settings for protection against contamination with blood and/or body fluids.
A fluid repellent gown should be used if excessive splashing or spraying is anticipated.
A full body fluid repellent gown should be worn when conducting AGPs on patients known or suspected to be infected with a respiratory infectious agent.
Further information can be found in the Aprons/Gowns literature review.

2.4.4 Gloves

Gloves must:

- be worn when exposure to blood, body fluids, (including but not limited to secretions and/or excretions), non-intact skin, lesions and/or vesicles, mucous membranes, hazardous drugs and chemicals, e.g. cleaning agents is anticipated/likely;[2]
- Gloves are a single-use item and should be donned immediately prior to exposure risk and should be changed immediately after each use or upon completion of a task;
- never be worn inappropriately in situations such as; to go between patients, move around a care area, work at IT workstations;
- be changed if a perforation or puncture is suspected or identified;
- be appropriate for use, fit for purpose and well-fitting;
- not be worn as a substitute to hand hygiene.

Double gloving is only recommended during some Exposure Prone Procedures (EPPs) e.g. orthopaedic and gynaecological operations or when attending major trauma incidents and when caring for a patient with a suspected or known High Consequence Infectious disease. Double gloving is not necessary at any other time.
For appropriate glove use and selection see Appendix 5.
Further information can be found in the Gloves literature review.

2.4.5 RPE

Filter Face Piece 3 (FFP3) Respirators
PPE must still be used in accordance with SICPs when using Respiratory Protective Equipment. See Chapter 1.4 for PPE use for SICPs.
Where it is not reasonably practicable to prevent exposure to a substance hazardous to health (as may be the case where healthcare workers are caring for patients with suspected or known airborne micro-organisms) the hazard must be adequately controlled by applying protection measures appropriate to the activity and consistent with the assessment of risk. If the hazard is unknown the clinical judgement and expertise of IPC/HP staff is crucial and the precautionary principle should apply.

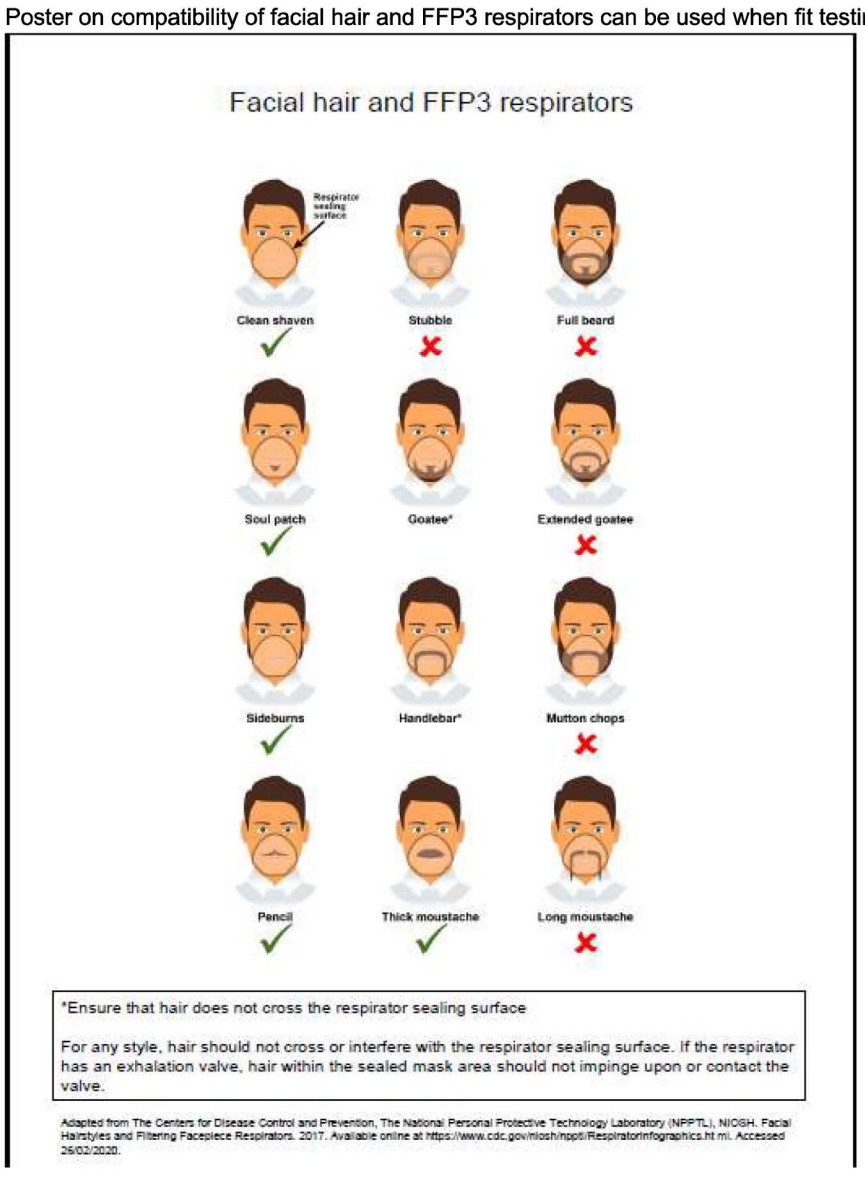
Respiratory Protective Equipment (RPE) i.e. FFP3 and facial protection, must be considered when:

- a patient is admitted with a known/suspected infectious agent/disease spread wholly by the airborne route; and
- when carrying out aerosol generating procedures (AGPs) on patients with a known/suspected infectious agent spread wholly or partly by the airborne or droplet route.

Please also see Appendix 17 for the extant list of Aerosol Generating Procedures which require the application of airborne precautions. Appendix 17 also includes details of associated Post AGP Fallow times.
Where staff have concerns about potential COVID-19 exposure to themselves during the ongoing COVID-19 pandemic, they may choose to wear an FFP3 respirator rather than a fluid-resistant surgical mask (FRSM) when providing patient care, provided they are fit tested. This is a personal PPE risk assessment, as per DL 2022 10.
All tight fitting RPE i.e FFP3 respirators must be:

- Fit tested (by a competent fit test operator) on all healthcare staff who may be required to wear a respirator to ensure an adequate seal/fit according to the manufacturers' guidance.
- Fit checked (according to the manufacturers' guidance) every time a respirator is donned to ensure an adequate seal has been achieved. The poster below gives further information on compatibility of facial hair and FFP3 respirators and can be used when fit testing and fit checking.
- Single use (disposable) and fluid-resistant. Valved respirators may be shrouded or unshrouded. Respirators with unshrouded valves are not considered to be fluid-resistant and therefore should be worn with a full face shield if blood or body fluid splashing is anticipated.
- Non valved if a sterile procedure is being performed at the same time as an AGP requiring a respirator to be worn. An MHRA safety alert can be viewed.
- Compatible with other facial protection used i.e. protective eyewear so that this does not interfere with the seal of the respiratory protection. Regular corrective spectacles are not considered adequate eye protection. If wearing a valved, non-shrouded FFP3 respirator a full face shield/visor must be worn.
- Always be put on before entry into the patient room/area and prior to performing an aerosol generating procedure (AGP) and removed in an anteroom/lobby or in a safe area (e.g. outside the isolation/cohort room/area (All other PPE should be removed in the patient care area)
- Changed after each use. Other indications that a change in respirator is required include: if breathing becomes difficult; if the respirator becomes wet or moist, damaged; or obviously contaminated with body fluids such as respiratory secretions.

Poster on compatibility of facial hair and FFP3 respirators can be used when fit testing and fit checking.



Further information regarding fitting and fit checking of respirators can be found on the Health and Safety Executive website.
The following risk categorisation is the minimum requirement for staff groups that require FFP3 fit testing. NHS Boards can add to this for example where high risk units are present. This categorisation is inclusive of out of hours services.
National Priority Risk Categorisation for face fit testing with FFP3
Level 1 – Preparedness for business as usual
Staff in clinical areas most likely to provide care to patients who present at healthcare facilities with an infectious pathogen spread by the airborne route; and/or undertake aerosol generating procedures i.e. A&E, ICU, paediatrics, respiratory, infectious diseases, anaesthesia, theatres, Chest physiotherapists, Special Operations Response Team (Ambulance), A&E Ambulance Staff, Bronchoscopy Staff, Resuscitation teams, mortuary staff.
Level 2 – Preparedness in the event of emerging threat
Staff in clinical setting likely to provide care to patients admitted to hospital in the event of an emerging threat e.g. Medical receiving, Surgical, Midwifery and Speciality wards, all other ambulance transport staff.
In the event of an 'Epidemic/Pandemic' Local Board Assessment as per their preparedness plans will apply.

- The decision to wear an FFP3 respirator/hood should be based on clinical risk assessment e.g task being undertaken, the presenting symptoms, the infectious state of the patient, risk of acquisition and the availability of treatment.

For a list of organisms spread wholly or partly by the airborne (aerosol) or droplet routes see Appendix 11.
Further information can be found in the aerosol generating procedures literature review.
Powered respirator hoods are an alternative to FFP3 respirators for example when fit testing cannot be achieved.
Powered hoods must be:

- single use (disposable) and fluid resistant;
- the filter must be enclosed with the exterior and the belt able to withstand disinfection with 10,000ppm av.cl.

FFP3 respirator or powered respirator hood:

- may be considered for use by visitors if there has been no previous exposure to the infected person or infectious agent; **but**
- must never be worn by an infectious patient(s) due to the nature of the respirator filtration of incoming air not expelled air.

Work is currently underway by the UK Re-useable Decontamination Group examining the suitability of respirators for decontamination. This literature review will be updated to incorporate recommendations from this group when available. In the interim, ARHAI Scotland are unable to provide assurances on the efficacy of respirator decontamination methods and the use of re-useable respirators is not recommended.
Further information can be found in the Respiratory Protective Equipment (RPE) literature review and the Personal Protective Equipment (PPE) for Infectious Diseases of High Consequence (IDHC) literature review.
Frameworks to support the assessing and recording of staff competency in PPE for HCID are available in the resources section of the NIPCM.
Sessional use of PPE
Typically, sessional use of any PPE is not permitted within health and care settings at any time as it is associated with transmission of infection between service users within health and care settings.

During periods of increased respiratory activity in health and care settings, both as part of service user direct care delivery and extended use of facemasks guidance, sessional use of FRSMs and eye/face protection is permitted at this time.
This means that FRSMs and eye/face protection (where required) can be used moving between service users and for the period of time where a HCW is undertaking duties in an environment where there is exposure to respiratory pathogens. A session ends when the healthcare worker leaves the clinical setting or exposure environment. It is important to note the following;

- FRSMs/FFP3/Eye/Face protection must be replaced if visibly contaminated, wet, damaged, uncomfortable, when moving between patients with suspected or confirmed respiratory infection and those without.
- FRSMs must be replaced following procedures where splash/spray is generated
- HCWs must not touch their FRSM, eye/face protection or FFP3 respirator whilst in situ. If they inadvertently do so, they must perform hand hygiene immediately afterwards

The above measures in conjunction with safe donning and doffing of PPE ensure the safety of the HCW and the service user.
No other PPE is permitted to be worn sessionally moving between service users or care tasks. This includes gloves, aprons and gowns.

2.5 Infection Prevention and Control during care of the deceased

The principles of SICPs and TBPs continue to apply whilst deceased individuals remain in the care environment. This is due to the ongoing risk of infectious transmission via contact although the risk is usually lower than for living patients.
It is important that information on the infection status of the deceased is sought and communicated at each stage of handling. Appropriate risk assessment must be carried out before performing activities that may increase the risk of transmission of infectious agents from deceased individuals (see literature review for further information on these activities).
Washing and/or dressing should be avoided when the deceased is known or suspected to have been infected with an invasive streptococcal infection, anthrax, rabies, viral haemorrhagic fevers (VHFs), Hazard Group 4 infectious agents or other HCID.
Viewing of the deceased should be avoided when the deceased is known or suspected to have been infected by Hazard Group 4 organisms, specifically those causing VHFs (including Ebola, Lassa etc.), anthrax or other HCID.
See Appendix 12. Application of transmission based precautions to key infections in the deceased.
Staff should advise relatives of the appropriate precautions when viewing and/or having physical contact with the deceased including when this should be avoided.
Deceased individuals known or suspected to have a Hazard Group 4 infectious agent should be placed in a sealed double plastic body bag with absorbent material placed between each bag. The surface of the outer bag should then be disinfected with 1000 ppm av.cl before being placed in a robust sealed coffin.
Post-mortem examination should not be performed on a deceased individual known or suspected to have Hazard Group 4 infectious agents. See Appendix 12 - Application of transmission based precautions to key infections in the deceased. Blood sampling can be undertaken in the mortuary by a competent person to confirm or exclude this diagnosis. Refer to Section 2.4 for suitable PPE.
Post-mortem examination of deceased individuals known or suspected to have been infected by transmissible spongiform encephalopathies (TSE) causing agents should be carried out in such a way as to minimise contamination of the working environment. See Literature review for further information.

Chapter 3 - Healthcare Infection Incidents, Outbreaks and Data Exceedance

The purpose of this chapter is to support the early recognition of potential infection incidents and to guide IPCT/HPTs in the incident management process within care settings; (that is, NHSScotland, independent contractors providing NHS services and private providers of care).
This guidance is aligned to the Management of Public Health Incidents: Guidance on the Roles and Responsibilities of NHS led Incident Management Teams
Built environment incidents/outbreaks
ARHAI Scotland are currently working towards delivery of comprehensive evidence-based guidance which will form Chapter 4 of the National Infection Prevention and Control Manual (NIPCM) on the built environment and decontamination.
Two Aide-Memoires currently provide best practice recommendations to be implemented in the event of a healthcare water-associated or healthcare ventilation-associated infection incident/outbreak. These will ensure clinical staff, estates and facilities staff, and Infection Prevention and Control Teams (IPCT) have an understanding of the preventative measures required and the appropriate actions that should be taken.
Prevention and management of healthcare water-associated infection incidents/outbreaks
Prevention and management of healthcare ventilation-associated infection incidents/outbreaks

3.1 Definitions of Healthcare Infection Incident, Outbreak and Data Exceedance

The terms 'incident' and 'Incident Management Team' (IMT) are used as generic terms to cover both incidents and outbreaks
A healthcare infection incident may be:
An exceptional infection episode

- A single case of an infection that has severe outcomes for an individual patient OR has major implications for others (patients, staff and/or visitors), the organisation or wider public health e.g., infectious diseases of high consequence such as VHF or XDR-TB, botulism, polio, rabies, diphtheria.

See literature review for Infectious Diseases of High Consequence (IDHC)
A healthcare infection exposure incident

- Exposure of patients, staff, public to a possible infectious agent as a result of a healthcare system failure or a near miss e.g. ventilation, water or decontamination incidents.

A healthcare associated infection outbreak

- Two or more linked cases with the same infectious agent associated with the same healthcare setting over a specified time period.

or

- A higher than expected number of cases of HAI in a given healthcare area over a specified time period.

A healthcare infection data exceedance

- A greater than expected rate of infection compared with the usual background rate for the place and time where the incident has occurred.

A healthcare infection near miss incident

- An incident which had the potential to expose patients to an infectious agent but did not e.g. decontamination failure.

A healthcare infection incident should be suspected if there is:

- A single case of an infection for which there have previously been no cases in the facility (e.g. infection with a multidrug-resistant organism (MDRO) with unusual resistance patterns or a post-procedure infection with an unusual organism).

Further information can be found in the literature review Healthcare infection incidents and outbreaks in Scotland.

3.2 Detection and recognition of a Healthcare Infection incident/outbreak or data exceedance

An early and effective response to an actual or potential healthcare incident, outbreak or data exceedance is crucial. The local Board IPCT and HPT should be aware of and refer to the national minimum list of alert organisms/conditions. See Appendix 13.
Healthcare associated infection (HAI) Surveillance systems should be used to aid incident/outbreak detection using a combination of retrospective detection of cases alongside prospective enhanced surveillance in high risk settings (ICU/PICU/NICU, oncology/haematology). A risk based approach should be applied for other vulnerable groups e.g. cystic fibrosis, oncology and those undergoing renal dialysis.
Local surveillance/reporting systems should be used for recognition and detection of potential healthcare infection incidents /outbreaks within NHS Boards. Systems should make use of 'triggers' to allow prompt detection of any variance from normal limits.
The Infection Prevention & Control Team (IPCT)/Health Protection Team (HPT) should utilise surgical site infection (SSI) surveillance systems to identify specific post-surgical healthcare infection incidents/outbreaks (in line with national SSI surveillance program as a minimum).
3.2.1 Assessment
Following detection/recognition of an incident/outbreak a member of IPCT or HPT will:

- Undertake an initial assessment, utilising the **Healthcare Infection Incident Assessment Tool (HIIAT) -** Appendix 14, gather epidemiological data and clinical assessment information on the patient's condition as per:
  - Section 1.1
  - Section 2.1
- NHS Boards are required to report all HIIAT assessed Green, Amber and Red reports to ARHAI Scotland through the electronic outbreak reporting tool (ORT).
- NHS Boards should monitor the ongoing impact of the incident by escalating and de-escalating as appropriate, using the HIIAT assessment tool. The HIIAT assessment should remain Amber or Red whilst there is ongoing risk of exposure, identification of new cases.

3.2.2 Investigation, management and communication
The IPCT/HPT will establish an IMT if required.

- In the NHS hospital setting the ICD will usually chair the IMT and lead the investigation of healthcare incidents. Where there are implications for the wider community e.g., TB or measles, or rare events such as CJD or a Hepatitis B/HIV look back, or where there is an actual or potential conflict of interest with the hospital service, the CPHM may chair the IMT. A draft agenda for the IMT is available.
- The membership of the IMT will vary depending on the nature of the incident.
- A healthcare infection incident investigation will usually consist of the following elements; an epidemiological investigation, a microbiological investigation and a specific investigation to identify how cases were exposed to the infectious agent (environmental investigation)
  - As part of the epidemiological investigation, a case definition(s) must be established by the IMT. A case definition should include the following: the people involved (e.g., patients, staff); the symptoms/pathogen/infection (e.g., with Group A Streptococci); the place (e.g., care area(s) involved); and a limit of time (e.g., between January and March year/date). The case definition(s) should be regularly reviewed and refined (if required) throughout the incident investigation as more information becomes available. A working hypothesis regarding the transmission route and source of the exposure must be formed based on initial investigation findings.
  - A microbiological investigation into the nature and characteristics of the implicated hazard /infective agent must be conducted.
  - An environmental investigation must be conducted if the findings of the epidemiological investigation suggest a common exposure to a potential environmental source/ environmental reservoir.
  - Review of patient cases should consider any potential missed opportunities to isolate a patient, a delay in which may have resulted in onward transmission. Any learning should be widely communicated to all clinical staff in the board.
  - An infection prevention and control assessment to review the existing IPC practices must be conducted, so that areas for immediate improvement can be identified.
- Identify any change(s) in the system: staffing, procedures/processing, equipment, suppliers. A step-by-step review of procedure(s). A generic outbreak checklist is available.

- Identify and count all cases and/or persons exposed: This includes the total number of confirmed/probable/possible exposed cases. An incident/outbreak data collection tool is available.
- The IMT should receive and discuss all information gathered and epidemiological outputs e.g. an epidemiological (epi) curve, a timeline and a ward map to:
    - Determine whether additional case finding and control measures may be necessary.
    - Confirm that all incident control measures are being applied effectively and are sufficient.
- Control measures must be directed at the source of the exposure and/or at affected persons in order to prevent secondary/ further exposure to the agent. Control measures must be initiated within 24 hours of receiving the initial report and should be implemented based on relevant guidance (e.g. pathogen specific) and investigation findings of the nature of the outbreak.
- A follow-up period may be defined after an infection incident/ outbreak has ended to ensure its termination, including assessment of any ongoing control measures and would be determined by the PAG/IMT.
- Identify any change(s) in the system: staffing, procedures/processing, equipment, suppliers. A step-by-step review of procedure(s). A generic outbreak checklist is available.
- Identify and count all cases and/or persons exposed: This includes the total number of confirmed/probable/possible exposed cases. An incident/outbreak data collection tool is available.

If staff screening is being considered as part of the investigation DL (2020)1 must be followed.

- HAI deaths, which pose an acute and serious public health risk, must be reported to the Procurator Fiscal, refer to SGHD/CMO(2018)11.
- The IMT must ensure affected patients, and where appropriate their next of kin, have been informed of any actual or potential harm as a result of the HAI. Duty of Candour must be considered at each IMT.
- All significant adverse event reviews involving a category 1 adverse event (events that may have contributed to or resulted in permanent harm, for example unexpected death) should also be reported.
- If no new cases arise and any remaining cases are considered to no longer pose a risk, the IMT should agree on actions prior to resumption of normal service.

3.2.3 Communications

- Following the PAG/IMT, the NHS Board is required to communicate all HIIAT Green, Amber and Red assessments with ARHAI Scotland, by completing the electronic Outbreak Reporting Tool (ORT) within 24 hours of HIIAT assessment. Incidents assessed as RED, AMBER and where ARHAI support is required GREEN will be reviewed for onward communication to Scottish Government Healthcare Associated Infection Policy Unit.

- Any adverse event related to equipment or medication must be reported as soon as possible (within one working day) to the Incident Reporting and Investigation Centre (IRIC) and the escalation/de-escalation flowchart followed.

Closure of incident/outbreak with lessons learned

- Once the incident is over and in addition to mandatory electronic reporting, the IMT/NHS Board should decide on the most appropriate format for a report, to communicate incident management/lessons learned (IMT report /SBAR/Hot Debrief Tool). This is not a mandatory requirement but for the purpose of sharing lessons learned across Scotland.

The IMT Chair, in discussion with the IMT, should determine whether further reporting on the incident and the incident management is required i.e. SBAR Report and full IMT report template are available in the resources section of the NIPCM website.

3.3 COVID-19 Case definitions

COVID-19 case definitions are regularly reviewed and can be found in the Public Health Scotland COVID-19 Guidance for Health Protection Teams.
Please note: People must also be assessed for other infectious or non-infectious causes of symptoms, as appropriate.

3.4 COVID-19 Notification of positive cases

It is essential that NHS Boards have systems in place to ensure that test confirmed cases of SARS-CoV-2 isolated from patients are reported to Infection Prevention and Control Teams (IPCTs) as promptly as possible to allow any inappropriately placed patients to be identified and isolated.
COVID-19 is a notifiable disease and as such, directors of diagnostic laboratories must inform their health board, the common services agency and Public Health Scotland of all COVID-19 isolates. This is a requirement of the Public Health etc (Scotland) Act 2008 and notification of infectious disease or health risk forms are available.

3.4.1 Communicating results (including other care facilities and NHS Boards)

On confirmation of a positive COVID-19 patient isolate, the ward staff should be informed by the reporting laboratory or IPCT if the patient is still an inpatient. There must be agreed processes in place for communicating results and IPC advice out of hours when IPCTs are not available. There must be local processes in place to ensure that IPCTs and OHS share intelligence which may indicate an outbreak is occurring in a specific ward/department.
IPCTs should agree local notification process for any patients who have been discharged home since the COVID-19 test was undertaken to ensure that the patient is contacted at home and provided with the appropriate stay at home advice.
Where a confirmed COVID-19 positive patient has been discharged or transferred to another care facility or NHS Board (e.g., care home, hospice, mental health facility), the patient and/or the receiving area must be notified at the earliest opportunity to make them aware of the positive COVID-19 result or COVID-19 exposure to ensure that the appropriate control measures can be implemented where applicable. Similarly, if a confirmed case has transferred from another board within 48 hours of symptom onset or positive test, the IPCT must inform the NHS board from which the patient transferred to allow risk assessment to be undertaken and contacts to be identified where applicable.
There should be a local agreement in place to determine whether clinical teams or IPCTs will notify the facility and HPTs where required. Local agreements should include reporting arrangements out of hours.

3.4.2 Surveillance

Active surveillance should be undertaken by IPCTs to allow clusters/incidents to be detected at the earliest possible opportunity.

3.5 COVID-19 clusters/incidents definitions

The definitions below should be applied to determine if a COVID-19 cluster/incident within a healthcare setting is occurring and determine when it can end. When assessing patient and staff clusters to determine if an outbreak is occurring, a high degree of suspicion should be applied.
Note: the current COVID-19 cluster reporting system is currently under review due to changes in asymptomatic testing policy announced on 14 September 2022.

3.5.1 Criteria to declare a COVID-19 cluster/incident in an inpatient setting

Two or more patient and/or staff cases of COVID-19 within a specific setting where **nosocomial infection and ongoing transmission is suspected**. For the purposes of this reporting, a high degree of suspicion should be applied and further investigation undertaken for any ward where there are **unexpected cases** of suspected or confirmed COVID-19. e.g., any cases that were not confirmed or suspected on admission. No time limit should be applied to determining whether a case is nosocomial e.g. 48 hours.

or

Where **two or more staff cases** of suspected or confirmed COVID-19 are identified and transmission between the staff members is suspected to be associated with workplace exposure/behaviours.
Note: If there is a **single suspected or confirmed case in a patient who was not suspected as having COVID-19 on admission**, this should initiate further investigation and risk assessment. This single case may constitute a possible cluster depending on the contacts and exposures identified. Where the patient has been in a side room with transmission based precautions in place for 48 hours prior to symptom onset, and where all staff were wearing appropriate PPE appropriately, the IPCT may decide that there is no further action needed other than active monitoring for any new unexplained cases associated with the ward.

3.5.2 Criteria to determine that a COVID-19 cluster/incident in an inpatient setting has ended

No new test-confirmed or suspected cases with illness onset date 10 days following the last new confirmed case (from date of symptom onset or date of positive test if case has remained asymptomatic), within the affected ward or department. The cluster can be closed provided that these criteria are met.

3.6 COVID-19 Roles and Responsibilities

NHS Boards should have a COVID-19 outbreak response plan which details the roles and responsibilities of Infection Prevention and Control Teams (IPCTs), Health Protection Teams (HPTs) and Occupational Health Services (OHS) within their board when responding to COVID-19 clusters/incidents.

3.6.1 Contact tracing responsibilities

The board COVID-19 outbreak response plan should include clarity on the responsible teams for contact tracing.
The COVID-19 Test and Protect service in Scotland ceased on the 1 May 2022 for the general community and as such contact tracing undertaken by public health will focus on outbreaks of COVID-19 associated with closed/high risk settings.
Contact tracing within acute inpatient settings should be based on local outbreak management and on the advice of the local Infection Control Doctor as per the Hospital Testing table.

3.7 COVID-19 Investigations

3.7.1 IPC practice and compliance (including AGPs)

Compliance with IPC practice on the ward should be reviewed to determine any practice which may have contributed towards onward transmission. Previous hand hygiene audits and any audits of staff practice and the environment undertaken should be reviewed to establish any education gaps which are required to be addressed.
Where AGPs are undertaken on the ward, IPCTs should check to ensure staff are wearing the appropriate PPE and the appropriate fallow times are being observed prior to other patients using the room in which the AGP was undertaken. The IMT may choose to repeat audits as part of the investigation.
Ensure that staff on the ward are compliant with COVID-19 IPC guidance contained within the National Infection Prevention and Control Manual (NIPCM) and advice contained within Appendix 21 COVID-19 pandemic controls.
Ensure that patients are wearing face masks appropriately as per the NIPCM and Scottish Government Extended use of face masks guidance.

3.7.2 Review of visiting

When investigating a COVID-19 cluster, ascertain from ward staff if there has been any non-compliance with visiting rules for example, visitors presenting symptomatic or declining to wear face coverings. Consider what, if any, measures need to be introduced to mitigate any risks identified.
Further hospital visiting guidance can be found here: Coronavirus (COVID-19): hospital visiting

3.7.3 Testing during an outbreak

Contact tracing and asymptomatic testing in an outbreak should be based on local outbreak management and on the advice of the local Infection Control Doctor.
Any patient who develops symptoms should be tested immediately using laboratory based PCR. Rapid Diagnostic Test (PCR or non-PCR based) or LFD may be used in addition to laboratory based PCR test to support rapid patient placement decisions whilst PCR results are awaited. If LFD (or other non-PCR based test) is positive at any point, a follow up PCR test is required and TBPs must commence. Further detail of current testing requirements is provided in the Hospital Testing table.

All staff who are symptomatic of COVID-19 must be tested and excluded from work and follow advice outlined in Annex B of the Directorate Letter of 14th September 2022 (DL 2022 (32)).

3.7.4 Whole Genome Sequencing

Public Health Scotland offer a whole genome sequencing service to support outbreak investigations and address important clinical and epidemiological questions.

3.7.5 Contact tracing

Contact tracing and asymptomatic testing in an outbreak should be based on local outbreak management and on the advice of the local Infection Control Doctor.
In the event of a decision to undertake contact tracing, anyone who has been in the same room/area with the confirmed case in the 48 hours prior to symptom onset (or 48 hours prior to positive test if asymptomatic) until the point when the confirmed case was appropriately isolated/cohorted/discharged should be considered as a potential healthcare setting contact.

Assessing patient contacts

Typically, any patients in the same bed bay as a confirmed case should be considered a contact. For larger open bedded areas such as ITUs or nightingale wards. IMTs should agree which patients should be classed as contacts, as a minimum this should include patients on either side of the confirmed case and an assessment of the whole area/ward must take account of the patient group and circumstances surrounding potential exposures. Local risk assessment should be undertaken taking into consideration the Hierarchy of Controls.
Any asymptomatic contacts identified as part of local outbreak management should be observed for symptom onset. Symptom vigilance is essential for all patients, irrespective of whether a contact.
Depending on considerations above and any other potential contributing transmission risks, the IMT may decide that all the patients and staff in the large open bedded area should be considered contacts.
For cases who have been in a single side room for the exposure period, only staff and patients who have entered the room of the confirmed case should be considered potential contacts. If the confirmed case has entered the room of any other patients or shared communal spaces with others, these should also be considered as potential contacts.
IMTs must also consider any patient transfers to other areas of the hospital within the exposure period e.g., radiology, other wards and consider any potential contacts in these areas.
Staff contact tracing in an outbreak situation should be based on local outbreak management and on the advice of the local Infection Control Doctor.

Contact tracing visitors

There is no expectation that contact tracing amongst visitors will be undertaken routinely.

3.7.6 Ventilation considerations

Learning from the COVID-19 pandemic to date has highlighted the risk of COVID-19 transmission associated with closed environments that have poor ventilation. It is important to consider best practice on ventilation. See Appendix 20 - Hierarchy of controls for more information.
The impact of the ventilation and any contribution it may have had to the onward transmission of COVID-19 should be noted for future learning and wherever possible mitigated.
The following should be considered when deciding if the ventilation may have been a contributing factor in the outbreak;

- Is the planned preventative maintenance (PPM) programme up to date?
- When was the last PPM check performed?
- Is ventilation system functioning within normal set parameters?
- Are ventilation grilles, Air Handling Units, ductwork etc clean and free from dust/debris?
- Is cleaning schedule for the above up to date?
- Does the ventilation system meet current specification?

3.7.7 Bed spacing

Bed spacing in the affected ward should be reviewed to ensure that it is adequate to prevent onward transmission of Healthcare Associated Infections (HAIs) and to ensure that mitigation measures implemented are adequate.
See Chapter 4 of the NIPCM for more detail

3.7.8 COVID-19 messaging

The IMT should consider if the COVID-19 messaging in the ward for both staff, patients and visitors is adequate. COVID-19 messaging should be in place to promote;

- Hand hygiene
- Appropriate use of face masks and face coverings
- Awareness of new onset respiratory symptoms and requirement for patients/staff/visitors to report symptoms to staff
- Good visiting advice including non-attendance if visitor has respiratory symptoms
- Staff testing where applicable

Every opportunity to promote this messaging should be considered.

3.8 COVID-19 Control Measures

Control measures should be implemented immediately to prevent onward transmission of COVID-19. These must include:

3.8.1 Patient placement

- The PAG/IMT must agree the most appropriate placement for the suspected/confirmed cases and any contacts that are identified through outbreak assessment.
- Cohort areas may be established where required.
- Suspected cases (symptomatic) should be isolated on the ward and tested for COVID-19 as soon as possible. Symptomatic patients should not be cohorted together. The cohorting of symptomatic patients' risks transmission of other respiratory viruses whilst the causative pathogen remains unknown.
- Doors to isolation rooms and cohorts should be closed and signage clear.
- Patient placement is regularly reviewed and documented in patient case notes.
- Restrict transfers to any other ward or department unless essential.
- A local risk assessment should be undertaken by the IMT and take account of whether the ward will remain open or closed.
- Any asymptomatic contacts identified as part of local outbreak management should be observed for symptom onset. Symptom vigilance is essential for all patients, irrespective of whether a contact.
- If a contact or any other patients develops symptoms, they should be isolated and laboratory based PCR testing should be performed as soon as possible.
- All efforts should be made to dedicate staff to the management of the cohort and ideally those staff must not then go between the case and contacts and all other unaffected patients on the ward. These staff cohorts should be maintained wherever possible for the duration of the isolation period.

3.8.2 Hand hygiene

- Reinforce hand hygiene techniques and opportunities to all staff groups and ensure hand hygiene signage is in place
- Adequate supplies of ABHR and plain liquid soap is available.
- Ensure patients are supported with hand hygiene where required and symptomatic patients are provided with disposable tissues and waste bag for disposal.

3.8.3 Personal Protective Equipment

- Reinforce appropriate PPE use as per NIPCM (general use and AGP) to all staff groups
- Ensure adequate PPE supplies are available

3.8.4 Safe Management of Care Equipment

- All non-essential items of equipment and any clutter removed from ward to aid cleaning.
- Dedicated equipment for the affected areas where possible. Ensure equipment is cleaned as per appendix 7 of NIPCM.

3.8.5 Safe Management of Care Environment

- As a minimum, twice daily cleaning with chlorine based detergent is in place throughout the ward paying close attention to touch surfaces
- Terminal clean is undertaken following a patient transfer, discharge, once the patient is no longer considered infectious and prior to ward reopening.

3.8.6 Waste and linen

- Waste associated with the affected area is disposed of as category B waste.
- All linen used by patients in the affected area should be managed as infectious linen.
- When a bed is vacated and the linen removed, new linen should not be put in place until the ward or bed bay has been terminally cleaned and is ready to re-open to admissions and transfers.

3.8.7 Staff

- Ward staff should be provided with regular updates and support regarding outbreak management.
- The number of staff entering the ward should be restricted as far as possible. The number of staff on wards rounds should be reduced to essential staff only. Non-essential patient assessments by staff external to the ward should be postponed until the outbreak is closed where possible. .
- Staff should be cohorted to the symptomatic patients and any contacts and avoid caring for other unaffected patients on the ward wherever possible.
- Regular symptom vigilance must be in place at all times and arrangements made for staff to leave the ward if symptoms develop during a shift.

3.8.8 Management of staff exposed to a confirmed case of COVID-19

- Staff should remain symptom vigilant. Symptomatic staff members should not attend work, inform their line manager and follow advice outlined in Annex B of the Directorate Letter of 14 September 2022 (DL 2022 (32)).

3.8.9 Closure of the ward/unit

- If cases have limited patient contacts which can all be isolated or cohorted in a closed bed bay or single rooms, the IMT may decide that it is appropriate to keep the ward open taking account of bed availability and any specialist services provided in the affected ward. This must be reviewed regularly (at least twice daily) and where there is any other symptom onset identified in staff, patients or visitors outside of the affected bay, the ward should be closed to admissions and transfers.
- Where all contacts and subsequent cases are unable to be isolated or cohorted, the ward should be closed to admissions and transfers wherever possible.

3.8.10 Other control measures which may be considered by the IMT

- Visiting restrictions
- Education sessions for staff if knowledge gaps identified
- Wider screening of patients and staff during the outbreak period

3.8.11 Conversion of outbreak ward to COVID-19 ward

During the ongoing COVID-19 pandemic when COVID-19 admissions are high and where bed capacity in the board is extremely limited, the board may consider converting the outbreak ward into a COVID-19 ward to allow confirmed COVID-19 cases to be transferred/admitted to the area and utilise bed capacity within the ward. This is an operational decision which must be carefully considered, documented and undertaken as a last resort.
In choosing to convert the outbreak ward to a COVID-19 ward, IMTs alongside hospital management must weigh up the risk associated with transferring contacts to other wards and the demand for patient beds to accommodate emergency admissions.

3.9 COVID-19 Communications

- Internal communication plans should be agreed for each NHS board and this should include senior managers within the board, department leads for visiting staff such as clinical teams, phlebotomists, pharmacists, physiotherapists, all support staff, including porters, cleaners, volunteers.
- Regular updates should be reported to ARHAI Scotland in line with section 3.10.
- COVID-19 test results should be documented in individual case notes including any IPC advice issued.
- Where guidance cannot be followed, this should be risk assessed and documented by the clinical team or IMT.
- Media statements should be prepared by the IMT ready for release should it be required.
- Patients and carers where applicable should be kept informed of all screening investigations and provided with information leaflets where available or advice provided from NHS Inform.

3.10 COVID-19 Antimicrobial Resistance and Healthcare Associated Infection (ARHAI) reporting requirements

Note: the current COVID-19 cluster reporting system is currently under review due to changes in asymptomatic testing policy announced on 14 September 2022.
Reporting should be led by the IPCT. Reporting of COVID-19 should occur on recognition of a COVID-19 cluster

COVID-19 Cluster (possible COVID-19 cluster as defined in section 3.5)

- A cluster should be assessed using the Healthcare Infection Incident Assessment Tool (HIIAT) as per Appendix 14 of the NIPCM.
- All confirmed clusters/possible outbreaks, must be reported to ARHAI Scotland.
- All COVID-19 clusters should be reported through the electronic ORT
- All board-level data is accessible through the ARHAI Scotland interactive dashboards on the eViz portal
- The data submitted above is reported through ARHAI Scotland to the Scottish Government Healthcare Associated Infection Policy Unit and it is essential that all fields within the tools are completed to enable reporting requirements to be met.
- Any media statements prepared by the IMT in response to the incident should be shared with ARHAI.

3.11 COVID-19 Learning from the cluster/incident

As the COVID-19 pandemic continues, it is essential that NHS Boards record and disseminate learning from clusters internally and with ARHAI Scotland for sharing nationally. There is a field within the ORT to capture this information and this should be completed with an evaluation of the effectiveness and efficiency of investigations and control measures. This will help inform the future management of COVID-19 patients and any COVID-19 outbreaks.

3.12 COVID-19 Cluster Resources

- COVID-19 Outbreak checklist v3 (February 2022) **(Currently under review)**
- Outbreak data collection tool
- IMT generic COVID-19 Agenda
- IMT generic COVID-19 Agenda Aide-memoire

Chapter 4 - Infection Control in the Built Environment and Decontamination

Introduction

Currently, chapter 4 exists as a repository for evidence reviews and tools relating to IPC in the built environment including delivery of appropriate decontamination within health and care settings and risk mitigation for water based pathogens.
Content going forward will be developed via the ARHAI Scotland Infection Control in the Built Environment and Decontamination (ICBED) programme informed by stakeholder engagement and requirements, learning from NHS Assurance programme and outbreaks and incidents.
This chapter is in the early stages of development and at this current time does not fall into the mandatory requirements for the NIPCM.

Bed spacing

Guidance consistently recognises that bed spacing requirements contribute towards the control of HAIs. All NHS boards and care providers should aim to meet the minimum bed spacing requirements laid out in the guidance below and in keeping with the date of design and construction of the building. This takes account of ergonomics within the clinical environment and not just healthcare associated infection (HAI) risk. Some other health and care settings may choose to adopt this guidance e.g. hospice settings.
Adult in-patient facilities designed post 2010 should achieve 3.6m (width) x 3.7m (depth) dimensions of SHPN 04-01, HBN 00-03 and SHFN 30. Width of 3.6m is measured from bed centre to bed centre. Since 2014, HBN 00-03's Figure 45 states a day treatment bay should achieve 2.45m width/centre-to-centre dimension.
Current NHS Scotland Guidance on bed spacing is listed below:

- Core guidance - General design for healthcare buildings (HBN 00-01)
- Core guidance - Clinical and clinical support spaces (HBN 00-03)
- Critical care units (HBN 04-02)
- HAI-SCRIBE Manual information for project teams (SHFN 30 Part A)
- HAI-SCRIBE Implementation strategy and assessment process (SHFN 30 Part B)
- HAI-SCRIBE question sets and checklists (SHFN 30 Part C)
- Adult in-patient facilities (SHPN 04-01)
- In-patient accommodation - supp 1 - Isolation facilities in acute settings (SHPN 4 sup 1)

Publications

Work undertaken and published to date has been cited here for ease of reference and use at a clinical level.
Many of these publications were produced prior to development of chapter 4 and were published outwith the existing manual methodology.
Updates to publications will be made where required as part of the ARHAI programme work plans.
ARHAI Scotland will work with SG directorates responsible for these areas in planning to establish planned implementation.

Decontamination

Probes

- NHS Scotland Guidance for decontamination of ultrasound probes
- NHSScotland Risk Based Recommendations for the Decontamination of Semi-Invasive Ultrasound Probes: Risk of infection following semi-invasive ultrasound procedures in Scotland, 2010 to 2016

Time to clean

- NSS time to clean report
- Report on National Time to clean a bedspace

Equipment and environment cleaning

- Roles & Responsibilities for Reusable Patient Care Equipment and Environmental Decontamination
- Summary Report from Pilot of Patient Equipment and Environment Compliance Monitoring Tool
- NHSScotland Guidance for Decontamination and testing of Cardiac Heater Cooler Units (HCUs), v1.0 | National Services Scotland

Alternative approaches to decontamination

- UK and International Review of Alternative Approaches to Environmental and Equipment decontamination

- Literature Review and Practice Recommendations: Existing and emerging technologies used for decontamination of the healthcare environment
  - Antimicrobial Copper Surfaces
  - Antimicrobial Copper and Silver Solutions
  - ATP Bioluminescence and Fluorescent Markers
  - Chlorine Dioxide
  - Electrolysed Water
  - HINS Light
  - Hydrogen Peroxide
  - Microfibre
  - Ozone
  - Steam
  - UV light (v2.0, November 2022)
  - Wipes (v2.0, December 2022)

Built environment

Water

- NHSScotland Guidance for the interpretation and clinical management of endoscopy rinse water
- Literature Review and Recommendations: Management of Dental Unit Waterlines

Addendum for Infection Prevention and Control within Neonatal Settings (NNU)

The purpose of this addendum is to provide additional guidance to chapters 1,2 and 3 for NNUs

4.1 Placement of neonates/assessment for infection risk

Undertake assessment for infection risk at the point of entry into the unit before placement of the neonate is decided. This assessment is the minimal microbiological testing required and any additional testing would be determined by the clinical presentation of the neonate. The potential for transmission of infection should be continuously reviewed throughout the stay/period and must be documented in the clinical notes.
Neonates who present as a cross infection risk include those who:

- have been transferred from another unit in Scotland with an ongoing incident/outbreak or
- were born outside Scotland
- have previously been positive with a Multidrug Resistant Organism (MDRO), or any alert organism or alert condition as found in Appendix 13.

From mothers who have:

- been hospitalised outside Scotland in the previous 12 months
- had no antenatal care
- been previously positive with a MDRO e.g. Meticillin Resistant Staphylococcus Aureus (MRSA) or Carbapenemase Producing Enterobacterales (CPE)

If a neonate is considered to be a cross infection risk then the clinical judgement of those involved in the management of the baby should assess the placement by prioritising the incubator/cot in a suitable area pending investigation i.e. place in a single room or cohort area/room with a wash hand basin.
Information/advice must be given to parents/carers of all neonates; particularly during outbreaks/incidents

4.2 Healthcare infection, incidents, outbreaks and data exceedance

In addition to the definitions in Chapter 3, in a neonatal unit investigation by IPCT is also required if:

- a single case of *Pseudomonas aeruginosa* is identified
- a single case of infection with an alert organism is identified
- two or more cases of colonisation with the same organism; linked in time and place are identified

Additionally, the local IPC team should consider the possibility of any onward transmission and potential for an incident/outbreak where there is:

- A single case of colonisation with an alert organism identified

Assigning a dedicated team to care for infected or colonised neonates may also be required. During outbreaks or incidents the ratio of staff to neonates may need to increase and it may be necessary to restrict admissions to the area. Prior to closing or restricting a neonatal unit, communication must be agreed across neonatal services and risk assessed.
Transfers to other units during incidents or outbreaks should be avoided, where possible; however this should take into consideration the clinical needs of neonates, and any practical or logistical issues for parents/carers.

4.3 Personal care of neonates

Due to the vulnerability of some neonates the use of tap water for personal care requires consideration and this is outlined in Guidance for neonatal units (NNUs) (levels 1, 2 & 3), adult and paediatric intensive care units (ICUs) in Scotland to minimise the risk of Pseudomonas aeruginosa infection from water. For example, an assessment should be made on the neonate's condition and whether tap water can be used or if an alternative, such as sterile water, is considered more appropriate.
In addition incubators/cots should not be placed near any water source where spraying or splashing may occur.
Further information for neonatal IPC management of healthcare incidents and outbreaks can be found in the supporting literature review.

Infection Prevention and Control Manual for older people and adult care homes

Appendix 22 - Community IPC COVID-19 Pandemic provides details of the measures still to be followed for COVID-19 and should be used alongside existing guidance.

About the Infection Prevention and Control Manual for older people and adult Care Homes

The National Infection Prevention and Control Manual (NIPCM) was first published on 13 January 2012, by the Chief Nursing Officer (CNO (2012)1), and updated on 17 May 2012 (CNO(2012)01-update). The Scottish Government expectation is that it is mandatory for use in all NHS care settings and in all other care homes to support health and social care integration, the content of this manual must be considered best practice.

Important words and what they mean

Mandatory means that you must do it.

In order to support care homes successfully adopt and implement the NIPCM, this context specific Care Home Infection Prevention and Control Manual (CH IPCM) has been co-produced with national and local stakeholders. The content of the CH IPCM is completely aligned to the evidence based NIPCM and is intended to be used by all those involved in residential care provision.
The CH IPCM contains chapters on:

1. Standard Infection Control Precautions (SICPs);
2. Transmission Based Precautions (TBPs);

There are web links in some sections taking you directly to information contained in the NIPCM.
The CH IPCM is a practice guide for use in care homes, which when used, can help reduce the risk of infections and ensure the safety of those being cared for, staff and visitors in the care home environment.
It aims to:

- make it easy for care home staff to apply effective infection prevention and control (IPC) precautions;
- help reduce the risk of infection;
- reduce variation and optimise IPC practices throughout care home settings;
- help align practice, monitoring, quality improvement and scrutiny.

Who should use the CH IPCM?

- Care home providers
- Care home staff
- Health Protection Teams
- Professionals providing IPC support

It should be adopted for all infection prevention and control practices and procedures.

Is the content based on scientific literature?

The recommendations for practice in the manual are developed from literature reviews of the current scientific literature (for example Medical Journals) that are updated real time and are considered best practice. Any major changes identified in the scientific literature may lead to a change being made to the content.
A number of 'SBAR's' are available which are short communication or guidance reports that advise on the situation, background, assessment and recommendations on a specific topic.

- **View the literature reviews**

Are there any other IPC materials that can be used?

The resources page links to SICPs materials, education and training links and posters and other supporting tools.

- **View the resources**

How can I find out what the scientific and medical words mean?

You can use the **glossary** to find out what these words mean. Sometimes we have added the meaning of important words within the chapter or section.

The Care Home Infection Prevention and Control Manual (CH IPCM) was launched on 24 May 2021.

Responsibilities for the CH IPCM

ARHAI Scotland to:

- ensure that the content of the CH IPCM remains evidence based.

Care Home providers to:

- ensure that the CH IPCM is adopted and implemented in their care homes in accordance with local governance processes;
- ensure that systems and resources are in place to facilitate implementation and compliance monitoring of IPC as specified in the manual in all care areas - compliance monitoring includes all staff (permanent, agency and where required external contractors);
- ensure there is a system in place which promotes incident reporting or potential hazards and focuses on improvement that ensures safe working practices, through regular monitoring and review;
- ensure there is a nominated lead with responsibility for IPC.

Care Home Managers to:

- ensure that all staff are aware of, have access to and know where to locate the CH IPCM;
- ensure that all staff have completed appropriate IPC training relevant to their roles and that this is centrally recorded. Training could include resources developed by your organisation, your local NHS Board or Health and Social Care Partnership, **NHS Education for Scotland (NES)** or the **Scottish Social Services Council (SSSC)**;
- ensure that all staff have adequate support and resources available to enable them to implement, monitor and take corrective action to ensure compliance with this manual (if this cannot be implemented, a robust risk assessment must be undertaken and approved through local governance procedures);
- ensure that all staff include IPC as an objective in their Personal Development Plans (or equivalent) and are encouraged to discuss any issues around this with their line manager.

Care Home staff to:

- ensure that they fully understand and apply the principles of IPC contained in the CH IPCM;
- maintain competence, skills and knowledge in IPC through completing appropriate training relevant to their role as directed by their line manager. Training can be via resources developed by their organisation, local NHS Board or Health and Social Care Partnership, **NHS Education for Scotland (NES)** or the **Scottish Social Services**

Council (SSSC);

- communicate IPC practices to be taken by colleagues, those being cared for, relatives and visitors without breaching confidentiality;
- report to line managers and document any deficits in knowledge, resources, equipment and facilities or incidents that may result in transmission of infection including near misses e.g. sharps or PPE failures;
- not provide care while at risk of potentially transmitting infectious agents to others e.g. when having a cold/flu or experiencing the symptoms of Norovirus (diarrhoea). If in any doubt they must consult with their line manager;
- contact HPT/IPCT if there is a suspected or actual HAI incident/outbreak. Outbreak definitions are found on Chapter 3 of the NIPCM.

Infection Prevention and Control Teams (IPCTs) and Health Protection Teams (HPTs) to:

- engage with and support care home staff to develop systems and processes that lead to sustainable and reliable improvements in relation to the application of IPC where required;
- provide expert advice on the application of infection prevention and control in care homes and on individual risk assessments as required;
- have systems in place capable of distinguishing individual case or cases of infection requiring investigations and;
- complete documentation when an incident/outbreak or data exceedance is reported.

Chain of infection

In order for infection to occur several things have to happen. This is often referred to as the Chain of Infection. The six links in the chain are:

1. The **Infectious Agent –** or the microorganism which has the ability to cause disease.

2. The **Reservoir** or source of infection where the microorganism can live and thrive. This may be a person, an animal, any object in the general environment, food or water.

3. The **Portal of Exit** from the reservoir. This describes the way the microorganism leaves the reservoir. For example, in the case of a person with flu, this would include coughing and sneezing. In the case of someone with gastro-enteritis microorganisms would be transmitted in the faeces or vomit.

4. The **Mode of Transmission.** This describes how microorganisms are transmitted from one person or place to another. This could be via someone's hands, on an object, through the air or bodily fluid contact.

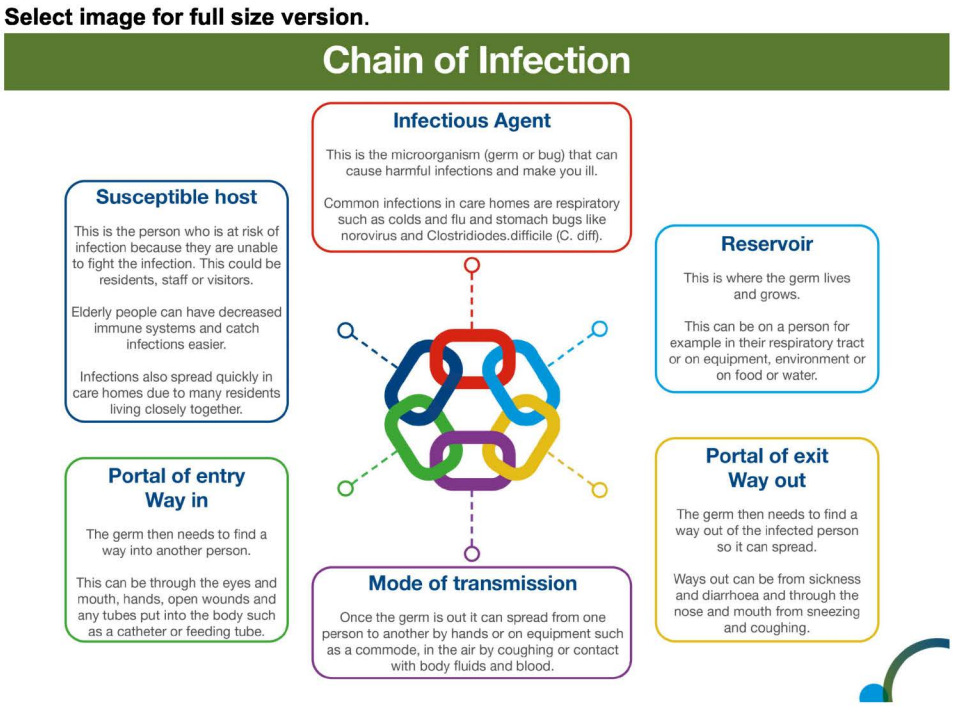
5. The **Portal of Entry.** This is how the infection enters another individual. This could be landing on a mucous membrane, being breathed in, entering via a wound, or a tube such as a catheter.

6. The **Susceptible Host.** This describes the person who is vulnerable to infection.

Infection can be prevented by breaking the Chain of Infection.

The chain of infection diagram illustrates and gives examples of actions that can be taken to break it. The overall aim of Standard Infection Control Precautions (SICPs), is to break the Chain.

Select image for full size version.



Chapter 1: Standard Infection Control Precautions (SICPs)

> **The basic IPC measures that should be used in your care home are called Standard Infection Control Precautions (SICPs).**
>
> SICPs are used to reduce the risk of transmission of infectious agents from known and unknown sources of infection.
>
> These should be used by **all staff, in all care settings, at all times, for all residents** whether infection is known to be present or not to ensure the safety of those being cared for, staff and visitors in the care home.
>
> SICPs should be part of everyday practice and applied consistently by all staff in the care home including, but not limited to, managers, nurses, care staff, domestics/housekeepers and volunteers.

It is essential that optimal IPC measures are applied continuously as people living in care homes may be elderly or have underlying medical conditions which could make them more at risk from infection which may then be serious and in some cases life threatening. By applying optimum IPC measures you will provide safe and effective care to the people in your care, fellow staff and visitors to your care home.

There are 10 Standard Infection Control Precautions (SICPs)

1. Resident Placement/Assessment for infection risk
2. Hand Hygiene
3. Respiratory and Cough Hygiene
4. Personal Protective Equipment
5. Safe Management of Care Equipment
6. Safe Management of Care Environment
7. Safe Management of Linen
8. Safe Management of Blood and Body Fluid Spillage
9. Safe Disposal of Waste
10. Occupational Safety: Prevention and Exposure Management (including sharps)

The Hierarchy of Controls detailed in Appendix 20 should also be considered in controlling exposures to occupational hazards which include infection risks.

1. Resident placement/assessment for infection risk

If residents have been admitted from another care setting, for example, external care home or hospital try to pre assess them before they are admitted by speaking to the staff from the other care setting.

Before the resident comes into the care home it is important to risk assess them for infection.

- Residents who may present a cross-infection risk include those with:
  - diarrhoea
  - vomiting, being sick
  - unexplained rash
  - fever or temperature of 37.8 C or higher
  - respiratory symptoms such as coughing and sneezing
  - known to have been previously positive with a Multi-drug Resistant Organisms (MDRO) e.g. Meticillin Resistant *Staphylococcus aureus* (MRSA), Carbapenemase Producing Enterobacterales (CPE)

- If you suspect or know that a resident has an infection, then details must be confirmed in order for you to put in place the correct IPC measures.

Appendix 11 of the National Infection and Prevention Control Manual tells you the precautions you need to put in place for different infections.
Use the **NES SIPCEP Breaking the Chain of Infection** module to learn about breaking the chain of infection in care homes.
Read the **placement literature review** to understand the evidence base for resident placement.

2. Hand Hygiene

The most important thing you can do to prevent the spread of infection in a care home is to keep your hands clean. This is called **hand hygiene**.

Hand hygiene is essential to reduce the transmission of infection in care home settings. All staff and visitors should clean their hands with soap and water or, where this is unavailable, alcohol-based hand rub (ABHR) when entering and leaving the care home and when entering and leaving areas where care is being delivered.

What you need for hand hygiene

- Liquid soap
- Running water
- Alcohol based hand rub (also known as ABHR)
- Disposable paper towels

When hand hygiene should be performed

- before touching a resident;
- before clean/aseptic procedures. If ABHR cannot be used, then antimicrobial liquid soap should be used;
- after body fluid exposure risk;
- after touching a resident;
- after touching a resident's immediate surroundings;
- before handling medication;
- before preparing/serving food;
- after visiting the toilet;
- before putting on and after removing PPE;
- between carrying out different care activities on the same resident;
- after cleaning care equipment;
- after disposing of individual's personal waste;
- after handling dirty linen.

It is important that residents are routinely encouraged to perform hand hygiene and given assistance if required.

The four moments for hand hygiene poster can be used in your care home to show staff when hand hygiene should be done and the reasons why.
Select image for full size version.

Before carrying out hand hygiene make sure:

- your arms are bare below the elbow;
- you take off all your hand and wrist jewellery (a single, plain metal finger ring is allowed but should be taken off (or moved up) during hand hygiene);
- bracelets or bangles which are worn for religious reasons, such as the Kara, can be pushed higher up the arm and secured in place;
- your finger nails are clean and short;
- you cover all cuts or abrasions with a waterproof dressing;
- you do not wear artificial nails or nail varnish/products.

Choose the correct product

Liquid soap and water must be used:

✔ if your hands look dirty;

⚠ If you are caring for a resident who is being sick or having diarrhoea or has diarrhoeal illness such as norovirus or *Clostridioides difficile* then you **must** use soap and water for hand hygiene.

✘ Do not use ABHR as it will not work in these cases.

✔ Make sure you wet your hands before applying liquid soap.

✔ Use paper towels to turn off taps if the taps are not elbow operated mixer taps.

Elbow operated mixer taps are considered to provide the best temperature and flow for optimum hand hygiene and should be considered for any new build, refurbishment or if they need repaired/changed.

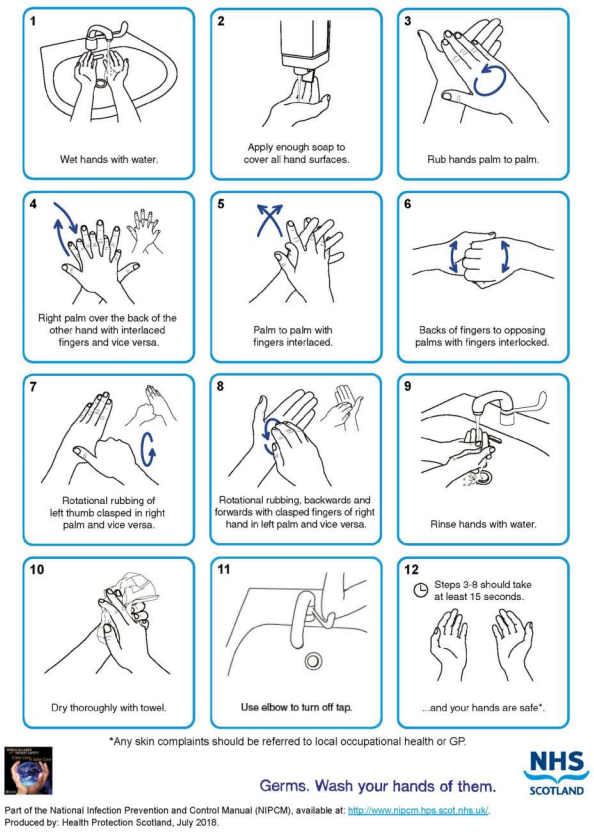
✔ When you have washed your hands dry them thoroughly using paper towel and dispose of the paper towel in a foot operated waste bin.

To make sure you clean your hands properly with soap and water you must follow the steps in the poster '**How to hand wash step by step images**'. This poster can be printed off and displayed throughout the care home to ensure that all staff and visitors are aware of and practice this hand hygiene method when required in the care home.

Select image for full size version

Best Practice: Appendix 1 - How to hand wash step by step images

Steps 3-8 should take at least 15 seconds.



Alcohol based hand rub (ABHR)

Alcohol based hand rub (ABHR) is a gel, foam or liquid containing one or more types of alcohol that is rubbed into the hands to stop or slow down the growth of microorganisms (germs).

✔ If your hands look clean then you can use ABHR for routine care

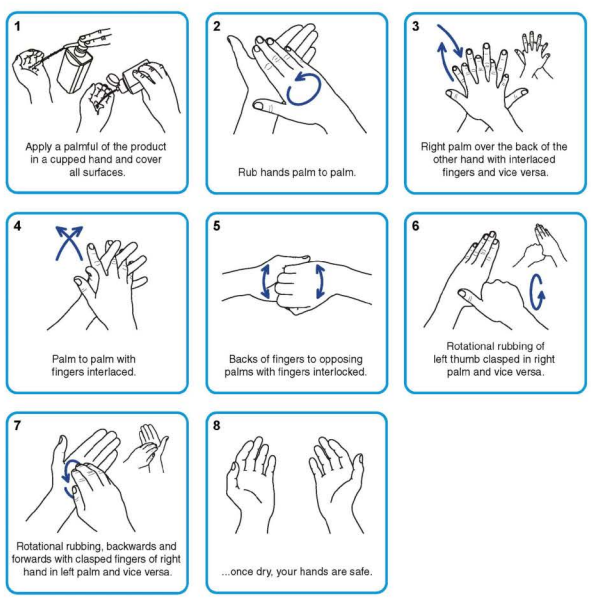
⚠ Do not use ABHR if you are caring for a resident who has sickness or diarrhoeal illnesses such as norovirus or *Clostridioides difficile*. **You must use soap and water as ABHR will not work.**

To make sure you clean your hands properly with ABHR you must follow the steps in the poster '**How to hand rub step by step images**'. This poster can be printed off and displayed throughout the care home to ensure that all staff and visitors are aware of and practice this hand hygiene method when required in the care home.

Select image for full size version

Best Practice: Appendix 2 - How to handrub step by step images

Duration of the process: 20-30 seconds.



Skin care:

✔ Use warm/tepid water to reduce the risk of dermatitis. Avoid using hot water.

✔ After hand washing pat hands dry using disposable paper towels. Avoid rubbing which may lead to skin irritation/damage.

✔ Use an emollient hand cream during breaks and when off duty.

✘ Refillable dispensers or communal tubs of hand cream should not be provided or used in the care setting.

✔ Staff with skin problems should seek advice from Occupational Health Department if available or their GP

Read the **hand hygiene literature reviews** to find out more about the evidence base for hand hygiene.

3. Respiratory and cough hygiene

It is easy for infections to spread within a care home by coughing and sneezing so it is very important that respiratory and cough hygiene is used by everyone including staff, residents and visitors.

What you need for respiratory and cough hygiene

- Disposable tissues
- Waste bin and waste bags
- Hand hygiene products

If anyone has a cough, cold or other respiratory symptoms then they must:

✔ cover their nose and mouth with a disposable tissue when sneezing, coughing, wiping and blowing the nose;

✔ put used tissues into a waste bin immediately after use;

✔ wash their hands with soap and water after coughing, sneezing, using tissues, or after contact with respiratory secretions or objects contaminated by these secretions;

✔ keep hands away from the eyes nose and mouth.

Staff must:

✔ help residents with their respiratory and cough hygiene where required;

✔ make sure that residents are given everything they need for respiratory and cough hygiene including tissues, waste bag and hand hygiene products and make sure that it is close enough for them to use;

✔ use hand wipes followed by ABHR if there is no running water available or hand hygiene facilities are out of reach then wash your hands at the first available opportunity.

Read the **respiratory and cough hygiene literature review** to find out the evidence for respiratory and cough hygiene practice.

4. Personal Protective Equipment (PPE)

Health and Safety at Work Act (1974), Control of Substances Hazardous to Health (COSHH) (2002 as amended) regulations and Personal Protective Equipment at Work Regulations 1992 (as amended) legislate that employers must provide PPE which gives you adequate protection against the risks associated with the task being undertaken. Employees also have a responsibility under these laws which is to make sure that they wear the correct PPE for the task they are doing and wear it correctly.

PPE products you might need in the care home

- Gloves
- Aprons
- Masks
- Eye Protection

Deciding which PPE to use:

Before doing any procedure or task you need to:

✔ think about or find out if you could be exposed or come into contact with blood and/or other body fluids (BBF); and

✔ make sure that the PPE worn gives you enough protection against the risks associated with the procedure or task you are doing.
Examples of potential risks are:

- caring for an individual with a known infection
- inserting or caring for urinary catheters
- changing wound dressings
- cleaning tasks using disinfectant products

All PPE should be:

✔ located close to the point of use

✔ stored in a clean and dry area to prevent contamination until needed for use;

✔ within expiry dates;

✔ single-use only items unless specified by the manufacturer;

✔ changed immediately after individual use and/or following completion of a procedure or task;

✔ disposed of after use into the correct waste stream i.e. healthcare waste or domestic waste.
Reusable PPE items, for example non-disposable goggles, face shields and visors, must have a decontamination schedule with responsibility assigned.

Gloves must be:

✔ worn when it is likely that you will be exposed to blood and/or other body fluids (BBF);

✔ worn when undertaking an invasive procedure

✔ appropriate for use, fit for purpose and well-fitting. The glove selection chart can help you select the correct glove;

✔ changed immediately after each individual and/or following completion of a procedure or task;

✔ changed if damaged or a perforation or puncture is suspected.

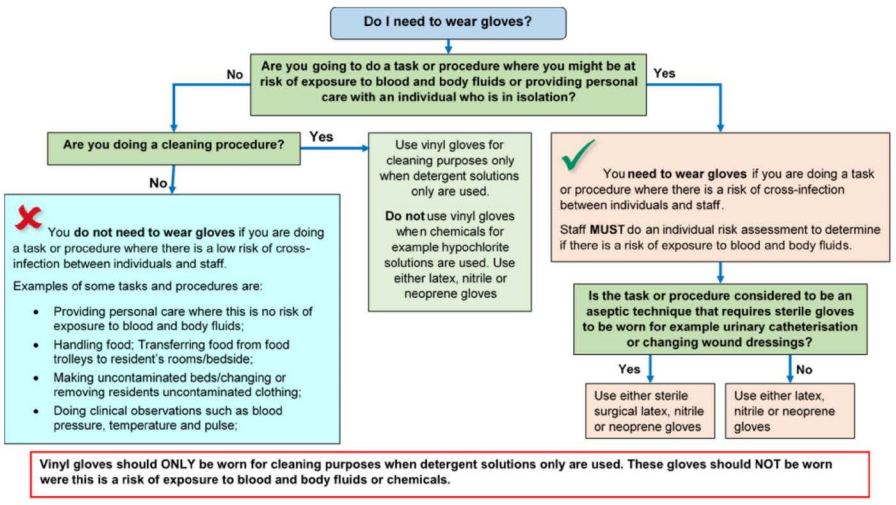
⚠ **Using gloves reduces the risk of contamination but does not remove it all. Gloves should not be used instead of carrying out hand hygiene.**

⚠ **Gloves should never be decontaminated or cleaned with ABHR or by washing with cleaning products.**

Choose the correct gloves

Use the **glove selection chart** to support you to select the correct glove type.

Select image for full size version



Aprons must be worn:

✔ by care staff when there is a risk of clothing being contaminated with blood or other body fluids;
✔ during direct care, bed-making or when undertaking the decontamination of equipment;
✔ when delivering food and/or supporting residents with nutrition.

Eye/face protection (including full face visors) must:

✔ be worn if blood and/or body fluid contamination to the eyes/face is expected/likely;
✘ not be touched when worn.
✘ Facial accessories such as piercings or false eyelashes must not be worn when using eye/face protection;
⚠ Regular glasses or safety glasses are not considered eye protection.

Fluid Resistant Type IIR surgical face masks must be:

✔ worn if splashing or spraying of blood, body fluids, secretions or excretions onto the respiratory mucosa (nose and mouth) is expected/likely;
✔ a full face visor may be used as an alternative to fluid resistant Type IIR surgical face masks to protect against splash or spray, however:

- If you are using droplet precautions, you must always wear a surgical face mask as well as the full face visor (droplet precautions will be discussed further in **Chapter 2 Transmission Based Precautions**)

✔ well-fitting, fully covering the mouth and nose and fit for purpose, you must follow the manufacturer's instructions to ensure effective fit/protection.
✔ removed or changed;

- at the end of a procedure/task;
- if the mask is damaged or there is a build up from moisture after extended use or from gross contamination with blood or body fluids; and
- following specific manufacturers' instructions.

Putting on personal protective equipment (PPE) - donning

✔ Always perform hand hygiene before putting on PPE.

The order for putting on PPE is:

1. Apron or Gown
2. Surgical Mask
3. Eye Protection (where required)
4. Gloves

Taking off personal protective equipment (PPE) - doffing

The order for taking off PPE is:

1. Gloves
2. Apron or Gown
3. Eye Protection
4. Surgical Mask

✔ Always carry out hand hygiene immediately after taking off PPE.

✔ All PPE should be removed before leaving the area and disposed of as healthcare waste.

A poster showing the order for putting on and removing PPE is available to print.
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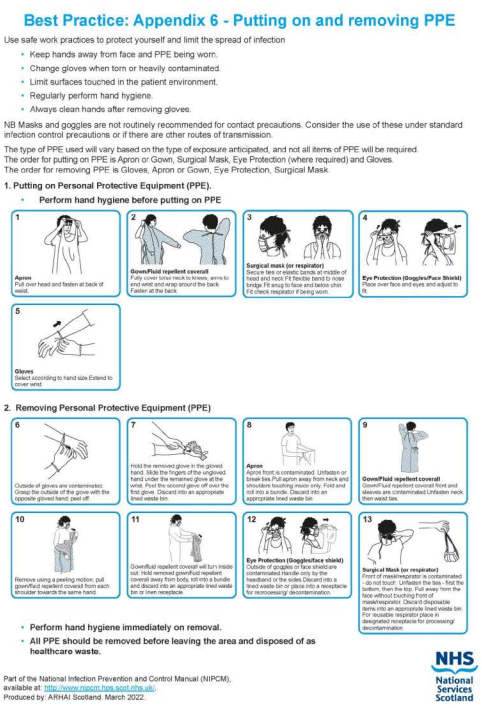

Read the PPE literature review to find out more about the evidence base for PPE use.

5. Safe management of care equipment

Care equipment is easily contaminated with blood, other body fluids, secretions, excretions and infectious agents and this can spread infection.

Important words and what they mean

Routine cleaning is regular cleaning which is carried out on a scheduled basis, not on an unplanned basis and not in response to an outbreak.
Cleaning is the removal of any dirt by use of an appropriate cleaning agent such as detergent.
Decontamination is removing, or killing pathogens on an item or surface to make it safe for handling, re-use or disposal, by cleaning, disinfection and/or sterilisation.
Disinfectant is a chemical used to reduce the number of infectious agents from an object or surface to a level that means they are not harmful to health.
Detergent is a chemical cleansing agent that can dissolve oils and remove dirt.

For **routine cleaning** general purpose detergent and water solution or detergent impregnated wipes are sufficient.
If the resident has a known infection or the equipment is contaminated with blood or body fluids, then a disinfection agent needs to be used.
✗ Do not use household bleach as the required dilution cannot be guaranteed.

✗ Do not use **refillable spray container** for cleaning products as there is a risk of contamination.
✓ Cleaning products which come in **non-refillable spray containers** may be used as long as they conform to EN standards.

What you need for safe management of care equipment

- Cleaning/disinfectant products:
  - general purpose detergent and water solution/detergent impregnated wipes;

    or
  - combined detergent/disinfectant solution at a dilution of 1,000 parts per million available chlorine (ppm available chlorine (av.cl.);

    or
  - a general purpose neutral detergent in a solution of warm water followed by disinfection solution of 1,000ppm av.cl.
- Paper towels/disposable cloths.

Types of equipment

There are three different types of care equipment that you will use in your care home and it is important that you know how to deal with each type.
You **must** use and follow manufacturers guidance for all equipment and products you use including those used for cleaning and decontamination.
Before using any sterile equipment, you should check that:

- the packaging is intact;
- there are no obvious signs of packaging contamination;
- the expiry date remains valid.

1. Single-use - equipment which is used once on a single resident and then discarded.
✗ Single-use equipment **must never be reused** even on the same resident. The packaging carries the symbol.

✗ Needles and syringes are single-use devices. They should never be used for more than one resident or reused to draw up additional medication.
✗ Never give medications from a single-dose vial or intravenous (IV) bag to multiple residents.

2. Single individual use – equipment which can be reused by same resident e.g. nebuliser equipment and decontaminated following use as per manufacturers instructions.

3. Reusable non-invasive equipment (often referred to as 'communal equipment') – equipment which can be reused on more than one resident following decontamination between each use e.g. commode, moving and handling equipment or bath hoist.

Cleaning or decontaminating reusable non-invasive equipment

Residents should be given their own reusable (communal) non-invasive equipment if possible.
Reusable equipment should be checked frequently for cleanliness and signs of integrity. This will include mattresses and pillows which should be clean, have a waterproof covering which is in a good state of repair.
You should clean or decontaminate reusable equipment:
✓ between individual use;
✓ after blood and/or body fluid contamination;
✓ as part of the regular scheduled cleaning process;
✓ before inspection, servicing or repair.

Staff must:
✓ follow the local cleaning protocol/schedule which should include responsibility for; frequency of; and method of decontamination required;
✓ use a general purpose detergent and water solution/detergent impregnated wipes;
or
a combined detergent/disinfectant solution at a dilution of 1,000 parts per million available chlorine (ppm available chlorine (av.cl.);
or
a general purpose neutral detergent in a solution of warm water followed by disinfection solution of 1,000ppm av.cl;
✓ make up cleaning/disinfection solution following manufacturers guidance;
✓ follow the manufacturer's contact time for the cleaning/disinfection solution;
✓ rinse and dry reusable equipment then store it clean and dry.

When an organisation uses cleaning and disinfectant products that differ from those stated in this CH IPCM these products need to meet BS EN standards.
This means that the product has passed tests and is shown to reduce different viruses, bacteria, fungi, yeasts and spores. If you do not use an BS EN standard product you have no assurance that it will work effectively.
Manufacturers instruction and recommended contact times must be adhered to.
BS EN standards and what they mean

- **BS EN 13727** - quantitative test used to evaluate bactericidal activity of disinfectants intended for use in the MEDICAL area (e.g. surface disinfection, surgical and hygienic handrub and handwash). Products must achieve ≥ 5 log reduction (must kill 99.999%) against P. aeruginosa, S. aureus and E. hirae.
- **BS EN 14476** – quantitative test used to evaluate virucidal activity of disinfectants intended for use in the medical area. For surface disinfection, products must achieve ≥ 4 log reduction against Adenovirus, Norovirus and Poliovirus.
- **BS EN 13624** – quantitative test used to evaluate fungicidal and yeasticidal activities of disinfectants intended for use in the medical area. For surface disinfection, products must achieve ≥ 4 log reduction against A. brasiliensis, C albicans.
- **BS EN 17126** – quantitative test used to evaluate sporicidal activity of disinfectants in the medical area. For surface disinfection, products must achieve ≥ 4 log reduction against bacterial spores. (Used for C. diff). BS EN 13704 has also been used to test products against C. diff.

Read the **management of care equipment literature review** to find out more about why we do things this way for care equipment.

The **decontamination of non-invasive care equipment** poster can help staff decide how to clean equipment.
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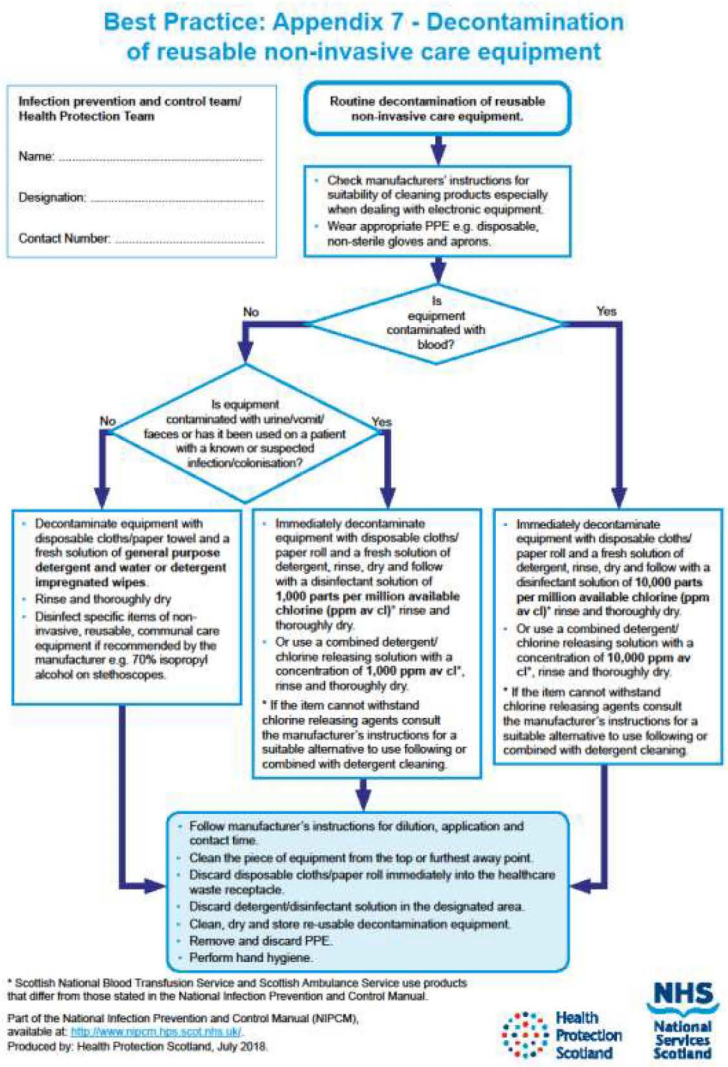

6. Safe management of the care environment

There are many areas in care homes that become easily contaminated with micro-organisms (germs) for example toilets, waste bins, tables.
Furniture and floorings in a poor state of repair can have micro-organisms (germs) in hidden cracks or crevices.
To reduce the spread of infection, the environment must be kept clean and dry and where possible clear from clutter and equipment.
Non-essential items should be stored and displayed in such a way as to aid effective cleaning
Keeping a high standard of environmental cleanliness is important in the care home settings as the residents are often elderly and vulnerable to infections.

The care home environment should be:

✔ visibly clean, free from non-essential items and equipment to help make cleaning effective

✔ well maintained and in a good state of repair

✔ routinely cleaned in accordance with the specified cleaning schedules:

- A fresh solution of general purpose neutral detergent in warm water is recommended for routine cleaning. This should be changed when dirty or at 15 minutes' intervals or when changing tasks.

- Routine disinfection of the environment is not recommended. However, 1,000 parts per million available chlorine (ppm available chlorine (av.cl.) should be used routinely on sanitary fittings.

Staff must:

✔ Report any issues with the environment cleanliness or maintenance to the person in charge to ensure that the care environment is safe. The person in charge must then act on problems reported to them.

✔ Be aware of the environmental cleaning schedules and clear on their specific responsibilities.

Cleaning schedules should include:

- responsibility for;
- frequency of; and
- method of environmental cleaning.

Managing cleaning services:

Cleaning services should be managed in a systematic way, and staff responsible for cleaning should be appropriately trained to carry out the tasks they are responsible for.
The **Care Home Manager** is responsible for managing the cleaning service which has a number of **essential** elements outlined in the cleaning services diagram.
Select the diagram for full size version
Cleaning Services
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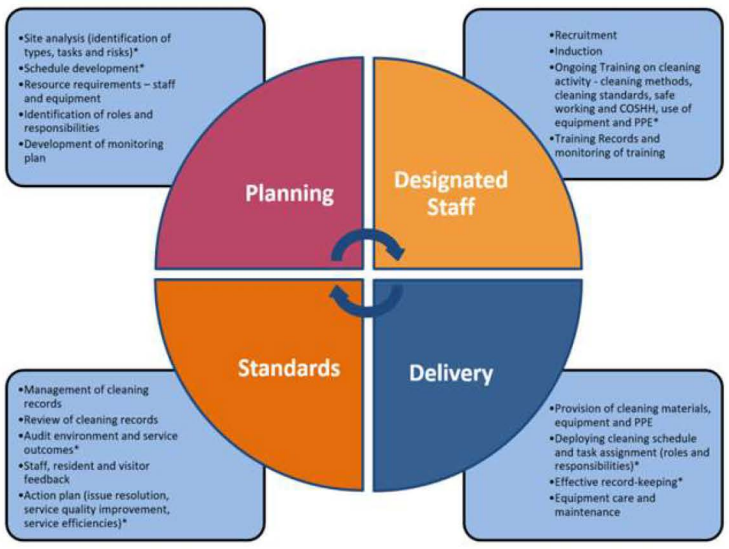


An effective service will include all of the elements above.

Care Homes Cleaning Specification

The **Care Homes Cleaning Specification** provides a guide to planning cleaning services. It has tools to help with the planning and recording of cleaning activities and with the management activities marked with a * in the diagram above. These include:

- A structure to identify all spaces within a care home and plan appropriate cleaning tasks and frequencies.
- A set of weekly and monthly **cleaning templates** to be assigned to each space within a care home. These can be used to develop a schedule and to provide a method for recording all cleaning activity. An example of a cleaning schedule and record is provided.
- The tools are examples and designed to support you. Care homes can use their own tools if preferred, however if a local tool is utilised it should reflect the standards set out in the **Care Homes Cleaning Specification.**

Table 1: Example cleaning schedule residents room

Cleaning Record A: Residents room and en-suite

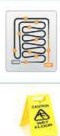
Room number: Week Commencing:

Task Group	Task Activity	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
	Daily Tasks							
Toilet	Clean and check (clean once, check once)							
Toilet brush holder	Clean and check (clean once, check once)							
Soap and handtowels	Clean dispensers and replenish supplies							
Glass panels or mirror/ceramic wall tiles/wet wall	Check for marks and spot clean							
Sanitary fittings (wash-hand basin, sink, taps, fixtures)	Clean and check (clean once, check once)							
High level	Check for cleanliness, spot clean							
Furnishings	Remove debris							
	Damp clean							
Radiators	Check for marks and spot clean							
Low level	Check for cleanliness, spot clean							
Paintwork (walls and doors)	Check for marks and spot clean							
Refuse	Collect refuse and dispose							
	Check bin and spot clean							
	Replace liners							
Floors Hard/Soft	Remove debris							
	Dust control or suction clean							
	Damp mop							
	Check for spills, stains etc.							

Weekly Tasks		
Glass panels or mirrors/ceramic wall tiles or wet wall	Clean	
High level surfaces	Clean ledges, pipes, directional signs	
Low level	Damp clean	
Telephone	Clean	
Window blinds	Suction clean	
Paintwork (walls and doors)	Remove marks	
Refuse	Clean holders and containers	
Floors Hard/Soft	Buff/burnish or scrub	
	Suction dry	
Less Frequent tasks*	Refer to yearly tasks record and note any activities undertaken	

- **Standard operating procedures (SOPs)** for all cleaning tasks. Each SOP outlines the correct equipment, safety considerations, method, and outcomes required for each task. The example shows the important steps that must be taken during the cleaning of floors.

Table 2: Example cleaning SOP: Floors

Preparation steps - Wash your hands, prior to wearing appropriate PPE	
- fit appropriate microfibre or disposable mop head to frame	
Cleaning steps - remove larger items of debris from floor and dispose of in an appropriate waste stream, ensure to follow local procedure for waste segregation	
- correctly position wet floor sign to identify cleaning task taking place	
- with frame, width wide in front of you, walk forward round edges of room against skirting board, ensuring the mop head is never lifted from the floor and debris is not brushed off with bare hands	
- visually divide room into wide strips. Hold mop with narrow end facing you and sweep to one side. At end of side sweep, twist the mop head so that the narrow end is facing towards you and sweep the next line. In this way the dust will be pushed in front of the mop head and not left against edges. Never brush off debris in a clinical area	
- mop the remaining floor using leading edge, working backwards towards the door	
- remove wet floor signs	
After cleaning steps - ensure all equipment used is cleaned and stored correctly	
- Dispose of PPE appropriately and wash your hands	

- A process for **checking** the cleanliness of the care environment, to ensure standards are being maintained and to identify areas for improvement.

The tools within the Cleaning Specification should be used by the care home manager in the planning, training of staff, delivery, and checking of standards of the cleaning services they provide.

> **When an organisation uses cleaning and disinfectant products that differ from those stated in this CH IPCM these products need to meet BS EN standards.**
> This means that the product has passed tests and is shown to reduce different viruses, bacteria, fungi, yeasts and spores. If you do not use an BS EN standard product you have no assurance that it will work effectively.
> Manufacturers instruction and recommended contact times must be adhered to.
> **BS EN standards and what they mean**
>
> - **BS EN 13727** - quantitative test used to evaluate bactericidal activity of disinfectants intended for use in the MEDICAL area (e.g. surface disinfection, surgical and hygienic handrub and handwash). Products must achieve ≥ 5 log reduction (must kill 99.999%) against P. aeruginosa, S. aureus and E. hirae.
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> - **BS EN 17126** – quantitative test used to evaluate sporicidal activity of disinfectants in the medical area. For surface disinfection, products must achieve ≥ 4 log reduction against bacterial spores. (Used for C. diff). BS EN 13704 has also been used to test products against C. diff.

Decontamination of soft furnishings

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Decontamination of soft furnishings may require to be discussed with the local HPT/ICT. If the soft furnishing is heavily contaminated with blood or body fluids, it may have to be discarded. If it is safe to clean with standard detergent and disinfectant alone then follow appropriate procedure.
If the item cannot withstand chlorine releasing agents staff are advised to consult the manufacturer's instructions for a suitable alternative to use following or combined with detergent cleaning. Any alternative disinfectant used must meet the relevant BS EN Standards as detailed previously

Read the **routine cleaning of the care environment** literature review to find out more about why we do things this way for the care environment.

7. Safe management of linen

Examples of linen you may have in the care home includes:

- bed linen (bed sheets, duvet, duvet covers, pillowcases);
- blankets;
- curtains;
- hoist slings;
- towels;
- resident's clothing (nightdresses, pyjama tops and bottoms).

There are three categories of linen:
Clean – Linen washed and ready for use
Used – All used linen in the care setting not contaminated by blood or body fluids
Infectious – All linen used by a person known or suspected to be infectious and/or linen that is contaminated with blood or body fluids, e.g. faeces.
Used or infectious linen may also be categorised as heat-labile: usually personal clothing where the clothing may be damaged (shrinking/stretching) by washing at a higher than recommended temperature than the label advises. If such linen needs to be washed at a higher temperature for example if soiled or resident has a known infection they or their relatives need to be advised that the clothing may be damaged.
All clean, used and infectious linen should be handled with care and attention paid to the potential spread of infection.

Clean linen:

✓ Should be stored in a clean, allocated area.
This should be an enclosed cupboard but a trolley could be used as long as it is completely covered with a waterproof covering that is able to withstand cleaning.

Used linen:

Staff must:

✓ put on disposable gloves and apron prior to handling used linen;
✓ make sure that a laundry trolley or container is available as close as possible to the point of use for immediate linen deposit.
Staff must not:

✗ rinse, shake or sort linen on removal from beds or trolleys;
✗ place used linen on the floor or any other surfaces for example on a locker or table top;
✗ re-handle used linen once bagged;
✗ overfill laundry receptacles or trolleys;
✗ place inappropriate items in the laundry receptacle for example used equipment/needles.

Infectious linen:

Staff must:

✓ wear disposable gloves and apron before handling infectious linen;
✓ put infectious linen directly into a water soluble laundry bag and secure before putting into a clear plastic bag and placing into a laundry receptacle/trolley.

Washing linen

Micro-organisms are destroyed by heat and detergent and also by the dilution effect of the water in the washing machine.
✓ wash items using the highest temperature you can and following the washing instructions.
✓ use your normal washing powder or detergent and follow the instructions on the correct amount to use.
✓ tumble-dry (if possible) following the washing instructions.
✓ iron according to washing instructions. If possible, use a hot steam iron.
If visitors wish to take their relatives clothes home to be laundered, place laundry in an appropriate bag and provide them with a **washing clothes at home leaflet**.
If the residents clothing is very soiled or infectious, staff may recommend that the clothing is washed in the care home's laundry service if available, otherwise, the item should be disposed of in the appropriate healthcare waste stream following discussion with the resident or their relative(s).

Read the **safe management of linen** literature review to find out more about why we do things this way when dealing with linen.

8. Blood and body fluid spillages

Spillages of blood and other body fluids may transmit blood borne viruses.

Important words and what they mean

A **blood borne virus** is a virus carried or transmitted by blood, for example Hepatitis B, Hepatitis C and HIV.
Body fluids are fluids produced by the body such as urine, faeces, vomit or diarrhoea. These body fluids may also contain blood.

Blood and body fluid spillages must be decontaminated:

✓ immediately by staff trained to undertake this safely;
✓ using body fluid spill kits/equipment available.
Responsibilities for the decontamination of blood and body fluid spillages should be clear within each area/care setting.
Read the **management of blood and body fluid spillages** literature review to find out more about why we do things this way for blood and body fluid spillages.
Use the poster **management of blood and body fluids** to help you when you clean up blood and body fluid spillages.
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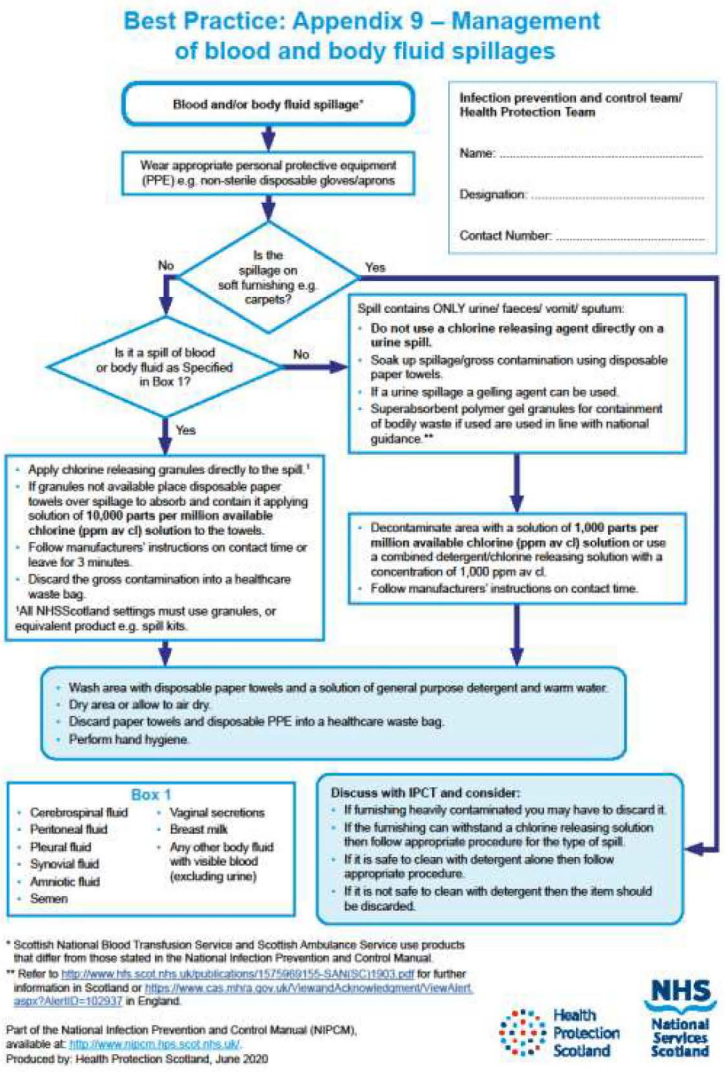


9. Safe disposal of waste (including sharps)

Different types of waste will be produced within care homes.
Some waste may be disposed of through the domestic waste route but other types of waste needs special handling and disposal for example sharps and waste from people who have or may have an infection.
Waste bags in care settings may be colour coded to denote the various categories of waste.
Local procedures and policies on waste disposal must be followed.

Segregation (separating) of waste

- **Healthcare (including clinical)** waste is produced as a direct result of healthcare activities e.g. soiled dressings, sharps
- **Special (hazardous)** waste arises from the delivery of healthcare in both clinical and non-clinical settings. Special waste includes a range of controlled wastes, defined by legislation, which contain dangerous or hazardous substances, e.g. chemicals, and pharmaceuticals
- **Domestic waste** – must be segregated at source into:
    - Dry materials that can be recycled (glass, paper and plastics, metals, cardboard)
    - Residual waste (any other domestic waste that cannot be recycled)

Care home waste disposal may differ from categories described and guidance from local contractors may apply.

Safe management of waste

Your care home should make sure that:

✔ waste is correctly segregated according to local regulations;

✔ the correct colour coded bags are being used according to local regulations;

✔ there is a dedicated area for storage of clinical waste that is not accessible to residents or the public;

✔ waste is stored in a safe place whilst awaiting uplift;

✔ there is a schedule for emptying domestic waste bins at the end of the day and during the day if needed.
Staff should:

✔ follow the schedule for emptying domestic waste bins;

✔ always use appropriate personal protective equipment (PPE);

✔ dispose of waste immediately as close as possible to where it was produced;

✔ dispose of clinical waste into the correct UN 3291 approved waste bin or sharps container;

✔ ensure that waste bins are never overfilled. Once the waste bin is three quarters full, tie waste bags up and put into the main waste bin;

✔ use a 'swan neck' technique for closure of the bag and label with date and location as per local policy.

- A 'swan neck' is a way of closing bag by tying in a loop and securing with a zip tie or tape to make a handle;

✔ clean waste bins regularly with a general purpose neutral detergent;

✔ remove PPE and perform hand hygiene when you have finished handling waste.

ⓘ Read the **safe disposal of waste** literature review to find out more about why we do things this way when dealing with waste.

10. Occupational Safety: Prevention and Exposure Management (including sharps)

All care homes should have policies in place to ensure that staff are protected from occupational exposure to micro-organisms (germs), particularly those that may be found in blood and body fluids.

Important words and what they mean

Occupational exposure is exposure of healthcare workers or care staff to blood or body fluids in the course of their work.

A **sharp** is a device or instrument such as needles, lancets and scalpels which are necessary for the exercise of specific healthcare activities and are able to cut, prick and/or have the potential to cause injury.
Safety device or safer sharp is a medical sharps device which has been designed to incorporate a feature or mechanism that minimises and/or prevents the risk of accidental injury. Other terms include (but are not limited to) safety devices, safety-engineered devices and safer needle devices.

The **Health and Safety (Sharp Instruments in Healthcare) Regulations (2013)** outline the regulatory requirements for employers and contractors in the healthcare sector in relation to:

- arrangements for the safe use and disposal of sharps
- provision of information and training to employees
- investigations and actions required in response to work related sharps injuries

Safe management of sharps in your care home

✔ sharps handling must be assessed, kept to a minimum and eliminated if possible with the use of approved safety devices;
✔ always dispose of needles and syringes as a single unit immediately at the point of use;
✔ sharps containers need to be assembled and labelled correctly;
✔ use the temporary closure mechanisms in between use;
✔ if a safety device is being used safety mechanisms must be deployed before disposal;
✔ follow manufacturers' instructions for safe use and disposal;
✘ do not re-sheath used needles or lancets;
✘ do not store sharps containers on the floor;
✘ ensure sharps containers are not accessible to residents or the public;
✘ sharps containers must not be more than three-quarters full.

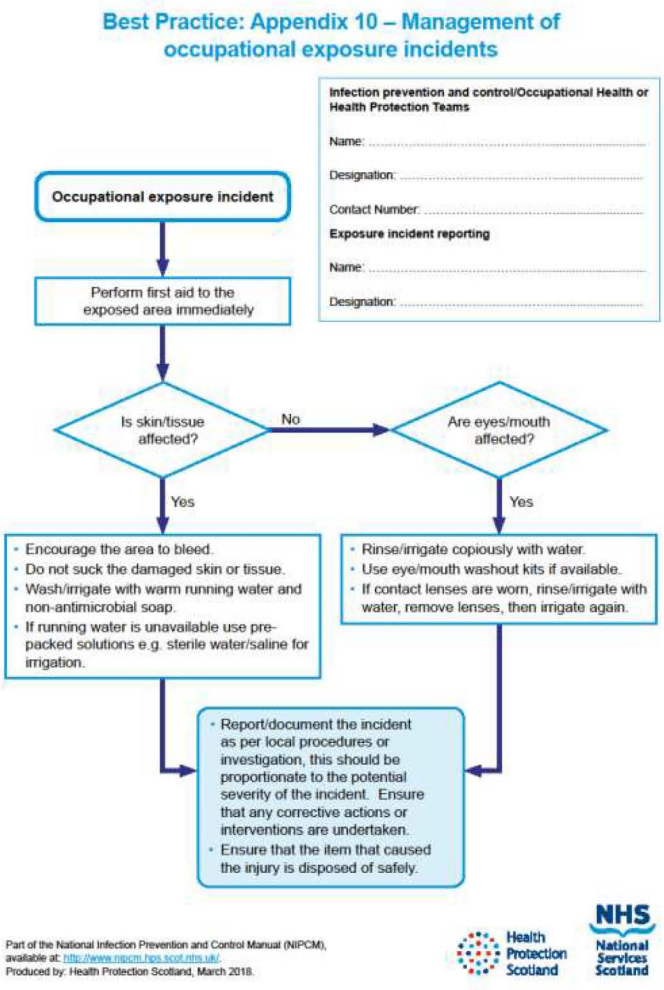
Significant occupational exposure

A significant occupational exposure is when someone is injured at work from using sharps or exposed to risk from blood or body fluids which may then result in a blood borne virus (BBV) or other infection.
Examples of this would be:

- a percutaneous injury for example injuries from needles, instruments, bone fragments, or bites which break the skin; and/or
- exposure of broken skin (abrasions, cuts, eczema, etc.); and/or
- exposure of mucous membranes including the eye from splashing of blood or other high risk body fluids.

If you think or know you have had a significant occupational exposure you must:
✔ report this immediately to the designated person in your care home**, this is a legal requirement;**
✔ follow the local agreed process for management of an occupational exposure incident and follow the management of occupational injuries flow chart.

ⓘ Read the **management of occupational exposure to Blood Borne Viruses (BBVs)** literature review to find out more about why we do things this way for occupational exposure.
The **management of occupational exposure incidents flowchart** should be used within your care home so you know what to do for an occupational exposure.
Select the image for full size



Transmission based precautions (TBPs)

Sometimes using standard infection control precautions (SICPs) won't be enough to stop an infection spreading and you will need to use some extra precautions. **These extra precautions are called Transmission Based Precautions or TBPs.**

When you should use TBPs?

You would use transmission based precautions if a resident has a suspected or known infection or colonisation.

Important words and what they mean

Colonisation is the presence of bacteria on a body surface (such as the skin, mouth, intestines or airway) that does not cause disease in the person or signs of infection.

How are infections transmitted?

Infections can be transmitted or spread by:

- direct contact with microorganisms (germs) on hands;
- indirect contact from contaminated equipment or environment;
- droplet infection by inhaling infectious droplets e.g. flu or COVID-19;
- aerosols e.g. chickenpox.

Different transmission routes need different TBPs.

The three routes or ways an infection is transmitted or spread are called contact, droplet and airborne. You need to use different transmission based precautions for each route.

Contact precautions are used to prevent infections that spread through direct contact with the resident or indirectly from the resident's immediate care environment and care equipment.

Droplet precautions are used to prevent and control infections spread over short distances (at least 3 feet or 1 metre) via small droplets from the respiratory tract of one individual directly onto the mucosal surface of another person's mouth or nose or eyes. Droplets penetrate the respiratory system to above the alveolar level.

Airborne precautions are used to prevent and control infections spread without necessarily having close contact via from the respiratory tract of one individual directly onto the surface of another person's mouth or nose or eyes. Aerosols penetrate the respiratory system to deep into the lung.

Different infections need different TBPs.

You might have heard of some infections like norovirus, Meticillin-resistant *Staphylococcus aureus* (MRSA), *Clostridioides. difficile* (C.diff/CDI) and flu but there are lots of others.
You can find out more information about the infection the individual has and the precautions you should use in **Appendix 11** and/or **A-Z of pathogens** in the NIPCM.
You can also contact your local Health Protection Team or Infection Prevention and Control Team.

Before using transmission based precautions you need to find out:

✔ What the suspected or known infection/colonisation is?

✔ How is it transmitted?

✔ How severe is the resident's illness?

✔ What is the care setting and procedures being done?

There are different ways you can find out if a resident has an infection that needs TBPs to be put in place. You can get information about a resident's infection status from:

- their GP (doctor);
- local Health Protection Team;
- local Infection Prevention and Control Team;
- laboratory;
- hospital or care homes staff from where the resident has been discharged or transferred.

ⓘ Further information on transmission based precautions can be found in the definitions of Transmission Based Precautions literature reviews.

1. Individual placement/assessment for infection risk

You need to regularly monitor the resident for infection throughout their stay so the correct precautions are in place to minimise the risk of infection being spread to other residents.
Residents may be an infection risk if they have:

- diarrhoea, vomiting, an unexplained rash, fever or respiratory symptoms;
- been previously positive with a Multi-drug Resistant Organism (MDRO) for example Meticillin-resistant Staphylococcus aureus (MRSA); Carbapenemase Producing Enterobacterales (CPE).

CPE should be considered if the resident meets **any** of the following criteria within the 12-month period before admission:

- been an inpatient in a hospital outside of Scotland;
- received holiday dialysis outside of Scotland;
- been a close contact of a person who has been colonised or infected with CPE.

CPE guidance for a care home setting is available.

Staff must:

✔ get advice on the resident's clinical management from their GP and advice on appropriate IPC management from either your local Health Protection Team or Infection Prevention and Control Team;

✔ make resident placement decisions based on advice received or sound judgement by experienced staff who are involved in the resident's management;

✔ let the ambulance service know of the resident's infectious condition if they need to go to hospital;

✘ not move residents within/between care areas unless essential.

Resident isolation requirements within the care home

Sometimes you will need to isolate a resident in their own room or area because of a known or suspected infection, it is important that:

✔ Residents remain in their rooms whilst considered infectious and the door should remain closed.
If it is not possible for example the resident has dementia, then there needs to be individual risk assessments and decisions taken documented.

✔ Suitable discrete signage is placed on the door advising others not to enter the room.

✔ Consideration is given to the use of a dedicated team of care staff to care for residents in isolation/cohort rooms areas as an additional IPC measure. This is known as 'staff cohorting' and must only be done if there are enough staff available.

✘ You do not stop isolation until you have considered individual risk factors and how this could affect other residents, staff and visitors.
You may need to contact your local health protection team or infection prevention and control team for further advice.

ⓘ Read the **patient placement, isolation and cohorting** literature review to find out more about why we do things this way for resident placement for TBPs.

2. Safe management of care equipment in an isolation room/area

Cleaning of care equipment is essential to reduce the spread of infection when infection is confirmed/suspected
When dealing with the equipment used in the resident's isolation room or area you should:

✔ use dedicated reusable care equipment for the individual in isolation e.g. commodes where possible.

✔ clean and decontaminate the care equipment after each use.

✔ cleaning products which come in non-refillable spray containers may be used as long as they conform to EN standards
For how to decontaminate non-invasive reusable equipment prior to use on another resident see SICPs - Safe Management of Care Equipment.

When an organisation uses cleaning and disinfectant products that differ from those stated in this CH IPCM these products need to meet BS EN standards.

This means that the product has passed tests and is shown to reduce different viruses, bacteria, fungi, yeasts and spores. If you do not use an BS EN standard product you have no assurance that it will work effectively.
Manufacturers instruction and recommended contact times must be adhered to.
BS EN standards and what they mean

- **BS EN 13727** - quantitative test used to evaluate bactericidal activity of disinfectants intended for use in the MEDICAL area (e.g. surface disinfection, surgical and hygienic handrub and handwash). Products must achieve ≥ 5 log reduction (must kill 99.999%) against P. aeruginosa, S. aureus and E. hirae.
- **BS EN 14476** – quantitative test used to evaluate virucidal activity of disinfectants intended for use in the medical area. For surface disinfection, products must achieve ≥ 4 log reduction against Adenovirus, Norovirus and Poliovirus.
- **BS EN 13624** – quantitative test used to evaluate fungicidal and yeasticidal activities of disinfectants intended for use in the medical area. For surface disinfection, products must achieve ≥ 4 log reduction against A. brasiliensis, C albicans.
- **BS EN 17126** – quantitative test used to evaluate sporicidal activity of disinfectants in the medical area. For surface disinfection, products must achieve ≥ 4 log reduction against bacterial spores. (Used for C. diff). BS EN 13704 has also been used to test products against C. diff.

Read the **management of care equipment** literature review to find out more about why we do things this way for patient care equipment for TBPs.

3. Safe management of the care environment

Isolation room/area cleaning

Staff must:

- ✓ clean and decontaminate the isolation/cohort rooms/area at least daily or more if advised to do so. If you have been advised to clean more than daily this should be added into the environmental cleaning schedule;
- ✓ clean frequently touched surfaces like door handles, bed frames and bedside cabinets at least twice daily;
  - ✓ make sure you are using the correct product which is:
    a combined detergent/disinfectant solution at a dilution of 1,000 parts per million available chlorine (ppm available chlorine (av.cl.));
    or
    a general purpose neutral detergent in a solution of warm water followed by disinfection solution of 1,000ppm av.cl.
  - ✓ follow manufacturers guidance and instructions on how to use the product and what the recommended contact time is for the product to work. This may include rinsing off the disinfection solution to prevent damage to surfaces.
- ✗ Do not use **refillable spray container** for cleaning products as there is a risk of contamination.
  - ✓ Cleaning products which come in non-refillable spray containers may be used as long as they conform to EN standards.

Terminal clean

Important words and what they mean

A **terminal clean** is cleaning/decontamination of the environment to ensure it is safe for the next resident or when the current resident is no longer considered infectious.

A terminal clean is carried out by:

- ✓ removing all healthcare waste and other disposable items from the room;
  - ✓ removing bedding, curtains (bagged before removal from the room) and then wash as infectious linen;
    - ✓ cleaning and decontaminating all reusable care equipment in the room (before removal from the room).
      The room should then be decontaminated using either:

- a combined detergent disinfectant solution at a dilution (1,000ppm av.cl.); or
- a general purpose neutral detergent clean in a solution of warm water followed by disinfection solution of 1,000ppm av.cl.

The room must be cleaned from the highest to lowest point and from the least to most contaminated point.

When an organisation uses cleaning and disinfectant products that differ from those stated in this IPCM CH these products need to meet BS EN standards.
This means that the product has passed tests and is shown to reduce different viruses, bacteria, fungi, yeasts and spores. If you do not use an BS EN standard product you have no assurance that it will work effectively.
Manufacturers instruction and recommended contact times must be adhered to.
BS EN standards and what they mean

- **BS EN 13727** - quantitative test used to evaluate bactericidal activity of disinfectants intended for use in the MEDICAL area (e.g. surface disinfection, surgical and hygienic handrub and handwash). Products must achieve ≥ 5 log reduction (must kill 99.999%) against P. aeruginosa, S. aureus and E. hirae.
- **BS EN 14476** – quantitative test used to evaluate virucidal activity of disinfectants intended for use in the medical area. For surface disinfection, products must achieve ≥ 4 log reduction against Adenovirus, Norovirus and Poliovirus.
- **BS EN 13624** – quantitative test used to evaluate fungicidal and yeasticidal activities of disinfectants intended for use in the medical area. For surface disinfection, products must achieve ≥ 4 log reduction against A. brasiliensis, C albicans.
- **BS EN 17126** – quantitative test used to evaluate sporicidal activity of disinfectants in the medical area. For surface disinfection, products must achieve ≥ 4 log reduction against bacterial spores. (Used for C. diff). BS EN 13704 has also been used to test products against C. diff.

4. Personal Protective Equipment (PPE): Respiratory Protective Equipment (RPE)

In addition to PPE used for Standard Infection Control Precautions, appendix 16 of the NIPCM outlines you what type of PPE and RPE you will need to wear for infections spread by different transmission routes.

Important words and what they mean

Respiratory Protective Equipment (RPE) means FFP3 masks and facial protection and must be thought about when a resident is admitted with a known/suspected infectious agent/disease spread wholly by the airborne route and when carrying out aerosol generating procedures (AGPs) on residents with a known/suspected infectious agent spread wholly or partly by the airborne or droplet route.
An **Aerosol Generating Procedure (AGP)** is a medical procedure that can result in the release of airborne particles from the respiratory tract when treating someone who is suspected or known to be suffering from an infectious agent transmitted wholly or partly by the airborne or droplet route.

Aerosol Generating Procedure (AGP)

The most common AGPs undertaken in the Care Home Setting are Continuous Positive Airway Pressure Ventilation (CPAP) or Bi-level Positive Airway Pressure Ventilation (BiPAP).
The full list of medical procedures for COVID-19 that have been reported to be aerosol generating and are associated with an increased risk of respiratory transmission are:

- tracheal intubation and extubation
- manual ventilation
- tracheotomy or tracheostomy procedures (insertion or removal)
- bronchoscopy
- dental procedures (using high speed devices, for example ultrasonic scalers/high speed drills
- non-invasive ventilation (NIV); Bi-level Positive Airway Pressure Ventilation (BiPAP) and Continuous Positive Airway Pressure Ventilation (CPAP)

- high flow nasal oxygen (HFNO)
- high frequency oscillatory ventilation (HFOV)
- induction of sputum using nebulised saline
- respiratory tract suctioning*
- upper ENT airway procedures that involve respiratory suctioning
- upper gastro-intestinal endoscopy where open suction of the upper respiratory tract occurs
- high speed cutting in surgery/post-mortem procedures if respiratory tract/paranasal sinuses involved

* only open suctioning beyond the oro-pharynx is currently considered an AGP i.e. oral/pharyngeal suctioning is not an AGP.

PPE for aerosol generating procedures (AGPs)

If the individual has an infection spread by the airborne route and an AGP is required staff should wear the following PPE:

PPE for aerosol generating procedures

PPE	PPE used
Gloves	Single-use.
Apron or gown	Single-use gown.
Face mask or respirator	FFP3 mask or powered respirator hood.
Eye and face protection	Single-use or reusable.

All FFP3 respirators must be:

- Fit tested (by a competent fit test operator) on all staff who may be required to wear a respirator to ensure an adequate seal/fit according to the manufacturers' guidance.
- Fit checked (according to the manufacturers' guidance) every time a respirator is donned to ensure an adequate seal has been achieved.
- Compatible with other facial protection used such as protective eyewear so that this does not interfere with the seal of the respiratory protection. Regular corrective spectacles are not considered adequate eye protection. If wearing a valved, non-shrouded FFP3 respirator a full face shield/visor must be worn.
- Changed after each use.

    - Other signs that a change in respirator is required include:
        - if breathing becomes difficult;
        - if the respirator is wet or moist,
        - if the respirator is damaged;
        - if the respirator is obviously contaminated with body fluids such as respiratory secretions.

Where staff have concerns about potential COVID-19 exposure to themselves during the ongoing COVID-19 pandemic, they may choose to wear an FFP3 respirator rather than a fluid-resistant surgical mask (FRSM) when providing patient care, provided they are fit tested. This is a personal PPE risk assessment, as per DL 2022 10.
Rooms should always be decontaminated following an AGP. Clearance of infectious particles after an AGP is dependent on the ventilation and air change within the room. In an isolation room with 10-12 air changes per hour (ACH) a minimum of 20 minutes is required; in a side room with 6 ACH this would be approximately one hour. It is often difficult to calculate air changes in areas that have natural ventilation only. Natural ventilation, particularly when reliant on open windows can vary depending on the climate. An air change rate in these circumstances has been agreed as 1-2 air changes/hour.
To increase natural ventilation in care home settings may require opening of windows. If opening windows staff must conduct a local hazard/safety risk assessment.

Post AGP fallow time (PAGPFT)

Time is required after an AGP is performed to allow the aerosols still circulating to be removed/diluted. This is referred to as the post AGP fallow time (PAGPFT) and is a function of the room ventilation air change rate.
The post aerosol generating procedure fallow time (PAGPFT) calculations are detailed in the table below. It is often difficult to calculate air changes in areas that have natural ventilation only.
If the area has zero air changes and no natural ventilation, then AGPs should not be undertaken in this area.
The duration of AGP is also required to calculate the PAGPFT and clinical staff are therefore reminded to note the start time of an AGP. It is presumed that the longer the AGP, the more aerosols are produced and therefore require a longer dilution time. During the PAGPFT staff should not enter this room without FFP3 masks. Other residents, other than the resident on which the AGP was undertaken, must not enter the room until the PAGPFT has elapsed and the surrounding area has been cleaned appropriately. As a minimum, regardless of air changes per hour (ACH), a period of 10 minutes must pass before rooms can be cleaned. This is to allow for the large droplets to settle. Staff must not enter rooms in which AGPs have been performed without airborne precautions for a minimum of 10 minutes from completion of AGP. Airborne precautions may also be required for a further extended period of time based on the duration of the AGP and the number of air changes. Cleaning can be carried out after 10 minutes regardless of the extended time for airborne PPE.

Post AGP fallow times calculation

Duration of AGP (minutes)	1 AC/h	2 AC/h	4 AC/h	6 AC/h	8 AC/h	10 AC/h	12 AC/h	15 AC/h	20 AC/h	25 AC/h
3	230	114	56	37	27	22	18	14	10	8 (10)*
5	260	129	63	41	30	24	20	15	11	8 (10)*
7	279	138	67	44	32	25	20	16	11	9 (10)*
10	299	147	71	46	34	26	21	16	11	9 (10)*
15	321	157	75	48	35	27	22	16	12	9 (10)*

*The minimum fallow time (to allow for droplet settling time) is 10 minutes
Contact your local HPT/IPCT if further advice is required.

Read the **RPE** literature review to find out more about why we do things this way for respiratory protective equipment

5. Infection prevention and control during care of the deceased

If a resident dies when in the care home, Standard Infection Control Precautions or Transmission Based Precautions must still be applied. This is due to the ongoing risk of infectious transmission via contact although the risk is usually lower than for the living.
It is important that information on the infection status of the deceased is sought and communicated at each stage of handling and risk assessments performed.
Viewing, washing and/or dressing of the deceased - Appendix 12 - Application of transmission based precautions to key infections in the deceased will give you guidance on the precautions that are required and what is permitted for certain types of infections.
Staff should advise relatives of the appropriate precautions to be taken when viewing and/or having physical contact with the deceased, including when this should be avoided.

Read the **infection prevention and control during care of the deceased** literature review to find out more about why we do things this way when dealing with the deceased.

How to contact us

If you have any questions or feedback about the Care Home IPCM then you can contact us by email or telephone.
Email
Telephone: 0141 300 1175

References

Reference 1
The use of the word 'Persons' can be used instead of ‘Patient’ when using this document in non-healthcare settings.

Glossary

Abrasion
A graze. A minor wound in which the surface of the skin or a mucous membrane has been worn away by rubbing or scraping.

Acute care setting/Acute hospital
This is a unique, demanding and fast-paced environment designed to accommodate a wide variety of urgent, or emergent patient care needs.

Adverse event
An event that could have caused or did result in harm to people or groups of people.

Aerosol Generating Procedures (AGPs)
An AGP is a medical procedure that can result in the release of airborne particles from the respiratory tract when treating someone who is suspected or known to be suffering from an infectious agent transmitted wholly or partly by the airborne or droplet route.

Aerosols
See Airborne particles

Airborne (aerosol) transmission
The spread of infection from one person to another by airborne particles (aerosols) containing infectious agents.

Airborne particles (aerosols)
Very small particles (of respirable size) that may contain infectious agents. They can remain in the air for extended periods of time and can be carried over long distances by air currents. Aerosols can be released during aerosol generating procedures (AGPs).

Airborne precautions
A group of transmission based precautions to prevent the spread of airborne pathogens

Alcohol based hand rub (ABHR)
A gel, foam or liquid containing one or more types of alcohol that is rubbed into the hands to inactivate microorganisms and/or temporarily suppress their growth.

Alert organism
An organism that is identified as being potentially significant for infection prevention and control practices. Examples of alert organisms include *Meticillin Resistant Staphylococcus aureus (MRSA)*, *Clostridioides difficile* (C.diff) and *Group A Streptococcus*.

Alveolar
Refers to the alveoli which are the small air sacs in the lungs. Alveoli are located at the ends of the air passageways in the lungs, and are the site at which gas exchange takes place.

Anteroom
An area with a door from/to the outside corridor and a second door giving access to the patient area (where both doors will never be open at the same time).

Antimicrobial
An agent that kills microorganisms, or prevents them from growing.
Antimicrobials are grouped according to the microorganisms they act against, such as, antibiotics, antivirals, antifungals and antiparasitics.

Antimicrobial hand wipes
Hand wipes that are moistened with an antimicrobial solution/agent at a concentration sufficient to inactivate microorganisms and/or temporarily suppress their growth.

Antimicrobial resistance
The ability of a microorganism to resist the action of an antimicrobial drug/agent which previously could treat the infection caused by that microorganism.

Antisepsis
The process of preventing infection by inhibiting the growth and multiplication of infectious agents. This is usually achieved by application of a germicidal preparation known as an antiseptic.

Aseptic Technique
A healthcare procedure designed to minimise the risks of exposing the person being cared for to pathogenic micro-organisms during simple (e.g dressing wounds) and complex care procedures (e.g. surgical procedures).

Asymptomatic
Not showing any symptoms of disease but where an infection may be present.

Augmented Care
In the context of infection prevention and control, most care designated as augmented will be that where medical/nursing procedures render the patients susceptible to invasive disease from environmental and opportunistic pathogens. However, there is no fixed definition of ‘augmented care’.

Autoclave
Machine used for sterilising re-usable equipment using steam sterilisation. Re-usable equipment is exposed to steam at a required temperature, pressure, and time.

Bay
A partly enclosed area within a ward containing one bed (single bay) or multiple beds (multi-bed bay).

Blood Borne Viruses (BBV)
Viruses carried or transmitted by blood, for example Hepatitis B, Hepatitis C and HIV.

Body Fluids

Fluid produced by the body such as urine, faeces, vomit or diarrhoea.

British Standards (BS), European Standards (EN) and International Standards (ISO)

National standards specify the requirements for application in the particular country.

- BS denotes Britain's National Standards which are controlled by the British Standards Institute (BSI)
- EN denotes a Standard which is adopted by the European community and is controlled by the European Committee for Standardisation (CEN). Once a European Standard has been agreed it supersedes any existing national standard and becomes the new national standard. In Britain these Standards are then prefixed with BS EN
- ISO denotes a worldwide standard issued by the International Organisation for Standardisation. Once an International Standard has been adopted as a European Standard it supersedes the existing European standard. In Britain these Standards are then prefixed with BS EN ISO

Care setting

Includes but is not limited to general practice, dental and pharmacy (primary care), acute-care hospitals, emergency medical services, urgent-care centres and outpatient clinics (secondary care), specialist treatment centres (tertiary care), long-term care facilities such as nursing homes and skilled nursing facilities (community care), and care provided at home by professional healthcare providers (home care).

Care staff

Any person who cares for patients, including healthcare support workers and nurses.

Central Venous Catheter (CVC)

An intravenous catheter that is inserted directly into a large vein in the neck, chest or groin to give intravenous drugs, fluids and blood and to allow for quick medical tests.

Chlorine

A chemical that is used for disinfecting, fumigating and bleaching.

Cleaning

The removal of any dirt, body fluids (blood, vomit) etc by use of an appropriate cleaning agent such as detergent.

Clinical wash hand basin

A sink designated for hand washing in clinical areas.

Cohort area

A bay/ward in which a group of patients (cohort) with the same infection are placed. Cohorts are created based on clinical diagnosis, microbiological confirmation when available, epidemiology, and mode of transmission of the infectious agent.

Colonisation

The presence of microorganisms on a body surface (such as the skin, mouth, intestines or airway) that does not cause disease in the person or signs of infection.

Conjunctivae

Mucous membranes that cover the front of the eyes and the inside of the eyelids.

Contact precautions

Series of procedures/interventions used in addition to routine practices to prevent transmission of infectious agents that spread by direct or indirect contact

Contact transmission

The spread of infectious agents from one person to another by contact. When spread occurs through skin-to-skin contact, this is called direct contact transmission. When spread occurs via a contaminated object, this is called indirect contact transmission.

Contaminated

The presence of an infectious agent on a body surface; also on or in clothes, bedding, surgical instruments or dressings, or other inanimate articles or substances including water and food.

Cough etiquette/respiratory hygiene

Source control measures intended to contain respiratory secretions in order to limit transmission of respiratory pathogens.

Cross-infection/Cross-transmission

Spread of infection from one person, object or place to another.

Decontamination

The process of removing, or killing pathogens on an item or surface to make it safe for handling, re-use or disposal, by cleaning, disinfection and/or sterilisation.

Detergent

A chemical cleansing agent that can dissolve oils and remove dirt.

Diarrhoea

Passing looser more frequent stools than is normal for the individual.

Direct contact transmission

Spread of infectious agents from one person to another by direct skin-to-skin contact.

Disinfectant

A chemical used to reduce the number of infectious agents from an object or surface to a level that means they are not harmful to health.

Disinfection

The treatment of surfaces/equipment using physical or chemical means, for example using a chemical disinfectant, to reduce the number of infectious agents from an object or surface to a level at which they are not harmful to health.

Doffing

To remove (an item of clothing or an item of PPE).

Domestic waste

Waste produced in the care setting that is similar to waste produced in the home.

Donning
To put on (an item of clothing or an item of PPE).

Droplet
A small drop of moisture, larger than airborne particle, that may contain infectious agents. Droplets can be released when a person talks, coughs or sneezes, and during some medical or patient care procedures such as open suctioning and cough induction by chest physiotherapy. It is thought that droplets can travel around 1 metre (3 feet).

Droplet Nuclei
Droplet nuclei are aerosols formed from the rapid evaporation/desiccation of larger droplet particles when expelled/exhaled from the respiratory tract.

Droplet transmission
The spread of infection from one person to another by droplets containing infectious agents.

Emollient
An agent used to soothe the skin and make it soft and supple.

Enhanced single room (with en-suite facilities and ventilated lobby)
See Isolation Suite/Room

Enhanced single room (with en-suite facilities)
See Isolation Suite/Room

En-suite facilities
En-suite facilities should contain a shower, WC and a general wash-hand basin.

En-suite single-bed room
A room with space for one patient with en-suite facilities.

Exceptional infection episode
A single case of an infection that has severe outcomes for an individual patient OR has major infection control/public health implications e.g. infectious diseases of high consequence such as extensively drug resistant tuberculosis (XDR-TB).

Excretions
Waste products produced by the body such as urine and faeces (bowel movements).

Exposure
The condition of being exposed to something that may have a harmful effect such as an infectious agent.

Exposure Prone Procedures (EPPs)
Certain medical and patient care procedures where there is a risk that injury to the healthcare worker may result in exposure of the patient's open tissues to the healthcare worker's blood e.g the healthcare worker's gloved hands are in contact with sharp instruments, needle tips or sharp tissues inside a patient's body.

Face covering
A term that applies collectively to items used to cover the nose and mouth. Also referred to as a face mask.
These should not be confused with items of PPE.

Fallow time
The period of time required for droplets and/or aerosols to settle and be removed from the air following a procedure. It is also known as settle time.

FFP3
Respiratory protection that is worn over the nose and mouth designed to protect the wearer from inhaling hazardous substances, including airborne particles (aerosols). FFP stands for filtering facepiece. There are three categories of FFP respirator: FFP1, FFP2 and FFP3. An FFP3 respirator or hood provides the highest level of protection, and is the only category of respirator legislated for use in UK healthcare settings.

Fit Testing
A method of checking that a tight-fitting facepiece respirator fits the wearer and seals adequately to their face. This process helps identify unsuitable facepieces that should not be used.

Fluid resistant surgical mask (FRSM)
See surgical face mask

Fluid-resistant
A term applied to fabrics that resist liquid penetration, often used interchangeably with 'fluid-repellent' when describing the properties of protective clothing or equipment.

Fomites
An inanimate substance or object that can transfer a pathogen to a host.

Germicide
An agent capable of destroying microorganisms, particularly organisms that are pathogenic.

GP
General practitioner (your family doctor)

Group 4 Infections
Definition taken from the HSE Approved list of biological agents www.hse.gov.uk/pubns/misc208.pdf
Group 4 infections cause severe human disease and are a serious hazard to employees; they are likely to spread to the community and there is usually no effective prophylaxis or treatment available.

Hand Hygiene

The process of decontaminating your hands using either alcohol based hand rub or liquid soap and water.

Health Protection Team (HPT)

A team of healthcare professionals whose role it is to protect the health of the local population and limit the risk of them becoming exposed to infection and environmental dangers. Every NHS board has a HPT.

Healthcare Associated Infection (HAI)

Infections that occur as a result of medical care, or treatment, in any healthcare setting.

Healthcare associated infection outbreak

Two or more linked cases associated with the same infectious agent, within the same healthcare setting, over a specified time period; or a higher than expected number of cases in a given healthcare area over a specified time period.

Healthcare infection data exceedance

A greater than expected rate of infection compared with the usual background rate for the place and time where the incident has occurred.

Healthcare infection exposure incident

An exposure of patients, staff, or the public to a possible infectious agent, as a result of a healthcare system failure or near misses e.g. ventilation, water or a decontamination incident.

Healthcare Waste

Waste produced as a result of healthcare activities for example soiled dressings, sharps.

Hierarchy of controls

This is a systematic process which provides a consistent approach to minimizing or eliminating exposures to hazards in the workplace.

High Consequence Infectious Disease (HCID)

A High Consequence Infectious Disease (HCID) is defined according to the following criteria:

- causes acute infectious disease
- typically has a high case-fatality rate
- may not have effective prophylaxis or treatment
- difficult to recognise and detect quickly
- ability to spread in the community and within healthcare settings
- requires an enhanced individual, population, and system response for safe, efficient, and effective management

Previously referred to as an Infectious Diseases of High Consequence (IDHC).

Hospital infection incident assessment tool (HIIAT)

Used by the IPCT or HPT to assess every healthcare infection incident i.e. all outbreaks and incidents including decontamination incidents or near misses in any healthcare setting (that is the NHS, independent contractors providing NHS Services and private providers of healthcare).

Hygiene Waste

Waste that is produced from personal care. In care settings this includes feminine hygiene products, incontinence products and nappies, catheter and stoma bags. Hygiene waste may cause offence due to the presence of recognisable healthcare waste items or body fluids. It is usually assumed that hygiene waste is not hazardous or infectious.

Hypochlorite

A chlorine-based disinfectant such as bleach

Immunisation

To provide immunity to a disease by giving a vaccination.

Immunocompromised patient/individual

Any person whose immune response is reduced or deficient, usually because they have a disease or are undergoing treatment. People who are immunocompromised are more vulnerable to infection.

Impervious

Cannot be penetrated by liquid.

Incident Management Team (IMT)

A multidisciplinary group with responsibility for investigating and managing an incident.

Incident/outbreak

An incident/outbreak may be:

- An exceptional infection episode, defined as a single case of an infection that has severe outcomes for an individual patient OR has major infection control/public health implications
- A healthcare infection exposure incident, defined as an exposure of patients, staff or the public to a possible infectious agent
- A healthcare associated infection outbreak, defined as two or more linked cases associated with the same infectious agent, within the same healthcare setting, over a specified time period; or a higher-than-expected number of cases in a given healthcare area over a specified time period
- A healthcare infection data exceedance, defined as a greater than expected rate of infection compared with the usual background rate for the place and time where the incident has occurred
- A healthcare infection near miss incident, which had the potential to expose patients to an infectious agent but did not e.g., decontamination failure

Indirect contact transmission

The spread of infectious agents from one person to another via a contaminated object.

Infection

Invasion of the body by a harmful organism or infectious agent such as a virus, parasite, bacterium or fungus.

Infection Prevention and Control Team (IPCT)

A multidisciplinary team responsible for preventing, investigating and managing an infection incident or outbreak.

Infectious agent

Any organism, such as a virus, parasite, bacterium or fungus, that is capable of causing an infection or infectious disease.

Infectious period
The time when an infectious agent may be transmitted directly or indirectly from an infected person to another person. Also known as “period of infectiousness” and “communicability”.

Inpatient
A patient is termed an inpatient when they occupy a staffed bed in a hospital and either remains overnight (whether intended or not), or is expected to remain overnight but is discharged earlier. An inpatient’s admission can be an emergency, an elective or as a transfer.

Invasive device
A device which penetrates the body, either through a body cavity or through the surface of the body. Central Venous Catheters (central line), Peripheral Arterial Lines and Urinary Catheters are examples of invasive devices.

Invasive procedure
A medical/healthcare procedure that penetrates or breaks the skin or enters a body cavity.

Isolation
Physically separating patients to prevent the spread of infection.

Isolation Suite/Room
An isolation room/suite consists of **enhanced** en-suite single bed rooms:
An en-suite single bed room is defined as: consisting of a bed; locker/wardrobe; clinical wash-hand basin and en-suite shower, WC and wash-hand basin. (In new build, space for a social support zone for overnight stay and a clinical support zone is also provided).

- **Enhanced single room (with en-suite facilities),** also called isolation room, is the same as an en-suite single-bed room but with a ventilation system that prevents uncontrolled escape of infectious aerosols from the room to adjacent areas. It can also provide a degree of dilution of infectious aerosols in the room for the safety of staff and visitors. The room should have extract ventilation that exceeds its supply, such that gaps in its fabric leak inwards not outwards.

- **Enhanced single room (with en-suite facilities and ventilated lobby),** also called isolation suite, is the same as an **enhanced single room (with en-suite facilities)** but with a lobby having positive pressure ventilation.

J
No terms

K
No terms

Lateral Flow Device (LFD)
A test carried out using a small medical device that tests whether or not there is a particular substance, gene, etc. in a sample. For example, to identify those who have COVID-19 but are not presenting symptoms.

Long Term Care Facility (LTCF)
Long term care facilities provide a variety of services, both medical and personal care, to people who are unable to live independently.

Mechanical Ventilation
Mechanical ventilation brings fresh air into a building from outside via a controllable method. Basic systems consist of a fan and either collection, (extraction) or distribution (supply) ductwork.

Microorganism (microbe)
Any living thing (organism) that is too small to be seen by the naked eye. Bacteria, viruses and some parasites are microorganisms.

Mode of transmission
The way that microorganisms spread from one person to another. The main modes or routes of transmission are airborne (aerosol) transmission, droplet transmission and contact transmission.

Mucocutaneous exposure
An incident in which the mucous membranes (e.g. mouth, nose, eyes) or non-intact skin have been contaminated with blood or other bodily fluids.

Mucous membranes/mucosa
The surfaces lining the cavities of the body that are exposed to the environment such as the lining of the mouth and nose.

Multi-bed room
A room that contains more than one bed.
The acceptable maximum number of beds in a multi-bed room is four. Multi-bed rooms require two clinical wash-hand basins and must have en-suite sanitary facilities. Ideally, an assisted shower room (with WC, shower and general wash-hand basin) and a separate semi-ambulant WC (with general wash-hand basin) both en-suite.

Needle safety device
Any device designed to reduce the risk of injury from needles. This may include needle-free devices or mechanisms on a needle, such as an automated resheathing device, that cover the needle immediately after use.

Negative pressure room
A room which maintains permanent negative pressure i.e. air flow is from the outside adjacent space (e.g. corridor) into the room and then exhausted to the outside. The room should be used to accommodate a patient known or suspected to be infected with a microorganism spread by the airborne (aerosol) route whilst the patient is considered infectious.

Nitrile
A synthetic rubber material used to make non-latex gloves.

Non-intact skin
Skin that is broken by cuts, abrasions, dermatitis, chapped skin, eczema etc.

Non-intact skin exposure
An incident in which non-intact skin is exposed to blood or body fluids.

Non-sterile procedure
Care procedure that does not need to be undertaken in conditions that are free from bacteria or other microorganisms.

Nosocomial
An infection occurring in a patient during the process of care in a hospital or other health care facility, which was not present or incubating at the time of admission.

Occupational exposure
An occupational exposure is a percutaneous or mucocutaneous exposure to blood or other body fluids.

Organism
Any living thing that can grow and reproduce, such as a plant, animal, fungus or bacterium.

Outbreak
See incidents/outbreaks

Outpatient
An outpatient is a patient who attends a consultant or other medical/healthcare clinic or has an arranged meeting with a consultant or a senior member of their team out with a clinic session. Outpatient attendances involve treatment or assessment that only take a short time to complete. Outpatient attendances are categorised as new or return (follow-up).

Overcrowding
Within health and care settings, this is the state of being filled past capacity/comfort and therefore being burdened by excessive demands for services.

Pandemic
A disease outbreak that occurs over a wide geographical area (such as multiple countries and/or continents) and typically affects a significant proportion of the population.

Pathogen
Any disease-producing infectious agent.

Patient cohorting
Placing a group of two or more patients (a cohort) with the same infection/strain in the same bay/ward. Cohorts are created based on clinical diagnosis, microbiological confirmation, epidemiology, and mode of transmission.

PCR test
Highly accurate tests used to diagnose certain infectious diseases.

Percutaneous injury
An injury caused by a needle/sharp, human scratch or bite cutting or puncturing the skin.

Personal Protective Equipment (PPE)
Equipment a person wears to protect themselves from risks to their health or safety, including exposure to infections e.g. disposable gloves and disposable aprons.

Physical Distancing
Keeping a distance from other people, in order to stop transmission of a disease to another person or other people.

Pre-symptomatic
The time period when someone has the infection but has not yet developed symptoms but does go on to develop symptoms later in the disease.

Primary Care Setting
These provide the first point of contact in the healthcare system and includes general practice, dentistry, community pharmacies etc.

Problem Assessment Group (PAG)
A group that is convened by the Infection Prevention and Control Team (IPCT)/Health Protection Team (HPT) to assess a healthcare incident/outbreak/data exceedence and determine if further action is required.
The assessment and outcome may be:

- HIIAT Green - continue to monitor
- HIIAT Amber/Red - IMT required

Q
No pathogens

Recapping/Re-sheathing
To put a needle or other sharp object back into its plastic sheath or cap. Also known as ‘re-sheathing’.

Respiratory droplets
A small droplet >5 µm in diameter, such as a particle of moisture released from the mouth during coughing, sneezing, or speaking.

Respiratory Protective Equipment (RPE)
Respirators are devices that cover the nose and mouth and are designed to filter the air breathed in to protect the wearer from inhaling hazardous substances.
They provide respiratory protection from infectious agents transmissible by the airborne (aerosols) route. FPP3 respirators are recommended for use in UK health and care settings when exposure to aerosols is anticipated.

Safer sharp
A medical sharps device which has been designed to incorporate a feature or mechanism that minimises and/or prevents the risk of accidental injury. Other terms include (but are not limited to) safety devices, safety-engineered devices and safer needle devices.

Sanitary fittings
All sinks and furniture in a bathroom, such as a toilet, bath, shower etc.

Screening
Performing a test or enquiry to identify individuals at risk of a specific disorder or infection to warrant further investigation or direct preventive action.

Secondary care setting
Provided by health professionals who generally are not the first point of contact for a patient. These settings are usually hospitals but can also be community based.

Secretions
Any body fluid that is produced by a cell or gland such as saliva or mucous, for a particular function in the organism or for excretion.

Segregated
Physically separating or isolating from other people.

Sepsis
A life threatening condition that arises when the body's response to a severe complication of infection e.g. pneumonia (lung infection) injures its own tissues and organs. This can lead to multiple organ failure and death. Early recognition, treatment and management is key to successful patient outcomes.

Sharp
A 'sharp' is a device or instrument used in healthcare settings with sharp points or edges, such as needles, lancets and scalpels which have the potential to cause injury through cutting or puncturing the skin.

Sharps incident
A type of percutaneous injury caused by a sharp instrument or device which cuts or penetrates the skin.

Sharps injury
See **percutaneous injury.**

Significant occupational exposure
A percutaneous, mucocutaneous exposure or non-intact skin (abrasions, cuts, eczema) exposure to blood/other body fluids from a source that is known (or later found to be) positive for a bloodborne virus infection.

Significant sharps incident
An incident which involves a used needle that has exposed, or may have exposed, the employee to blood/body fluids.

Single-bed room
A room with space for one patient and usually contains as a minimum: a bed; locker/wardrobe; clinical wash-hand basin.
Single-bed rooms should also have en-suite sanitary facilities comprising of a shower, WC and a general wash-hand basin.

Source control
This term encompasses all physical measures used to control the transmission of an infectious agent.

Spore
A reproductive cell produced by fungi and some types of bacteria under certain environmental conditions. Spores can survive for long periods of time and are very resistant to heat, drying and chemicals.

Staff cohorting
A dedicated team of healthcare staff who care for a cohort of patients, and do not care for any other patients.

Standard infection control precautions (SICPs)
These are a group of basic infection prevention and control practices that need to be adopted by all staff in health and care settings, irrespective of infectious status of patient.

Sterile
Free from live bacteria or other microorganisms.

Sterile procedure
Care procedure that is undertaken in conditions that are free from bacteria or other microorganisms.

Sterilisation
The procedure of making some object free of all germs, live bacteria or other microorganisms (usually by heat or chemical means).

Surgical face mask
A disposable fluid-resistant mask worn over the nose and mouth to protect the mucous membranes of the wearer's nose and mouth from splashes and infectious droplets and also to protect patients. When recommended for infection control purposes a 'surgical face mask' typically denotes a fluid-resistant (Type IIR) surgical mask.

Surgical scrubbing
The process of removing debris and sterilizing hands prior to performing a sterile or surgical procedure.

Surgical site infection
This is an infection which occurs after the surgery at the site of the surgical incision due to introduction and multiplication of pathogens at the surgical site.

Swan-neck
Way of closing bag by twisting the top of the bag (must not be more than 2/3 full), looping the neck back on itself, holding the twist firmly, and placing a seal over the neck of the bag (such as with a tag).

Terminal decontamination
Cleaning/decontamination of the environment following transfer/discharge of a patient, or when they are no longer considered infectious, to ensure the environment is safe for the next patient or for the same patient on return.

Touch surfaces
These are surfaces that are frequently touched by different people throughout the day and are therefore more likely to be contaminated with bacteria or viruses for example doorknobs, tables, phones etc. which can then easily transfer to the user.

Transmission-based precautions (TBPs)
These are additional measures that are used in conjunction with SICPs when caring for patients with a known or suspected infection or colonisation.

Ultraviolet germicidal irradiation (UVGI)
The use of ultraviolet (UV) radiation to kill or inactivate microorganisms.

Vaccination
Treatment with a vaccine to produce immunity against a disease.

Vaccine
A suspension that is administered in order to stimulate the immune response of the body against an infectious agent.

Vascular access devices
Any medical instrument used to access a patient's veins or arteries such as a Central Venous Catheter or Peripheral Vascular Catheter.

Ventilation
Ventilation is a means of removing and replacing the air in a space. In its simplest form this may be achieved by opening windows and doors.

Viral load
The viral load or viral burden is a numerical expression of the amount of virus present in biological fluids or environmental specimens.

Ward
An area forming a division of a care setting (or a suite of rooms) shared by patients who need a similar type of care.

X
No terms

Y
No terms

Z
No terms

78. Email CP to Laura Imrie 16 August 20196a. FW Meeting re Ventilation (2)

Louise Mackinnon

Subject: FW: Confidential

SharePointLocationUrl: http://spweb1/ecm/CaseManagement/Upload
SharePointAbsoluteFileUrl: http://spweb1/ecm/CaseManagement/Upload/Fwd_ Confidential_1rdv5sb4.msg

From: Christine Peters <chrispeaters[redacted]
Date: 16 August 2019 at 13:47:19 BST
To: Laura.imrie[redacted]
Subject: Confidential

hi Laura,

further to my phone call I am writing to raise my concerns formally as an anonymous whistleblower regarding my real concerns about the situation in GGC infection control.

I have seen first hand evidence of the real lack of support , and indeed undermining of Dr Teresa Inkster as Lead I CD as she tries to manage a number of very complex and high consequence situations. She has expressed to me this afternoon that she is not able to face anymore meetings where she is unsupported. She does not wish me to raise this within the organisation for fear of consequences. I have already previously raised this through occupational health and line management . There is no perceptible change in attitudes or behaviours. Her over riding concern is that she is unable to do her job in protecting patients from infections due to the culture and organisational failings.

Of particular note critical information has been denied to her, or false accounts given by high level managers eg the chilled beams leaking, her judgement regarding the fact that there is a real issue with unusual environmental pathogens in Haematology paediatric patients is being continuously questioned even by the ICM. It is patently clear that senior management has distanced itself from the water incident and there is a "nothing to see here attitude" with key agreed actions from the IMT not carried out without discussion with the chair of the IMT.

She feels unsupported, bullied and was even asked to tell a false account of the situation to a parent.

I am not aware of all the details of the current incident, however I am convinced that this organisation required a task force to come in and sort out the situation .

And this while there is external reviews ongoing!

Please do ask the relevant authorities to speak directly with Teresa rapidly and get external support both for her sake but also for the sake of patient safety. She is aware that I have spoken to you and am sending this email.

I have no confidence in internal systems of escalation.

Regards

Christine
Sent from my iPhone

HIIAT Greens : QEUH/RHC (2016-2019)

Line on spreadsheet: 60: HIIAT Log: 016.31: HIIAT green.

Organism: *Mycobacterium abscessus*

Date reported: 24/5/16

Summary:

NHS GGC reported an increased incidence of *Mycobacterium abscessus* in the paediatric cystic fibrosis patient cohort following a PAG held earlier. 4 new cases reported between 2nd Feb 2016- 24th May 2016. HPS agreed to undertake a rapid review of the evidence base for the effectiveness of different methods of cleaning environmental surfaces and reusable communal patient care equipment colonised with *Mycobacterium abscessus* and also to review ECOSS to determine whether further epidemiological information is available


Rapid Review Summary.docx


SBAR M abscessus May 16.docx


FW SBAR M abscessus.msg

Line on spreadsheet: 62: HIIAT Log: G16.34: HIIAT green

Organism: *Aspergillus*

Date reported: 21/6/16

Summary:

NHSGGC reported 2 cases of aspergillosis since January 2016 in the intensive care unit, QEUH. IMT held and action plan developed to repair issues identified.

Line on spreadsheet: 67: HIIAT Log: G16.52: HIIAT green

Organism/incident: Endoscope Decontamination incident

Date reported: 24/8/16

Summary:

NHSGGC reported a decontaminate failure occurring on 19/8/16 where an endoscope used for Electro retrograde pancreatography (ERCP) was not appropriately decontaminated before use on a patient in QEUH. An IMT was held 24/8/16 and a Datix incident form and rapid review was completed by NHSGGC.

Line on spreadsheet: 69: HIIAT Log: G16.70: HIIAT green

Organism: *Pseudomonas*

Date reported: 7/10/16

Summary:

Single case of pseudomonas bloodstream infection reported in a patient in intensive care, QEUH. Review of patient undertaken and water safety checklist completed. Patient subsequently transferred to High dependency unit.

Line on spreadsheet: 61: HIIAT Log: G16.29: HIIAT green

Organism: *Cupriavidus pauculus*

Date reported: 16/6/16

Summary:

Single case of *Cupriavidis pauculus* blood stream infection reported in a patient in RHC. Routine water sampling of the aseptic unit RHC has identified a link with the child. NHSGGC have reported they will hold an IMT

Points to note

This is the first reported isolate of Cupriavidus and also positive water sample as discussed in water incident report.

Line on spreadsheet: 64: HIIAT Log: G16.35: HIIAT green

Also linked to Line 71 on spreadsheet

Organism: *Serratia*

Date reported: 29/7/16

Summary:

NHSGGC reported 8 cases of Serratia colonisation since 13th June 2016 in the neonatal unit. All cases identified through routine screening. This incident was escalated and linked to line 71 on spreadsheet

---

Line on spreadsheet: 68: HIIAT Log: G16.59: HIIAT green

Organism: *Pseudomonas*

Date reported: 23/9/16

Summary:

Single case of pseudomonas bloodstream infection reported in a patient in paediatric intensive care (PICU), RHC. Patient reported to be positive on admission to PICU

Line on spreadsheet: 90: HIIAT Log: G17.050: HIIAT green

Organism: *Enterobacter*

Date reported: 16/06/17

Summary:

2 cases of external ventricular drain device (EVD) infections with Enterobacter reported from the neurosurgical unit, QEUH. Cases reported as occurring within 2 days of each other and both patients required treatment and EVD replacement. One further patient was reported as having a blood stream infection with Enterobacter. PAG held on 18/06/17. Reported as HIIAT green.

Line on spreadsheet: 95 HIIAT Log: G17.080: HIIAT green

Organism: Gentamycin resistant E.Coli

Date reported: 14/9/17

Summary:

3 cases of HAI gentamycin resistant ecoli reported. Identified from endotracheal (ET) aspirates (ETA) within a six-week period in neonatal intensive care (RHC). No cases reported as giving clinical cause for concern.

Line on spreadsheet: 99: HIIAT Log: G17.084: HIIAT green

Organism: *Acinetobacter baumanii*

Date reported: 22/9/17

Summary:

2 cases of *Acinetobacter baumanii* in sputum samples reported from neurosurgical intensive care, QEUH.

Line on spreadsheet: 103: HIIAT Log: G17.094: HIIAT green

Organism: *Pseudomonas aeruginosa*

Date reported: 27/10/17

Summary:

2 cases (one HAI and one non HAI) of *Pseudomonas aeruginosa* from wound samples reported. PAG held 27/10/17

Line on spreadsheet: 73: HIIAT Log: G17.010: HIIAT green

Organism: *Serratia*

Date reported: 6/2/17

Summary:

Two cases of *Serratia* colonisation reported from PICU, RHC

Line on spreadsheet: 76: HIIAT Log: G17.023: HIIAT green

Organism: *Serratia*

Date reported: 3/3/17

Summary:

2 cases reported of *Serratia*: one colonisation, one infection from Neonatal intensive care, RHC. An action plan is in place

---

Line on spreadsheet: 78: HIIAT Log: G17.025: HIIAT green

Organism: *Elizabethkingia miricola*

Date reported: 3/3/17

Summary:

3 cases of *Elizabethkingia miricola* bloodstream infection reported since September 2016 from wards 2A/B (paediatric haemato-oncology). Action plan in place with a focus on the environment

---

Line on spreadsheet: 79: HIIAT Log: G17.026: HIIAT green

Organism: Mixed

Date reported: 3/3/17

Summary:

General increase in number of positive blood cultures with mixed organisms reported over January and February. Review of cases ongoing.

Line on spreadsheet: 94: HIIAT Log: G17.068: HIIAT green

Organism: *Pseudomonas*

Date reported: 02/08/17

Summary:

2 cases of blood stream infection (1 infection, 1 colonisation) with pseudomonas in PICU, RHC. Good standard infection control precautions reinforced with nursing staff

Line on spreadsheet: 101: HIIAT Log: G17.088: HIIAT green

Organism: *Acinetobacter baumanii*

Date reported: 13/10/17

Summary:

1 new case and 2 existing cases reported of *Acinetobacter* colonisation in a general medical ward, QEUH.

Line on spreadsheet: 100: HIIAT Log: G17.089: HIIAT green

Organism: *Acinetobacter baumanii*

Date reported: 11/10/17

Summary:

2 cases of *Acinetobacter baumanii* colonisation reported in neonatal intensive care, RHC. PAG held.

Line on spreadsheet: 102: HIIAT Log: G17.093: HIIAT green

Organism: Probable invasive fungal infection/*Aspergillus fumigatus*

Date reported: 27/10/17

Summary:

Patient reported to have probable invasive fungal infection. IMT to be held if patient deteriorates. Enhanced cleaning in place.

Line on spreadsheet: 105: HIIAT Log: G17.104: HIIAT green

Organism: *Acinetobacter baumanii*

Date reported: 15/11/17

Summary:

2 cases of *Acinetobacter baumanii* reported from PICU, RHC. One considered HAI to PICU, the other to ward 1E however there is also an epidemiological link to HAI cases in September and October

---

Line on spreadsheet: 107 HIIAT Log: G17.115: HIIAT green

Organism: Acinetobacter baumanii

Date reported: 1/12/17

Summary:

Three cases of the same type of *Acinetobacter baumanii* surgical site infection reported (from October, November and December) possibly linked to the same bay in PICU, RHC. IMT to be held

---

Line on spreadsheet: 111: HIIAT Log: G18.04: HIIAT green

Organism: CPE Klebsiella

Date reported: 05/01/18

Summary:

One case of cross infection of CPE Klebsiella surgical site infection in neurosurgical unit, QEUH. IMT planned.

Line on spreadsheet: 117: HIIAT Log: G18.038: HIIAT green

Organism: Klebsiella

Date reported: 13/02/2018

Summary:

Increased number of cases between August and November of Klebsiella in urine samples, in patients in spinal injuries rehab unit, Phillipshill, QEUH. IMT held

Line on spreadsheet: 132: HIIAT Log: G18.102: HIIAT green

Organism: Serratia

Date reported: 15/8/18

Summary:

Four cases (3 colonisation, 1 blood stream infection) of Serratia reported over a month period in neonatal intensive care unit, RHC.

Line on spreadsheet: 139: HIIAT Log: G18.118: HIIAT green

Organism: *Stenotrophomonas maltophilia*

Date reported: 4/10/18

Summary:

3 cases of *Stenotrophomonas maltophilia* reported over a 2-week period in the neonatal intensive care unit, RHC.

HPS observed GGC were reporting separate incidents of different organism in the same area over recent months. GGC contacted to discuss further in terms of incident and reporting process

---

Line on spreadsheet: 140: HIIAT Log: G18.120: HIIAT green

Organism: *Pseudomonas aeruginosa*

Date reported: 10/10/18

Summary:

4 cases of Psedomonas aeruginosa, 2 infections and 2 colonisations reported from neonatal intensive care unit, RHC. Water safety checklist completed.

HPS observed GGC were reporting separate incidents of different organism in the same area over recent months. GGC contacted to discuss further in terms of incident and reporting process

Line on spreadsheet: 141: HIIAT Log: G18.123: HIIAT green

Organism: *Pseudomonas aeruginosa*

Date reported: 25/10/18

Summary:

3 patients reported with colonisation with Pseudomonas aeruginosa following appendicectomy in theatres, RHC. Water and environmental samples taken. 2 previous cases (1 July, 1 August) also under review.

Line on spreadsheet: 115: HIIAT Log: G18.35: HIIAT green

Organism: *Cupriavidas pauculus*

Date reported: 5/2/18

Summary:

3 cases reported over two years. Case 3 isolated from a blood culture of a patient receiving IV therapy made up in the aseptic unit.

This case triggered the subsequent water incident

Line on spreadsheet: 125: HIIAT Log: G18.67: HIIAT green

Organism: *Enterobacter cloacae*

Date reported: 18/05/18

Summary:

4 cases of *Enterobacter cloacae* blood stream infection, 2 of which are HAI to ward 2A, paediatric haemato-oncology, RHC. Continued surveillance in place

---

Line on spreadsheet: 129: HIIAT Log: G18.081: HIIAT green

Organism: *Acinetobacter baumanii*

Date reported: 29/6/18

Summary:

6 cases of HAI *Acinetobacter baumanii* reported since February. IMT to be arranged

Line on spreadsheet: 130: HIIAT Log: G18.088: HIIAT green

Organism: *Aspergillus fumigates*

Date reported: 20/7/18

Summary:

Single case positive for Aspergillus fumigates from sputum in ward 2A, paediatric haemato-oncology, RHC. Part of a wider investigation for this unit. Whilst assessed as HIIAT Green, HPS informed the HAIPU due to increased awareness of HAI in this unit. The GGC working hypothesis was the case may be related to an air quality issue rather than water.


FW Aspergillus case.msg


FW Aspergillus case.msg


FW Aspergillus case.msg

Line on spreadsheet: 135: HIIAT Log: G18.113: HIIAT green

Organism: *Unknown*

Date reported: 5/9/18

Summary:

4 cases associated with ongoing water incident in paediatric haemato-oncology, RHC. HPS in attendance at the associated IMT

Line on spreadsheet: 150: HIIAT Log: G19.020: HIIAT green

Organism: *Serratia marcescens*

Date reported: 08/2/19

Summary:

3 cases HAI Serratia marcescens colonisation over a 2 week period in neonatal intensive care, RHC.

Line on spreadsheet: 152: HIIAT Log: G19.028: HIIAT green

Organism: *Serratia*

Date reported: 25/02/19

Summary:

Linked with Line 150

Typing has confirmed there are 3 different types of *Serratia* linked to NICU as previously reported, however there are 4 cases of the same type. IMT to be held

---

Line on spreadsheet: 158: HIIAT Log: G19.072: HIIAT green

Organism: *Aspergillus fumigates*

Date reported: 04/06/19

Summary:

4 cases gram negative blood stream infections reported from ward 6A, decanted paediatric haemato-oncology unit QEUH/RHC.

2 cases blood culture Stenotrophomonas

1 case blood culture Pantoea

1 case blood culture Enterobacter cloacae

PAG held. Water samples taken are negative for gram negative bacteria. Point of use filters remain in place

---

Line on spreadsheet: 162: HIIAT Log: G19.115: HIIAT green

Organism: *Klebsiella pneumonia and Staphylococcus aureus*

Date reported: 13/9/19

Summary:

2 cases of Klebsiella pneumoniae and 4 cases of Staphylococcus aureus surgical site infection reported in neurosurgical unit, QEUH. IMT held.

Line on spreadsheet: 147: HIIAT Log: G19.015: HIIAT green

Organism: *Serratia marcescens*

Date reported: 31/1/19

Summary:

3 HAI cases of *Serratia marscesens* attributable to special care baby unit, RHC reported.

Line on spreadsheet: 167: HIIAT Log: G19.080: HIIAT green

Organism: *Malassezia*

Date reported: 14/5/19

Summary:

2 cases of *Malassezia* reported in neonatal unit, intensive care, RHC. PAG held

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Line on spreadsheet: 167: HIIAT Log: G19.132: HIIAT green

Organism: *Acinetobacter baumanii*

Date reported: 05/11/19

Summary:

3 cases of *Acinetobacter baumanii* over a 12-day period from PICU, RHC. PAG held.

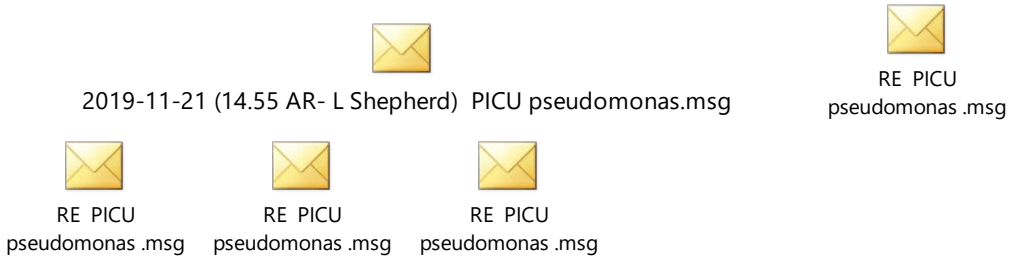
Line on spreadsheet: 169: HIIAT Log: G19.136: HIIAT green

Organism: *Pseudomonas aeruginosa*

Date reported: 19/11/19

Summary:

2 cases of Pseudomonas aeruginosa linked to PICU. [redacted]



From: Ritchie, Lisa (NHSmail)
Sent: 20 February 2019 20:17
To: Ritchie, Lisa (NHSmail); KANE, Hayley (NHS NATIONAL SERVICES SCOTLAND); Birch, Jason (SGPU); BROWN, Claire (NHS NATIONAL SERVICES SCOTLAND); CAIRNS, Shona (NHS NATIONAL SERVICES SCOTLAND); BOSWELL, Catherine (NHS NATIONAL SERVICES SCOTLAND); CHRISTIE, Katie (NHS NATIONAL SERVICES SCOTLAND); Rachael.Dunk@[redacted] Emma Watson; goodfellow, melanie; HOOKER, Emma (NHS NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NHS National Services Scotland); IMRIE, Laura (NHS NATIONAL SERVICES SCOTLAND); LOCKHART, Michael (NHS NATIONAL SERVICES SCOTLAND); LONGSTAFF, Jenny (NHS NATIONAL SERVICES SCOTLAND); MCINTYRE, Jackie (NHS NATIONAL SERVICES SCOTLAND); Mediarelations (NHS NATIONAL SERVICES SCOTLAND); MULLINGS, Abigail (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); REILLY, Jacqui (NHS NATIONAL SERVICES SCOTLAND); Shepherd, Lesley ; SHEPHERD, Lesley (NHS NATIONAL SERVICES SCOTLAND); Syme, Margaret; THOULASS, Janine (NHS NATIONAL SERVICES SCOTLAND); UNZURRUNZAGA, Garazi (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Heather (NHS NATIONAL SERVICES SCOTLAND); WILSON, Julie (NHS NATIONAL SERVICES SCOTLAND)
Cc: Inkster, Teresa (NHSmail); Devine, Sandra; Dodd, Susie; Pritchard, Lynn; MCMENAMIN, Jim (NHS NATIONAL SERVICES SCOTLAND); Fiona.McQueen[redacted]
Subject: [ExternaltoGGC]RE: HIIORT - NHSGGC - Wards 6A and 4C, QEUH

Dear colleagues,

Update from NHS Greater Glasgow and Clyde incident (two cases of Cryptococcus neoformans in the Haematology unit (Wards 6A and 4C), Queen Elizabeth University Hospital.

HIIAT de-escalated to Green (severity of illness – minor; impact on services- minor; risk of transmission – minor; public anxiety – moderate)

In Summary
Cases:

- No further clinical isolates/patients cases reported since 21st December 2018.

Patient placement:

- Paediatric patients being managed in Clinical Decision Unit (CDU) moved back to Ward 6A.

Update on investigations/actions:

- Interim laboratory report from Ayr Lab. has identified 'yeast' in the pigeon faecal samples sent; final results are not yet available.
- The SLWG of the IMT will continue to meet (remit to review all the hypotheses and remedial work to date and agree next steps)

No further IMT meeting planned.

Teresa, Sandra, please advise of any errors or omissions in the above. Please also advise of press statements (holding or release) to SG and HPS Communications Teams.

Kind regards,
Lisa

Dr. Lisa Ritchie
NHS Improvement IPC Fellow

Nurse Consultant Infection Control

Infection Control Team / HAI Group
Health Protection Scotland
NHS National Services Scotland
4th Floor Meridian Court
5 Cadogan Street
Glasgow G2 6QE
T: [redacted]

Scotland's National Infection Prevention and Control Manual Website
http://www.nipcm.hps.scot.nhs.uk

From: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Sent: 08 February 2019 15:04
To: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND); KANE, Hayley (NHS NATIONAL SERVICES SCOTLAND); Birch, Jason (SGPU); BROWN, Claire (NHS NATIONAL SERVICES SCOTLAND); CAIRNS, Shona (NHS NATIONAL SERVICES SCOTLAND); BOSWELL, Catherine (NHS NATIONAL SERVICES SCOTLAND); CHRISTIE, Katie (NHS NATIONAL SERVICES SCOTLAND); Rachael.Dunk[redacted]; Emma Watson; goodfellow, melanie; HOOKER, Emma (NHS NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NHS National Services Scotland); IMRIE, Laura (NHS NATIONAL SERVICES SCOTLAND); LOCKHART, Michael (NHS NATIONAL SERVICES SCOTLAND); LONGSTAFF, Jenny (NHS NATIONAL SERVICES SCOTLAND); MCINTYRE, Jackie (NHS NATIONAL SERVICES SCOTLAND); Mediarelations (NHS NATIONAL SERVICES SCOTLAND); MULLINGS, Abigail (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); REILLY, Jacqui (NHS NATIONAL SERVICES SCOTLAND); Shepherd, Lesley ; SHEPHERD, Lesley (NHS NATIONAL SERVICES SCOTLAND); Syme, Margaret; THOULASS, Janine (NHS NATIONAL SERVICES SCOTLAND); UNZURRUNZAGA, Garazi (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Heather (NHS NATIONAL SERVICES SCOTLAND); WILSON, Julie (NHS NATIONAL SERVICES SCOTLAND)
Cc: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); Devine, Sandra; Dodd Susan (NHS GREATER GLASGOW & CLYDE); Pritchard Lynn (NHS GREATER GLASGOW & CLYDE); MCMENAMIN, Jim (NHS NATIONAL SERVICES SCOTLAND); Fiona.McQueen[redacted]
Subject: RE: HIIORT - NHSGGC - Wards 6A and 4C, QEUH

Apologies, to clarify Wednesday 13th Feb and not 20th Feb – highlighted below

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From: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Sent: 08 February 2019 14:56
To: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND); KANE, Hayley (NHS NATIONAL SERVICES SCOTLAND); Birch, Jason (SGPU); BROWN, Claire (NHS NATIONAL SERVICES SCOTLAND); CAIRNS, Shona (NHS NATIONAL SERVICES SCOTLAND); BOSWELL, Catherine (NHS NATIONAL SERVICES SCOTLAND); CHRISTIE, Katie (NHS NATIONAL SERVICES SCOTLAND); Rachael.Dunk[redacted] Emma Watson; goodfellow, melanie; HOOKER, Emma (NHS NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NHS National Services Scotland); IMRIE, Laura (NHS NATIONAL SERVICES SCOTLAND); LOCKHART, Michael (NHS NATIONAL SERVICES SCOTLAND); LONGSTAFF, Jenny (NHS NATIONAL SERVICES SCOTLAND); MCINTYRE, Jackie (NHS NATIONAL SERVICES SCOTLAND); Mediarelations (NHS NATIONAL SERVICES SCOTLAND); MULLINGS, Abigail (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); REILLY, Jacqui (NHS NATIONAL SERVICES SCOTLAND); Shepherd, Lesley ; SHEPHERD, Lesley (NHS NATIONAL SERVICES SCOTLAND); Syme, Margaret; THOULASS, Janine (NHS NATIONAL SERVICES SCOTLAND); UNZURRUNZAGA, Garazi (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Heather (NHS NATIONAL SERVICES SCOTLAND); WILSON, Julie (NHS NATIONAL SERVICES SCOTLAND)
Cc: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); Devine, Sandra; Dodd Susan (NHS GREATER GLASGOW & CLYDE); Pritchard Lynn (NHS GREATER GLASGOW & CLYDE); MCMENAMIN, Jim (NHS NATIONAL SERVICES SCOTLAND); Fiona.McQueen[redacted]
Subject: RE: HIIORT - NHSGGC - Wards 6A and 4C, QEUH

Dear colleagues,

Update from NHS Greater Glasgow and Clyde incident (two cases of Cryptococcus neoformans in the Haematology unit (Wards 6A and 4C), Queen Elizabeth University Hospital.

HIIAT remains Amber (severity of illness – minor; impact on services- moderate; risk of transmission – minor; public anxiety – moderate)

In Summary

Cases:

- No further clinical isolates/patients cases reported since 21st December 2018.

Patient placement:

- IMT decision that paediatric patients being managed in Clinical Decision Unit (CDU) can now move back to Ward 6A. Bone Marrow Transplant (BMT) patients will continue to be managed in Ward 4B (adult BMT). The earliest this will happen is Wednesday of next week (20th Feb).
- The lead nurse from the IPCT will review the ward and feedback to estates/facilities any final issues before patients move back.

Update on investigations/actions:

- Post HEPA filter installation air sampling of ward 6: results show that most rooms are free of fungal spores. Particulate counts (atmospheric aerosol particles) are also much improved.
- HEPA filters will remain on 6A long term.
- Air sampling in Ward 6A will continue fortnightly for the foreseeable future.
- Microbiology, ID consultants and pharmacy are developing a prophylaxis guideline for paediatric haem-oncology.
- Interim laboratory report from Ayr Lab. has identified 'yeast' in the pigeon faecal samples sent; final results are not yet available.
- The SLWG of the IMT (remit to review all the hypotheses and remedial work to date and agree next steps)
    - Filters are being sourced that will improve filtration associated with general ventilation.
    - TAC mats have been ordered for the helipad.
    - Maintenance programme to be established for HEPA filters, including cleaning between patients with actichlor solution.
    - Vent cleaning frequency being increased to three monthly.
    - A draft water damage policy has been prepared; named estates person allocated to each high risk area being considered. This policy is still to be approved.

Communications:

- Face book page in development.
- An occupational health update/advice for staff is to be sent out.
- Women and Children Senior Management Team (SMT) developing a briefing with communications colleagues to give to parents regarding the move back to Ward 6A. The lead ICD, consultants and SMT will also be available to patients/families to answer any questions or concerns.

HPS support not requested at this time *(HPS/SGHSCD would be interested to see the communications/information sent out).*

Next expected update Friday 15th February 2019; unless the situation changes before this time.

Teresa, Sandra, please advise of any errors or omissions in the above. Please also advise of press statements (holding or release) to SG and HPS Communications Teams.

Kind regards,

Lisa

Dr. Lisa Ritchie
NHS Improvement IPC Fellow
Nurse Consultant Infection Control

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From: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Sent: 04 February 2019 17:35
To: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND); KANE, Hayley (NHS NATIONAL SERVICES SCOTLAND); Birch, Jason (SGPU); BROWN, Claire (NHS NATIONAL SERVICES SCOTLAND); CAIRNS, Shona (NHS NATIONAL SERVICES SCOTLAND); BOSWELL, Catherine (NHS NATIONAL SERVICES SCOTLAND); CHRISTIE, Katie (NHS NATIONAL SERVICES SCOTLAND); Rachael.Dunk[redacted] Emma Watson; goodfellow, melanie; HOOKER, Emma (NHS NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NHS National Services Scotland); IMRIE, Laura (NHS NATIONAL SERVICES SCOTLAND); LOCKHART, Michael (NHS NATIONAL SERVICES SCOTLAND); LONGSTAFF, Jenny (NHS NATIONAL SERVICES SCOTLAND); MCINTYRE, Jackie (NHS NATIONAL SERVICES SCOTLAND); Mediarelations (NHS NATIONAL SERVICES SCOTLAND); MULLINGS, Abigail (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); REILLY, Jacqui (NHS NATIONAL SERVICES SCOTLAND); Shepherd, Lesley ; SHEPHERD, Lesley (NHS NATIONAL SERVICES SCOTLAND); Syme, Margaret; THOULASS, Janine (NHS NATIONAL SERVICES SCOTLAND); UNZURRUNZAGA, Garazi (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Heather (NHS NATIONAL SERVICES SCOTLAND); WILSON, Julie (NHS NATIONAL SERVICES SCOTLAND)
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Subject: RE: HIIORT - NHSGGC - Wards 6A and 4C, QEUH

Dear colleagues,

Update from NHS Greater Glasgow and Clyde incident (two cases of Cryptococcus neoformans in the Haematology unit (Wards 6A and 4C), Queen Elizabeth University Hospital, following an IMT today.

HIIAT de-escalated to Amber (severity of illness – minor; impact on services- moderate; risk of transmission – minor; public anxiety – moderate)

In Summary

Cases:

- No further clinical isolates/patients cases reported since 21st December 2018.

Patient placement (no change):

- Paediatric patients being managed in Clinical Decision Unit (CDU) / Ward 4B (adult BMT)

Update on investigations/actions:

- Post HEPA filter installation air sampling of ward 6A is still outstanding; settle plates are reported to be negative so far. Final results should be available later this week.
- Results of air sampling in plant room samples associated with PICU are not yet available, nor are other sampling from the RHC site.
- The SLWG of the IMT will meet this week for the first time to review all the hypotheses and remedial work to date and agree next steps.
    - Filters are being sourced that will improve filtration associated with general ventilation.
    - Samples of TAC mats for trolleys on helipad being sent to facilities colleagues for review.

Communications:

- Face book page to be set up by NHSGGC Comms Dept with two members of Paediatric SMT as administrators to allow parents to raise any concerns and NHSGGC the opportunity to respond.
- Public Health Protection Unit have developed information for the general public. This will be sent to the lead ICD for comment.
- An occupational health update for staff is to be sent out.

HPS support not requested at this time *(HPS/SGHSCD would be interested to see the communications/information sent out).*

Next expected update after IMT on Friday 8th February 2019; unless the situation changes before this time.

Teresa, Sandra, please advise of any errors or omissions in the above. Please also advise of press statements (holding or release) to SG and HPS Communications Teams.

Kind regards,
Lisa

Dr. Lisa Ritchie
NHS Improvement IPC Fellow
Nurse Consultant Infection Control

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From: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Sent: 31 January 2019 17:13
To: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND); KANE, Hayley (NHS NATIONAL SERVICES SCOTLAND); Birch, Jason (SGPU); BROWN, Claire (NHS NATIONAL SERVICES SCOTLAND); CAIRNS, Shona (NHS NATIONAL SERVICES SCOTLAND); BOSWELL, Catherine (NHS NATIONAL SERVICES SCOTLAND); CHRISTIE, Katie (NHS NATIONAL SERVICES SCOTLAND); Rachael.Dunk[redacted] Emma Watson; goodfellow, melanie; HOOKER, Emma (NHS NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NHS National Services Scotland); IMRIE, Laura (NHS NATIONAL SERVICES SCOTLAND); LOCKHART, Michael (NHS NATIONAL SERVICES SCOTLAND); LONGSTAFF, Jenny (NHS NATIONAL SERVICES SCOTLAND); MCINTYRE, Jackie (NHS NATIONAL SERVICES SCOTLAND); Mediarelations (NHS NATIONAL SERVICES SCOTLAND); MULLINGS, Abigail (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); REILLY, Jacqui (NHS NATIONAL SERVICES SCOTLAND); Shepherd, Lesley ; SHEPHERD, Lesley (NHS NATIONAL SERVICES SCOTLAND); Syme, Margaret; THOULASS, Janine (NHS NATIONAL SERVICES SCOTLAND); UNZURRUNZAGA, Garazi (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Heather (NHS NATIONAL SERVICES SCOTLAND); WILSON, Julie (NHS NATIONAL SERVICES SCOTLAND)
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Subject: RE: HIIORT - NHSGGC - Wards 6A and 4C, QEUH

Dear colleagues,

Update from NHS Greater Glasgow and Clyde incident (two cases of Cryptococcus neoformans in the Haematology unit (Wards 6A and 4C), Queen Elizabeth University Hospital, following an IMT yesterday afternoon. There are a couple of points that clarity is being sought on and I will advise of these when received from colleagues in GGC.

HIIAT remains Red (severity of illness – minor; impact on services- moderate; risk of transmission – minor; public anxiety – major)

In Summary

Cases:

- No further clinical isolates/patients cases reported since 21st December 2018.

Patient placement:

- Paediatric patients being managed in Clinical Decision Unit (CDU) / Ward 4B (adult BMt)
- Three patients transferred/receiving treatment in Edinburgh

Update on investigations/actions:

- New bird faecal samples obtained. Further samples to be obtained from the Helipad. These will all be sent to Veterinary Lab. Ayrshire for testing.
- Remedial work on 6A complete. HPV cleaning complete. Air sampling complete. HEPA filters being installed.
- Initial air sampling in PICU obtained 21st December 2018 identified no growth of Cryptococcus. However, further sample taken on the same date have grown Cryptococcus albicus. NHSGGC discussions with Bristol mycology expert suggests that the counts of Cryptococcus in the air may have now reduced due to natural dispersion.
- A review of all patients who were admitted to the PICU via the helipad in December to be completed.
- Facilities to review down drafts created by helicopter landings and any potential dispersal of pigeon faeces.
- A review of all samples related to this incident to be reviewed.
- A local guideline for HEPA filter changes is being developed.

Hypothesis Update:

- Due to updated air sampling results from PICU the hypothesis generated at the last IMT has been revised: PICU is served by Plant Room 41 on Level 4 (to be air sampled). This area was previously inspected and found to be contaminated with pigeon faeces but no sign of infestation. An IMT subgroup will now be convened to review all possible hypotheses, and explore further, future preventative methods.

Communications:

- Face book page to be set up by NHSGGC Comms Dept with two members of Paediatric SMT as administrators to allow parents to raise any concerns and NHSGGC the opportunity to respond.
- Media enquiry from BBC regarding the cause of death of the adult patient; a NHSGGC response has been prepared.

HPS support not requested at this time.

Next IMT meeting to be scheduled

Teresa, Sandra, please advise of any errors or omissions in the above. Please also advise of press statements (holding or release) to SG and HPS Communications Teams.

Kind regards,

Lisa

Dr. Lisa Ritchie
NHS Improvement IPC Fellow
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From: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Sent: 28 January 2019 20:30
To: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND); KANE, Hayley (NHS NATIONAL SERVICES SCOTLAND); Birch, Jason (SGPU); BROWN, Claire (NHS NATIONAL SERVICES SCOTLAND); CAIRNS, Shona (NHS NATIONAL SERVICES SCOTLAND); BOSWELL, Catherine (NHS NATIONAL SERVICES SCOTLAND); CHRISTIE, Katie (NHS NATIONAL SERVICES SCOTLAND); Rachael.Dunk[redacted] Emma Watson; goodfellow, melanie; HOOKER, Emma (NHS NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NHS National Services Scotland); IMRIE, Laura (NHS NATIONAL SERVICES SCOTLAND); LOCKHART, Michael (NHS NATIONAL SERVICES SCOTLAND); LONGSTAFF, Jenny (NHS NATIONAL SERVICES SCOTLAND); MCINTYRE, Jackie (NHS NATIONAL SERVICES SCOTLAND); Mediarelations (NHS NATIONAL SERVICES SCOTLAND); MULLINGS, Abigail (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); REILLY, Jacqui (NHS NATIONAL SERVICES SCOTLAND); Shepherd, Lesley ; SHEPHERD, Lesley (NHS NATIONAL SERVICES SCOTLAND); Syme, Margaret; THOULASS, Janine (NHS NATIONAL SERVICES SCOTLAND); UNZURRUNZAGA, Garazi (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Heather (NHS NATIONAL SERVICES SCOTLAND); WILSON, Julie (NHS NATIONAL SERVICES SCOTLAND)
Cc: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); Devine, Sandra; Dodd Susan (NHS GREATER GLASGOW & CLYDE); Pritchard Lynn (NHS GREATER GLASGOW & CLYDE); MCMENAMIN, Jim (NHS NATIONAL SERVICES SCOTLAND); Fiona.McQueen[redacted]
Subject: RE: HIIORT - NHSGGC - Wards 6A and 4C, QEUH

Dear colleagues,

Update from NHS Greater Glasgow and Clyde incident (two cases of Cryptococcus neoformans in the Haematology unit (Wards 6A and 4C), Queen Elizabeth University Hospital, following an IMT today.

HIIAT escalated to Red (severity of illness – minor; impact on services- moderate; risk of transmission – minor; public anxiety – major)

In Summary
Cases:

- No further clinical isolates/patients cases reported since 21st December 2018.

The family of Case 1 [redacted] has requested additional information, this is being taken forward by the clinical team and Lead ICD.

Patient placement:

- Thirteen paediatric patients are currently being managed in Clinical Decision Unit (CDU)
- Three patients transferred/receiving treatment in Edinburgh
- Three patients remain on Ward 4B (adult BMT)
- Ward 2A functioning as acute admission ward

Update on investigations/actions:

- New bird faecal samples to be obtained; Veterinary Lab. Ayrshire to send to the Bristol Mycology Ref. Lab. once their analysis complete.

- Latest results from microbiological air sampling on Level 7 are all negative. Lead ICD to review the control measures previously implemented in this area.
- Remedial work on 6A reported to be scheduled for completion today.
- Additional HEPA filters have been purchased for installation. HEPA filters to remain in situ in all high risk areas.
- HEPA filters will remain in Wards 6A and 4C long term, pending upgrade work. A maintenance programme for these filters to be put in place.
- Further hypothesis being considered following review of the helipad regarding downdraft airflow and patient transport equipment - obvious birds and faeces. Transfer trolleys will therefore have bird faeces on the wheels. Other centres with helipads being contacted regarding what measures they have put in place to address such an issue. Note: Haematology patients as not admitted via this route.

Communications:

- Letter issued to all inpatient parents. Letters also being sent to outpatient s.
- Families being advised that they can contact GGC Communications if reporters appear at their home. A formal communication to this effect (with contact numbers, etc) is being developed.
- Senior Management Teams have briefed Clinical Directors (or their equivalent) for each specialty regarding this incident. This is to be followed up with a formal, written communication.

HPS support not requested at this time.

Next IMT meeting Wednesday 30th January 2019; unless the situation changes before this time

Teresa, Sandra, please advise of any errors or omissions in the above. Please also advise of press statements (holding or release) to SG and HPS Communications Teams.

Kind regards,
Lisa

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From: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Sent: 25 January 2019 15:48
To: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND); KANE, Hayley (NHS NATIONAL SERVICES SCOTLAND); Birch, Jason (SGPU); BROWN, Claire (NHS NATIONAL SERVICES SCOTLAND); CAIRNS, Shona (NHS NATIONAL SERVICES SCOTLAND); BOSWELL, Catherine (NHS NATIONAL SERVICES SCOTLAND); CHRISTIE, Katie (NHS NATIONAL SERVICES SCOTLAND); Rachael.Dunk[redacted] Emma Watson; goodfellow, melanie; HOOKER, Emma (NHS NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NHS National Services Scotland); IMRIE, Laura (NHS NATIONAL SERVICES SCOTLAND); LOCKHART, Michael (NHS NATIONAL SERVICES SCOTLAND); LONGSTAFF, Jenny (NHS NATIONAL SERVICES SCOTLAND); MCINTYRE, Jackie (NHS NATIONAL SERVICES SCOTLAND); Mediarelations (NHS NATIONAL SERVICES SCOTLAND); MULLINGS, Abigail (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); REILLY, Jacqui (NHS NATIONAL SERVICES

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Cc: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); Devine, Sandra; Dodd Susan (NHS GREATER GLASGOW & CLYDE); Pritchard Lynn (NHS GREATER GLASGOW & CLYDE); MCMENAMIN, Jim (NHS NATIONAL SERVICES SCOTLAND); Fiona.McQueen[redacted]
Subject: RE: HIIORT - NHSGGC - Wards 6A and 4C, QEUH

Minor amendment advised from NHSGGC (see below in red).

From: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Sent: 25 January 2019 14:57
To: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND); KANE, Hayley (NHS NATIONAL SERVICES SCOTLAND); Birch, Jason (SGPU); BROWN, Claire (NHS NATIONAL SERVICES SCOTLAND); CAIRNS, Shona (NHS NATIONAL SERVICES SCOTLAND); BOSWELL, Catherine (NHS NATIONAL SERVICES SCOTLAND); CHRISTIE, Katie (NHS NATIONAL SERVICES SCOTLAND); Rachael.Dunk[redacted]; Emma Watson; goodfellow, melanie; HOOKER, Emma (NHS NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NHS National Services Scotland); IMRIE, Laura (NHS NATIONAL SERVICES SCOTLAND); LOCKHART, Michael (NHS NATIONAL SERVICES SCOTLAND); LONGSTAFF, Jenny (NHS NATIONAL SERVICES SCOTLAND); MCINTYRE, Jackie (NHS NATIONAL SERVICES SCOTLAND); Mediarelations (NHS NATIONAL SERVICES SCOTLAND); MULLINGS, Abigail (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); REILLY, Jacqui (NHS NATIONAL SERVICES SCOTLAND); Shepherd, Lesley ; SHEPHERD, Lesley (NHS NATIONAL SERVICES SCOTLAND); Syme, Margaret; THOULASS, Janine (NHS NATIONAL SERVICES SCOTLAND); UNZURRUNZAGA, Garazi (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Heather (NHS NATIONAL SERVICES SCOTLAND); WILSON, Julie (NHS NATIONAL SERVICES SCOTLAND)
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Subject: RE: HIIORT - NHSGGC - Wards 6A and 4C, QEUH

Dear colleagues,

Update from NHS Greater Glasgow and Clyde incident (two cases of Cryptococcus neoformans in the Haematology unit (Wards 6A and 4C), Queen Elizabeth University Hospital, following IMT today.

HIIAT deescalated to Amber (severity of illness – minor; impact on services- moderate; risk of transmission – minor; public anxiety – moderate)

In Summary
Cases:

- No further clinical isolates/patients cases reported since 21st December 2018.

All haematology/oncology paediatric patients are now being managed in Clinical Decision Unit (CDU), the bone marrow transplant patients are being managed in Ward 4B, adult BMTU.

Update on investigations/actions:

- Veterinary Lab. Ayrshire has reported results: Cryptococcus albidus, in bird faeces samples. These will now be sent to Bristol for further investigation. The Ayrshire Lab have advised that they discarded the sample once their analysis was complete and so these will not be sent to the Bristol Mycology Ref. Lab.
- Review of helipad regarding downdraft airflow and patient transport equipment.
- NHSGGC have requested Peter Hoffman from PHE make an onsite visit to offer expert view on the ventilation system. Peter Hoffman has asked for some information re ventilation, the answers are currently being developed.
- A review of the type of filters to be added to the ventilation system to prevent ingress of Cryptococcus.

- Ward 6A shower repairs and cleaning of chilled beams will be complete by Monday 28th Jan 2019. Ward 6A to be reviewed by the lead ICD and lead ICN on Monday following completion of repairs. Air sampling in this ward will commence on Wednesday 30th Jan 2019.

HPS support not requested at this time.

Next IMT meeting Tuesday 29th January 2019 unless the situation changes before this time.

Teresa, Sandra, please advise of any errors or omissions in the above. Please also advise of press statements (holding or release) to SG and HPS Communications Teams.

Kind regards,
Lisa

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From: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Sent: 25 January 2019 10:48
To: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND); KANE, Hayley (NHS NATIONAL SERVICES SCOTLAND); Birch, Jason (SGPU); BROWN, Claire (NHS NATIONAL SERVICES SCOTLAND); CAIRNS, Shona (NHS NATIONAL SERVICES SCOTLAND); BOSWELL, Catherine (NHS NATIONAL SERVICES SCOTLAND); CHRISTIE, Katie (NHS NATIONAL SERVICES SCOTLAND); Rachael.Dunk[redacted]; Emma Watson; goodfellow, melanie; HOOKER, Emma (NHS NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NHS National Services Scotland); IMRIE, Laura (NHS NATIONAL SERVICES SCOTLAND); LOCKHART, Michael (NHS NATIONAL SERVICES SCOTLAND); LONGSTAFF, Jenny (NHS NATIONAL SERVICES SCOTLAND); MCINTYRE, Jackie (NHS NATIONAL SERVICES SCOTLAND); Mediarelations (NHS NATIONAL SERVICES SCOTLAND); MULLINGS, Abigail (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); REILLY, Jacqui (NHS NATIONAL SERVICES SCOTLAND); Shepherd, Lesley ; SHEPHERD, Lesley (NHS NATIONAL SERVICES SCOTLAND); Syme, Margaret; THOULASS, Janine (NHS NATIONAL SERVICES SCOTLAND); UNZURRUNZAGA, Garazi (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Heather (NHS NATIONAL SERVICES SCOTLAND); WILSON, Julie (NHS NATIONAL SERVICES SCOTLAND)
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Subject: RE: HIIORT - NHSGGC - Wards 6A and 4C, QEUH

Dear colleagues,

Update from NHS Greater Glasgow and Clyde incident (two cases of Cryptococcus neoformans in the Haematology unit (Wards 6A and 4C), Queen Elizabeth University Hospital, following IMT yesterday afternoon, 24th January 2019.

HIIAT escalated to Red (severity of illness – minor; impact on services- moderate; risk of transmission – minor; public anxiety – major)

In Summary

Cases:

- No further clinical isolates/patients cases reported since 21st December 2018.

Incident hypotheses:

Previously reported hypotheses:

1. Maintenance being carried out in the Plant rooms has disrupted pigeon droppings, disseminating fine dust, aerosols into the atmosphere and potentially into ventilation systems.
2. Fine dust from dry pigeon droppings entering via insufficiently sealed window frames.
3. The carts/trolleys used to deliver supplies to ward areas may have been contaminated with pigeon droppings.

Additional hypothesis being considered:

4. In Radiology Dept, RCH, there is a door which smoke testing has confirmed is not fully sealed when closed. Outside this door is Courtyard 8, and within this area there is a heat exchanger. Bird droppings evident in this area. Hypothesis is that the heat exchanger may be causing pigeon droppings spore dispersion close to an air inlet into a nearby plant room (this is a plant room not previously implicated in this incident).

Investigations update:

- Ongoing investigations in plant rooms – all plant rooms to be investigated following a visit visit yesterday by the HSE.
- NHSGGC have requested Peter Hoffman from PHE make an onsite visit to offer expert view on the ventilation system.
- Courtyard near radiology being reviewed.
- Receipt of supplies boxes reviewed. National Distribution Centre and Procurement have confirmed there is no problem in NDC with pigeons.
- Roof top garden (QEUH) assessed; no evidence of pigeon nesting. This area does however require removal of garden debris, the process of doing this is being assesses; this areas is difficult to access for removal of debris. This area is currently closed.

Further update to follow after IMT this afternoon .

HPS support not requested at this time.

Teresa, Sandra, please advise of any errors or omissions in the above. Please also advise of press statements (holding or release) to SG and HPS Communications Teams.

Kind regards,

Lisa

Dr. Lisa Ritchie
NHS Improvement IPC Fellow
Nurse Consultant Infection Control

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From: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Sent: 23 January 2019 08:55
To: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND); KANE, Hayley (NHS NATIONAL SERVICES SCOTLAND); Birch, Jason (SGPU); BROWN, Claire (NHS NATIONAL SERVICES SCOTLAND); CAIRNS, Shona (NHS NATIONAL SERVICES SCOTLAND); BOSWELL, Catherine (NHS NATIONAL SERVICES SCOTLAND); CHRISTIE, Katie (NHS NATIONAL SERVICES SCOTLAND); Rachael.Dunk[redacted]; Emma Watson; goodfellow, melanie; HOOKER, Emma (NHS NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NHS National Services Scotland); IMRIE, Laura (NHS NATIONAL SERVICES SCOTLAND); LOCKHART, Michael (NHS NATIONAL SERVICES SCOTLAND); LONGSTAFF, Jenny (NHS NATIONAL SERVICES SCOTLAND); MCINTYRE, Jackie (NHS NATIONAL SERVICES SCOTLAND); Mediarelations (NHS NATIONAL SERVICES SCOTLAND); MULLINGS, Abigail (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); REILLY, Jacqui (NHS NATIONAL SERVICES SCOTLAND); Shepherd, Lesley ; SHEPHERD, Lesley (NHS NATIONAL SERVICES SCOTLAND); Syme, Margaret; THOULASS, Janine (NHS NATIONAL SERVICES SCOTLAND); UNZURRUNZAGA, Garazi (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Heather (NHS NATIONAL SERVICES SCOTLAND); WILSON, Julie (NHS NATIONAL SERVICES SCOTLAND)
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Subject: RE: HIIORT - NHSGGC - Wards 6A and 4C, QEUH

Dear colleagues,

Update from NHS Greater Glasgow and Clyde incident (two cases of Cryptococcus neoformans in the Haematology unit (Wards 6A and 4C), Queen Elizabeth University Hospital, following IMT yesterday afternoon, 22nd January 2019.

HIIAT remains **Amber**

In Summary

Cases:

- No further clinical isolates/patients cases reported since 21st December 2018.

Investigations update:

- Water ingress in the shower areas in Ward 6A is more significant than initially thought. Visible mould was evident when the flooring was lifted in these areas. As a consequence inpatients relocated as stated below in control measures.
- Air sampling undertaken in the Paediatric ICU (PICU), Royal Hospital for Children (RHC). All results reported negative.
- Further air sampling in Wards 6A and 4C:
    - Ward 6A results show a single colony of yeast in one bedroom and some in a corridor, several rooms negative for Cryptococcus. Full fungal cultures will be available mid week.
    - Ward 4C results not yet available.
- Twice weekly air sampling to continue.
- The Health and Safety Executive (HSE) have advised, 22nd January, that they will make a site visit on Thursday 24th January 2019.

Control measures:

- Ward 6A decant: All inpatients in Ward 6A moved to CDU (Clinical Decision Unit). Bone Marrow Transplant patients remain in Ward 4C. This decant/arrangement is likely to be for a period of four weeks to allow completion of remedial estates work and further air sampling once this work is complete.
- Repairs to eight shower rooms in Ward 6A should be complete by today, 23rd January 2019. A further eight rooms should be complete by end January 2019. Air sampling will take place once all rooms are repaired; HPV decontaminated; and before HEPA filters are reinstalled. Further air sampling will also be undertaken after HEPA filters installed.
- Minor repair work ongoing in a small number of rooms in CDU (these are unoccupied).
- Some repair work also scheduled for Ward 4C.

- Thermal imaging of windows in Wards 6A and 4C complete. Some minor issues identified but no major concerns noted.
- Plan in place for new patient admissions.
- A Directorate review of options to move patients from adult back to children's hospital is underway.

Communications:

- Communication via other forms of social media to be put in place from yesterday, 22nd January 2019 to reach the wider staff and public population of NHSGGC.
- All families of inpatients and those who are scheduled for admission have been spoken with by clinical staff – this has, and remains ongoing. All also received hard copy information from Friday 18th January 2019.
- Letter for patients/parents to be approved by CEO and will be issued to all inpatients and out patients.
- Further communication to parents by member of NHS Board being considered.
- Nursing staff in both 6A and 4C have raised concerns and have been spoken with.
- Haematology consultants (paediatrics) briefed on situation yesterday 22nd January 2019.
- Core briefs have been issued to staff to update them on the situation; going forward social media will also be used.

HPS support not requested at this time.

Next expected update Friday 25th January unless the situation changes before this date.

Teresa, Sandra, please advise of any errors or omissions in the above. Please also advise of press statements (holding or release) to SG and HPS Communications Teams.

Kind regards,
Lisa

Dr. Lisa Ritchie
NHS Improvement IPC Fellow
Nurse Consultant Infection Control

Infection Control Team / HAI Group
Health Protection Scotland
NHS National Services Scotland
4th Floor Meridian Court
5 Cadogan Street
Glasgow G2 6QE
T: [redacted]

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From: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Sent: 22 January 2019 15:30
To: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND); KANE, Hayley (NHS NATIONAL SERVICES SCOTLAND); Birch, Jason (SGPU); BROWN, Claire (NHS NATIONAL SERVICES SCOTLAND); CAIRNS, Shona (NHS NATIONAL SERVICES SCOTLAND); BOSWELL, Catherine (NHS NATIONAL SERVICES SCOTLAND); CHRISTIE, Katie (NHS NATIONAL SERVICES SCOTLAND); Rachael.[redacted] Emma Watson; goodfellow, melanie; HOOKER, Emma (NHS NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NHS National Services Scotland); IMRIE, Laura (NHS NATIONAL SERVICES SCOTLAND); LOCKHART, Michael (NHS NATIONAL SERVICES SCOTLAND); LONGSTAFF, Jenny (NHS NATIONAL SERVICES SCOTLAND); MCINTYRE, Jackie (NHS NATIONAL SERVICES SCOTLAND); Mediarelations (NHS NATIONAL SERVICES SCOTLAND); MULLINGS, Abigail (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); REILLY, Jacqui (NHS NATIONAL SERVICES SCOTLAND); Shepherd, Lesley ; SHEPHERD, Lesley (NHS NATIONAL SERVICES SCOTLAND); Syme, Margaret; THOULASS, Janine (NHS NATIONAL SERVICES SCOTLAND); UNZURRUNZAGA, Garazi (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Heather (NHS NATIONAL SERVICES SCOTLAND); WILSON, Julie (NHS NATIONAL SERVICES SCOTLAND)

Cc: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); Devine, Sandra; Dodd Susan (NHS GREATER GLASGOW & CLYDE); Pritchard Lynn (NHS GREATER GLASGOW & CLYDE); MCMENAMIN, Jim (NHS NATIONAL SERVICES SCOTLAND); Fiona.McQueen[redacted]
Subject: RE: HIIORT - NHSGGC - Wards 6A and 4C, QEUH

Dear colleagues,

Update from NHS Greater Glasgow and Clyde incident (two cases of Cryptococcus neoformans in the Haematology unit (Wards 6A and 4C), Queen Elizabeth University Hospital

HIIAT remains **Amber**

- The five inpatients in Ward 6A are in the process of being moved to the CDU (Clinical Decision Unit). There are four Positive Pressure Ventilation Lobby (PPVL) rooms available in the CDU. This decant is likely to be for a period of four weeks to allow completion of remedial estates work and further air sampling once this work is complete.

- Dr Inkster and Prof Gibson have spent the morning at outpatient clinic speaking with families.

A further IMT meeting is scheduled for this afternoon (priority to move Ward 6A inpatients); any further information will be provided from Dr Inkster/NHSGGC to HPS.

HPS support not requested at this time.

Teresa, Sandra, please advise of any errors or omissions in the above. ***Please also advise of press statements (holding or release) to SG and HPS Communications Teams.***

Kind regards,
Lisa

Dr. Lisa Ritchie
NHS Improvement IPC Fellow
Nurse Consultant Infection Control

Infection Control Team / HAI Group
Health Protection Scotland
NHS National Services Scotland
4th Floor Meridian Court
5 Cadogan Street
Glasgow G2 6QE
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From: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Sent: 18 January 2019 21:46
To: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND); KANE, Hayley (NHS NATIONAL SERVICES SCOTLAND); Birch, Jason (SGPU); BROWN, Claire (NHS NATIONAL SERVICES SCOTLAND); CAIRNS, Shona (NHS NATIONAL SERVICES SCOTLAND); BOSWELL, Catherine (NHS NATIONAL SERVICES SCOTLAND); CHRISTIE, Katie (NHS NATIONAL SERVICES SCOTLAND); Rachael.Dunk[redacted]; Emma Watson; goodfellow, melanie; HOOKER, Emma (NHS NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NHS National Services Scotland); IMRIE, Laura (NHS NATIONAL SERVICES SCOTLAND); LOCKHART, Michael (NHS NATIONAL SERVICES SCOTLAND); LONGSTAFF, Jenny (NHS NATIONAL SERVICES SCOTLAND); MCINTYRE, Jackie (NHS NATIONAL SERVICES SCOTLAND); Mediarelations (NHS NATIONAL SERVICES SCOTLAND); MULLINGS, Abigail (NHS NATIONAL SERVICES

SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); REILLY, Jacqui (NHS NATIONAL SERVICES SCOTLAND); Shepherd, Lesley ; SHEPHERD, Lesley (NHS NATIONAL SERVICES SCOTLAND); Syme, Margaret; THOULASS, Janine (NHS NATIONAL SERVICES SCOTLAND); UNZURRUNZAGA, Garazi (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Heather (NHS NATIONAL SERVICES SCOTLAND); WILSON, Julie (NHS NATIONAL SERVICES SCOTLAND)
Cc: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); Devine, Sandra; Dodd Susan (NHS GREATER GLASGOW & CLYDE); Pritchard Lynn (NHS GREATER GLASGOW & CLYDE); MCMENAMIN, Jim (NHS NATIONAL SERVICES SCOTLAND); Fiona.McQueen[redacted]; GOLDBERG, David (NHS NATIONAL SERVICES SCOTLAND); REDMAN, Christopher (NHS NATIONAL SERVICES SCOTLAND)
Subject: RE: HIIORT - NHSGGC - Wards 6A and 4C, QEUH

Dear colleagues,

Update from NHS Greater Glasgow and Clyde incident (two cases of Cryptococcus neoformans in the Haematology unit (Wards 6A and 4C), Queen Elizabeth University Hospital) following IMT, 3pm today; further information in red added to previous email (below).

Kind regards,
Lisa

From: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Sent: 18 January 2019 15:12
To: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND); KANE, Hayley (NHS NATIONAL SERVICES SCOTLAND); Birch, Jason (SGPU); BROWN, Claire (NHS NATIONAL SERVICES SCOTLAND); CAIRNS, Shona (NHS NATIONAL SERVICES SCOTLAND); BOSWELL, Catherine (NHS NATIONAL SERVICES SCOTLAND); CHRISTIE, Katie (NHS NATIONAL SERVICES SCOTLAND); Rachael.Dunk[redacted] Emma Watson; goodfellow, melanie; HOOKER, Emma (NHS NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NHS National Services Scotland); IMRIE, Laura (NHS NATIONAL SERVICES SCOTLAND); LOCKHART, Michael (NHS NATIONAL SERVICES SCOTLAND); LONGSTAFF, Jenny (NHS NATIONAL SERVICES SCOTLAND); MCINTYRE, Jackie (NHS NATIONAL SERVICES SCOTLAND); Mediarelations (NHS NATIONAL SERVICES SCOTLAND); MULLINGS, Abigail (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); REILLY, Jacqui (NHS NATIONAL SERVICES SCOTLAND); Shepherd, Lesley ; SHEPHERD, Lesley (NHS NATIONAL SERVICES SCOTLAND); Syme, Margaret; THOULASS, Janine (NHS NATIONAL SERVICES SCOTLAND); UNZURRUNZAGA, Garazi (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Heather (NHS NATIONAL SERVICES SCOTLAND); WILSON, Julie (NHS NATIONAL SERVICES SCOTLAND)
Cc: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); Devine, Sandra; Dodd Susan (NHS GREATER GLASGOW & CLYDE); Pritchard Lynn (NHS GREATER GLASGOW & CLYDE); MCMENAMIN, Jim (NHS NATIONAL SERVICES SCOTLAND); Fiona.McQueen[redacted] GOLDBERG, David (NHS NATIONAL SERVICES SCOTLAND); REDMAN, Christopher (NHS NATIONAL SERVICES SCOTLAND)
Subject: RE: HIIORT - NHSGGC - Wards 6A and 4C, QEUH

Dear colleagues,

Update on NHS Greater Glasgow and Clyde incident (two cases of Cryptococcus neoformans in the Haematology unit (Wards 6A and 4C), Queen Elizabeth University Hospital); now that air sampling results are known. Some of the below information e.g. regarding the patient cases has been reported/discussed with SG Policy Unit colleagues in advance of this update.

HIIAT Green (reassessment requested)
HIIAT escalated to **AMBER** (impact on services - moderate, risk of transmission - moderate, public anxiety - moderate)

In Summary
Cases:

- No further clinical isolates/patients cases reported since 21st December 2018.
- Dr Inkster and clinical consultants met with the parents of the deceased paediatric patient (w/c 31st December 2018). Although the parents were reported to be understandably upset, they had no questions at the time of the meeting. A Severe Case Investigation (SCI) regarding the death of this patient has

commenced by NHSGG&C (death attributed to this incident). The parents are aware of this SCI and the process that will be followed.

- Dr Inkster also met with the family of the adult patient (w/c 31st December 2018). The family are reported to be content with the information provided and had no further questions at that time. This patient responded well to the antifungal treatment for Cryptococcus; was subsequently discharged home and sadly died (death due to underlying immune compromising disease and expected; not attributed to this incident). Cryptococcus not recorded on either part of the death certificate.

Investigations:

- The results from air sampling and settle plates from Plant room 12 and the Wards 6A and 4C are a Cryptococcus match (different type from the one isolated from the patients), however, strongly suggests that the transmission route of the Cryptococcus is from the plant room to the ward via the ventilation system (e.g. via air handling units, filters, ventilation ducts).
- Air sampling has also confirmed that wards on the 7th floor have Cryptococcus in samples. Patients in this area of the hospital are reported to be at extremely low risk of developing this type of infection.

As a result:

- Portable HEPA filters have been deployed in all patient rooms, corridors, and adjacencies in Wards 6A and 4C. Reassurance sought from clinical staff of HEPA filters efficiency; thus repeat air sampling and particulate counts on 16th Jan 2019. Particulate sampling results, although lower than previously reported, remained higher than expected. Identified areas of mould/damp in shower rooms e.g. skirting board join; could account for the higher than expected particulate count. There are also two rooms out of use due to a leaking cistern with mould visible on the wall; this may also be a contributing factor.
- NHSGG&C had discussion with expert from the Bristol Mycology Reference Lab; they proposed that the most likely source of transmission is via a breach in the ventilation system and that GGC should consider Hydrogen peroxide Vapour (HPV) cleaning of the ventilation system. However, further discussion with a national expert, Dr Peter Hoffman at PHE advised not to decontaminate any of the ventilation system at this time but rather assess all aspects of the ventilation system to identify any underlying structural/operational defects in the first instance; if rectified, over time the system will through dilution clear itself. Further teleconference with Peter Hoffman and NHSGGC microbiology. Outcomes of discussions to be further discussed at IMT next week.

Risk mitigation measures for this incident:

1. Prophylaxis of potentially exposed patients in Wards 6A and 4C.
2. Installation of portable HEPA filters in Wards 6A and 4C.
3. 'Very high risk' patients in Wards 6A and 4C to be relocated to the adult bone marrow transplant unit until estates issues have been rectified. High risk paediatric patients moved to adult Bone Marrow Transplant Unit. Other patients risk assessed to ensure highest risk are in rooms with no issues with showers.
4. NHSGGC to identify any other high risk patient wards. HEPA filters to be deployed in all 'high risk' wards/areas, QEUH, including renal transplant.

Communications prepared for patients and parents. Members of IP&CT and Senior Management Team Women's and Children's continue to make themselves available to address specific concerns of patients, parents and staff.

A NHSGGC Contingency Planning Group has now been tasked with further investigation of the fabrication of the ventilation system to establish if there are any further sources of contamination, specifically from the plant rooms to the affected wards.

- NHSGGC Estates Dept is reported to be in discussion with colleagues in HFS regarding the review of the buildings ventilation system.
- NHSGGC Estates Dept is reported to have contacted a specialist contractor to assess the feasibility of decontamination of the ventilation system using HPV.
- Plant rooms to be inspected every two weeks for evidence of pest infestations.

- Report awaited from independent (GP Environmental Services) detailing options for reducing pigeon infestations in and around the QEUH site.
- NHSGGC Estates have engaged contractors to conduct thermal imaging on the windows within Wards 6A and 4C to check for seal breaches.
- HAI SCRIBE to be completed by 18th Jan 2019 to enable NHSGGC Estates to commence work; rectifying issues identified in the ward areas. Work has commenced in the two rooms out of use due to the leaking cistern. HAI SCRIBEs complete for remedial work that will progress over weekend.

A further IMT meeting is being held this afternoon, 3pm, after which any further information will be provided from Dr Inkster/NHSGGC to HPS.

HPS support not requested at this time.

Teresa, Sandra, please advise of any errors or omissions in the above. ***Please also advise of press statements (holding or release) to SG and HPS Communications Teams.***

Kind regards,
Lisa

Dr. Lisa Ritchie
NHS Improvement IPC Fellow
Nurse Consultant Infection Control

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From: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Sent: 03 January 2019 16:48
To: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND); KANE, Hayley (NHS NATIONAL SERVICES SCOTLAND); Birch, Jason (SGPU); BROWN, Claire (NHS NATIONAL SERVICES SCOTLAND); CAIRNS, Shona (NHS NATIONAL SERVICES SCOTLAND); BOSWELL, Catherine (NHS NATIONAL SERVICES SCOTLAND); CHRISTIE, Katie (NHS NATIONAL SERVICES SCOTLAND); Rachael.Dunk[redacted]; Emma Watson; goodfellow, melanie; HOOKER, Emma (NHS NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NHS National Services Scotland); IMRIE, Laura (NHS NATIONAL SERVICES SCOTLAND); LOCKHART, Michael (NHS NATIONAL SERVICES SCOTLAND); LONGSTAFF, Jenny (NHS NATIONAL SERVICES SCOTLAND); MCINTYRE, Jackie (NHS NATIONAL SERVICES SCOTLAND); Mediarelations (NHS NATIONAL SERVICES SCOTLAND); MULLINGS, Abigail (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); REILLY, Jacqui (NHS NATIONAL SERVICES SCOTLAND); Shepherd, Lesley ; SHEPHERD, Lesley (NHS NATIONAL SERVICES SCOTLAND); Syme, Margaret; THOULASS, Janine (NHS NATIONAL SERVICES SCOTLAND); UNZURRUNZAGA, Garazi (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Heather (NHS NATIONAL SERVICES SCOTLAND); WILSON, Julie (NHS NATIONAL SERVICES SCOTLAND)
Cc: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); Devine, Sandra; Dodd Susan (NHS GREATER GLASGOW & CLYDE); Pritchard Lynn (NHS GREATER GLASGOW & CLYDE); MCMENAMIN, Jim (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Lesley (NHS NATIONAL SERVICES SCOTLAND); Fiona.McQueen[redacted]
Subject: RE: HIIORT - NHSGGC - Wards 6A and 4C, QEUH

Slight amend below in red for clarification

Kind regards,
Lisa

From: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Sent: 03 January 2019 16:31
To: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND); KANE, Hayley (NHS NATIONAL SERVICES SCOTLAND); Birch, Jason (SGPU); BROWN, Claire (NHS NATIONAL SERVICES SCOTLAND); CAIRNS, Shona (NHS NATIONAL SERVICES SCOTLAND); BOSWELL, Catherine (NHS NATIONAL SERVICES SCOTLAND); CHRISTIE, Katie (NHS NATIONAL SERVICES SCOTLAND); Rachael.Dunk[redacted]; Emma Watson; goodfellow, melanie; HOOKER, Emma (NHS NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NHS National Services Scotland); IMRIE, Laura (NHS NATIONAL SERVICES SCOTLAND); LOCKHART, Michael (NHS NATIONAL SERVICES SCOTLAND); LONGSTAFF, Jenny (NHS NATIONAL SERVICES SCOTLAND); MCINTYRE, Jackie (NHS NATIONAL SERVICES SCOTLAND); Mediarelations (NHS NATIONAL SERVICES SCOTLAND); MULLINGS, Abigail (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); REILLY, Jacqui (NHS NATIONAL SERVICES SCOTLAND); Shepherd, Lesley ; SHEPHERD, Lesley (NHS NATIONAL SERVICES SCOTLAND); Syme, Margaret; THOULASS, Janine (NHS NATIONAL SERVICES SCOTLAND); UNZURRUNZAGA, Garazi (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Heather (NHS NATIONAL SERVICES SCOTLAND); WILSON, Julie (NHS NATIONAL SERVICES SCOTLAND)
Cc: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); Devine, Sandra; Dodd Susan (NHS GREATER GLASGOW & CLYDE); Pritchard Lynn (NHS GREATER GLASGOW & CLYDE); MCMENAMIN, Jim (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Lesley (NHS NATIONAL SERVICES SCOTLAND); Fiona.McQueen[redacted]
Subject: RE: HIIORT - NHSGGC - Wards 6A and 4C, QEUH

Dear colleagues,

NHS Greater Glasgow and Clyde have reported that this incident (two cases of Cryptococcus neoformans in the Haematology unit (Wards 6A and 4C), Queen Elizabeth University Hospital) has today been deescalated to **HIIAT Green.**

In Summary
Cases:

- No further clinical isolates/patients cases.
- Arrangements are now scheduled for Friday 3rd Jan and Monday 7th Jan 2019 for Dr Inkster and representatives from the clinical team to speak with the families of both case 1 and 2.

Investigations:

- Air sampling results remain in progress.
- The pigeon dropping samples were negative (possible sampling methodology used). All droppings now cleared away so cannot resample.
- The typing (MLST) results are awaited from the patient isolates (blood cultures) which have been sent to Bristol.
- The previously stated hypotheses remain.

Control measures:

- Additional bird proofing measures completed by GP Environmental Ltd.

Next steps:

- No further updates expected; unless the situation changes.

Teresa, Sandra, please advise of any errors or omissions in the above. Please also advise of press statements (holding or release) to SG and HPS Communications Teams.

Kind regards,
Lisa

Dr. Lisa Ritchie

NHS Improvement IPC Fellow
Nurse Consultant Infection Control

Infection Control Team / HAI Group
Health Protection Scotland

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Glasgow G2 6QE
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From: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Sent: 27 December 2018 16:17
To: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND); KANE, Hayley (NHS NATIONAL SERVICES SCOTLAND); Birch, Jason (SGPU); BROWN, Claire (NHS NATIONAL SERVICES SCOTLAND); CAIRNS, Shona (NHS NATIONAL SERVICES SCOTLAND); BOSWELL, Catherine (NHS NATIONAL SERVICES SCOTLAND); CHRISTIE, Katie (NHS NATIONAL SERVICES SCOTLAND); Rachael.Dunk[redacted]; Emma Watson; goodfellow, melanie; HOOKER, Emma (NHS NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NHS National Services Scotland); IMRIE, Laura (NHS NATIONAL SERVICES SCOTLAND); LOCKHART, Michael (NHS NATIONAL SERVICES SCOTLAND); LONGSTAFF, Jenny (NHS NATIONAL SERVICES SCOTLAND); MCINTYRE, Jackie (NHS NATIONAL SERVICES SCOTLAND); Mediarelations (NHS NATIONAL SERVICES SCOTLAND); MULLINGS, Abigail (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); REILLY, Jacqui (NHS NATIONAL SERVICES SCOTLAND); Shepherd, Lesley ; SHEPHERD, Lesley (NHS NATIONAL SERVICES SCOTLAND); Syme, Margaret; THOULASS, Janine (NHS NATIONAL SERVICES SCOTLAND); UNZURRUNZAGA, Garazi (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Heather (NHS NATIONAL SERVICES SCOTLAND); WILSON, Julie (NHS NATIONAL SERVICES SCOTLAND)
Cc: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); Devine, Sandra; Dodd Susan (NHS GREATER GLASGOW & CLYDE); Pritchard Lynn (NHS GREATER GLASGOW & CLYDE); MCMENAMIN, Jim (NHS NATIONAL SERVICES SCOTLAND); COUPER, Sarah (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Lesley (NHS NATIONAL SERVICES SCOTLAND); Fiona.McQueen[redacted]
Subject: RE: HIIORT - NHSGGC - Wards 6A and 4C, QEUH

Dear colleagues,

Please find attached update to the HIIORT from NHS Greater Glasgow and Clyde reporting two cases of Cryptococcus neoformans in the Haematology unit (Wards 6A and 4C), Queen Elizabeth University Hospital.

HIIAT deescalated to Amber

In Summary
Cases:

- Case 1 (adult [redacted] inpatient Ward 4C responding to antifungal treatment and is reported to be giving no clinical cause for concern.
- Case 2 [redacted]. Arrangements to hold discussions with the family are in progress.
- There are no further clinical isolates / patients cases.

Investigations:

- The provisional report from samples of bird faeces is negative; however, there may have been some issues with sampling.
- Air sampling results remain in progress.
- The previously stated hypotheses remain. It has also been noted that the carts/trolleys used to deliver supplies to ward areas may have been contaminated.

Control measures:

- All high risk patients to remain on prophylaxis until air sampling results received.
- GP Environmental Ltd carried out pest control and housekeeping inspection of multiple Plant rooms (Plant rooms: 31, 32, 33, 21, 22, 41 and 41A), QEUH. A 'deep clean' completed in response to recommendations made within their report.
- Additional bird proofing measures implemented by GP Environmental Ltd in areas identified within their report.

Next steps:

- Next IMT planned for Thursday 3rd January 2019; unless the situation changes before this date.
- Next expected update after the IMT on the 3rd Jan 2019.

Teresa, Sandra, please advise of any errors or omissions in the above. Please also advise of press statements (holding or release) to SG and HPS Communications Teams.

Dr Sarah Couper (cc'd) is the HPS on-call Consultant to the 30th Dec; Dr Janine Thoulass takes over on the 31st Dec 2018.

Kind regards,
Lisa

Dr. Lisa Ritchie
NHS Improvement IPC Fellow
Nurse Consultant Infection Control

Infection Control Team / HAI Group
Health Protection Scotland

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5 Cadogan Street
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T: [redacted]

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http://www.nipcm.hps.scot.nhs.uk

From: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Sent: 24 December 2018 12:27
To: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND); KANE, Hayley (NHS NATIONAL SERVICES SCOTLAND); Birch, Jason (SGPU); BROWN, Claire (NHS NATIONAL SERVICES SCOTLAND); CAIRNS, Shona (NHS NATIONAL SERVICES SCOTLAND); BOSWELL, Catherine (NHS NATIONAL SERVICES SCOTLAND); CHRISTIE, Katie (NHS NATIONAL SERVICES SCOTLAND); Rachael.Dunk[redacted] Emma Watson; goodfellow, melanie; HOOKER, Emma (NHS NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NHS National Services Scotland); IMRIE, Laura (NHS NATIONAL SERVICES SCOTLAND); LOCKHART, Michael (NHS NATIONAL SERVICES SCOTLAND); LONGSTAFF, Jenny (NHS NATIONAL SERVICES SCOTLAND); MCINTYRE, Jackie (NHS NATIONAL SERVICES SCOTLAND); Mediarelations (NHS NATIONAL SERVICES SCOTLAND); MULLINGS, Abigail (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); REILLY, Jacqui (NHS NATIONAL SERVICES SCOTLAND); Shepherd, Lesley ; SHEPHERD, Lesley (NHS NATIONAL SERVICES SCOTLAND); Syme, Margaret; THOULASS, Janine (NHS NATIONAL SERVICES SCOTLAND); UNZURRUNZAGA, Garazi (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Heather (NHS NATIONAL SERVICES SCOTLAND); WILSON, Julie (NHS NATIONAL SERVICES SCOTLAND)
Cc: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); Devine, Sandra; Dodd Susan (NHS GREATER GLASGOW & CLYDE); Pritchard Lynn (NHS GREATER GLASGOW & CLYDE); MCMENAMIN, Jim (NHS NATIONAL SERVICES SCOTLAND); COUPER, Sarah (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Lesley (NHS NATIONAL SERVICES

SCOTLAND); Fiona.[redacted]
Subject: RE: HIIORT - NHSGGC - Wards 6A and 4C, QEUH

Resending as a couple of email addresses failed.

Dear colleagues,

NHS GG&C have advised this morning that:

- There are no further clinical isolates/cases
- Work is ongoing with external contractors to decontaminate the areas contaminated with pigeon droppings
- All high risk patients remain on prophylaxis until this is decontamination is completed

Next expected update, following the IMT planned for Thursday 27th December 2018; unless the situation changes before this date (The HIIAT will be reassessed at this time).

Teresa, Sandra, please advise of any errors or omissions in the above. Please also advise of press statements (holding or release) to SG and HPS Communications Teams.

Dr Sarah Couper (cc'd) is the HPS on-call Consultant with Dr Lesley Wallace (also cc'd) on the 25th and 26th December 2018.
Scottish Government HAI policy unit on call contact is; CNO - Professor Fiona McQueen (also cc'd).

Kind regards,
Lisa

Dr. Lisa Ritchie
NHS Improvement IPC Fellow
Nurse Consultant Infection Control

Infection Control Team / HAI Group
Health Protection Scotland

NHS National Services Scotland
4th Floor Meridian Court
5 Cadogan Street
Glasgow G2 6QE
T: [redacted]

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From: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Sent: 21 December 2018 16:47
To: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND); KANE, Hayley (NHS NATIONAL SERVICES SCOTLAND); Birch, Jason (SGPU); BROWN, Claire (NHS NATIONAL SERVICES SCOTLAND); CAIRNS, Shona (NHS NATIONAL SERVICES SCOTLAND); BOSWELL, Catherine (NHS NATIONAL SERVICES SCOTLAND); CHRISTIE, Katie (NHS NATIONAL SERVICES SCOTLAND); Rachael.Dunk[redacted] Emma Watson; goodfellow, melanie; HOOKER, Emma (NHS NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NHS National Services Scotland); IMRIE, Laura (NHS NATIONAL SERVICES SCOTLAND); LOCKHART, Michael (NHS NATIONAL SERVICES SCOTLAND); LONGSTAFF, Jenny (NHS NATIONAL SERVICES SCOTLAND); MCINTYRE, Jackie (NHS NATIONAL SERVICES SCOTLAND); Mediarelations (NHS NATIONAL SERVICES SCOTLAND); MULLINGS, Abigail (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); REILLY, Jacqui (NHS NATIONAL SERVICES SCOTLAND); Shepherd, Lesley ; SHEPHERD, Lesley (NHS NATIONAL SERVICES SCOTLAND); Syme, Margaret; THOULASS, Janine (NHS NATIONAL SERVICES SCOTLAND); UNZURRUNZAGA, Garazi (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Heather (NHS NATIONAL SERVICES SCOTLAND); WILSON, Julie (NHS NATIONAL SERVICES SCOTLAND)

Cc: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); Devine, Sandra; Dodd Susan (NHS GREATER GLASGOW & CLYDE); Pritchard Lynn (NHS GREATER GLASGOW & CLYDE); MCMENAMIN, Jim (NHS NATIONAL SERVICES SCOTLAND)
Subject: RE: HIIORT - NHSGGC - Wards 6A and 4C, QEUH

Dear colleagues,

By way of update: Firstly to correct that the clinical areas where the two patient cases were confirmed are Wards 6A and 4C

Cases:

- There are no further clinical isolates / patients cases

Investigations remain ongoing:

- The results from active air sampling and settle plates in four roof Plant rooms has been undertaken where bird droppings have been found
- Swabs taken from pigeon drops have been sent to a specialist lab in Ayr for analysis , results available early next week

These four Plant rooms are being scheduled for environmental decontamination by an external, specialist company as soon as possible

- Occupational health are following up all staff members who work in the Plant rooms regarding any potential exposure risks e.g. were they wearing appropriate PPE when working in these areas.

Two hypotheses currently being considered:

1. Maintenance being carried out in the Plant rooms has disrupted pigeon droppings, disseminating fine dust, aerosols into the atmosphere and potentially into ventilation systems
2. Fine dust from dry pigeon droppings entering via insufficiently sealed window frames

Communications:

- Written information and discussion with parents in progress regarding the prescribing of antifungal prophylaxis

The HIIAT remains RED

Next update expected Monday 24th December 2018

Teresa, Sandra, please advise of any errors or omissions in the above. Please also advise of press statements (holding or release) to SG and HPS Communications Teams.

Dr Jim McMenamim (cc'd) is the HPS on-call Consultant this weekend.

Kind regards,
Lisa

Dr Lisa Ritchie
NHS Improvement IPC Fellow
Nurse Consultant Infection Control

Infection Control Team / HAI Group
Health Protection Scotland

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5 Cadogan Street
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T: [redacted]

Scotland's National Infection Prevention and Control Manual Website
http://www.nipcm.hps.scot.nhs.uk

From: RITCHIE, Lisa (NHS NATIONAL SERVICES SCOTLAND)
Sent: 21 December 2018 06:43
To: KANE, Hayley (NHS NATIONAL SERVICES SCOTLAND); Birch, Jason (SGPU); BROWN, Claire (NHS NATIONAL SERVICES SCOTLAND); CAIRNS, Shona (NHS NATIONAL SERVICES SCOTLAND); BOSWELL, Catherine (NHS NATIONAL SERVICES SCOTLAND); CHRISTIE, Katie (NHS NATIONAL SERVICES SCOTLAND); Rachael.Dunk[redacted]; Emma Watson; goodfellow, melanie; HOOKER, Emma (NHS NATIONAL SERVICES SCOTLAND); HPSInfectionControl (NHS National Services Scotland); IMRIE, Laura (NHS NATIONAL SERVICES SCOTLAND); LOCKHART, Michael (NHS NATIONAL SERVICES SCOTLAND); LONGSTAFF, Jenny (NHS NATIONAL SERVICES SCOTLAND); MCINTYRE, Jackie (NHS NATIONAL SERVICES SCOTLAND); Mediarelations (NHS NATIONAL SERVICES SCOTLAND); MULLINGS, Abigail (NHS NATIONAL SERVICES SCOTLAND); RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND); REILLY, Jacqui (NHS NATIONAL SERVICES SCOTLAND); Shepherd, Lesley ; SHEPHERD, Lesley (NHS NATIONAL SERVICES SCOTLAND); Syme, Margaret; THOULASS, Janine (NHS NATIONAL SERVICES SCOTLAND); UNZURRUNZAGA, Garazi (NHS NATIONAL SERVICES SCOTLAND); WALLACE, Heather (NHS NATIONAL SERVICES SCOTLAND); WILSON, Julie (NHS NATIONAL SERVICES SCOTLAND)
Cc: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); Devine, Sandra; Dodd Susan (NHS GREATER GLASGOW & CLYDE); Pritchard Lynn (NHS GREATER GLASGOW & CLYDE)
Subject: HIIORT - NHSGGC - Wards 2A and 4C, QEUH

Dear colleagues,

Please find attached HIIORT from NHS Greater Glasgow and Clyde reporting two cases of Cryptococcus neoformans in the Haematology unit (Wards 2A and 4C; two floors apart) at Queen Elizabeth University Hospital.

HIIAT Red

In Summary
Cryptococcus neoformans is an encapsulated yeast that can live in both humans and animals and is largely found in soil and pigeon excrement

Cases: Two clinical isolates within 17 days on the same hospital site. Both haematology patients (one adult and one paediatric)

- Case 1 (adult [redacted]) inpatient for past three weeks in Ward 4C. This patient has been commenced on antifungal treatment and is reported to be giving no clinical cause for concern.
- Case 2 [redacted] Admitted to Ward 2A on [redacted] August 2018; transferred to Ward 6A on [redacted] September 2018 due to facilities upgrade in Ward 2A. Patient subsequently transferred to paediatric intensive care unit (Ward 1D) on [redacted] November 2018. Blood cultures taken on [redacted] December confirmed positive for Cryptococcus neoformans. Sadly, this patient died ([redacted] December 2018). This case has been referred to the Procurator Fiscal. Post-mortem samples confirmed Cryptococcus neoformans in multiple body sites.

Investigations:

- A two year look back at blood culture data has been undertaken by consultant microbiologists – no HAI Cryptococcus neoformans identified.
- Review of drug preparation in the aseptic pharmacy (in progress/unlikely source as more cases would potentially have been identified).
- HPS Vet. Consultant contacted by NHS GG&C CPHM to establish incidence/epidemiology. Further epidemiology of cases to be reviewed by NHS GG&C HPT.
- Environmental review of PICU - initial findings:
  - Excessive volume of pigeon droppings noted outside of unit in enclosed external atriums - there is no access to this area for staff or patients. Reports of pigeon nesting in this area throughout the summer resulted in overhead nets and spikes being installed.
  - pigeon excrement also visible on overhead canopies at entrance way to the Royal Hospital for Children
- Environmental review of roof plant room – evidence of pigeon droppings. Microbiology in discussions with public health colleagues arranging analysis of pigeon droppings. Air sampling and settle plates in progress.

Control measures:

- All high risk patients to receive prophylaxis.
- Clinicians and microbiologists to consider Cryptococcus neoformans as part of differential diagnosis.
- Environmental decontamination of areas contaminated with pigeon droppings.
- Further anti-pigeon measures to be put in place.

Next steps:

- Next IMT planned for Thursday 27th December 2018; unless the situation changes before this date.
- Next expected update, today, 21st December 2018

Teresa, Sandra, please advise of any errors or omissions in the above. Please also advise of press statements (holding or release) to SG and HPS Communications Teams.

Kind regards,
Lisa

Dr Lisa Ritchie
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Scotland's National Infection Prevention and Control Manual Website
http://www.nipcm.hps.scot.nhs.uk

Mandatory - Healthcare Infection, Incident and Outbreak Reporting Template (HIIORT)

Complete within 24 hours for all HIIAT Red and Amber;
for HIIAT Green complete only if HPS Support requested.

Section 1 :Contact Details	
NHS Board/Care organisation	NHS Greater Glasgow and Clyde
Date and time of reporting	20.12.18
Person Reporting and designation	Dr T Inkster Lead Infection Control Doctor Sandra Devine Associate Director of Nursing IPC Lynn Pritchard LNIPC Susie Dodd LNIPC
Telephone number and email	Sandra.devine2@[redacted]
Section 2: Infection Incident/outbreak Details	
Care facility/hospital	Queen Elizabeth University Hospital
Clinical area/ward and speciality	Haematology
Total number of beds	N/A
Total number of beds occupied	N/A
Section 3: Initial assessment	
Type: Incident/outbreak/ data exceedance e.g. Gastrointestinal, decontamination failure	Two cases of Cryptococcus neoformans in the past week. Considered an exceptional infection
Infectious agent known or suspected	Cryptococcus neoformans

Case definition	Any patient diagnosed for clinical samples with Cryptococcus neoformans

Date of first case (if applicable)	24.11.18		
Total number of confirmed patient cases 2	Total number of probable patient cases 0	Total number of possible patient cases: 0	Total number of staff cases: 0

Number of patients giving clinical cause for concern as a consequence of this incident/outbreak	none
Number of deaths as a consequence of this incident/outbreak	1
Was the infectious agent cited as a cause of death on a **death certificate* (**if yes, state which part of the certificate**)**	Final death certificate not available as yet referred to PF

Additional information:

Cryptococcus neoformans is an encapsulated yeast that can live in both humans and animals and is largely found in soil and pigeon excrement

Summary

2 clinical isolates within 17 days on the same hospital site. Both were haematology patients – one adult and one paediatric. Summary of the two cases is as follows:

[redacted] year old [redacted] who was admitted to Ward 2A of the Royal Hospital for Children (RHC) on [redacted] August 2018. The patient was too unwell to mobiulise out of his room or anywhere in the hospital. Ward 2A was decanted to ward 6A, Queen Elizabeth University Hospital (QEUH) on 28th September 2018 to allow for upgrade works to take place. The patient was transferred to paediatric intensive care unit (ward 1D) on [redacted]/11/18. [redacted] tested positive for Cryptococcus neoformans from blood cultures obtained on [redacted] December. The patient sadly died the same day and is currently undergoing post mortem. Post mortem samples reveal Cryptococcus neoformans from multiple sites

The adult case in still in hospital and is neutropenic. Diagnosis is T cell lymphoma and neutropenia. [redacted] is currently on treatment. The infection is not thought to be significantly contributing to [redacted] condition at this time.

Control Measures

Review of cases (PAG) on the 18.12.18 and immediate actions as follows:

- Review of drugs given to patients by the aseptic pharmacy (in progress).
- Review of PICU to review possible contamination with pigeon excrement on window ledges etc. Findings – excessive volumes of pigeon droppings have been noted outside of PICU in enclosed external atriums. There is no window or door access to the external atrium for staff or patients. Pigeons have been reported to be nesting on the sills of the external atrium throughout the summer months and as a result nets were placed overhead and spikes applied to window sills. The extensive pigeon excrement is no longer visible although some pigeon droppings do remain on the external windows and sills. The same was also visualised on overhead canopies at entrance way to the Royal Hospital for Children.
- Review of plant room on the roof of the adult hospital – evidence of pigeon droppings and feathers in the plant room. Microbiology will sample droppings from this areas and also the air with settle plates and active air sampling After this estates will decontaminate the areas as per instructions from the IMT.
- Samples of faeces will be sent for further analysis – Bristol
- Air sampling of ward areas will take place

IMT convened on the 21.12.18 actions from this;

- All high risk patients will receive prophylaxis.
- Establish if both patients received drugs from the aseptic pharmacy
- Place spikes on all areas where birds might nest in both buildings
- Review plant room daily and put measures in place to prevent further access to the areas by birds. Investigate for access points
- Vet Consultant at HPS has been contacted by Consultant Public Health Medicine to establish incidence/epidemiology.
- Epidemiology of cases will be reviewed by CPHM
- Bristol mycology – typing not routinely available but they will attempt sequencing. Advice sought re epidemiology – they have not seen hospital acquired cases before, usually sporadic community cases
- Ongoing surveillance – clinicians and microbiologists will consider as part of differential diagnosis and send serum antigen and blood cultures.

Lab contamination has been ruled out

Section 4: Healthcare Infection Incident Assessment Tool (HIIAT) (link to tool)		
Severity of illness	Minor/Moderate/Major	Major
Impact on services	Minor/Moderate/Major	Minor
Risk of transmission	Minor/Moderate/Major	Moderate
Public anxiety	Minor/Moderate/Major	Major (among this group of patients)
HIIAT Assessment	Red Amber Green	RED
Section 5: Organisational Arrangements		
PAG/IMT meeting held	Both Y /Y	Date: 18.12.18 & 20.12.18 Chair: Dr Inkster
Next planned IMT	Yes (sooner if is another case)	Date:27.12.18
Press statement (send with HIIORT or provide date for receipt)	Holding, Release Date:20.12.18	
HPS support requested	Y Vet consultant	Date..20.12.18
Other information: e.g. decisions from IMT		

Complete this update section weekly as a minimum if red or amber or as agreed with IMT and HPS for onward reporting to SGHSCD.

Section 6: Update						
On this date:	27.12.18	7.1.19	9.1.18	17.1.19	18.1.19	22.1.19
Cumulative total of confirmed patient cases	2	2	2	2	2	2
Cumulative total of probable patient cases	0	0	0	0	0	0
Cumulative total of possible patient cases	0	0	0	0	0	0
Cumulative total of staff cases	0	0	0	0	0	0
Total number of symptomatic patients today	1	0	0	0	0	0
Number of patients giving cause for concern	0	0	0	0	0	0
Total number of deaths as a consequence of the incident since last HIIORT report	1	1	1	1	1	1
Is the ward/services closed	no	No	No	No	No	No
Is a service restricted	no	No	No	Yes	Yes	Yes
HIIAT assessment	AMBER	Green	GREEN	GREEN	AMBER	

Organisation update certification information)	*Comments (including changes to any control measures, case definition or death)*
Date:	IMT 27.12.18 – Actions and Update Update Adult patient responding to treatment. No new cases. Actions update: • GP Environmental Ltd carried out Pest Control and Housekeeping Inspection of Various Plant rooms (31, 32, 33, 21, 22, 41 and 41A at QEUH, Glasgow. Deep clean completed in response to recommendations within the report. • Additional bird proofing implemented in an area identified within their report “Pigeons had gained access through what appears to be weather damaged cladding and have been using the pipes and high beams as a roosting point. The roosting areas were mainly at the roof access point below the large roof overhang”. • Unable to speak to family of the paediatric patient at this time. To be arranged as soon as possible. • Provisional report from samples of bird faeces is negative, however, there may have been some issues with sampling. • Air sampling results are not available yet.

	• Plant room D (1, 2, 3) pigeons in situ now removed. • Public health epidemiology confirms and general increase in cases although numbers are very low. 5 cases since June 2018. Update from HPS Consultant Vet still awaited. • Typing by Bristol lab still awaited. • All high risk patients will continue to receive prophylaxis. Additional agreed actions: • Plant rooms will now be inspected every two weeks for evidence of pest, infestations. • Water tanks reviewed and they are covered so unlikely to be a source. • Estates will check window seals for any obvious gaps. • Public health to update HPS Consultant Vet re findings of epidemiology. • Occupational health will consider any issues for staff who would normally work in the plant room in respect of PPE. • Confirmed that specialist contractors wear appropriate PPE. • Estates will plan for cleaning of window ledges in PICU. • Continue to review epidemiology. • Estates to look at removing vegetation from level 4 QEUH rooftop and place spikes on patients windows • Review carts taking patient supplies to ward to ensure clean
Date: 7th January 2019	HIIAT remains Green. No new suspected cases. Adult patient discharged home for palliative care and has subsequently died since the meeting took place. Cryptococcus is not associated with [redacted] death. IMT held to update clinicians with available air sampling results. Fungal counts identified in plant room 12 including Cryptococcus. Isolate being sent to Bristol to confirm species and compare with patient isolates. Fungal growth on plates from wards 6A and 4C (these are not hepa filtered wards). Plates left to incubate for longer than specified which may account for some overgrowth. Air sampling being repeated. Prophylaxis continues in adults without any issues. Paediatric prophylaxis has been challenging – paediatrics do not tolerate long term prophylaxis and there have been 2 episodes of anaphylaxis. Actions from the meeting; • Repeat air sampling as well as await results still outstanding from initial sampling. • Plant rooms will be inspected every two weeks for evidence of pest infestations • Estates to Clean window ledges visible from PICU • Report awaited from GP environmental detailing options for reducing pigeon infestations in and around the QEUH site • Review of portable filter options for use in ward 6A • Await feedback from HPS re. national picture relating to Cryptococcus

	cases amongst humans
Date:8 January 2019	Adult patient sadly passed away. Not recorded on either part of patients death certificate so not considered either a cause or contributor to the patients death.
Date:9 January 2019	Confirmed that samples from the wards grew Cryptococcus. Significant concern among clinical staff. Agreed to resample and install portable hepa filter units into all rooms, adjacencies and corridors. Re- sample pre and post installation. No new cases. NB this was written retrospectively and in error. The plates were unable to be assessed with any degree of reliability as they had been left to incubate longer than normal. Cryptococcus was not identified in ward samples until the 16th January S Devine.
Date: 16 January 2019	IMT Results from air sampling from 9/1/10 now available. This was before portable HEPA filters were in place but after the plant rooms had been decontaminated. Cryptococcus has been isolated, however it was a different type from the one isolated from the patients. After discussion with expert from Bristol it was proposed that the most likely source is a breach of the ventilation system and that GGC should consider HPV cleaning of the system. Cryptococcus was not found in samples from PICU. In the absence of post filter insertion sampling ICD was asked if there were any other indicators that could be used to reassure clinical staff that filters were working. Lead ICD agreed to carry out repeat air sampling and particulate counts on the evening of 16th January. Actions Obtain additional units for the 6A corridor and deploy additional units to complete coverage in corridor of 6A and ward 4C inpatient rooms. Ascertain risk in adult renal unit and requirement for hepa filter units in 4C/additional prophylaxis. PM Particulate sampling results although lower than previously reported remained higher than expected. LICD conducted through examination of the built environment and identified areas of mould/damp in some joins in the shower rooms e.g. skirting board joins. The hypothesis is that this could account for the higher than expected particulate count although it should also be noted that these room and not occupied solely by the patient but at least one parent. These rooms also have toys, parents possessions etc so not a typical clinical environment.
Date:17 January 2019	IMT to discuss results and actions from particulate counts and findings from the review of the environment. HIIAT GREEN?? Actions/Summary: • Lead Infection Control Doctor has contact Public Health England to ascertain if this problem has occurred in other hospitals and if so what action was taken to resolve it. Advice from a National Expert is that over time the system will through dilution clear itself. As an additional control measure Estates have contacted a specialist contractor to assess the feasibility of decontamination of the system using hydrogen peroxide vapour. In addition the system will be assessed to establish if there is any other source of contamination. • Portable Hepafilter units have been deployed to ward 6a with additional units being delivered into the adult general haematology ward today. • All high risk patients are receiving antifungal prophylaxis.

	• Air sampling has confirmed that wards in the 7th floor have Cryptococcus in samples, however, patients in this area are at extremely low risk of developing this type of infection • Very high risk patients will be relocated to the adult bone marrow transplant unit as an additional precaution until estates issues have been rectified. • Facilities have engaged contractors to check with thermal imaging on the windows within the wards to see if there are any possible leaks. • SCRIBs will be completed 18/1/19 to enable estates colleagues to commence work to rectify issue in showers over the next couple of days. Next IMT 18/1/19 at 3pm.
18th January 2018	HIIAT assessed as AMBER Severity of illness - minor Impact on services- moderate Risk of transmission - moderate Public anxiety - moderate Summary No new cases have been identified. All at risk groups remain on profalaxis. Actions • Air sampling complete as requested at IMT 17/01/19. • Hepa filters in all key areas with more being delivered tomorrow for renal transplant areas. • HAI SCRIBE complete for works which will progress over weekend. • Teleconference with Peter Hoffman and microbiology – results of which will be communicated at next IMT. • High risk patients moved to adult BMTU. • Other patients on ward risk assessed to ensure highest risk are in rooms with no issued with showers. • **Proactive press statement to be released – we will forward on as soon as this is available**. • Comms prepared for patient and parents. Members of IPCT and SMT Women's and Children's continue to make themselves available to address specific concerns of patients, parents and staff. • No report on thermal imaging action re windows. • Review of filtration within ventilation system is ongoing with estates colleagues.

21st January 2018	**HIIAT AMBER** Severity of illness - minor Impact on services- moderate Risk of transmission - moderate Public anxiety - moderate **<u>Situation Update</u>** No new cases. Water ingress in shower areas was more significant than thought (6A). There was visible mould evident when flooring was lifted and as a consequence all patients were risk assessed and four patients were moved to PPVL rooms in Clinical Decisions Unit in RHC. The rest of the patients (4) were relocated to the beginning of the ward were the showers appeared to be in the best condition. A operational group will meet this afternoon to consider options in terms of relocating patients in RHC. HSE have indicated this morning that they will make visit to the site on Thursday 24th January. **RHC Air sampling** Air sampling done in RHC (PICU, Renal Unit) all negative. 6a & 4c 4c results not available as yet. Ward 6A results show a single colony of yeast in one bedroom and some in a corridor but several rooms are negative for Cryptococcus. Full fungal cultures will be available mid week. **Update on Actions** **New:** Communication via other forms of social media will be put in place today to reach the wider population of NHSGGC. All families who are inpatients or who are due to come in have been spoken to by clinical staff – this has been ongoing. They also received hard copy information on Friday18th. Further communication to parents by member of NHS Board to be considered. Draft letter to be developed by directorate and issued. Nursing staff in both 6a and 4c have raised concerns and have been spoken to. Review showers in 4c and rectify any issues noted. Haematology consultants (paeds) briefed today. Continue with air sampling on site twice weekly. **Update**: Work is ongoing to repair shower rooms. 8 should be repaired by Wednesday. Directorate review of options to move patients from adult back to children's hospital.

	Thermal work on windows complete. Some minor issues identified but no major concerns noted. NB Please note update from 9th January Next IMT tomorrow 22/01/19 location and time to be confirmed.
22/01/18	**HIIAT AMBER** Severity of illness - minor Impact on services- moderate Risk of transmission - moderate Public anxiety - moderate **Update** All patients from 6a now in CDU. BMT patients remain in ward 4b No new cases. Plan in place for new admissions. **Review of Actions/New Actions** • Work still ongoing in rooms used by low risk patient, one room with some issues in shower will be used as an OPD room for low risk patients. • On target to complete works on at least 6 rooms by 23/01/19. A further 8 rooms should be complete by next week at the earliest. Air testing will take place once the rooms are all complete, they have had a HPV clean and before HEPA filters are put back in place. Once this is complete the rooms will be tested with the HEPA filters in place. • Some repair work also scheduled for ward 4c. • Letter for patients/parents will be approved by CEO and will be issued to all in-patients and out patients. • Core briefs have been issued to staff to update them on the situation. Going forward social media will be used to also send this message out.
24 January 2019	**HIIAT RED** Severity of illness - minor Impact on services- moderate Risk of transmission - minor Public anxiety - major **No new cases** **Additional Hypothesis** In radiology there is a door which smoke testing has confirmed in not sealed when closed. Outside this door is a courtyard and within this area there is a heat exchanger. Bird dropping were evident in this area and the hypothesis is that the heat exchanger may be causing spore dispersion close to an air inlet.

	Update • Haematology/Oncology now located in CDU. Day cases on first floor. • 6A scribes complete. Repairs and HPV cleaning should be complete by Monday 28.01.19. Air sampling will commence after this has been completed – probably Wednesday 30.01.19. Sampling will be done pre and post HEPA filter placement. • Ongoing investigations in plant room. • Courtyard near radiology being reviewed. • Letter to patients/parents developed. Both in patient and outpatients will be issued with same. • Supplies boxes reviewed – procurement confirm no problem in Hillington with pigeons. • Roof top garden assessed (QEUH) no signs of nesting. Will need to be assessed to develop solutions to remove garden material. Pest control in attendance. Guidance will be sought re mid term solutions. • Twice weekly air sampling in level 7 (QEUH) as a control.
25/01/19	IMT HIIAT assessed as AMBER Severity of illness - minor Impact on services- moderate Risk of transmission - minor Public anxiety - moderate No new cases **Update** Shower repairs and cleaning of chilled beams (6a) will be complete by Monday, Air sampling will commence on Wednesday. Action • Review of types of filters to be added to ventilation system to prevent ingress of Cryptococcus. • Haematology/oncology paediatrics patients now in CDU. BMT patients in ward 4b adult BMTU. • Vet lab Ayrshire – results, crypto albidus in bird faeces these will now be sent to Bristol. • Air sampling – results not available as yet. • Peter Hoffman has asked for some information re ventilation, the answers are currently being developed. • Review of helipad. Downdraft airflow and patient transport equipment. • 6a will be reviewed by LICD and LIPCN on Monday after repairs are complete. Next meeting 29TH January

28 January	**IMT** HIIAT assessed as RED due to public anxiety Severity of illness - Minor Impact on services- Moderate Risk of transmission - Minor Public anxiety - Major Update • Vet lab Ayrshire – results, crypto albidus in bird faeces these will now be sent to Bristol – post meeting – these samples were discarded. New samples will be obtained. • One patient transferred to Edinburgh (new patient). One [redacted] yr currently in Beatson Oncology Centre but plans to transfer are ongoing, one other patient receiving treatment in Edinburgh. • 13 patients in CDU. • Letter issued to all inpatient parents – no issues raised. Letters being sent to outpatient cohort. • Adult BMT (4B) three patients remain on ward. • 2a functioning as acute admission – no issues identified in haematology/oncology in this area – **only in extremis** and four BMT rooms would be used. • Micro – air sampling - Level 7(indicator ward) most recent results all negative therefore may be able to lift some control measures. Lead ICD to review • Work on 6a should be complete today. • Additional HEPA filters purchased. • Hepa filters will be left in wards 6A and 4C long term,pending works to upgrade them. Maintenance programme to be put in place. **Hypothesis Update** Visit to helipad – obvious birds and faeces. Trolleys will have bird faeces on wheels cannot be transferred onto new trolleys as they are trauma patients. Other centres with helipad being contacted re what they have put in place to address this. Not likely to affect haematology patients as not admitted via this route **New Actions** • After discussion recommendation is that HEPA filters remain in situ in high risk areas • SLWG to further develop hypotheses , and explore further future preventative methods we can put in place . **Communications** • Letter issued to all inpatient parents – no issues raised. Letters being sent to outpatient cohort. • Families will be advised that they can contact GGC comms if reporters appear at their home. Formal communication with numbers etc will be developed. • W & C senior management team have briefed clinical directors for each specialty or their equivalent regarding incident. This will be followed up with some formal written communication. • Family of adult family has asked for additional information this will be actioned by clinical team and LICD. Next IMT 30 January 2019

30 January 2018	**IMT** HIIAT assessed as RED due to public anxiety Severity of illness - Minor Impact on services- Moderate Risk of transmission - Minor Public anxiety - Major Update • New bird faeces samples have been obtained and further samples to be obtained from the helipad and these will now be tested. • Adult BMT (4B) 4 paediatric patients remain on ward. • Micro – air sampling - PICU – initial air samples obtained on 21st December 2018 showed no growth of Cryptococcus however the chair of the IMT has now been informed that that further sample taken on this date have grown cryptococcus albicus. Discussion with expert in Bristol suggests that the counts of Cryptococcus in the air may have now reduced due to natural dispersion. • Work on Ward 6a is now complete and HPV cleaning has been undertaken prior to air sampling and heap filters being installed • Additional HEPA filters purchased. • Prophylaxis and heap filters remain in place for all high risk patients. **Hypothesis Update** Due to updated air sampling results from PICU the hypothesis generated at the last IMT has now changed. PICU is served by Plant Room 41 on Level 4 and this area was previously inspected and found to be contaminated with pigeon faeces but no sign of infestation. A separate subgroup will now be convened to review all possible hypotheses. Air sampling of plant room 41 will take place **New Actions** • Jamie Redfern will review all patients who was admitted to the PICU via the helipad in December. • Guidelines for hepafilter changes is being developed. • Dr T Inkster has requested a review of all samples related to the incident. • SLWG to further develop hypotheses , and explore further future preventative methods we can put in place. • Facilities to review down drafts created by helicopter landings and any potential dispersal of pigeon faeces. . **Communications** • Dr T Inkster will speak to the family of the adult patient who have requested update of all development. • Facebook page to be set up by comms dept with 2 members of Paediatric SMT as administrators to allow parents to raise any concerns and GGC the opportunity to respond. • Letters being sent to outpatient cohort. • Media enquiry from BBC regarding the cause of death of the adult patient and a response has been prepared. Next IMT to be agreed.

4 February 19	**IMT** HIIAT assessed as AMBER Severity of illness – minor Impact on services- moderate Risk of transmission - minor Public anxiety - moderate **Update** • SLWG will meet this week for the first time. • One case with a positive Aspergillus PCR but normal CT scan – to be reviewed by lead ICD • Air sampling of ward 6a is still outstanding but the plates are negative so far (final results should be available this week). • Plant room samples associated with PICU not available. • Other samples from RHC not available as yet. • Filters arrived and now in place • Pigeon faeces samples sent to Ayrshire lab. • Maintenance guidance for HEPA filters sent to group. This will be put into place. • TAC mats for trolleys in helipad– samples being sent to facilities colleagues for review. **New Actions** • Filters are being sources that will improve filtration associated with general ventilation. **Communications** • Board supported facebook page is being set up to support parents of this patient group**.** • Letters to parents will be sent to LICD. LICD will forward to HPS/SGHD as requested when received. • NSD will be updated re press releases as requested. • Public Health Protection Unit have developed information for the general public. This will be sent to LICD for comment. • Occupational health update for staff to be sent out. Next IMT Friday 8th 12md.
8 February 19	**HIIAT AMBER** Severity of illness - minor Impact on services- moderate Risk of transmission - minor Public anxiety - moderate **Update** • Air sampling ward 6a (QEUH). Results are that most room are free of fungal spores. Minimal positive samples with Penicillium which is not significant. Particulate counts are also much improved. • IMT decision is that we can now move patients back into the ward. BMT patient will continue to be looked after in ward 4B (Adult BMT). • Tac mats ordered for helipad. • Interim report from Ayr lab – yeast but final results are not available. **New Actions** • LN IPCT will check ward and feedback to estates/facilities any final issues before children move back. • HEPA filters will remain on 6A long term. • Prophylaxis guideline will be developed for paediatric haem-oncology with micro and ID consultant and pharacy. • LICD will initiate fortnightly air sampling in 6a.

	• Maintenance programme will be put in place for HEPA filters. These are cleaned between patients with actichlor. • Draft water damage policy has been prepared but is still to be ratified. Possibility for named estates colleague allocated to each high risk area is being explored. • Vent cleaning frequency being increased to three monthly. **Communications** • Face book page in development, should be available soon. • Occupational advice to go out to staff as soon as possible. • W & C senior management team will develop a briefing with communications to give to parents regarding the move back. LICD, consultants and SMT W & C will be available if anyone has any questions or concerns.
15 February 19	HIIAT GREEN Children have moved back to ward 6A and we have had no new cases of Cryptococcus. The expert advisory group met for the first time on the 14 February 19 and minutes will be shared with the IMT once available. No further meetings planned.

Section 6: Update						
On this date:	24.01.19	25.01.19	28.01.19	30.01.19	04.02.19	08.02.19
Cumulative total of confirmed patient cases	2	2	2	2	2	2
Cumulative total of probable patient cases	0	0	0	0	0	0
Cumulative total of possible patient cases	0	0	0	0	0	0
Cumulative total of staff cases	0	0	0	0	0	0
Total number of symptomatic patients today	0	0	0	0	0	0
Number of patients giving cause for concern	0	0	0	0	0	0
Total number of deaths as a consequence of the incident since last HIIORT report	0	0	0	0	0	0
Is the ward/services closed	No	No	No	No	No	No
Is a service restricted	No	No	No	No	N0	No
HIIAT assessment	RED	AMBER	RED	RED	AMBER	AMBER

ONCE COMPLETED, EMAIL TO: NSS.HPSInfectionControl [redacted]

Health Protection Scotland

NHS National Services Scotland

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 NHSScotland

Date: 20/12/18

Status: Final v2

Contents

Executive summary

NHS Greater Glasgow and Clyde (NHSGGC) are currently investigating and managing a contaminated water system across the Queen Elizabeth University Hospital (QEUH) and Royal Hospital for Children (RHC) with probable linked cases of bloodstream infections associated with wards 2A/2B RHC.

Wards 2A/2B RHC is a haemato-oncology unit, also known as Schiehallion, and houses the National Bone Marrow Transplant Unit. In 2016 a patient within ward 2A RHC was identified as having a blood stream infection (BSI) as a result of *Cupriavidus pauculus*. NHSGGC investigations included water samples from outlets within the aseptic suite of the pharmacy department where the parenteral nutrition received by the child was prepared. *Cupriavidus pauculus* was isolated from water samples taken from a tap on a wash hand basin within this area. The wash hand basin was subsequently removed as a result. A further single case of *Cupriavidus pauculus* was identified in September 2017 however no environmental or water sampling was undertaken at this time.

Between the period of 29th January and 26th September 2018, 23 cases of blood stream infections (11 different organisms) with organisms potentially linked to water contamination were identified. As a result further testing of the water supply was undertaken across both hospital sites early in the investigation. This testing identified widespread contamination of the water system. Control measures implemented included sanitisation of the water supply to ward 2A, installation of the use of point of use filters in wash hand basins and showers in ward 2A/B and other areas where patients were considered high risk. Drain decontamination was undertaken and on 26th September 2018 wards 2A/B were closed and patients decanted to ward 6A QEUH and 4B QEUH. There have been no new linked cases identified since the decant of the patients.

NHSGGC requested support from Health Protection Scotland (HPS) with this incident on 16th March 2018 and Scottish Government invoked the national support framework on 20th March 2018 which requires HPS to lead an investigation and provide board support. This report is a summary of the findings from this ongoing investigation for the period of 29th January 2018 – 26th September 2018. Further technical work is being undertaken for NHSGGC by Health Facilities Scotland (HFS).

Background

Health Protection Scotland

HPS plan and deliver effective and specialist national services which co-ordinate, strengthen and support activities aimed at protecting the people of Scotland from infectious and environmental hazards.

They do this by providing advice, support and information to health professionals, national and local government, the general public and a number of other bodies that play a part in protecting health.

HPS is a division of NHS National Services Scotland which works at the very heart of the health service across Scotland, delivering services critical to frontline patient care and supporting the efficient and effective operation of NHS Scotland. The specialist group involved in supporting NHSGGC in this investigation is the antimicrobial resistance and healthcare associated infection (ARHAI) group. The lead from HPS in this investigation and author of this report is a Consultant Nurse in Infection Prevention and Control with a specialist qualification in water and ventilation and is also the national HAI built environment and decontamination lead. HPS have been supporting NHSGGC with this incident since 16th March 2018. This report has been produced with full support from colleagues across NSS.

National Support Framework

The National Support Framework[1] is a structure that sets out the roles and responsibilities of organisations in the event that a healthcare infection outbreak/incident, is deemed to require additional expert support. The National Support Framework may be invoked by the Scottish Government HAI/AMR Policy Unit or by the NHS Board to optimise patient safety during or following any healthcare incident/outbreak(s)/data exceedance or Healthcare Environment Inspectorate (HEI) visit/report. Scottish Government invoked the national support framework[1] on 20th March 2018

NHS Greater Glasgow and Clyde

NHSGGC is the largest health board in Scotland serving a population of approximately 1.2 million people and employ circa 38,000 staff. The main hospital sites covered by this NHS Board are:

- Inverclyde hospitals campus
- Royal Alexandra campus
- Gartnavel campus
- West Glasgow ambulatory care Campus
- Glasgow Royal Campus
- New Victoria Hospital
- Stobhill campus
- Vale of Leven
- Queen Elizabeth University Hospitals Campus

Queen Elizabeth University Hospital (QEUH)/Royal Hospital for Children (RHC)

NHS Greater Glasgow and Clyde's (NHSGGC) Queen Elizabeth University hospital (QEUH) is a 1109 bedded hospital with 100% ensuite single side room. Construction commenced on the £842 million hospital in 2011 which was handed over to the Board on 26th January 2015 with patient migration commencing from 24th April 2015 until 7th June 2015. The adjoining Royal Hospital for Children (RHC) is a 256 bedded childrens hospital which was handed over to the Board on 26th January 2015 with migration of patients occurring between 10th and 14th June 2015. The QEUH and RHC were both fully occupied from 15th June 2015. There are a number of additional healthcare facilities in the surrounding grounds including the maternity unit, neurosurgical unit, elderly care unit and the national spinal injuries unit. The QEUH/RHC is Scotland's largest hospital and replaced a number of existing hospitals from the NHSGGC area including:

- Southern General Hospital
- Victoria Infirmary
- Mansionhouse Unit
- Western Infirmary
- Royal Hospital for Sick Children (Yorkhill)

Introduction

NHS Greater Glasgow and Clyde (NHSGGC) are currently investigating and managing a contaminated water system across the Queen Elizabeth University Hospital (QEUH) and Royal Hospital for Children (RHC) with 23 probable linked cases of bloodstream infections associated with wards 2A /2B RHC. NHSGGC requested support from HPS with this incident on 16th March 2018 and Scottish Government invoked the national support framework[1] on 20th March 2018 which requires HPS to lead an investigation and provide NHS board support. It is recognised that this investigation and remedial action is still underway and may be ongoing for a considerable period, therefore this report is a summary of the findings from this investigation and includes cases and findings for the period 29th January – 26th September 2018.

An initial report was produced by HPS and submitted to Scottish Government (SG) and NHSGGC on 31st May 2018. Due to the ongoing and complex nature of this incident and investigation a further report was requested. This report is a summary overview of this investigation however due to the large volume of data and complexities associated with this incident further technical work is being undertaken by HFS. HPS worked with the support of HFS as the technical engineering experts to support this investigation and report production. In addition the HAI Policy Unit Scottish Government (HAIPU) has requested a separate detailed review of wards 2A/B to be undertaken. This is currently underway and will form a separate report for HAIPU and NHSGGC.

Summary of clinical cases associated with this incident

Case definition

The case definition in place since January 2018 is:

"*any child linked to wards 2A/B RHC with a blood stream infection (BSI) caused by a gram negative bacillus that had been identified from organisms identified within the water system"*

Ward 2A RHC is a haemato-oncology unit, also known as Schiehallion, and houses the National Bone Marrow Transplant Unit and teenage cancer trust. Ward 2B is the day care component of ward 2A. In total there have been 23 cases identified during the period 29th January and 26th September 2018.

2016-2017

In February 2016 a patient within ward 2A RHC was identified as having a bloodstream infection (BSI) as a result of *Cupriavidus pauculus*. NHSGGC investigations included water samples from outlets within the aseptic suite of the pharmacy department where the parenteral nutrition was made that the child had received. *Cupriavidus pauculus* was isolated from water samples taken from a tap on a wash hand basin within this area. Typing by Colindale reference laboratory confirmed the isolate from the washhand basin and the patient were the same. The wash hand basin was subsequently removed as a result. A further single case of *Cupriavidus pauculus* was identified in September 2017. NHSGGC reported that a second hand hygiene sink was found to be positive but following assessment was unable to be removed. Silver hydrogen peroxide treatment was undertaken and repeat testing resulted in zero total viable counts from this outlet.

2018

On 29th January 2018 *Cupriavidus pauculus* was again identified from a bloodstream infection (BSI) in a patient in ward 2A. Following identification of this case a series of investigations were undertaken including water sampling from outlets within the ward area. On 21st February *Pseudomonas fluorescens* was identified from a BSI and between 11th and 16th March 2018, 3 cases of *Stenotrophomonas maltophilia* were identified from patients in ward 2A. On 7th April a further case of *Stenotrophomonas maltophilia* was identified. *Cupriavidas*, *pseudomonas* and *stenotrophomonas* (amongst other gram negative bacillus and fungi) were identified from water samples obtained within wards 2A/B and therefore all cases considered to be linked to the water system. No further cases were reported until April, when between April and June, a further 10 cases were reported: 5 *Enterobacter cloacae*, 3 mixed gram negative bacilli, 2 S*tenotrophomonas maltophilia*. This cluster of mixed organisms, which were present from drain samples prompted the investigation in to the drains within ward 2A/B. Following drain sanitisation and environmental decontamination using hydrogen peroxide vapour, no further cases were reported until 2nd August and between the period 2nd August and 20th September 6 further cases were identified: 1 *Chryseomonas indologenes/Stenotrophomonas maltophilia*, 1 *Serratia marsescens*, 1 *Klebsiella oxytoca*, 2 S*tenotrophomonas maltophilia,* 1 *Enterobacter cloacae.* This latest cluster resulted in immediate further drain decontamination and a temporary decant facility for wards 2A/B being identified, with the patients transferred to wards 6A and 4B on 26th September to allow for investigative and remedial works to be undertaken in wards 2A/B.

In total there have been 23 patient cases identified. A number of patients have multiple organisms so the organism total is greater than the case number.

The organisms linked to cases include:

- *Cupriavidus pauculus* (1)
- *Pseudomonas fluorescens (1)*
- *Pseudomonas aeruginosa* (3)
- *Stenotrophomonas maltophilia* (12)
- *Acinetobacter ursingii* (2)
- *Enterobacter cloacae* (7)
- *Klebsiella oxytoca* (1)
- *Serratia marcescens* (1)
- *Pseudomonas putida* (1)
- *Pantoea sp* (1)
- *Klebsiella pneumonia* (1)
- *Chryseomonas indologenes*(1)

In addition to the organisms detailed above there is evidence of fungal growth in the water system however there have been no associated clinical cases reported.

A timeline of cases is detailed in Appendix 1. This incident has resulted in a number of children requiring additional intervention and some delays in chemotherapy treatment, however, there has been no associated mortality. There have been no associated cases since the temporary closure of wards 2A/B and the decant of the patients to ward 6A QEUH on 26th September 2018.

The clinical component of this incident is considered as occurring within two phases:

- Phase one relates to the water contamination and the clinical cases associated at that time relating to the water system. Following installation of point of use filters, the water system was acknowledged as being of suitable quality for use by patients and staff. Whilst work was ongoing to investigate and manage the water contamination incident the clinical component of this phase was considered over with a debrief held on 15th May 2018

- Phase two relates to the environmental contamination and subsequent associated clinical cases occurring as a result of the contaminated drains and the impact caused by the fitting of point of use filters. Phase two is currently ongoing and will remain open until wards 2A/B have re-opened

Summary of initial findings

Following identification of the potentially contaminated water system in wards 2A/B and the resultant possible linked cases in March 2018, NHSGGC considered the decant of these 2 wards to allow for a full investigation of the source of water contamination in wards 2A/B and consider remedial action. At that time ward 4B QEUH was being prepared for the transfer of adult BMT patients from the Beatson oncology unit. Water sampling was undertaken in this ward prior to decant as a precautionary measure. Results identified the presence of *Cupriavidus pauculus* (and other gram negative bacilli) in water outlets within this ward and was the initial suggestion that there may be widespread contamination of the water system that serves both QEUH and RHC. Further testing across the site provided confirmation of this, with positive samples being identified in a number of areas across both sites at both outlet level and within the water system in the basement level (risers). Within the same timeframe staff within wards 2A/B also reported they had witnessed “black effluent” around the rim of the drain in some wash hand basins. Following visual inspection and laboratory testing, this was considered to be biofilm and sampling identified significant contamination of the drains with microorganisms and fungi. Drain contamination is not unexpected however the level of biofilm evident was not in keeping with a water system of less than four years old.

In an attempt to establish the extent of the water system contamination and any causative factor NHSGGC, supported by HFS and HPS initiated a detailed investigation into the contaminated water system within QEUH/RHC. Support was also requested from a number of external companies experienced in water incident management: These included Leegionella, Public Health England (PHE), water solutions group and Makin & Makin. The detailed investigations led by NHSGGC and supported by HFS/HPS included reviewing commission, installation and maintenance records provided by the contractor. This proved to be challenging due to the archiving of data and there were very few members of the initial project team available who are technically qualified to retrieve data and provide verbal clarification. The detailed findings from these records are included within the technical review.

Results from ongoing water testing were reviewed on a weekly basis and highlighted there was evidence of regressional seeding of contamination which supported NHSGGCs view that a whole system remedial approach was required.

Commissioning and design of the hospital water system

As part of the normal water system commissioning water samples were obtained. Initial preliminary findings have identified that prior to handover from the contractor there were a number of water samples taken that produced results with high level of total viable counts (TVCs). TVCs are indicators that there are hygiene issues within the water system and are quantified as a generic indicator for microbial contamination. Specific microorganisms which can be tested for include: Coliforms, *Escherichia coli (*including O157), *Pseudomonas aeruginosa, Salmonella spp*, *Campylobacter spp* and Environmental Mycobacteria. Testing for these is not conducted as standard within current guidance and typically occurs in response to a suspected or confirmed outbreak, or due to identification of a series of sequential cases.

In response to the high levels of TVCs found as part of the pre handover commissioning sanitisation of the water supply was undertaken by the contractor, with some impact and a reduction in TVCs in most areas, however there are a number of reports which indicate that

there may still have been a number of areas with higher than normally acceptable levels of TVCs.

Design and installation of taps and clinical wash hand basins

The design and construct of wash hand basins, showers and taps in these hospitals were agreed with NHSGGC in line with the Scottish Health Technical Memorandum (SHTM) in place at the point the hospitals were designed (commencing 2009), this included the installation of taps with flow regulators. HFS and HPS were involved in this decision making process as were NHSGGC Infection Control team. The SHTM (SHTM 04-01)[2] was revised in 2015 and no longer supports the use of flow regulators in clinical wash hand basins.

Biofilm formation in flow regulators has been identified in a previously published outbreak.[3] The manufacturers of the taps/flow regulators in place across the QEUH/RHC recommend regular removal of the flow regulators for cleaning/decontamination however do not offer more specific guidance on frequency of decontamination of the flow regulators. The flow regulators in use have a number of components and potentially create ideal conditions for the development of biofilm.

NHSGGC provided an external company (Intertek) with some flow regulators to carry out microbiological testing. This confirmed that flow regulators have the ability to harbour a significant number of micro-organisms with the presence of biofilm being detected on all flow regulators tested and 50% showing high levels of contamination. It is also worthy of note that biofilm was present on some flow regulators which was not immediately obvious on visual inspection.

The taps in place across all clinical wash hand basins in both hospitals are also reported to be non compatible with silver hydrogen peroxide, a product which was used during commission stage to sanitise the water system in view of the high TVC results. It is unclear whether this has caused any degradation of the taps. A tap was deconstructed by NHSGGC and examined for the presence of biofilm, in addition to microbiological sampling. Several components of the tap exhibited microbiological contamination.

The presence of high levels of gram negative bacteria and fungus in the water system may indicate that temperature control required has not always been achieved. Temperature control is included as part of the wider technical review being undertaken for NHSGGC by HFS.

Other aspects discussed in the detailed technical review include:

- Flushing
- Contract/project team
- Roles/responsibilities
- Design and construction
- Guidance and specifications
- Specification of water system
- Flexible hoses
- System description

- Pipe work
- Post handover and maintenance

There are a number of local and national recommendations within this review for both NHSGGC and Nationally. The key NHSGGC and National recommendations from the technical review are included within the recommendation section of this report.

Infection Control at design commissioning and handover

HAI-SCRIBE

Healthcare Associated Infection System for Controlling Risk in the Built Environment (HAI-SCRIBE) [4], reference has been designed as an effective tool for the identification and assessment of potential hazards in the built environment and the management of these risks. HAI-SCRIBE (2007) was in place during the construction and handover of both buildings.

Implementation of HAI-SCRIBE should be the responsibility of a multidisciplinary team of specialists with appropriate skills.

Compliance with HAI-SCRIBE requires an accurate record of the process of hazard assessment and risk management which is essential ‘due diligence’ information.

Evidence has been reviewed in relation to the infection control sign-off of results and the system at commissioning/handover. Whilst there is evidence of involvement with initial results and sanitisation there is no evidence of ongoing input or sign off from the Infection Prevention and Control Team (IPCT). It is noted that there is lack of clarity in current national guidance relating to roles and responsibilities of the IPCT in the commissioning, design and handover of new or refurbished builds. Water was first placed on the Infection prevention and control (IPCT) risk register in 2018. The IPC risk register is reviewed on an annual basis with risks considered and prioritised using a risk scoring system. Water safety was added to the risk register in 2018 in response to the emerging evidence of potential issues associated with this incident. Prior to 2018 water safety did not feature in the IPC risk priorities when scored.

NHSGGC employed a robust approach to the design stage of the hospital project by means of a dedicated Infection Prevention and Control Nurse (IPCN) seconded as part of the project team to support the IPCT aspect of the design stage, commissioning and handover stage.

Whilst there was dedicated resource allocated to the project team, there is no documented evidence of NHSGGC Infection Prevention and Control Team involvement in the commissioning or handover process of the project. However NHSGGC has provided a statement from the Lead Infection Control doctor at the time to confirm that they were involved in reviewing some aspects of the initial water testing methodology and the results for QEUH and RHC during commissioning and handover. The Lead ICD has confirmed being involved in:

- Quality assurance of the water testing methodology used by the commissioning engineers.
- Liaising with Facilities Colleagues in reviewing the water testing results supplied by the commissioning engineers.

- Recommending further actions (dosing), for a small number of outlets with TVCs above the acceptable limits.

In addition to a nurse consultant being seconded as a dedicated resource to the project team with involvement in design, commissioning and handover, the project team were supported by the IPCT. This support included regular review of the new builds hospital project at the infection control committee and senior IPC meetings. NHSGGC reported that both the infection control manager and associate director of nursing (infection control) liaised regularly with the project associate nurse director and ensured the numerous commissioning groups established were supported by a member of the IPCT. In addition all wards were reviewed by a member of the IPCT prior to occupation by patients.

Current management of situation/Control measures

In addition to holding regular incident management IMT meetings (IMT) NHSGGC established a multi disciplinary water technical group which is a sub group of the incident management team. This group is supported by HFS, HPS, with monthly representation from water solutions group and Makin & Makin.

A number of control measures have been instigated during this incident and in particular in wards 2A/B. These included parent and staff education sessions, daily visits to the ward from members of the infection prevention and control team (IPCT), increased domestic hours, environmental monitoring by means of audit, including Standard infection control precautions (SICPs) audits.

Limiting access to water

In the initial investigation the use of water within wards 2A/B was limited with portable wash hand basins being supplied for hand washing. Patients were requested not to use wash hand basins or showers and wipes were provide as an alternative. Drinking water was provided by means of bottled water. Access to water was re-established once point of use filters were in place in showers and wash hand basins/sinks. BMT patients continue to receive sterile water.

Point of Use filters.

Following the identification that the water contamination was widespread across both RHC and QEUH an additional control measure of point of use (POU) filters for high risk areas was implemented to ensure a safe water supply at the point of use. In addition if a high risk patient was being nursed in an area deemed to be of low risk, a point of use filter was fitted to water outlets in their room. POU filters require to be changed every 30 days and are a costly approach, however in the interim until the water contamination can be addressed, is considered the only feasible approach to ensure safe delivery of water. A number of studies found that installation of point of use filters reduced either infection rates in associated healthcare settings[5;6] or pathogen counts within tested water samples.[7]

Once the POU filters were in place the restrictions on access to water within wards 2A/B was removed and patients were able to access washhand basins and showers. It was noted that following the fitting of the POU filters there was a greater splash evident from the wash hand basins as the point of entry of the water from the outlet was closer the basin. This splash was noted more from clinical wash hand basins than ensuite wash hand basins and trough sinks.

Drain Sanitisation

Following the identification of the second phase of cases associated with this incident and the hypothesis that the cases may be related to drain contamination, the drains were inspected by the IPCT. Once the drains were identified as being visibly contaminated with what was thought to be biofilm, a programme of drain sanitisation was undertaken across high risk areas commencing with wards 2A/B.

Environmental decontamination

Prior to and following completion of the first drain decontamination process in wards 2A/B, a terminal clean of all areas using hydrogen peroxide vapour was carried out.

Water treatment

It is well recognised that drinking water distribution systems contain a diverse range of microorganisms.[8-10] The presence of microorganisms is affected by various factors including; the disinfection processes employed, the location and age of the system as well as pipe material.[11]

There were a number of options explored for longer term water treatment by NHSGGC. These options included:

Chlorine dioxide

A number of studies were identified which utilised chlorine dioxide systems within hospital settings, and use of these was found to reduce bacterial numbers.[10,12,13] Various advantages and limitations associated with use of chlorine dioxide are known, with the most relevant summarised below.[14,15]

Advantages**:** Known to be effective against a wide range of bacteria, viruses and some protozoa including Giardia.

Limitations: Production of disinfection by-products (DBP's). Although potential production of DBP's always needs to be considered, the efficacy of water disinfection should not be compromised in trying to eliminate these.[16]

UV light

A number of drinking-water treatment technologies are available which employ UV light radiation to inactivate microorganisms.[15] As with chlorine dioxide, various advantages and limitations associated with use UV are known, with the most relevant summarised below.[14-16]

Advantages: Bacteria, fungi and protozoa (considered to be more effective at killing Cryptosporidium than chlorine dioxide) are readily inactivated at low UV doses, with higher doses required for virus inactivation. In addition, UV disinfection does not result in the formation of DBP's like chlorine dioxide.

Limitations: UV disinfection does not leave any residual compound in treated water and therefore does not offer protection against possible microbial re-growth in distribution pipe-work.

Thermal disinfection

Very limited information was identified in the published literature in relation to advantages and limitations of thermal disinfection. One study found that heat shock treatment at 80˚C reduced Gram negative bacteria in a hospital water system but did not lead to complete eradication.[17] Copper silver ionisation was also considered however this was discounted due to pH levels.

Preferred solution

The NHSGGC preferred method of choice for water treatment was continual dosing chlorine dioxide. This was supported by HFS and HPS. Shock dosing of the system was considered and it was agreed that due to safety issues and the potential impact on both hospitals ability to function during the process, this was not the most appropriate approach. It was also recognised that in the absence of initial shock dosing it may take up to two years for the process to be effective from tank to tap level. The procurement process is well underway and installation expected to commence November 2018.

Temporary closure of wards 2A/B

A recommendation was made by the IMT to pursue the temporary decant of wards 2A/B to allow investigative and remedial work to be undertaken. A number of options were explored resulting in the transfer of patients from wards 2A/B to ward 6A of the QEUH. Adult patients within ward 6A QEUH were transferred to Gartnavel General. Three rooms within the adult BMT (4B) were identified and allocated to the paediatric BMT unit. The patients were transferred on 26th September 2018. It is anticipated that the decant facility will remain in place until mid/late December.

Remedial work/Investigations wards 2A/B

The planned investigations/remedial works planned during the decant period include:

- Drain Survey
- Ventilation review
- Replacement of clinical wash hand basins
- Replacement of taps (with no flow regulator)
- Review of any little used water outlets with a view to remove
- Replacement of sections of pipework where biofilm noted
- Review of toilet cisterns and adaptation to reduce potential toilet plume effect.

Hypothesis

There are a number of workable hypotheses being explored; it is currently considered the most likely cause of the widespread contamination is a combination of hypothesis B and C

A: Ingress contamination

A small low level number of micro-organisms may have been present in the water supply at the point of entry. Lack of temperature or chemical control may have enabled biofilm formation. Due to the increasing biofilm throughout the system this may have allowed any subsequent micro-organisms present at point of entry an opportunity to flourish and cause widespread

contamination of the system.

B: Regressional contamination

This may have occurred due to contamination occurring at the taps/outlets or flow straighteners and contamination has regressed backwards throughout the system causing widespread contamination. The widespread positive results and array of bacteria point to contaminated outlets at installation or contamination of high risk components in the tap from ingress as opposed to the patient contact route.

C: Contamination at installation/commissioning

Contamination may have occurred due to presence of contaminated pipework or outlets. Prior to handover the system required to be sanitised due to high TVC counts. It is unclear if a robust flushing regime was in place from installation to handover and from handover to occupancy to prevent contamination.

Secondary Hypothesis

It is recognised that in many situations control measures or actions taken in an attempt to minimise the risk of HAI there can be unintended consequences. In this scenario the secondary hypothesis is linked to the unintended consequence of the point of use filter use:

<u>POU filters.</u>

In an attempt to provide water of a safe microbiological quality NHSGGC applied point of use filters to all clinical and patient wash hand basins in high risk areas and areas where high risk patients were being treated. These filters meant the exit point of the water from the taps was closer to the washhand basin and as a result caused more splash which may also lead to disruption of any drain biofilm as well as potential environmental contamination. (Pictures 1, 2). At the time of fitting the filters, the issue of biofilm within the drains and the associated risk or the resultant splashing that was being caused had not been identified and therefore the subsequent increased risk of environmental contamination and potential exposure of the children was not recognised.

Picture 1

Picture 2

Additional potential considerations to minimise impact

Ensuite single side rooms/hand hygiene practice

Since 2008 it is recommended that all new build hospitals have 100% en suite single side rooms.[18] As a result this has substantially increased the number of wash hand basins and therefore the frequency with which a wash hand basin is used and the water volume in each basin reduced when compared to multi occupancy wards with a single wash hand basin. Since the introduction and widespread use of alcohol gel, the need for hand washing as a first approach has greatly decreased, as alcohol gel may be used on hands that are not visibly soiled. This requires further exploration and consideration and review of flushing regimes and number of wash hand basins required.

Disposal to drain

A number of drain samples were sent to Intertek for analysis. A report has highlighted that in addition to the general presence of biofilm, there was biofilm noted around the aluminium spigots. There was also some occlusion reported as a result of adhesive and pooling noted between the back of the sink and the pipework. All aluminium spigots in wash hand basins in wards 2A/B were replaced with PVC spigots. In addition a number of foreign objects were identified within the drains. It was also reported that there was evidence of a yellow fluid present suggestive of urine being disposed to the drain. The biofilm has a mustard yellow colour and an odour of ammonia was detected. There was a small amount of yellow liquid in the base of the bowl trap which when removed and looked at in isolation also had an ammonia smell. Parents, families and clinicians are advised that hand wash basins are for hand washing only and additional activities such as fluids being disposed of to drain via a handwash basin should not occur. Staff are aware that this is not acceptable practice however the positioning of a wash hand basin in every ensuite single side room may encourage patients or visitors to expel fluids such as contents of a drink bottle. Items such as coffee, sweet drinks encourage the growth of

bio film and microorganisms within a drain. The large open horizontal drain may also encourage the accidental disposal of foreign items.

Summary

There have been no new reported cases since the decant of patients to ward 6A on 26th September 2018. The IMT will continue to meet regularly until the patients have been transferred back to wards 2A/B. The water subgroup will continue to meet until early/mid 2019 and will be supported by HFS/HPS. It has been evident to HPS that since the identification of this widespread incident and clinical impact on wards 2A/B, patient safety has been paramount with NHSGGC clinicians, facilities, IPCT and management team. A significant financial investment has been made to minimise ongoing risks including widespread use of point of use filters in addition to remedial work planned. A number of lessons can be taken from this incident for NHSGGC and NHSScotland as a whole in relation to water safety and commission, handover and maintenance of buildings. The national work and learning for NHSScotland will be driven via the HAI built environment steering group which is widely represented and chaired by the associate director of facilities (NHSGGC) and deputy chair is the lead ICD (NHSGGC).

Recommendations

A number of local and national recommendations have been made based on the investigation to date. This includes recommendations for NHSGGC which have been identified from a detailed HFS technical review. NHSGGC/HPS/HFS will produce an action plan based on the recommendations as follows:

1. NHSGGC

- To produce a detailed action plan addressing ALL points identified within the HFS technical review and should cover as a minimum:
  - Decontamination
  - The management of the water systems
  - All required rectification work
  - Management of recording systems
  - Routine and reactive maintenance schedules

2. All NHS Boards

- All NHS boards should ensure facilities teams are adequately resourced to ensure maintenance of all aspects of the water system are maintained in accordance with policies and guidance.
- All maintenance undertaken should be recorded and maintenance records should be reviewed regularly to ensure all aspects of the water system are maintained in accordance with policies and guidance

3. HPS/HFS

HPS (supported by HFS) to undertake an urgent national water review of all healthcare premises built since 2013 to provide assurance that a similar incident has not and is not likely to occur elsewhere.

HPS (supported by HFS) to establish a national expert group to:

- Review NHSScotland current approach to water safety including as a minimum:
  - Review NHSScotland current approach to water testing in healthcare settings.
  - Review NHSScotland current surveillance and reporting of potentially linked water related HAI cases.
  - Based on findings develop risk based guidance on water testing protocols, results interpretation roles and responsibilities and remedial steps to be considered.
- Give consideration to the development of a best practice built environment manual which will be evidence based and cover as a minimum current and emerging evidence

and the technical requirements from a clinical, patient safety and HAI perspective that will be adopted by all NHS boards. This will include as a minimum:

- Review existing national and international guidance relating to water safety.
- Develop robust requirements/guidance for all aspects of water safety.
- Develop robust handover requirements in relation to water systems.
- Review of the role of the IPCT into the built environment, and produce clear guidance on roles and responsibilities.
- Establish a risk based approach to water testing and any remedial action required, including roles and responsibilities that NHS boards will adopt.
- Review the requirement for 100% ensuite single side rooms the number of clinical wash hand basins per patient/bed.
- Review the use of flow regulators across NHS Scotland and identify and associated risks and recommend any remedial actions required.

- HPS/HFS will continue to provide support to NHSGGC relating to the current water incident and provide input into the weekly meetings until mid 2019 (and reviewed thereafter).
- Further develop the existing Scottish expertise in the built environment programme (mainly water and ventilation) at national level.

HFS (supported by HPS) to:

- Review all relevant water technical guidance to ensure all aspects are covered within the guidance including as a minimum:
  - Thermal disinfection in sections of water distribution systems
  - Handover checklists
  - Contract management procedures
  - Design guides to eliminate thermal pickup in cold water systems
  - Update advantages and disadvantages of chemical disinfection techniques
  - The organisms Boards should test for and action to take on defined levels
  - Drain cleaning regimes
  - Biofilm growth in drainage systems

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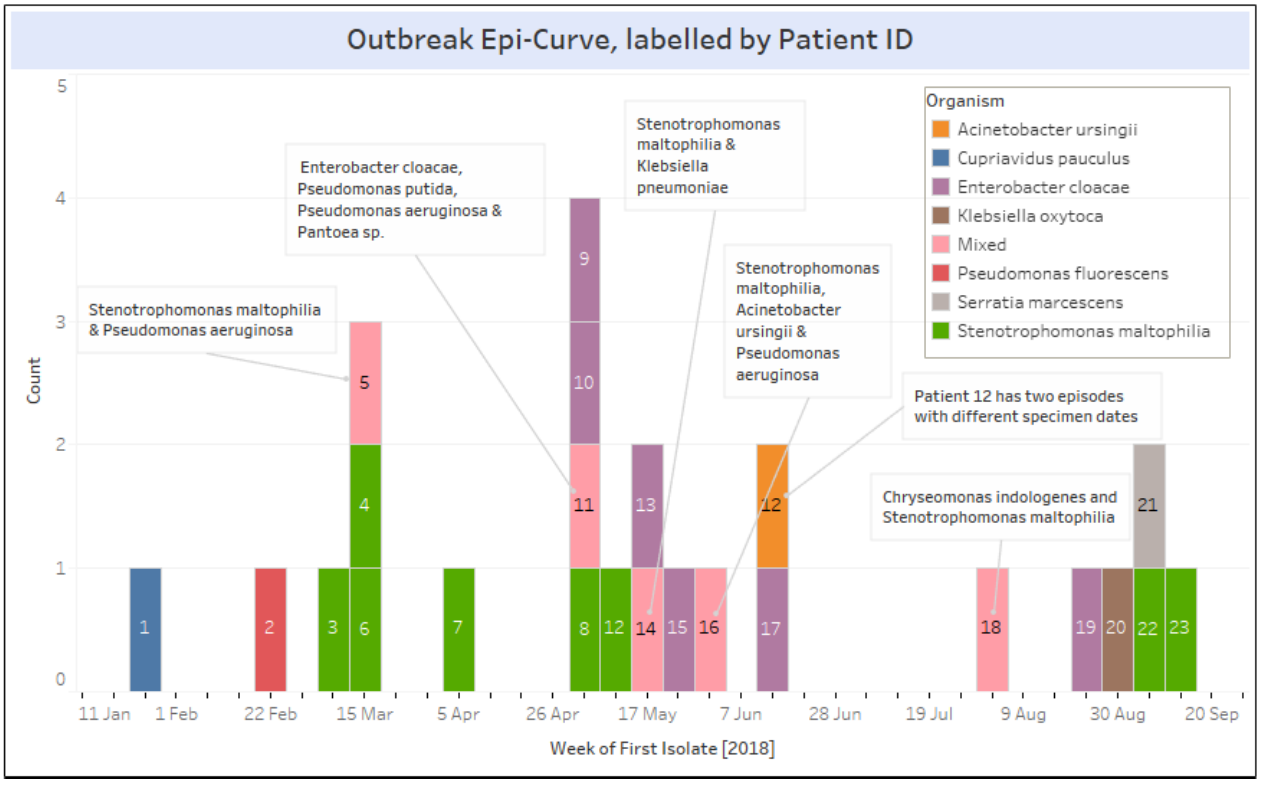
Appendix : 1 Timeline of cases

The epi-curve demonstrates that only one case of *Cupriavidus pauculus* was reported from 26th January 2018, with the other associated cases being *Stenotrophomonas maltophilia* and/or *Pseudomonas aeruginosa* positive between 21st February 2018 and 5th April 2018.



References

(1) Health Protection Scotland (2017) National Support Framework. Available from: http://www.documents.hps.scot.nhs.uk/hai-compendium/national-support-framework-2017.pdf

(2) Health Facilities Scotland (2014) Scottish Health technical memorandum 04-01 Water safety for healthcare premises. Available from: http://www.hfs.scot.nhs.uk/publications/1475662392-SHTM%2004-01%20V2.%20Part%20B.pdf

(3) Kannan A, Gautam P. A quantitative study on the formation of Pseudomonas aeruginosa biofilm. Springer Plus 2015;4(1):379

(4) Health Facilities Scotland (2015) HAI scribe. Available from http://www.hfs.scot.nhs.uk/publications/1475246814-SHFN%2030%20HAI-SCRIBE%20questionsets%20and%20checklists.pdf

(5) Garvey MI, Bradley CW, Tracey J, Oppenheim B. Continued transmission of Pseudomonas aeruginosa from a wash hand basin tap in a critical care unit. Journal of Hospital Infection 2016;94 (1) 8-12

(6) Durojaiye OC, Carbarns N, Murray S, Majumdar S. Outbreak of multidrug-resistant Pseudomonas aeruginosa in an intensive care unit. Journal of Hospital Infection 2011;78(2):154-5

(7) Willmann M, Bezdan D, Zapata L, Susak H, Vogel W, Schr+Âppel K, et al. Analysis of a long-term outbreak of XDR Pseudomonas aeruginosa: a molecular epidemiological study. Journal of Antimicrobial Chemotherapy 2015;70(5):1322-30

(8) Snyder LA, Loman NJ, Faraj LJ, Levi K, Weinstock J, Boswell TC, et al. Epidemiological investigation of 'Pseudomonas aeruginosa' isolates from a six-year- long hospital outbreak using high-throughput whole genome sequencing. Eurosurveillance 2013;18(42)

(9) Breathnach AS, Cubbon MD, Karunaharan RN, Pope CF, Planche TD. Multidrug-resistant Pseudomonas aeruginosa outbreaks in two hospitals: association with contaminated hospital waste-water systems. Journal of Hospital Infection 2012;82(1):19-24

(10) De Rossi BP, Calenda M, Vay C, Franco M. Biofilm formation by Stenotrophomonas maltophilia isolates from device-associated nosocomial infections. Revista Argentina de microbiologia 2007;39(4):204-12

(11) Walker JT, Jhutty A, Parks S, Willis C, Copley V, Turton JF, et al. Investigation of healthcare-acquired infections associated with Pseudomonas aeruginosa biofilms in taps in neonatal units in Northern Ireland. Journal of Hospital Infection 2014;86(1):16- 23

(12) Ma X, Baron JL, Vikram A, Stout JE, Bibby K. Fungal diversity and presence of potentially pathogenic fungi in a hospital hot water system treated with on-site monochloramine. Water research 2015;71:197-206

(13) Hsu MS, Wu MY, Huang YT, Liao CH. Efficacy of chlorine dioxide disinfection to non-fermentative Gram-negative bacilli and non-tuberculous mycobacteria in a hospital water system. Journal of Hospital Infection 2016;93(1):22-8

(14) Baron JL, Vikram A, Duda S, Stout JE, Bibby K. Shift in the microbial ecology of a hospital hot water system following the introduction of an on-site monochloramine disinfection system. PloS one 2014;9(7):e102679

(15) Casini B, Buzzigoli A, Cristina ML, Spagnolo AM, Del Giudice P, Brusaferro S, et al. Long-term effects of hospital water network disinfection on Legionella and other waterborne bacteria in an Italian university hospital. Infection Control & Hospital Epidemiology 2014;35(3):293-9

(16) Marchesi I, Ferranti G, Bargellini A, Marchegiano P, Predieri G, Stout JE, et al Monochloramine and chlorine dioxide for controlling Legionella pneumophila contamination: biocide levels and disinfection by-product formation in hospital water networks. Journal of water and health 2013;11(4):738-47

(17) Environmental Protection Agency. Water treatment manual: disinfection. 2011

(18) Scottish Government (2008) Single room provision steering group report. Available from https://www.gov.scot/Publications/2008/12/04160144/9

Glossary

Alcohol gel	A gel, foam or liquid containing one or more types of alcohol that is rubbed into the hands to inactivate microorganisms and/or temporarily suppress their growth.
Aseptic Suite	An ultra clean environment within a department, (for example pharmacy) where sterile solutions are prepared such as chemotherapy under strict measures.
Bacteria	Microscopic organisms (germs).
Bib taps	A tap or stop cock which has a nozzle bent downwards.
Biofilm	Collective of one or more types of microorganisms, including bacteria, fungi and protists, that stick together and can become embedded on a surface.
Blood stream infection	The presence of bacteria in the bloodstream.
Chemotherapy	A cancer treatment where medication is used to kill cancer cells.
Chlorine dioxide	A chemical compound used for a variety of antimicrobial uses, including the disinfection of drinking water.
Clinical wash hand basins	A sink designated for hand washing in clinical areas
Cluster	A group of similar things located around the same location
Copper silver ionisation	A disinfection process where positively charged copper and silver ions are added into the water system. It is primarily used to control control Legionella, the bacteria responsible for Legionnaires' disease.
Decant	Temporarily transferring people to another location.
Decontamination	Removing, or killing pathogens on an item or surface to make it safe for handling, re-use or disposal, by cleaning, disinfection and/or sterilisation.
Drain	A fixture that provides an exit-point for waste water or water that is to be re-circulated.
Ensuite single side room	A room with space for one patient and containing a bed; locker/wardrobe, clinical wash-hand basin, en-suite shower, WC and wash-hand basin.
Flexible hoses	A flexible hollow tube designed to carry fluids from one location to another and are used to connect taps to the water supply
Flow regulators	Point of use regulators designed to provide constant and maximum flow rates at taps and showers etc. irrespective of changes in demand or water pressure

Flushing	The process of cleaning or “scouring” the interior of water distribution mains (pipes) by sending a rapid flow of water through the mains.
Gram negative bacilli	Gram-negative bacteria are bacteria that do not retain the crystal violet stain used in the gram-staining method of bacterial differentiation; examples include E.coli, and Pseudomonas aeruginosa.
Hydrogen Peroxide Vapour	Vaporized hydrogen peroxide is an airborne disinfectant and infection control measure that can be used for room decontamination after patient use.
Ingress	The act of entering.
Microbiological sampling	Sampling for harmful bacteria, parasites, fungi and viruses including those in water, environment and equipment.
Micro-organism	Any living thing (organism) that is too small to be seen by the naked eye. Bacteria, viruses and some parasites are microorganisms.
Organism:	Any living thing that can grow and reproduce, such as a plant, animal, fungus or bacterium.
Parenteral nutrition:	The giving of special liquid feeding products to a person using an intravenous catheter and bypassing the normal digestion process of the stomach and bowel.
Pathogen:	Any disease-producing infectious agent
Point of use filters:	A device that incorporates an integral filter with a maximal pore size of 0.2 µm applied at the outlet, which removes bacteria from the water flow therefore protecting the end user from exposure to harmful waterborne pathogens.
Portable wash hand basins	A sink that is not connected to the mains water supply but connects to a water tank which is filled locally.
Regressional seeding	Where micro-organisms from contaminated water outlets/biofilm regress ‘back’ through the water system and seed other areas (pipes/tanks/outlets). The microorganisms embed themselves and multiply contaminating other areas of the system.
Sanitisation	Use of antimicrobial agent on objects, surfaces or living tissue to reduce the number of disease-causing organisms to non-threatening levels.
Shock dosing	The use of large quantities of chemicals to the water supply to break down organic waste and get rid of bacteria and contamination.
Silver hydrogen peroxide	A solution of stabilised silver in hydrogen peroxide that is used for surface and water decontamination.

Sterile water	Water free of all microorganisms – bacteria, viruses, fungi.
Terminal clean	Cleaning/decontamination of the environment following transfer/discharge of a patient, or when they are no longer considered infectious, to ensure the environment is safe for the next patient or for the same patient on return.
Thermal disinfection	The use of water and heat for the disinfection process for example washer-disinfectors.
Toilet plume effect	The dispersal of microscopic particles as a result of flushing a toilet.
Total viable counts	A quantitative estimate of the concentration of microorganisms such as bacteria, yeast or mould spores in a sample.
Trough sinks	A long, narrow basin designed for communal handwashing with water delivered at hand-washing temperature via mixer taps in conjunction with a thermostatic mixing valve. Usually used for surgical scrubbing.
UV light	A disinfection method that uses short-wavelength ultraviolet (UV-C) light to kill or inactivate microorganisms.
Water outlets	Any hole or opening where water is released for example taps, showerheads.
Water sampling	The analysing of the water supply for harmful bacteria, parasites, and viruses.
Water system	A system of engineered hydrolic and hydraulic components to supply water.
Spigots	A short cylindrical pipe which connects the Clinical Wash Hand basin to the main pipework.
Occlusion	Obstruction or blockage

Dear Brian, Tom and Sandra,

After due consideration of the discussions from the ICD meeting yesterday, and as a result of recent issues in infection control, we propose to work together to provide urgent IPC cover for QEUH, RHC, Regional (excluding haemonc) and Partnerships. There will be removal of any designated patches, but rather a rota with a designated person to deal with urgent IPC queries from ICNs each day, Monday through to Friday during working hours. In the meantime, the three of us will work together as we see fit in order to provide the safest and best care that we can and to support the service through this difficult time. This is a gesture of goodwill and an interim arrangement; with the exception of the request for SPA time detailed below, any additional infection control workload is not an indefinite change to infection control sessions already detailed in our job plans, which we may revert to if we feel this is necessary until we have trialled a new way of working. Where below we refer to senior infection control management, we understand that this constitutes Brian Jones, Sandra McNamee and Tom Walsh.

In order to facilitate this process, we will require the following:

- 10 infection control sessions including partnerships for South Sector, as a minimum
- We will require a trigger of 3 or more of same blood culture in NICU/SCBU alert to go either to data team or ICNs, who will then analyse and let us know if final authorised results demonstrate any issues
- A generic email address will be set up, manned by ICNs for any lab results, typing results, new CF results, queries from clinical microbiologists or clinical scientists, to be vetted, dealt with and then if appropriate or necessary, raised through ICDs during working hours, or to be forwarded to data team by ICNs if relates to local epidemiology and surveillance enquiries to be handled and the queries answered. If a generic email address is not possible, then any such queries will be directed to the lead ICNs or any designated person
- A generic email address will be set up to receive any ICN or other enquiries directed to ourselves, which we will check and reply to individually or collaboratively as required
- Regular trending graphs of VRE rates (new and total) for CH2A/B will be required
- We do not have the sessional availability to participate in any special groups; Drs [redacted] and Balfour will no longer be able to help with decontamination or education
- Cystic fibrosis policies and infection control-related queries from consultants who wish to discuss with a medic will all be directed to senior infection control management
- We will each have at least 2.5 SPA sessions built into our job plans pro rata and protected indefinitely irrespective of whether any of us continue infection control in the long term. We require a more equitable and fair arrangement of SPA opportunities and professional development for all.
- It was clear from the ICD meeting 31/08/17 that although we would welcome attending training courses and getting further teaching on niche areas, such as ventilation, none of us (both north and south ICDs) are in a position of knowledge and understanding at present to progress more pressing work that

Teresa as coordinating ICD was doing. Additionally, none of us have the lead/coordinating sessions. In particular, we will not be able to advise or be involved for any HAISCRIBE or commissioning work related to QEUH ward 4B/C (none of us have signed off this HAISCRIBE and now that we understand the background to this, we do not in principle agree with the work. This was part of Teresa's specialist remit as regional/Beatson/haemonc coordinating ICD). We are also not in a position to assist with work related to ward CH2A rooms, other isolation rooms, ICE theatres and cystic fibrosis decontamination rooms. We are highlighting this now in order that arrangements can be made to assist with any HAISCRIBE sign-offs, relevant advice and commissioning work, particularly as ICE theatres, and ward CH2A work is ongoing or about to start. We are also not in a position to undertake work related to M. chimaera, water group, M. abscessus, decontamination group, policy group, theatre group, or any other new build work on QEUH/RHC/Victoria or any other site. The water group in the South Sector was attended by Teresa as part of her sessions and we do not have sessions to cover this. Whoever is leading or co-ordinating with Teresa's sessions should attend these meetings, receive relevant emails, and feedback to us if any problems identified.

- Any complex HAISCRIBES, if reviewed by us, will be escalated to senior infection control management for final vetting and sign-off
- We will not be pressurised to do any work we feel uncomfortable with
- If we require any further support to make any aspects of our jobs easier this will be provided
- A transparent, no-blame culture will be fostered
- Additional FFP3 fit testing sessions will be arranged for the paediatric and adult hospital sites and administrative support provided for this
- We will have secretarial support for our communications as well as administrative support when relevant
- Any ICN queries related to new medical devices or innovations will be strictly between the ICNs and manufacturers, or taken through the relevant IPC subgroups as needed. We will not have direct dealings with medical device companies unless we expressly wish to or have the time to
- For any work that we are asked to undertake, we will be provided with complete information including previous discussions related to that work
- We will be enabled to attend courses and training to develop our skills in key areas of infection control and will be reimbursed for any professional or work-related travel expenses or study leave
- Any additional work that may be required of us will be subject to us being completely comfortable with this work, and subject to further DCC or IPC sessional negotiations

We will be starting to work collaboratively from today, however we would be grateful if you would be able to confirm agreement with the above requirements by the middle of next week. We are confident that we can make this interim arrangement work.
With kind regards,

In alphabetical order:

Alison Balfour

[redacted]

Pepi Valyraki

NHS Greater Glasgow & Clyde	**Paper No. 19/43**
Meeting:	**NHSGGC Board**
Date of Meeting:	**20 August 2019**
Purpose of Paper:	**For Noting**
Classification:	**~~Official Sensitive~~/Board Official**
Sponsoring Director:	**Dr Jennifer Armstrong, Medical Director**

Healthcare Associated Infection Reporting Template (HAIRT)

Recommendation: For noting

Purpose of Paper: Update on NHSGGC performance against Healthcare Associated Infection standards and performance measures.

Key Issues to be considered:

Validated HPS / ISD data : Quarter 1 2019 (January – March)					
		Healthcare Associated Rate per 100 000 bed days		**Community Associated** Rate per 100 000 population	
		GGC	**National**	**GGC**	**National**
***S. aureus* Bacteraemia**	**111 cases**	18.7	15.6	10.7	10.7
***C. difficile* in age 15+**	**77 cases**	15.0	11.8	4.5	4.0

Table 1 *NHSGGC and national comparison rates for 01/01/2019- 31/03/2019.*

- **111** validated *Staphylococcus aureus* Bacteraemia (SAB) cases were reported for January to March 2019 with a Healthcare Associated rate of 18.7 cases per 100,000 bed days (n 80). This is above the national rate but within expected confidence intervals. At the moment rates are calculated for each individual health board area. Comparisons across diverse boards may not reflect the range and complexity of patients and services delivered in each. The IPCT are currently working with colleagues in the Clinical Governance Support Unit to try to propose indicators that may be more meaningful to NHSGGC teams. SABs remain a priority and the SAB group continues to meet on a regular basis and implement actions based on emerging evidence and quality improvement initiatives.

- **77** validated *Clostridioides difficile* (CDI) cases in ages 15 and over were reported for January to March 2019 with a Healthcare Associated rate of 15.0 cases per 100,000 bed days (n 64). This is a reduction in CDI cases upon the previous reporting quarter, however is above the national rate but within expected confidence intervals.

Any Patient Safety /Patient Experience Issues: Please refer to outbreaks and Incidents

Any Financial Implications from this Paper: No

Any Staffing Implications from this Paper: No

Any Equality Implications from this Paper: No

Any Health Inequalities Implications from this Paper: No

Has a Risk Assessment been carried out for this issue? If yes, please detail the outcome:

No

Highlight the Corporate Plan priorities to which your paper relates:
Patient Safety and improving quality, efficiency and effectiveness.

Author: Mrs Sandra Devine, Acting Board Infection Control Manager
Tel No: [redacted]
Date: 20/08/2019

Healthcare Associated Infection Reporting Template (HAIRT)

Section 1 – Board Wide Issues
This is the bi-monthly publication of the reporting template for submission to the NHS Board as required by the national HAI Action Plan.

Changes to National Definitions/Denominators

This HAIRT presents data based on the revised national definitions of Healthcare Associated and Community Infections. Below is a short summary of the definitions which have been applied to the presented data.

Definitions/Denominators

Reports now have rates split into two:

- Healthcare Associated Infections i.e. *any infections associated with Healthcare (hospital or GP).* Rates are worked out by number of infections over total occupied bed days (OBDs).
- Community Associated Infections. Rates are calculated as the number of infections per 100,000 population.

Staphylococcus aureus

***Staphylococcus aureus* Bacteraemia (SAB) Surveillance and Actions**

Quarter 1: 2019 (January - March) Surveillance
For the last published reporting quarter (January - March 2019) NHS Greater Glasgow Clyde reported a total of **111** validated SAB cases. These are further classified as healthcare associated (n 80) or community infections (n 31).

80 healthcare associated cases were reported for the quarter equating to a rate of 18.7 per 100,000 occupied bed days (Figure 1). This is above the NHS Scotland rate of 15.6. The GGC rate remains within expected confidence intervals.

At this time rates are calculated for each individual health board area. It is possible that comparisons across such diverse areas may not fully illustrate the range and complexity of patients and services delivered in each. The IPCT are currently working with colleagues in the Clinical Governance Support Unit to try to propose indicators that may be more meaningful to NHSGGC teams, although national data will also continue to be reported as required by SGHD.

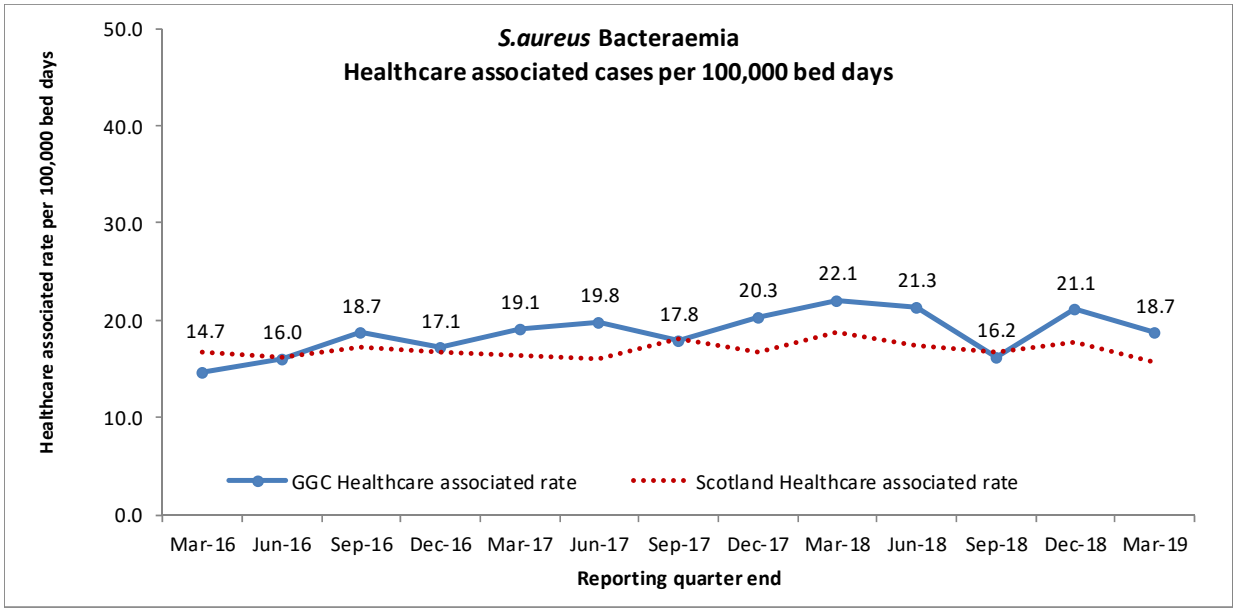


Figure 1 *Healthcare associated SAB comparison by quarter for NHSGGC and Scotland.*

Community associated infections are reported against a denominator rate per 100,000 population (Figure 2). These cases include SABs in people who have had no healthcare interaction as an in-patient, out-patient or via Health Social Care Partnerships (HSCP) in the 30 days prior to SAB onset and are not users of registered medical devices such as urinary catheters. These cases are therefore less amenable to reduction measures within GGC Acute hospitals. The rate of community associated infections in NHSGGC was 10.7 which was also the same as NHS Scotland. It should be noted that the process for reviewing all cases in NHSGGC is rigorous and includes all available sources of data.

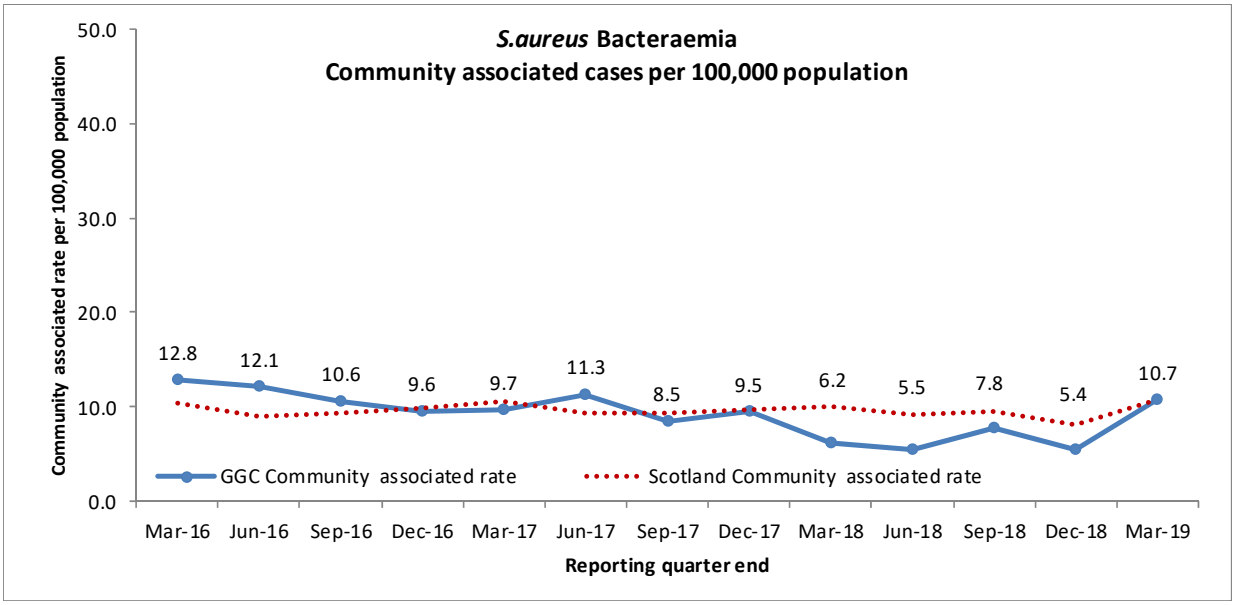


Figure 2 *Community associated SAB comparison by quarter for NHSGGC and Scotland*

Quarter 2: 2019 (April - June**) NHSGGC Surveillance**

Local surveillance has shown a decrease in the number of SAB cases for Quarter 2 with a total of 103 cases. This is a reduction of 10% upon the previous reporting quarter.
Eighty-five cases were healthcare associated and 18 were community associated.

22 IV access device related HAI SABs have been reported in the current quarter (Figure 3). IPCT will continue to monitor and return information to clinical sectors and directorates for action. The SAB group continue to implement new initiatives to drive this number down even further.

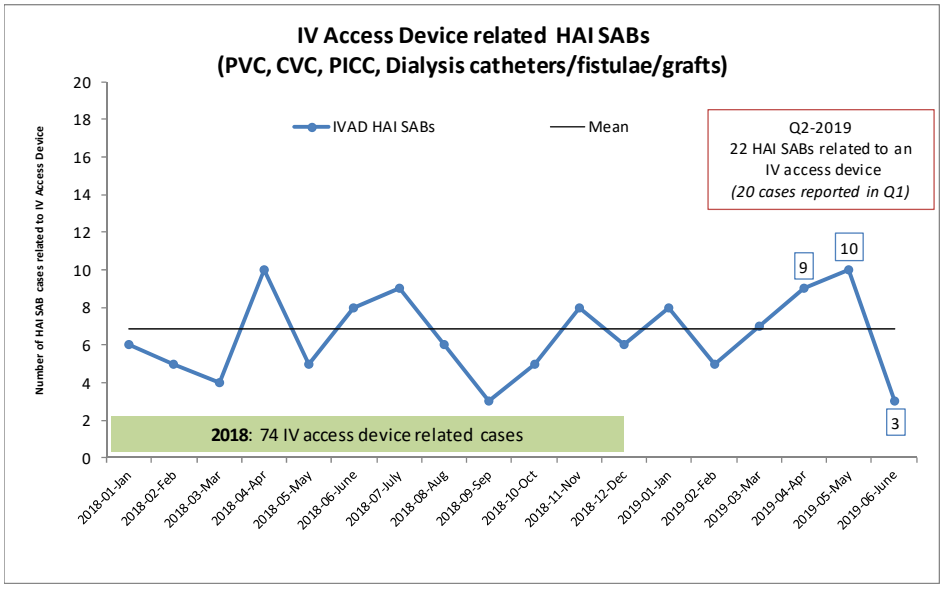


Figure 3 *Number of Hospital acquired SABs by month attributed to an IV access device*

SAB Actions Update
The GGC SAB group met on 28th May 2019 and work continues to reduce the amount of avoidable healthcare associated cases.

Peripheral Venous Catheter (PVC) Care Plan
The new PVC care plan has now been implemented across adult services in NHS GGC. The care plan requires staff to assess twice per day three key elements of care related to the safe use of these devices:

- Visual Infusion Phlebitis (VIP) score – this visual inspection triggers the removal of the device if there are any signs of local infection.
- DRIFT Assessment criteria reviews if the device is still required for Diagnostics, Resuscitation, Intravenous Drugs, Fluids or Transfusion (DRIFT). If not required for any of these it should trigger the removal of the PVC.
- Assessment if it is possible to change patients from intravenous to oral antibiotics, the former requires a PVC to be in place, the latter does not.

The Infection Prevention and Control Team (IPCT) and the ward staff continue to monitor the completion of the PVC care plan using the PVC audit tool.

PVC Packs
A PVC insertion pack was trialled in the Immediate Assessment Unit QEUH, ward 60 in the Institute for Neurological Sciences and by the hospital at night team. 45 packs were provided and staff completed 20 evaluation forms. 18 out of 20 staff reported that they saw a benefit to using the pack and would like them to be available at ward and department level. The IPCT and clinical team have written an SBAR regarding the outcome of the trial and have submitted this with recommendations to support the use of this pack to the NHSGGC SAB Group.

Multi-Drug Resistant Organism (MDRO) Screening Clinical Risk Assessment (CRA) uptake. Includes MRSA screening and CPE screening.

MRSA
Mandatory Clinical Risk Assessment (CRA) compliance for GGC in Q1 (April-June 2019) is **92%.** This is a substantial improvement on recent reporting quarters and is fully compliant with national reporting requirements. The presumption is that the update to the My Admission Record (MAR) has led to this improvement, this is also the case for CPE.

MRSA screening CRA uptake	**2018-19 Q2** (Jul-Sep)	**2018-19 Q3** (Oct-Dec)	**2018-19 Q4** (Jan-Mar)	**2019-20 Q1** (Apr-Jun)
Greater Glasgow Clyde	72%	**69%**	**69%**	**92%**
Scotland	84%	83%	83%	89%

Table 3 *Quarterly screening compliance- MRSA National Data Source: MDRO Admission Screening Team July 2019.*

CPE (Carbapenemase-producing Enterobacteriaceae)
Enterobacteriaceae are a family of Gram-negative bacteria (sometimes called coliforms) which are part of the normal range of bacteria found in the gut. Carbapenemase-Producing Enterobacteriaceae (CPE) are a type of bacteria that are extremely resistant to antibiotics.

Table 4 below shows the CRA compliance rate since national reporting was implemented. There has been a substantial improvement in Q1. Although CPE screening is mandatory, there is no national target set for compliance.

CPE screening - CRA uptake	**2018-19 Q2** (Jul-Sep)	**2018-19 Q3** (Oct-Dec)	**2018-19 Q4** (Jan-Mar)	**2019-20 Q1** (Apr-Jun)
Greater Glasgow Clyde	71%	76%	78%	**94%**
Scotland	79%	78%	81%	86%

Table 4 *Quarterly screening compliance - CPE*

National Data Source: MDRO Admission Screening Team July 2019.

Clostridioides difficile

Quarter 1: 2019 (January - March) Surveillance

77 validated cases were reported in the last published quarter (January - March). This is a **decrease** upon the previous quarter. 64 cases were healthcare associated and this provided a rate of 15.0 cases per 100,000 bed days. The rate for NHS Scotland was 11.8 (Figure 4).

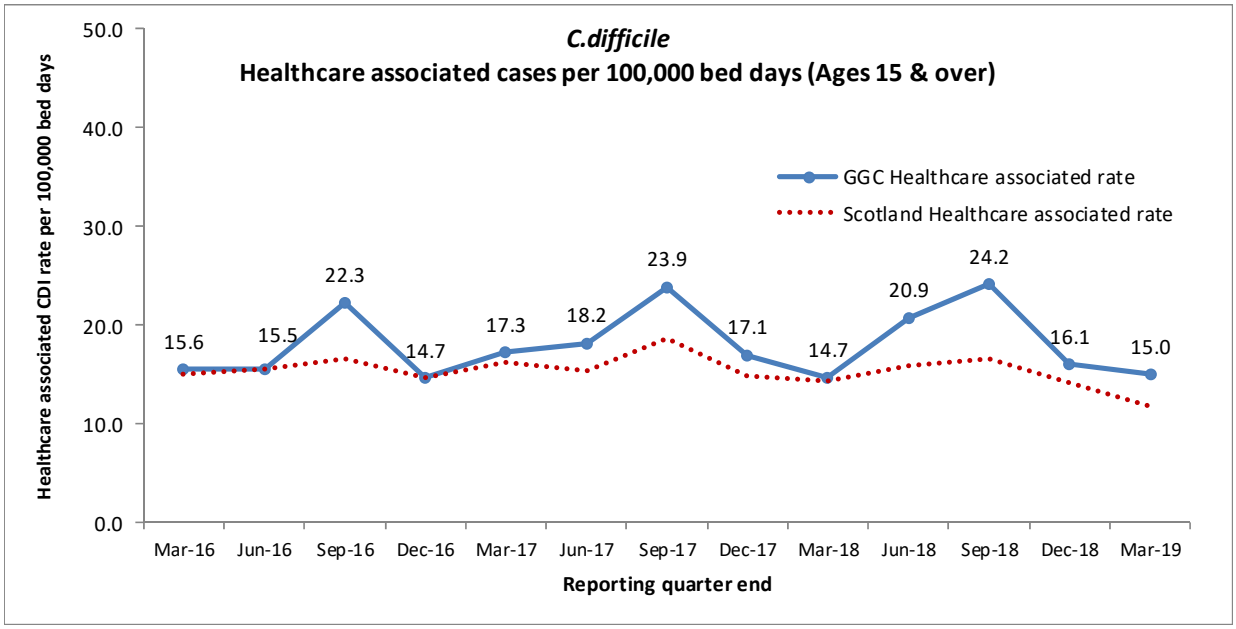


Figure 4 *Healthcare associated CDI rates comparison by quarter for NHSGGC and Scotland.*

13 community associated CDI cases were reported for the quarter with a rate of 4.5 per 100,000 population (Figure 5). The rate for NHS Scotland was 4.0.

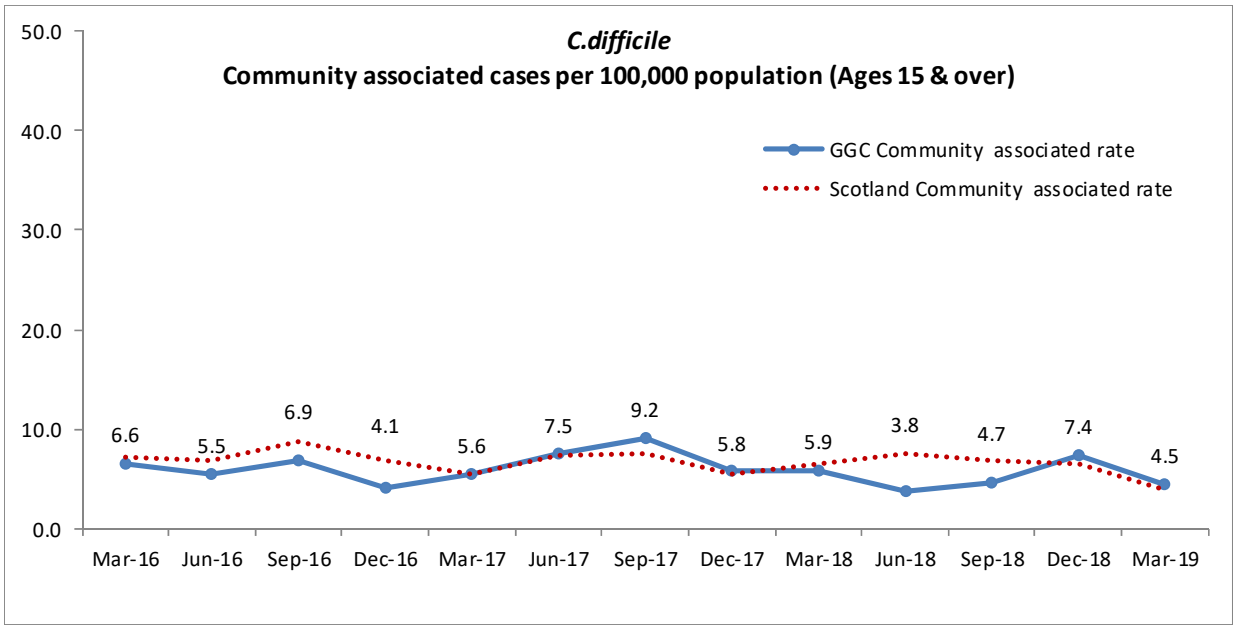


Figure 5 *Community associated CDI comparison by quarter for NHSGGC and Scotland.*

Quarter 2: 2019 (April - June) NHSGGC Surveillance

There has been a very slight increase in *C.difficile* this reporting quarter with 84 cases in total. 69 are healthcare associated and 15 are community associated. This would appear to be normal seasonal variation.

We continue to issue a letter to the GP of every adult in-patient who has been diagnosed with CDI signed by the Lead Infection Control Doctor, Lead Physician, Lead Microbiologist and Lead Pharmacist. This letter provides information on CDI and includes links to best practice guidance for the use of antibiotics and proton-pump inhibitors (PPIs) (Appendix 1).

Update on Previously Reported Outbreaks and Incidents.

Cryptococcus neoformans

There have been no further cases of *Cryptococcus neoformans* infection in patients since the identification of the two cases in late November/ December 2018.

The Expert Advisory sub-group, continues to meet. All hypotheses are being tested and over 2500 air samples have been taken to inform this process. This is a highly complex area with limited scientific evidence, so opinion is being sought not only from the U but from colleagues in the USA. We expect that the final report from this Group will be available for review by the Incident Management Team in the very near future.

Princess Royal Maternity (PRM) - *Staphylococcus aureus* spa type t11164.

The IMT has now been stepped down and the incident closed. There have been 4 weeks of negative screens following the discharge of the last positive patient. Surveillance has been put in place to alert the IPCT if this strain is identified from clinical samples in the future. Clinical staff within the unit implemented an extensive list of actions to bring this outbreak under control and have been successful in doing so.

OUTBREAKS / EXCEPTIONS June 2019 – present

(Reported are those that are assessed as AMBER or RED using the HPS Hospital Infection Incident Assessment Tool (HIIAT))

QEUH, Ward 6A (Paediatric Haematology/Oncology Unit). Three cases of unusual blood stream infections. HIIAT assessed as Amber on the 14 August 2019.

NHS Greater Glasgow and Clyde closely monitor all blood stream infections (BSI) in this vulnerable group of patients and the Lead Infection Control Doctor (LICD) reviews all cases as they occur. There are many reasons this group of patients are vulnerable to infection, chemotherapy and radiotherapy suppresses the immune system and these patients can develop opportunistic infections. Patients with cancer have increased exposure to harmful bacteria because of indwelling central venous catheters (required to deliver treatment) and frequent hospitalisations. It is acknowledged that there will be a background level of bloodstream infections in this susceptible population. Since April there have been eleven cases of gram negative bacteraemias and one case associated with a type of mycobacteria over a four month period. This is in keeping with recognised background rates which are approximately two-three per month. Three of the twelve cases were of an unusual type of bacteria and as a consequence an Incident Management Team was convened to review all of the cases.

Many measures are used to prevent blood stream infections, e.g. hand hygiene, the use of gloves and aprons and the application of an aseptic technique when accessing patient's central venous catheters. All of these measures have been reviewed by practice educators and the infection prevention and control team. In addition, environmental sampling has been undertaken and at this time, there have been no links to any of the cases and the environment in the haematology/oncology ward. It should be noted that this process is ongoing.

The three unusual cases referred to were identified by the LICD. None of the cases are linked to each other however one has been linked to the general environment (water). There is evidence that the filtered water in the haematology/oncology ward is free of bacteria but as a precaution, point of use filters were placed on outlets in other areas of the hospital this vulnerable group of patients might visit. The bacteria linked to water is harmless to the vast majority of patients and the public and published studies show this type bacteria can be found in raw water, such as reservoirs, lochs and rivers, in public mains, household water systems and in public buildings such as hospitals. Infections with this bacteria are very rare. The authorised engineer (AE) has reviewed all the water reports from the QEUH and describes the water supply as 'wholesome'. The part of the incident related to water was closed by GGC and HPS on the 8 August 2019.

8 patients have been discharged home and three remain in hospital and on treatment. Children in the Paediatric Haematology/Oncology Unit are also now receiving prophylactic antibiotics to protect them against this type of infection.

Norovirus

There were 5 wards closed in 3 hospitals due to Norovirus activity May - June 2019.

Month	Jul-18	Aug -18	Sep-18	Oct-18	Nov-18	Dec-18	Jan -19	Feb -19	Mar-19	Apr-19	May-19	Jun-19
Ward Closures	5	0	1	0	2	4	1	7	3	5	2	3
Bed Days Lost	69	0	21	0	93	50	7	42	106	188	49	49

Table 5: *NHSGGC Ward closures due to suspected / confirmed Norovirus*

Data on the number of wards closed due to confirmed or suspected Norovirus is available from HPS on a weekly basis: [redacted]

Healthcare Environment Inspectorate (HEI)

There was an unannounced inspection of wards and departments in Inverclyde Royal Infirmary on the 15th and 16th of July 2019. 8 wards and departments were inspected against standards (6) Policy and procedure, (7) Invasive devices and (8) Decontamination. The draft report will be sent to the board on the 28th August 2019 for sign off and return to HIS by 11th September 2019. The final report will be published on the 25th September 2019.

Following the HEI inspection of the QEUH in January 2019, the latest action plan was submitted in July 2019 and can be found at the link below:

[redacted]

Other HAI Related Activity

Surgical Site Infection (SSI) Surveillance

All NHS Boards are required to undertake in-patient and 30-day re-admission surveillance as per HDL (2006) 38 and CEL (11) 2009.

Quarter 1: 2019 (January-March)

For the last published reporting quarter the SSI rate for caesarean-section remained lower than the national dataset SSI rate (Table 6).

There has also been a sustained reduction in the number of hip arthroplasty SSIs this quarter, with two cases reported in total. The SSI rate of 0.5% is marginally higher than the national rate however remains within national confidence intervals (CI).

Category of Procedure	Operations	Infections	NHSGGC SSI rate (%)	NHSGGC 95% CI	National Dataset SSI rate (%)	National 95% CI
Caesarean section	1306	9	0.7	0.4-1.3	1.6	1.3-2.0
Hip arthroplasty	391	2	0.5	0.1-1.8	0.4	0.2-0.7

Table 6 *SSI rates for Caesarean section (in-patient and PDS to day-10), Hip arthroplasty (in-patient and re-admission to day-30), NHSGGC*

Quarter 2: 2019 (April- June) **NHSGGC Surveillance**

Local surveillance data is displayed in Table 7.

Quarter 2 -19 (April - June) : Local SSI Surveillance Status				
	Category of Procedure	Operations	Infections	NHSGGC SSI Rate (%)
Mandatory (reported to HPS)	Caesarean section	1218	4	0.3
	Hip arthroplasty	397	0	0.0
	Large Bowel Surgery	208	7	3.4
	Major Vascular Surgery	204	7	3.4
Voluntary	nee arthroplasty	408	3	0.7
	Repair of neck of femur	345	0	0.0
Additional INS,QEUH only	Cranial Surgery	182	2	1.1
	Spinal Surgery	169	4	2.4

Table 7 *Local SSI Surveillance. Procedures undertaken 01/04/19 - 30/06/19 (In-patient and 30 day readmission; C-section* in-patient and PDS to day 10)

Statistical Process Control Charts

Statistical Process Control Charts (SPCs) continue to remain within normal control limits in all sites.

Cleaning and the Healthcare Environment

All areas within NHSGGC scored **GREEN (>90%)** in the most recent report on the National Cleaning Specification.

Cowlairs, Central Decontamination Unit, LRQA External Audit, July 2019.

This visit was to assess the compliance of the management system of Central Decontamination Unit NHS Greater Glasgow against ISO 13485:2016, MDD, 93/42/EEC was carried out 29 - 30 July 2019 that included 3 audit days.

9 minor findings from previous visits were reviewed and all were closed during the assessment and no further findings were raised during the assessment.

Based on the assessment outcome the assessor recommended continued certification to MDD 93/42/EEC; and ISO13485:2016. Both Assessors noted that there was a significant change in the compliance to the MDD and ISO 13485:2016 and there has been a significant improvement in quality and production processes at the site. It was noted that the site is clean, tidy and well organised.

Healthcare Associated Infection Reporting Template (HAIRT)

Section 2 – Healthcare Associated Infection Report Cards

The following section is a series of 'Report Cards' that provide information for each acute hospital and key non-acute hospitals in the Board, on the number of cases of *Staphylococcus aureus* blood stream infections and *Clostridioides difficile* infections, as well as hand hygiene and cleaning compliance. In addition, there is a single report card which *C. difficile* specimens identified from non-hospital locations, e.g. GPs, hospices, care homes, prisons etc. The information in the report cards is provisional local data and may differ from the national surveillance reports carried out by HPS and HFS. The national reports are official statistics which undergo rigorous validation which means final national figures may differ from those reported here. However these reports aim to provide more detailed and up-to-date information on healthcare associated infection activities at local level than is possible to provide through the national statistics.

Understanding the Report Cards – Infection Case Numbers
Clostridioides difficile infections (CDI) and *Staphylococcus aureus* bacteraemia (SAB) cases are presented for each hospital, broken down by month.

- **Healthcare associated cases**
  For each hospital the total number of cases for each month is included in the report cards. These include those that are considered to be **hospital acquired**, i.e. reported as positive from a laboratory report on samples taken more than 48 hours after admission and **healthcare associated** in which the patient has a positive sample taken from within 48 hours of admission and the patient has also had healthcare interaction in the previous 30 days for SAB or 12 weeks for *C. difficile*.

- **Community associated cases**
  For community associated cases, the patient has had no healthcare interaction as specified in the time frame above, however the specimen was obtained from a current hospital in-patient that did not meet the reporting criteria for a healthcare associated case.

More information on these organisms can be found on the HPS website:

***Clostridioides difficile*:**
http://www.hps.scot.nhs.uk/haiic/sshaip/clostridiumdifficile.aspx?subjectid=79

***Staphylococcus aureus* Bacteraemia**
http://www.hps.scot.nhs.uk/haiic/sshaip/mrsabacteraemiasurveillance.aspx?subjectid=D

Understanding the Report Cards – Hand Hygiene Compliance
Hospitals carry out regular audits of how well their staff are complying with hand hygiene. The Board report card presents the combined percentage of hand hygiene compliance with both opportunity taken and technique used broken down by staff group.

Understanding the Report Cards – Cleaning Compliance
Hospitals strive to keep the care environment as clean as possible. This is monitored through cleaning and estates compliance audits. More information on how hospitals carry out these audits can be found on the HFS website:
http://www.hfs.scot.nhs.uk/online-services/publications/hai/

NHS GREATER GLASGOW & CLYDE

REPORT CARD

Staphylococcus aureus bacteraemia monthly case numbers

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Healthcare Associated	24	21	22	28	29	31	31	24	25	29	31	25
Community Associated	11	9	4	4	6	5	14	16	5	7	7	4
Total	**35**	**30**	**26**	**32**	**35**	**36**	**45**	**40**	**30**	**36**	**38**	**29**

Clostridioides difficile infection monthly case numbers

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Healthcare Associated	26	40	28	17	18	27	20	18	18	16	30	23
Community Associated	6	10	6	13	10	9	10	6	7	8	2	5
Total	**32**	**50**	**34**	**30**	**28**	**36**	**30**	**24**	**25**	**24**	**32**	**28**

Hand Hygiene Monitoring Compliance (%)

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Board Total	**98**	**96**	**97**	**98**	**97**	**98**	**97**	**97**	**97**	**97**	**97**	**97**

Cleaning Compliance (%)

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Board Total	95.2	95.6	95.4	95.1	95.3	95.5	95.1	94.8	95.2	95.3	94.3	95.0

Estates Monitoring Compliance (%)

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Board Total	99.2	98.9	99.1	98.9	99.0	99.0	98.7	97.9	98.0	96.9	97.3	97.2

GLASGOW ROYAL INFIRMARY / PRINCESS ROYAL MATERNITY

REPORT CARD

***Staphylococcus aureus* bacteraemia monthly case numbers**

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Healthcare Associated	10	4	4	6	8	9	9	7	3	7	8	8
Community Associated	4	2	1	1	3	1	6	5	-	1	3	1
Total	**14**	**6**	**5**	**7**	**11**	**10**	**15**	**12**	**3**	**8**	**11**	**9**

***Clostridioides difficile* infection monthly case numbers**

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Healthcare Associated	6	11	6	2	6	9	4	5	8	4	8	7
Community Associated	1	1	2	2	1	2	1	2	-	3	-	-
Total	**7**	**12**	**8**	**4**	**7**	**11**	**5**	**7**	**8**	**7**	**8**	**7**

Cleaning Compliance (%)

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Board Total	95.8	95.7	95.5	95.6	95.8	95.7	95.6	95.6	95.0	95.2	95.3	95.3

Estates Monitoring Compliance (%)

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Board Total	99.6	99.7	99.6	99.7	99.5	99.6	99.5	99.2	98.7	97.9	96.9	95.7

ROYAL ALEXANDRA HOSPITAL

REPORT CARD

***Staphylococcus aureus* bacteraemia monthly case numbers**

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Healthcare Associated	2	7	4	4	5	1	5	4	7	4	7	3
Community Associated	2	5	-	1	1	2	4	4	1	1	2	1
Total	**4**	**12**	**4**	**5**	**6**	**3**	**9**	**8**	**8**	**5**	**9**	**4**

***Clostridioides difficile* infection monthly case numbers**

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Healthcare Associated	3	9	6	3	2	4	7	5	2	-	7	3
Community Associated	3	1	-	2	1	2	-	2	-	1	-	1
Total	**6**	**10**	**6**	**5**	**3**	**6**	**7**	**7**	**2**	**1**	**7**	**4**

Cleaning Compliance (%)

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Board Total	95.9	96.3	95.8	95.8	95.9	95.2	95.7	94.7	94.7	93.3	95.0	95.5

Estates Monitoring Compliance (%)

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Board Total	97.0	96.1	96.8	96.0	96.5	95.0	96.2	93.4	93.5	93.6	98.0	96.5

INVERCLYDE ROYAL HOSPITAL

REPORT CARD

***Staphylococcus aureus* bacteraemia monthly case numbers**

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Healthcare Associated	-	-	1	2	1	2	2	1	-	3	3	1
Community Associated	-	-	1	1	-	-	2	-	-	1	-	-
Total	**0**	**0**	**2**	**3**	**1**	**2**	**4**	**1**	**0**	**4**	**3**	**1**

***Clostridioides difficile* infection monthly case numbers**

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Healthcare Associated	3	3	1	1	-	2	2	2	-	3	2	1
Community Associated	-	1	-	1	1	-	-	-	1	-	-	-
Total	**3**	**4**	**1**	**2**	**1**	**2**	**2**	**2**	**1**	**3**	**2**	**1**

Cleaning Compliance (%)

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Board Total	94.0	95.4	94.5	94.4	96.0	95.2	95.6	94.7	93.6	94.9	95.2	95.1

Estates Monitoring Compliance (%)

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Board Total	97.3	97.7	96.8	96.2	97.3	97.4	96.6	95.4	95.2	96.5	96.6	96.9

VALE OF LEVEN HOSPITAL

REPORT CARD

***Staphylococcus aureus* bacteraemia monthly case numbers**

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Healthcare Associated	2	-	-	-	-	1	1	-	-	-	-	3
Community Associated	1	-	-	-	-	-	-	-	-	1	-	-
Total	**3**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**3**

***Clostridioides difficile* infection monthly case numbers**

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Healthcare Associated	-	1	-	1	-	1	-	-	-	-	-	-
Community Associated	-	-	-	-	-	-	-	-	-	-	-	-
Total	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**

Cleaning Compliance (%)

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Board Total	97.7	97.7	97.5	97.9	97.7	97.7	97.6	97.9	97.3	97.2	97.2	97.5

Estates Monitoring Compliance (%)

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Board Total	99.9	99.7	99.8	99.7	99.6	99.7	99.6	99.3	98.5	98.7	99.1	99.3

GARTNAVEL GENERAL HOSPITAL

REPORT CARD
Figures combined for Gartnavel General Hospital, Beatson WoSCC and Homeopathic Hospital

***Staphylococcus aureus* bacteraemia monthly case numbers**

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Healthcare Associated	1	2	-	-	2	-	1	1	2	1	2	2
Community Associated	-	-	-	-	-	-	-	-	-	-	-	-
Total	**1**	**2**	**0**	**0**	**2**	**0**	**1**	**1**	**2**	**1**	**2**	**2**

***Clostridioides difficile* infection monthly case numbers**

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Healthcare Associated	2	2	-	-	3	2	1	1	-	-	1	1
Community Associated	-	-	-	-	1	-	1	-	1	-	-	-
Total	**2**	**2**	**0**	**0**	**4**	**2**	**2**	**1**	**1**	**0**	**1**	**1**

Cleaning Compliance (%)

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Board Total	96.4	96.3	96.6	96.1	96.0	96.7	96.1	96.1	96.7	96.1	95.4	95.6

Estates Monitoring Compliance (%)

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Board Total	99.8	99.5	99.8	99.3	99.2	99.7	99.5	99.1	99.1	99.0	98.6	98.5

QUEEN ELIZABETH UNIVERSITY HOSPITAL

REPORT CARD

***Staphylococcus aureus* bacteraemia monthly case numbers**

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Healthcare Associated	9	8	10	15	11	14	13	8	10	5	10	6
Community Associated	3	1	1	1	2	2	1	5	4	3	1	1
Total	**12**	**9**	**11**	**16**	**13**	**16**	**14**	**13**	**14**	**8**	**11**	**7**

***Clostridioides difficile* infection monthly case numbers**

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Healthcare Associated	9	11	10	9	4	7	4	4	7	8	11	7
Community Associated	-	4	3	4	2	1	2	-	1	3	-	-
Total	**9**	**15**	**13**	**13**	**6**	**8**	**6**	**4**	**8**	**11**	**11**	**7**

Cleaning Compliance (%)

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Board Total	91.2	93.6	93.7	93.4	93.1	93.5	91.5	90.9	93.7	92.9	89.3	91.9

Estates Monitoring Compliance (%)

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Board Total	99.8	99.8	99.9	99.9	99.9	99.8	99.3	97.7	97.9	93.8	94.8	96.3

ROYAL HOSPITAL FOR CHILDREN

REPORT CARD

***Staphylococcus aureus* bacteraemia monthly case numbers**

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Healthcare Associated	-	-	1	1	-	3	-	2	2	6	-	1
Community Associated	1	1	1	-	-	-	1	2	-	-	1	1
Total	**1**	**1**	**2**	**1**	**0**	**3**	**1**	**4**	**2**	**6**	**1**	**2**

***Clostridioides difficile* infection monthly case numbers (in ages 15 & over only)**

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Healthcare Associated	-	-	-	-	-	-	-	-	-	-	-	-
Community Associated	-	-	-	-	-	-	-	-	-	-	-	-
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Cleaning Compliance (%)

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Board Total	94.8	95.1	93.9	94.6	95.0	94.9	94.5	94.1	93.7	95.2	93.8	94.5

Estates Monitoring Compliance (%)

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Board Total	99.5	99.3	99.4	98.9	99.1	99.7	97.8	97.3	98.5	95.1	94.4	95.2

NHS GREATER GLASGOW & CLYDE

NON-ACUTE HOSPITALS REPORT CARD

The hospitals covered in this report card include:

- Lightburn Hospital
- Dykebar Hospital
- Gartnavel Royal Hospital
- Leverndale Hospital
- Mac innon House
- Mearnskirk House (Closed 03 March 2019)
- New Victoria Hospital
- Orchard View (Inverclyde Royal Hospital campus)
- Stobhill Hospital

***Staphylococcus aureus* bacteraemia monthly case numbers**

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Healthcare Associated	-	-	2	-	2	1	-	1	1	3	1	1
Community Associated	-	-	-	-	-	-	-	-	-	-	-	-
Total	**0**	**0**	**2**	**0**	**2**	**1**	**0**	**1**	**1**	**3**	**1**	**1**

***Clostridioides difficile* infection monthly case numbers**

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Healthcare Associated	-	1	2	-	-	-	-	1	-	-	-	-
Community Associated	-	-	-	-	-	-	-	-	-	-	-	-
Total	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**

NHS GREATER GLASGOW & CLYDE

Non hospital locations (GP practices, care homes & hospices) report card
***Clostridioides difficile* infection monthly case numbers**

	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
Healthcare Associated	3	2	3	1	3	2	2	-	1	1	1	4
Community Associated	2	3	1	4	4	4	6	2	4	1	2	4
Total	**5**	**5**	**4**	**5**	**7**	**6**	**8**	**2**	**5**	**2**	**3**	**8**

GLOSSARY

AMT	**Antimicrobial Management Team**
Alert organism alert condition	Any of a number of organisms or infections that could indicate, or cause, outbreaks of infection in the hospital or community.
Bacteraemia	Infection in the blood. Also known as Blood Stream Infection (BSI).
CDI	***Clostridioides difficile*** Infection. Also referred to as ***C. diff*** is a Gram-positive spore-forming anaerobic bacterium. *C.difficile* is the most common cause of gastro-intestinal infection in hospitals. It causes two conditions; antibiotic associated diarrhoea and the more severe and occasionally life-threatening pseudomembranous colitis. Control of the organism can be problematic due to the formation of spores and difficulty in removing them. Patients who have had antibiotics within the last eight weeks are most at risk of acquisition of the organism.
CEL	**Chief Executive Letter** issued by Scottish Government Health Directorates (SGHD)
CRA	**Clinical Risk Assessment**
CVC	**Central Vascular Catheter.** This also includes those that are peripherally inserted i.e. PICC
Code of Practice	**Code of Practice -** The NHS Scotland Code of Practice for the Local Management of Hygiene and Healthcare Associated Infection issued 2004 contains the components that must be complied with by all NHS HCWs in Scotland. http://www.scotland.gov.uk/Publications/2004/05/19315/36624
GRO	**General Registers Office**
HAI	Originally used to mean hospital acquired infection, the official 'Scottish Government' term is now **Healthcare Associated Infection**. These are considered to be infections that were not incubating prior to contact with a healthcare facility or undergoing a healthcare intervention. It must be noted that HAI infection is not always an avoidable infection. **Please note** that for *S.aureus* Bacteraemia surveillance – HAI refers to 'hospital acquired cases as per HPS National reporting requirements. See http://www.documents.hps.scot.nhs.uk/hai/sshaip/guidelines/s-aureus/esab-protocol-v2-2014-11.pdf
HCAI	**Healthcare Associated Infection (for CDI and SAB classification)**
HCW	**Healthcare Worker**
HDL	**Health Department Letter**
HDU	**High Dependency Unit**
HEAT Target	**Health Efficiency and Access to Treatment**. Targets set by the Scottish Government.
HFS	**Health Facilities Scotland**
HH	**Hand Hygiene**
HIIAT	**Hospital Infection Incident Assessment Tool**
HIIORT	**Healthcare Infection Incident and Outbreak Reporting Template**
HIS	**Health Improvement Scotland**
HPS	**Health Protection Scotland**
HSCP	**Health & Social Care Partnerships**
IPCN /T/D/M	**Infection Prevention & Control Nurse / Team / Doctor / Manager**
ICP	**Infection Control Programme**
ICU	**Intensive Care Unit**
ISD	**Information Services Division** A division of National Services Scotland, part of NHS Scotland. ISD provides health information, health intelligence, statistical services and advice that support the NHS in progressing quality improvement in health and care, and facilitates robust planning and decision making.
IVAD	**Intravenous Vascular Access Device.** An invasive device placed into a vein which is used to administer intravenous fluids or medication. **Examples are PVC or CVC**
PI	**Key Performance Indicator**
MDRO	**Multi Drug Resistant Organism**
MRSA	**Meticillin resistant *Staphylococcus aureus*.** A *Staphylococcus aureus* resistant to first line antibiotics; most commonly known as a hospital acquired organism.
MSSA	**Meticillin Sensitive *Staphylococcus aureus***
NHSN	**National Healthcare Safety Network** – risk factor score for determining risk of SSI after surgery.
OBD	**Occupied Bed Days**
OPAT	**Outpatient Parenteral Antibiotic Therapy**
PDS	**Post Discharge Surveillance (Caesarean Section procedures only)**
PHPU	**Public Health Protection Unit**
PICC	**See CVC**
PPI	**Proton Pump Inhibitors.** A group of medications used to decrease gastric acid production.
PVC	**Peripheral Vascular Catheter**
RSV	**Respiratory Syncytial Virus.** A contagious respiratory infection.
SAB	***Staphylococcus aureus* Bacteraemia**
SCN / M	**Senior Charge Nurse / Midwife**
SICP	**Standard Infection Control Precautions**
SGHD	**Scottish Government Health Directorate**
SOP	**Standard Operating Procedure**
SPC	**Statistical Process Control *(Charts)***
SSI	**Surgical Site Infection**
VRE	**Vancomycin resistant enterococcus** - an alert organism. A common organism that can be inherently resistant to Vancomycin but can also acquire (and transfer resistance) to other organisms. Has caused outbreaks reported in the literature in a variety of high-risk settings, e.g. renal or bone marrow transplant units.

Enhanced *S. aureus* Bacteraemia Surveillance Definitions

Hospital Acquired Infection

Positive blood culture obtained from a patient who has been hospitalised for 48 hours. The patient was discharged from hospital in the 48 hours prior to the positive blood culture being taken. If the patient was a neonate/baby who has never left hospital since being born.

OR
a patient who receives regular haemodialysis as an outpatient.

OR
contaminant if blood aspirated from hospital

Healthcare Associated Infection

Positive blood culture obtained from a patient within 48 hours of admission to hospital and fulfils one or more of the following criteria:

1. Was hospitalised overnight in the 30 days prior to the positive blood culture being taken
   OR
2. Resides in a nursing home
   OR
3. IV, or intraarticular medication in the 30 days prior to the positive blood culture being taken, but excluding illicit drug use
   OR
4. Regular user of a registered medical device
   OR
5. Underwent a medical procedure which broke mucous or skin barrier in the 30 days prior to the positive blood cultures being taken
   OR
6. Underwent care for a medical condition by a healthcare worker in the community which involved contact with non intact skin, mucous membranes or the use of an invasive device 30 days prior to the positive blood culture being taken

Community Acquired Infection

Positive blood culture obtained from a patient within 48 hours of admission to hospital who does not fulfil any criteria for healthcare associated bloodstream infection.

HPS Protocol
April 2016, Version 1.0

Appendix 1

Infection Prevention & Control and Antimicrobial Management Team ***Clostridioides difficile* (*C. difficile*)**	NHS Greater Glasgow and Clyde

Dear Doctor,

Re: Above Patient

This patient was recently diagnosed with *Clostridioides difficile* (*C. difficile*). We would be grateful if you could consider the following in order to reduce the risk of relapse or future episodes:

1. If the patient is prescribed a proton pump inhibitor – please review. PPIs are associated with increased risk of *C. diff*icile. See the following for guidance on duration of PPI prescribing:

   [redacted] (review Date May 2019)
2. Please consider the need for antibiotic therapy, and follow the primary care guidelines for future suspected bacterial infection episodes ensuring avoidance of those antibiotics most associated with *C. difficile* i.e. quinolones, co-amoxiclav, cephalosporins and clindamycin.
3. Please try to ensure that any future antibiotic **course duration** does not exceed that recommended within GGC guidance.

With many thanks for your cooperation.

On behalf of GG&C IPC and AMT teams

[redacted]

Dr Teresa Inkster, Lead Infection Control Doctor, GG&C

[redacted]

Dr Andrew Seaton, Lead Physician, GG&C Antimicrobial Management Team

A49799834

[redacted]

Dr Brian Jones, Lead Microbiologist, GG&C Antimicrobial Management Team

[redacted]

Ysobel Gourlay, Lead Antimicrobial Pharmacist, GG&C Antimicrobial Management Team

Infection Control Input Ward 2A: March 2017 – Current Date

IPCATs

- 10th Feb 2017 - Overall Score 89% (SICPs 87%, SPE 82%, TBPs 100%, QA 100%) NB; Control of environment section scored 33%.
- 1st June 2017 - Overall Score 74% (SICPs 69%, SPE 69%, TBPs 94%, QA 50%)
- 7th November - Overall Score 94% (SICPs 93%, SPE 92%, TBPs 97%, QA 100%)

H/H Audits

- 8th March 2017 Opportunities taken: 100% Combined compliance 85%.
- 19th April 2017 Opportunities taken: 95% Combined Compliance 70%.
- 12th April 2018 Opportunities taken: 95% Combined Compliance 85%.

Observational Audit of line Care

- Completed in March 2018. A number of poor practices identified. These were taken forward by Practice Development Nurse for ward 2A and were part of the initial focus of the QI Vascular access group.

CVC Sweeps

- 26th January 2018 - Score 78%.
- 7th February 2018 – Score 100%.

Staff Education

- 8 drop in hand hygiene sessions between May 2017 and June 2017.
- 6 drop in SICPs sessions November 2011.

Patient/Parent Education

- Infection Control guidance sheet developed for every patient room and parents (and patients if age appropriate) asked to familiarise themselves with the sheet during induction to the ward.
- Parent education sessions focusing on IPC measures necessary in ward 2A – clean and clutter free rooms, ensuring lines don't trail on floor, highlighting redness/swelling at line site to staff, stopping staff if they feel IPC measures aren't being followed, linen management, cleaning of toys, hand hygiene.
- General infection prevention and control information leaflet developed and currently going through committees (May 2018). To be issued to all parents of inpatients on ward 2A when available.

Attendance at Medical Meetings

- During incidents, IPCNs and ICDs have attended medics, weekly meetings when requested to provide updates and relay IPC advice/good practice.

Increased IPCN Presence on the Ward

- IPCNs are required to visit every inpatient area at least weekly. Ward 2A has been visited twice weekly as a minimum since May 2017 however IPCNs are on the ward 3-4 times per week in reality taking into account patient referrals. IPCN visits have been increased to daily as of W/B 21st May 2018.

Enhanced Supervision

- Structured weekly visit to the unit accompanied by the clinical Lead nurse and a representative from domestics. Observations/checks include; general inspection of the environment for cleanliness and clutter, check that clinical hand wash basins are clear, cleanliness of equipment, use of PPE, prep of IV meds, parent practices, hand hygiene, documentation including IPC care plans, CVC/PVC care plans and Bristol stool charts, parent beds. Findings are reported to nurse in charge at the time of the visit and a written report emailed to SCN, LN, CN and domestic manager.

Air Sampling

Water Testing

Water Checklists (Pseudomonas SOP)

- 27th February 2018 SBAR issued detailing actions required.
- 20th April 2018 SBAR issued detailing actions

Emails to Domestic Services re. concerns

- 5th December 2017 – Floors not clean.
- 12th January 2018 – High dust levels. Poor domestic knowledge.
- 16th January 2018 – Empty room ready for admission – dusty.
- 19th January 2018 - Empty room ready for admission – dusty.
- 29th January 2018 – Underside beds dusty.
- 5th February 2018 – General concern re: cleanliness levels on ward.
- 16th February 2018 – Meeting with GM for facilities to discuss concerns around cleaning of 2A and agreed actions form meeting previous year.
- 25th April 2018 – Meeting with Domestic managers regarding concerns associated with domestic staffing provision on 2A, cleaning of underside of parent beds, access to clean reporting.

October 2017: Ward 2A – IPC Interventions and Improvement works in response to a number of incidents and outbreaks spanning 7 months including high bacteraemia rates.

Susie Dodd – Lead IPCN

Item	Intervention	Outcome/Progress
1	IPCAT audits	19/04/17 – 87% (SICPs 93%, SPE 65%, TBPs 100%, QI 100%) 01/06/17 – 74% (SICPs 69%, SPE 69%, TBPs 94%, QI 50%) • Questions for staff included in the IPCAT were sent to SCN for distribution to all staff to improve knowledge. • Education for staff delivered. Due again November 2017.
2	Hand hygiene audits	Hand Hygiene Coordinator Audit 8/3/17 – Opportunities taken 100%, Combined compliance 85% Hand Hygiene Coordinator Audit 19/4/17 - Opportunities taken 95%, Combined compliance 70% Hand Hygiene Coordinator Audit 6/6/17 - Opportunities taken 95%, Combined compliance 80%
3	Review of Aseptic Technique and Line care	Week of 20/03/17 – Week of observation of line practice carried out by IPCNs. Number of poor practices identified which were of concern. Findings discussed and emailed to SCN, LN, PDN and reported to CN and GM. • Meetings with PD nurse to discuss poor practice and requirement for aseptic technique and line care • Review of quick reference guideline for administration of IV drugs for use in 2A treatment room • Advised purchase of 10 Stainless steel trolleys for use during IV line care. • Re-convening of 2A QI CLABSI group chaired by Timothy Bradnock • Review of environment and treatment areas (see item 6) • IPCT contacted Royal Marsden and GOSH to discuss aspects of bacteraemia reduction rates
4	Review of Antimicrobial prescribing	May 2017 – Requested by IPCT in response to increased incidence of VRE in stools and increasing Bacteraemia rates. • Demonstrated a spike in Vanc/Teic use coinciding with increase in blood cultures and subsequent increase in VRE colonisations.
5	Enhanced observation of practice by IPCNs	June/July 2017 – Commenced in response to ongoing outbreaks incidents on 2A. 6 sessions in total carried out. IPCNs observed practice in relation to SICPs, TBPs, environmental cleanliness, aseptic

		technique and line practice. Feedback given at time of session to nurse in charge and reported out afterwards by email to SCN, LN, CN, GM and ANDIPC.
6	Review of environment particularly in relation to IV medication reconstitution	In response to poor practice identified during line care the IPCT reviewed the ward in relation to appropriately sized, stocked and clean treatment rooms for reconstitution of IV meds. In general, it was felt that the treatment room and available work top space was insufficient for the volume of meds being made up by a large volume of nursing staff. • Suggested alteration works to TCT corridor to install a CHWB, worktop and locked cupboards to allow IV meds to be reconstituted in this area. It was recognised that this would not meet building note standards however, in the absence of another room to be used as a treatment space, this was the most suitable option. • Suggested alterations sent to SCN on 11/8/17 by email. This was forwarded to estates manager – response awaited.
7	Staff education	Hand hygiene education sessions carried out throughout June/July. 8 in total provided in NICU and 2A and all staff from both areas invited to attend. Poor attendance by medical staff which was reported to SMT. Further 2 dedicated sessions held for medical staff. SICPs education April/May, 2017 ward 2A. Mainly attended by students and nursing staff. ICD provided IPC education for medical staff, ward 2A, July 2017.
8	Parent education	Parent education developed following concerns around clutter environment and general lack of knowledge around IPC. 4 sessions held in total throughout July and August, 8 parents attended. Session will be repeated. Parent IPC information poster developed and now displayed in every patient room. Parent IPC patient info leaflet in development.
9	Water and air testing	Water outlets have been tested in response to incidents/outbreaks on 2A since March 2017. Air sampling is carried out routinely. A number of tests have revealed fungal counts which require the room to be vacated and remain out of use until cleaning has taken place and repeat sampling finds counts to be within a normal limit. (Further detail around this can be obtained from ICDs/consultant microbiologists).
10	Review of domestic cleaning	Following an outbreak of Rota and Astrovirus in April 2017 the domestic cleaning was reviewed. Basic audit of environmental cleanliness was carried out by the IPCT. Concerns were raised around the findings. Meeting held between IPCT and facilities management. Actions included; • full clean of the ward by domestic services • full clean of the ward by external contractors

		• domestic services audit • cross peer audit by domestic services • Daily review of cleaning by domestic supervisor/manager • Additional domestic hours • Long term daily routine cleaning of the unit with Actichlor plus (ongoing)
11	Training for auditors (SICPs and Hand hygiene)	July – Training of staff by Hand hygiene coordinator to ensure hand hygiene auditing on the unit is accurate. August – Training of staff by LIPCN to complete SICPs audits.
12	CVC sweeps	28/03/17 – CVC sweep in response to increased bacteraemia rates – 58% (only 11 of 19 CVC care plans in place and fully completed). Feedback given to SCN, LN, CN, ANDIC 13/10/17 - CVC sweep in response to increased bacteraemia rates – 57% (only 12 of 21 CVC care plans in place and fully completed). Feedback given to SCN, LN, CN, ANDIC
13	Re-convening of the QI CLABSI group	Group has 4 work streams; • Theatre (insertion + subsequent visits) • Access and line maintenance • Patient and family engagement • Staff education and training Work underway so far; • Review of line maintenance by Practice development nurse and Quality Improvement facilitator • Trial of Curos port protectors. These have been rolled out to all 2A patients who are on 2A. If the are boarded out to another ward they do not receive curos port protectors and are not included in the numbers. Compliance so far is in the region of 72-74%. Vygon state that a 30% reduction in CLABSI will be achieved once 80% or more compliance is achieved. • Pre theatre patient hygiene. • Roll out of Aseptic Non Touch Technique.
14	Twice weekly ward visits	IPCT have visited ward 2A twice weekly (compared to once weekly in all other areas). Often, it is more frequently than twice weekly depending on new patient referrals. Weekly visit allows staff to raise concerns with IPCN and IPCN can relay any advice and monitor for any good/poor practice.
15	Weekly reporting to medical director (IPC, clinical SMT, domestic and facilities)	Following a number of concerning incidents on ward 2A, Lead IPCN developed a report tabling all the incidents and outbreaks on the unit since March 2017. This was sent to IPC SMT and forwarded to medical director. As a result, the medical director requested weekly updates on progress in 2A. The

		update contained a report from IPCT, domestic services, estates and clinical team. IPCT report was issued to CN and GM each Friday to then be forwarded to medical director. Reporting now ceased.
16	SPC monitoring	SPCs were developed for environmental organisms and Coag negative Staphylococci organisms found in blood cultures. These are formulated and monitored on a month by month basis by the IPCT.
17	Review of CLIC sargent house	Review of CLIC sargent house for any possible route of cross transmission between patients. None found.
18	Consideration of phlebotomy practice	Practice amongst the phlebotomists was queried in April and October 2017. IPCT raised concern around storage of equipment for IV access by phlebotomists. This was reviewed and practice changed. The practice development nurse has been managing the phlebotomy service since April 2016. 3 were in post and had been for several years and they were previously trained by an ANP. The newest recruit was trained by the PDN. When concerns around the line infections were first raised, all phlebotomists were given refresher training by the PDN. They were all included in the audit of practice and also given an education session by Vygon. There were no major concerns identified.

Planned action	When/How/Who	Outcome
IPCAT	IPCT - 1st Nov 2017	
CVC sweep	IPCT - 19/10/17	57% Only 12 of 21 care plans were in place and fully completed. Fed back to SCN, LN, CSM, CN and GM.
Hand hygiene audit	IPCT - W/B 23/10/17	
Discuss QI progress with Tim	Gillian Paton (PDN) and Kathleen Thompson (QI facilitator) will organize a review of practice on 2A. KT will produce forms based on the key 5 elements of the RHC access and maintenance bundles. Staff will be observed for compliance.	Discussed with Timothy Bradnock 19/10/17. This was reported at the QI group as having been completed. Discussed with Gillian Paton 20/10/17. She completed this action over a period of 2 weeks in May however this was done as an observational audit and there is no paper trail record of findings.

		Gillian reports that no issues were found with staff practice. Email sent to KT to query if she too had carried this audit on 2A and if a record was kept.
	Given the temporal relationship between the change of needle-free device, it was agreed that TJB would raise these concerns with Jen Rodgers to see if any other clinical areas had reported an upsurge in CLABSI rates since switching to Vadsites. Staff will complete datix forms if further issues arise.	Discussed with Timothy Bradnock 19/10/17. He discussed this with Jen Rodgers who reported that there had been no concerns raised in other areas associated with the use of VAD sites and line associated bacteraemias.
	KT will report back further regarding compliance with access. The theatre sub-group will meet to discuss the insertion bundle and circulate a proposed bundle, which will largely be based on the SPSP bundle. This will then be promoted across all theatre user groups and in particular to the surgeons.	Discussed with Timothy Bradnock 19/10/17. Almost complete.
	AR and the A and M sub-group will agree on the tunnelled line dressing to be used in Schiehallion.	Discussed with Angela Howat and Gillian Paton 19/10/17. Changed from Mepatil dressing to IV3000. Some staff find the IV3000 doesn't stick well and curls at the edges. Trial ongoing. Suggested that a formal questionnaire is given to staff/parents to record usability and suitability formally.
	KT will help facilitate a brief bedside audit to record frequency and indication for line access.	Discussed with Gillian Paton 19/10/17. This was in fact carried out by Gillian Paton. A formal record of audit was not kept however she felt that there were possibly some reductions in frequency of line access which could be made. Advised to take this

		forward.
	TJB will approach the medics to try and quantify how frequently medics are accessing tunneled lines. He will also speak to Morag Wilson regarding the possibility of having a slot in medical induction for CVL access training.	Discussed with Timothy Bradnock 19/10/17. It was concluded that medical staff very rarely accessed CVC lines for 2A patients on 2A or boarding on other wards and it was therefore felt that there would be very little benefit to adding CVC access training to an already full medical induction.
	The theatre insertion group will include this in the insertion bundle. In the meantime, KT will email the ward to request that this becomes standard practice using soap and water, either the night before or the morning of surgery.	Discussed with SCN Emma Somerville 19/10/17. This is now happening and has been added to the pre theatre checklist. However, Emma did point out that the theatre slots could often be delayed meaning that patients did not attend theatre until 12-24 hours after their wash. Susie Dodd will discuss this with QI facilitator.
	Aseptic Non Touch Technique (ANTT)	Discussed with Gillian Paton 19/10/17. Roll out has started but it is slow due to time constraints. Training ongoing and all new starts on the ward will be taught the ANTT method.

From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)
To: Devine, Sandra
Cc: Kerr, Ann; Joannidis, Pamela; Walsh, Tom; Marek, Aleksandra
Subject: [ExternaltoGGC]Re: appendix 13
Date: 26 March 2018 12:06:53

Agree we need to discuss. There was clear guidance in place before I went off sick . There is a difference between a trigger and the need for a PAG. One bacteraemia does not require a PAG.

I would suggest we revert back to previously agreed triggers particularly in light of the recent incident. The issue here is not over sensitive triggers . Some of the PAGs that were held in my absence were inappropriate and outwith triggers .This relates to education of ICDs involved.

So, I will spend some time going over this at the SMT and again at the ICD meetings including what we should be doing if a single bacteraemia

KR
Teresa

Dr Teresa Inkster
Lead Infection Control Doctor NHSGGC
Training Programme Director Medical Microbiology
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
Direct dial : [redacted]

From: Devine, Sandra <Sandra.Devine[redacted]
Sent: 26 March 2018 11:41
To: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)
Cc: ann.kerr[redacted] Joannidis Pamela (NHS GREATER GLASGOW & CLYDE); Walsh Thomas (NHS GREATER GLASGOW & CLYDE); Marek, Aleksandra
Subject: RE: appendix 13

Hi
Wonder if we could discuss detail at next SMT. Need time frames for linked cases and what would be the action if we had a single bacteraemia – not sure we could sustain a PAG for every bacteraemia but we could scope. There is a CPE SOP and i have asked for Pamela to send round for comments the MDRO SOP that i think was in draft previously.

Teams need really clear guidance at the moment as there has been so many changes to the national manual.

Kind regards
Sandra

Sandra Devine
Associate Nurse Director
Infection Prevention & Control
[redacted]

From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [mailto:teresa.inkster[redacted]
Sent: 23 March 2018 16:48
To: Devine, Sandra
Subject: [ExternaltoGGC]Re: appendix 13

Hi - I have attached email from not long before I went off which was my understanding of the triggers and a single bacteraemia was one for the organisms listed . This paper has no time frames attached so we should add

Some comments on the document also . Not had a long time to look it but happy to discuss further
KR
Teresa

Dr Teresa Inkster
Lead Infection Control Doctor NHSGGC
Training Programme Director Medical Microbiology
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
Direct dial : [redacted]

From: Devine, Sandra <Sandra.Devine[redacted]
Sent: 23 March 2018 09:05
To: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)
Subject: FW: appendix 13

This is what Pamela came up with
Sandra

Sandra Devine
Associate Nurse Director
Infection Prevention & Control
[redacted]

From: Joannidis, Pamela
Sent: 23 March 2018 08:32
To: Devine, Sandra; Dodd, Susie; Ferguson, Kirsty; Hamilton, Kate; Higgins, Joan; Kerr, Ann; Pritchard, Lynn
Cc: Hamilton, Pauline
Subject: RE: appendix 13

Hi all
I was asked as an action from the Leads meeting to send the IPC SBAR re Appendix 13 to you for comment. Please see attached. MDRO SOP to follow in separate email.
Pamela

From: Joannidis, Pamela
Sent: 13 December 2017 15:05
To: Joannidis, Pamela; Devine, Sandra; Dodd, Susie; Ferguson, Kirsty; Hamilton, Kate; Higgins, Joan; Kerr, Ann; Pritchard, Lynn
Subject: RE: appendix 13

Hi
Please see attached, the SBAR for our implementation of specific alert organisms within Appendix 13.
Can you take a look and perhaps we can discuss at next week's leads ?

kind regards
Pamela Joannidis
Nurse Consultant
Infection Prevention and Control
[redacted]

From: Jones, Brian
To: Walsh, Tom; Devine, Sandra
Subject: FW: Request
Date: 23 August 2017 17:21:25

FYI

-----Original Message-----
From: Jones, Brian
Sent: 23 August 2017 17:26
To: Peters, Christine; Neil, Isobel
Subject: RE: Request

Dear Christine,

This a very unfortunate situation. It will take time but we will do our best to address these issues asap. In the meantime I'd be grateful if [redacted] and Pepe could continue to provide IPC cover for the South Sector. Neither consultant will be asked to sign off any documents during this period.

These are extraordinarily difficult circumstances and I appreciate everyone's support.

Kind regards,

Brian

Professor Brian L. Jones
Consultant Medical Microbiologist, Glasgow Royal Infirmary
Head of Service, Microbiology & Virology, NHS GGC

Professor of Clinical Microbiology & Infection
Institute of Infection, Immunity & Inflammation,
University of Glasgow

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Mobile [redacted]

brian.jones[redacted]
brian.jones[redacted]

-----Original Message-----
From: Peters, Christine
Sent: 23 August 2017 16:44
To: Jones, Brian; Neil, Isobel
Subject: FW: Request
Importance: High

Hi Brian and Isobel,

Please be advised that I have just received a request from [redacted] (below) to relinquish [redacted] infection control remit by undertaking an urgent job plan review. I am not surprised as [redacted] has been under a lot of pressure since Teresa went off with regard to IC and the last few days have been particularly unpleasant.

Furthermore Pepi has written to say that unless she is formally advised in writing about her exact IC remit she feels unable to be a named ICD here.

Could we urgently discuss how we can take this situation forward please?

Kr
Christine

-----Original Message-----
From: [redacted] (NHS GREATER GLASGOW & CLYDE)
[redacted]
Sent: 23 August 2017 16:33
To: Peters, Christine
Cc: flogan[redacted]
Subject: Request

Hi Christine,

I would be most grateful if it would be possible to request an urgent job plan review with a view to relinquishing my infection control sessions for clinical work instead which has been understaffed. This is on the basis that since Teresa has left, there has been a clear gap in the leadership structure of IPC and although we have all been working very hard, I am not comfortable with much of the work that fell under her remit of lead, regional and paediatric ICD. I feel as though I am coming into conflict with IC management on various issues, and there is clearly a lot of backstory behind much of the work that Teresa did which I am not fully appraised of. In addition I have not at this stage built up the expertise that she had. Of course, there may be other ICDs who are more than happy to undertake Teresa's work and I in no way wish to criticise or pose an impediment to anybody. I have copied in a member of the BMA team just to keep them informed.

With many thanks,

[redacted]

From: Armstrong, Jennifer
Sent: 07 August 2015 17:17
To: Stewart, David; Archibald, Grant
Subject: FW:

Both
See advice from IC doctor (Pauline Wright)

I also spoke to Sandra: there will be advice sought from both estates on the engineering issues as well as advice from the UK expert from Public Health England – Dr Peter Hoffman - on the significance of the counts compared with the specification.

On discussion with Sandra, the schehallion spec is thought to be ok; there has been previously sealing done on the rooms to ensure their integrity. However it will be on Monday before further information will be available.

We can perhaps catch up Monday to see where we are with this
j

From: McNamee, Sandra
Sent: 07 August 2015 17:08
To: Armstrong, Jennifer
Subject: Fw:

Fyi

Sent from my BlackBerry 10 smartphone on the EE network.

From: Wright, Pauline <Pauline.Wright[redacted]
Sent: Friday, 7 August 2015 15:54
To: McNamee, Sandra
Subject: RE:

Hi Sandra,

John Hood is dicussing with Ian Powrie this afternoon to see if he can get additional information including room specification / validation data / progress with permeability testing. He will also discuss with Peter Hoffman, hopefully on Monday. Until that time no recommendation can be made regarding whether the rooms can be used for transplantation. The one child who was scheduled to start chemo today will be delayed as her procedure was for a benign condition and it was not necessary that it happen now. We have told Brenda that we aim to get an answer for them next week once in full possession of all the facts and there has been a discussion with Peter Hoffman.

Pauline

From: McNamee, Sandra
Sent: 07 August 2015 15:37
To: Wright, Pauline
Subject:

Hi Pauline
Sorry to hassle you but did you manage to get the information you were looking for from Ian Powrie? and was everything ok when you visited the unit with Brain.

Thanks
Sandra

Sandra McNamee
Associate Nurse Director
Infection Prevention & Control
[redacted]

RE: Sealing of Suites within Children's Hospital Ward 2A

McNamee, Sandra <Sandra.McNamee[redacted]

Fri 11/09/2015 09:43

To Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20) <teresa.inkste[redacted]

Teresa - I have some additional information could you call me urgently.
kind regards
Sandra

Sandra McNamee
Associate Nurse Director
Infection Prevention & Control
[redacted]

From: Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20) [mailto:teresa.inkste[redacted]
Sent: 10 September 2015 15:43
To: McNamee, Sandra
Cc: Joannidis, Pamela; Balfour, Alison; Jones, Brian
Subject: RE: Sealing of Suites within Childrens Hospital Ward 2A
Importance: High

Dear Sandra ,

I have not been involved in any discussions or attended any meetings regarding childrens BMT and I have not received a handover. This is a complex issue and, ideally, any decision should be made in conjunction with estates colleagues, Prof Williams (ICD for RHC) and Dr John Hood (local ventilation expert who has been closely involved).

Pamela, Alison and myself met today and reviewed the particle counts from Friday 4th September and these are still elevated in rooms 18 and 19 . Pamela has reviewed the unit today and has expressed concerns re practice and procedures. Pamela has also noted outside construction work in close vicinity to the unit.

Whilst particle counts are only one parameter , they would indicate that further investigations are necessary to ensure safety for patients. It would be helpful to have sight of the following ;

[redacted] 1/6

1) Validation reports including leak test results
2) Minutes from relevant previous meetings
3) The most recent report and recommendations from Dr Hood

In light of the information currently available to us , Alison, Pamela and I feel that we must err on the side of caution and cannot recommend that the unit is safe for transplant procedures.

Kind Regards
Teresa

Dr Teresa Inkster
Consultant Microbiologist and Infection Control Doctor
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
Direct dial : [redacted]

From: McNamee, Sandra [Sandra.McNamee[redacted]
Sent: 09 September 2015 16:05
To: Redfern James (NHS GREATER GLASGOW & CLYDE - SGA20)
Cc: pamela.joannidi[redacted] Williams Craig (NHS GREATER GLASGOW & CLYDE - SGA20); Inkster Teresa (NHS GREATER GLASGOW & CLYDE - SGA20); alison.balfou[redacted]
Subject: FW: Sealing of Suites within Childrens Hospital Ward 2A

Hi Jamie
I am acting up for Tom so could you cc me into any correspondence regarding this issue.

In response to your e mail:

- My understanding is that the ICDs who will give advice after reviewing the results of this weeks testing will be Dr. Alison Balfour (Thursday) or Dr T Inkster (Friday). We will let you know when these are available.
- Craig will be back on Monday and can advise on the testing of the other rooms due to be sealed next week.
- Pamela is meeting with Billy tomorrow to progress the issues regarding the cleaning of the unit.

Thanks
Sandra

Sandra McNamee
Associate Nurse Director

[redacted] 2/6

Minutes of Meeting
Meeting Room L02-001, Teaching & Learning Centre
Queen Elizabeth University Hospital

Wednesday 4th October 2017 at 8:00am

PRESENT

Dr Jennifer Armstrong (**Chair**)	JA	Medical Director
David Loudon	DL	Director of Property, Procurement & FM
Morag Gardner	MG	Chief Nurse
Sandra McNamee	SMcN	Associate Nurse Director IPC
Ian Powrie	IP	Depute General Manager, Estates
Professor Brian Jones	BJ	Head of Service, Microbiology
Tom Walsh	TW	Infection Control Manager
Anne Harkness	AH	Director, South Sector
Jonathan Best	JB	Acting Chief Operating Officer
Gary Jenkins	GJ	Acting Director, North Sector
Dr Penelope Redding	PR	Consultant Microbiologist
Dr Christine Peters	CP	Consultant Microbiology
[redacted]	[redacted]	[redacted]
Dr Rachel Green	RG	Chief of Medicine, Diagnostics

In Attendance

Ann Lang (Minutes) PA, Infection Prevention and Control

Item	Action

1. Welcome & Introductions

Dr Armstrong welcomed everyone to today's meeting to discuss Infection Control and estates issues at QEUH and RHC and round the table introductions were made. The group noted that colleagues from Women's and Children's Directorate were not in attendance but were aware of the issues raised and had helpfully submitted information via email which could inform the relevant areas of the discussion.

2. Purpose, Format and Conduct of Meeting

Dr Armstrong advised that a series of emails have been received from Dr Redding and Dr Peters regarding Infection Control and estates issues on the QEUH and RHC site. Dr Armstrong had requested a document setting out the issues of concern and thanked Drs Redding and Peters for providing the SBAR document which provided a helpful basis for the discussion. Dr Armstrong proposed that the meeting is focused on patient safety and a review and update on the current status of the issues identified.

She asked that if there are any comments during the meeting if these could be addressed through the chair and to adhere to the GMC and Board guidance regarding respect, professionalism and working as part of a team. The group agreed the importance of issues raised being discussed in the context of the appropriate roles, responsibilities and governance structures.

3. Review of SBAR / Concerns

It was agreed to go through the items detailed in the SBAR from Dr Redding and Dr Peters, to look at the points raised and address any outstanding issues.

Item	Action

- Patient Placement

Dr Redding outlined that there are challenges for the microbiologists regarding source isolation of infected patients.

She said the current situation is that the positive pressure ventilated lobby rooms were not built to SHTM standard and she and others were concerned that they do not provide appropriate protection when managing a small number of patients with significant respiratory pathogens of high consequence such as MERS and MDRTB.. Dr Peters advised that Microbiologists and ICDs and ID colleagues feel there is a lack of provision for isolation rooms in A&E. David Loudon replied that this specification was signed off by the board and clinical teams; he also confirmed that remedial work had been carried out due to issues raised at the snagging stage of the build. David also stated that although there were some modifications to the design the rooms did conform to SHTM 04-01 and that it was incorrect to state that this was not the case. Ian Powrie addressed specific points raised in respect of the ventilation specification and agreed to provide the detailed information to support this.

Sandra McNamee commented that the inclusion of the Infectious Diseases service was a late amendment to the QEUH project and therefore not commissioned as an ID unit at the outset. The group noted that the Brownlee Clinical Team put a strong clinical case to the board to be co-located on QEUH site with the Intensive Care Unit and other critical clinical services. The issues identified were discussed with HPS at the time and they agreed to advise the Board on what standard these rooms would need to be to accommodate these patients. When this information has been received, estates colleagues will review the advice to determine if these modifications were feasible. Dr Redding stated she would like to see the evidence relating to this. Sandra advised that a follow up meeting took place with HPS on Monday 2nd October and that the relevant information was expected in the next few weeks, however in the meantime a patient pathway has been in place which routes these patients to appropriate isolation rooms in other hospitals.

Dr Peters reported that these patients with significant airborne pathogens are being sent from A&E to the isolation rooms in ITU before being transferred to other hospitals as reported by ID colleagues. The group noted that this would be the case for other hospitals within NHSGGC and across NHS Scotland. Dr Peters however intimated that there is a risk of exposure to a large number of patients and staff and reiterated that, in her opinion, the ITU isolation rooms are not adequate for these types of patients. Furthermore other hospitals have not been recently built and are not a tertiary ID referral centre such as the QEUH. Dr Redding also recognised that work may be ongoing but the microbiologists are not aware of this.

Anne Harkness advised that as these issues were raised she met with Directors and ID Physicians and they agreed a pathway for these patients to be transferred to other sites. She also commented that based on the external advice, unless the existing rooms can be modified in some way the only alternative was to build a new Infectious Disease Unit which would require a significant resource. David Loudon confirmed that changing the specification to negative pressure would be reviewed to assess technical feasibility.

It was agreed to await the response from HPS and to deal with any further issues via the Acute and Board Infection Control Committees and the relevant Directorate Governance Committees.

Item	Action
• Protective Isolation Currently HEPA filters are not fitted in PICU isolation rooms and in the prep rooms in Ward 2A. Dr Redding also commented that IVs are prepared in the treatment room. She stated that there has been a perceived high rate of infections in immune compromised patients in Ward 2A and air quality has remained an issue in this ward since it opened. She also commented that there was an outbreak of Aspergillus in the unit and that there is still a risk to patients. Dr Peters said there was a public statement made by NHSGGC that BMT services at RHC are separate and unaffected and that both she and an ICD colleague had objected to the wording of the statement at the time and had asked to step down from ICD roles immediately after it was released. Dr Armstrong advised that she will check with the Comms team regarding the wording in the statement as this required some additional clarity around context. With regards to the cases of Aspergillus, Sandra McNamee updated that there were two cases in March and April associated with a leak in the ceiling space. This was investigated and the tiles were removed and replaced with no further cases of Aspergillus. Ian Powrie advised that the HEPA filters were installed in two of the rooms in adult ITU but there has been no request to add these to isolation rooms throughout the adult or children's hospital. Work in RHC, Ward 2A is scheduled to start this month and with the scribe being signed off he can now contact the contractors to start the work. Sandra McNamee confirmed that this was raised at a meeting she attended yesterday and that she was aware that there is a plan to put HEPA filters in two of the rooms in PICU as contingency. Ian Powrie said that the only reason this had not been done is that there was a requirement for the rooms to be unoccupied for 24 hours whilst this work was done and validation carried out and that up to this time it was not possible because the beds had been fully occupied and that there were ongoing discussions with the team in Ward 2A as to whether these patients could be accommodated in isolation rooms within other wards where HEPA Filters could be fitted to address the overspill contingency. Dr Peters commented that this was necessary in PICU, not just as an overspill for Ward 2A, but for these extremely vulnerable patients if they required intensive care treatment because of their illness. Dr Redding advised that the clinical team in Ward 2A have reported that in their experience there seemed to be an increase in the number of line related infections and Sandra advised that this was investigated by Infection Prevention Control and the clinical team when first raised and work had been ongoing for several months. She also reported that IPCT and the Clinical Team were working with Timothy Bradnock, Consultant Paediatric Surgeon to look at improvement work. Sandra noted that there was no effective benchmark available for this area. Dr Peters noted that rates of line infection were important to determine and that IPCT had stated there was no resource to do this. Jen Rodgers, Chief Nurse has an improvement group looking at PVC and CVC bundles and Sandra said that this should have an impact on the number of infections. Dr Armstrong added that there has been a focused piece of work carried out in Ward 2A and they were on a weekly reporting process to ensure compliance with infection control standards had improved. Dr Redding was concerned that this may not accurately pick up any concerns.	**JA**

Item	Action
In relation to the chemotherapy being prepared in the treatment rooms Gary Jenkins advised the group that chemo was prepared in a designated area and there was an audit process to confirm this. He also commented that this process had been reviewed recently and offered to provide Dr Redding the document that was produced. Dr Armstrong confirmed that chemo is not being made up in these rooms and is carried out in the Aseptic Dispensing unit. Dr Armstrong agreed to confirm this with Pharmacy.	**JA**
With regards to safe placement of immunocompromised patients, Dr Peters asked if there was a list of which rooms were of the standard that would be acceptable for this group of patients. She commented that when she worked in Crosshouse Hospital they had a list of where these particular patients could be placed. She said the microbiologists receive calls asking this question by clinical staff. The group debated the definition and severity of immunocompromised patients and agreed, with input from Sandra McNamee and Prof Jones that this was a decision best considered by the clinical team looking after the individual patients. Dr Armstrong advised that this should be discussed at AICC and Gary Jenkins commented that this has not been raised as an issue via his Regional Clinical Governance Committee. Dr Armstrong recommended that this be addressed through the Regional Clinical Governance Committee. She also said it would be helpful to have a copy of the document that Dr Peters used in Crosshouse. Dr Redding reiterated that Microbiologists need to know which rooms are the most suitable for different categories of patients.	**GJ** **CP**
Dr Redding commented that she feels the infection rates are not being monitored and Dr Armstrong replied that the Board and Acute Directors receive a weekly report of all outbreaks and infection control incidents. Dr Armstrong agreed to ask the Women & Children directorate to take forward the points raised above.	
• Single Side Room Accommodation Dr Redding outlined that air changes per hour for all clinical accommodation in QEUH and RHC are 3 instead of 6 as per guidelines with the inclusion of chilled beam technology. The grills also collect dust as air is entrained over chilled beams which she suggested is not recommended in a healthcare setting. Dr Peters advised this initially came to light when investigating issues regarding CF patients.	
David Loudon advised that Dumfries and Galloway have chilled beam technology and Dr Peters stated that Monklands Hospital is at the commissioning stage of a new build and suggested that we share our learning with them. It was agreed that it was important to share the GGC knowledge around chilled beam technology with colleagues in other Boards and David Loudon agreed to take this forward. Ian Powrie informed the group that all chilled beams on site are being cleaned and maintained and Dr Redding asked if the air changes can be changed from 3 to 6 in some rooms but not in all areas and David Loudon advised this was not realistically possible. Ian Powrie confirmed that cleaning and monitoring is being carried out to determine how quickly dust has built up and once this has been established a cleaning schedule will be organised and this can be shared with other hospitals. Dr Redding suggested involving Microbiologists regarding cleaning to look at the microbiological counts. Dr Jones suggested that rates of infection may also be a useful indicator. In this context Sandra McNamee reported that during the point prevalence survey QEUH was under the national average for infections and that all alert organism/conditions were monitored by the IPCT and that there were no indications that this site had a higher than average infection rates. It was noted that infections occurring post discharge would not be picked up by the point prevalence survey.	**DL**

Item	Action

- Cleaning

  In relation to cleaning Dr Redding stated that cleaning agents were not being used on floors in clinical areas.

  Dr Redding also outlined that dishwashers had not been cleaned, installed or operated according to manufacturing instructions. This was brought to light with the investigation into CF patients with Exophiala. Sandra McNamee updated regarding the occurrence of Exophiala in CF patients and said this was referred to HPS as an amber HIIAT score but they downgraded this to a green HIIAT as this is considered to be a ubiquitous organism and the modes of spread, incubation period and occurrence in the population and environment was largely unknown. Dr Peters stated that she had already discussed the outbreak in her role as CF Microbiologist with mycology experts and given the striking epidemiology of increasing numbers, it is a reasonable hypothesis to assume a link to the dishwashers as a possible source. She had also discussed the HIIAT rating with HPS and agreed with green rating as the intervention with dishwasher was rapidly and appropriately dealt with.

  With reference to the cleaning agents Sandra McNamee responded that Actichlor cleans are used throughout the winter norovirus season which normally runs from November to April. She also stated that Actichlor was used in specific areas at the recommendation of IPCT, for example. Actichlor was used in GGH for a month in the summer due to an increase in CDI across the site. This has also been introduced for general cleaning into the wards with CF patients in QEUH and RHC, PICU, NICU and Ward 2A. At a recent meeting with HPS Sandra said HPS have found no evidence that using Actichlor is effective but further guidance was awaited.

  With regards to dishwashers in the ward area there had been some debate in the ward regarding whose responsibility it was to clean these but Sandra said this has been addressed. The manufacturer has come in to check the dishwashers and Catering Services have confirmed they will commence a cleaning programme for the dishwashers. It was also noted that Environmental Health Officers prefer dishwashers to be used over hand washing in sinks/ basins.

  Dr Peters commented that the audit system did not pick up this problem, and raised concerns about gaps in the environmental audit programmes and this was possibly the same with regards to ward refrigerators or other equipment. Sandra McNamee advised that nursing staff have a requirement to check the temperature in fridges and stated again that the catering department have agreed to take responsibility for the ward dishwashers. The group noted that dishwasher maintenance had been overlooked in the overall system but that this had now been rectified.

- Water Quality and Testing

  In the SBAR it stated that all taps are fitted with TMVs and the cleaning and maintenance policy has not been reported and Dr Redding stated that we need to ensure this is up-to-date. She also commented that the water in Ward 4B has not been tested to a high standard.

  The group was assured that there was a Board Water Safety Policy in place that is approved by the appropriate governance committees. David Loudon reported that we have strict guidance on how to monitor water systems and processes are in place to comply with ECOPs. Ian Powrie also confirmed that water testing is carried out as per protocol and only exceptions are reported to the Infection Control Teams and this was previously agreed with Dr Inkster.

Item	Action

He said testing is mainly carried out in high risk areas. David Loudon stated that we are not required to test all taps but a sample and that this was in accordance with guidance. He also confirmed that if requested by an ICD additional sampling was undertaken. [redacted] said that Dr Inkster was managing the water testing and [redacted] perceived there was a problem with the environment. [redacted] said that [redacted] requested gram negative testing but did not receive the results from Estates. Ian Powrie replied that recent changes in staff in both estates and IPC could have been the reason why he did not receive the information. It was agreed that GGC are compliant with the water testing protocol. Dr Peters stated that the issue was not the overall testing protocols but the ICD role in requesting and receiving the results in a timely manner in exceptional circumstances where a water source of infection needed to be investigated.

In relation to TMVs Ian Powrie advised that these are maintained in all high risk areas and they are working towards carrying this out in all areas. He said the end piece of the taps cannot be removed and an SBAR is in place for this. Estates are finalising the installation of a heat sanitation system and once complete this will be sent to the Board Water Safety Committee for approval.

In terms of serratia Ian said they would test the water for this if requested by a clinician.

- Plumbing in Neuro Surgical Block
  Dr Redding stated that there has been sewage leaking in the theatre suite since before 2015 and is still ongoing and not all incidents have been reported to ICDs.

  Gary Jenkins advised that there is ongoing work in the neuro building that would, because of its complexity, take several years to complete. In the meantime the new operating theatres were due to open in January 2018. He stated that his directorate has a specific focus on IPC and that they had a dedicated group to look at surgical site infection. He said they funded 1.5 WTE surveillance nurses to carry out prospective surgical site surveillance in this area. Dr Armstrong updated that Dr Inkster carried out a detailed inspection of the area previously and she suggested that SSI surveillance was carried out here. Sandra McNamee advised for context that there are 3 surveillance nurses that cover all of GGC so the resource to actively do this in the INS was significant.

  She acknowledged that the ICDs were concerned about infections in EVD and stated that the clinical teams were currently developing an EVD bundle. Ian Powrie reported that remedial work was carried out in this building over the past year but that there had been an incident with sewage last week.

  There has been a delay in the opening of the ICE theatres as GGC were not satisfied with the standard but a programme of work has been agreed with the clinicians. Dr Peters said she requested to know the number of instances from when the theatres closed two years ago due to problems with the pipe work to date and she stated that she was told at the time of the initial problems that the plumbing was to be replaced. Gary Jenkins responded that that the pipes run through multiple floors and a process is in place with IPC and Capital Planning to take this forward in stages. Anne Harkness commented that increases in SSI should be discussed at the Regional Clinical IPC Group which [redacted] is a representative of. Ian Powrie advised that he has arranged to meet with [redacted] and Dr Balfour to discuss the INS theatre issue.

Item	Action

- Decontamination Provision for Respiratory Clinics
  The SBAR also stated that the decontamination facilities in both Paediatric and adult respiratory clinics have been identified as inadequate on a number of occasions. Sandra McNamee informed that remedial actions have been put in place and a list of items has been sent to HPS for advice on how to decontaminate them. Dr Peters stated that QEUH ICD had not been informed of timeline for revision works to decontamination area to take place.

- Infection Control Structure
  Dr Redding advised that the ICDs in the South Sector had stated that the roles within the Infection Control team are unclear and appear to have changed. Dr Armstrong proposed that consideration is given to having a further separate meeting to discuss the issues referred to in this section. Jonathan Best offered to support this discussion.

4. Agreement of Further Actions / Next Steps

- Ian Powrie to provide documents supporting work on PPVL rooms
- David Loudon to liaise with colleagues re GGC experience with chilled beams
- In relation to safe patient placement and availability of isolation rooms, this is to be raised via the Regional Clinical Governance Committee.
- Dr Peters to issue the group a copy of the document listing isolation rooms from Crosshouse Hospital.
- Dr Armstrong to relay issues pertaining to Ward 2A to Women & Children directorate.
- Dr Armstrong to confirm chemotherapy preparation in Aseptic Unit.
- Consideration to be given to a further meeting with a smaller group to discuss the issues contained in the Infection Control Structure section of the SBAR.
- Dr Armstrong to check with the Comms team regarding the wording in the public statement regarding BMT services

5. A.O.C.B.
Nil.

Dr Armstrong thanked everyone for their attendance today.

NHS Greater Glasgow & Clyde

Clinical & Care Governance

Infection Prevention and Control Team **5 December 2017** **Paper No: 17/24**

Report on Concerns Raised re Queen Elizabeth University Hospital (QEUH) and Royal Hospital for Children (RHC)

Recommendation:- The committee are asked to note the concerns raised in relation to the QEUH and RHC and review the current status and actions being progressed.

Purpose of Paper:-

During September 2017 three consultant microbiologists in the South Sector raised a series of concerns about the facilities in QEUH and RHC and the structure of the Infection Prevention and Control (IPCT) Service within NHS Greater Glasgow and Clyde.

On the 4th of October 2017 Board and Acute Directors including the Board Director of Facilities, the Chief of Medicine for Diagnostics and members to the IPCT Senior Management team met with the consultants to discuss these concerns. The consultant microbiologists tabled a list of concerns and this paper identifies each with an action plan setting out the current situation and the steps taken or in progress to address the issues identified. The minutes of the October meeting are appended to this document with each specific issues raised identified and cross referenced to the action plan.

Key Issues to be considered:-

As above

Any Patient Safety /Patient Experience Issues:- yes

Any Financial Implications from this Paper:- no

Any Staffing Implications from this Paper:- no

Any Equality Implications from this Paper:- no

Any Health Inequalities Implications from this Paper:-no

Has a Risk Assessment been carried out for this issue? If yes, please detail the outcome:-

Highlight the Corporate Plan priorities to which your paper relates:- improving quality efficiency and effectiveness

Below is a list of the key themes raised by the Consultants.

Themes

- Positive Pressured Ventilated Lobbied (PPVL) Isolation Rooms.
- Royal Hospital for Children (RHC) – Protective Isolation – Haematology Oncology Unit.
- RHC – HEPA filters in Paediatric Intensive Care Unit (PICU).
- Queen Elizabeth University Hospital (QEUH) – Ward 4B – Upgrade to the Haematology Ward.
- Single Room Specification and Location of Areas that can be used for Protective Isolation.
- Cleaning of QEUH, RHC and Office Block
- Cleaning of Dishwashers in QEUH and RHC linked to a potential outbreak of exophiala
- Water Quality and Water Testing
- Plumbing in the Neurosurgical Block
- Decontamination of Respiratory Equipment
- Structure of the Infection Prevention and Control Team

Each specific item has been identified in the minute of the meeting and cross referenced in the associated action plan which is tabulated below.

Action Plan

Item	Issue	Current Position	Future Actions
1	PPVL rooms not compliant with SHTM standards	Facilities colleagues confirmed that there are 10 air changes per hour and a positive pressure of 10 pascals in the PPVL rooms which is consistent with SHBN 04-01.	Included in item 2
2	PPVL rooms do not provide appropriate protection for patients with infectious diseases of high consequence (IDHC) e.g. MERS, SARS This issue also exists in the Royal Hospital for Children	IDHC should be nursed in negative pressure rooms. These are not available in QEUH. In order to address this issue in the short term a patient pathway has been agreed by the Infectious Disease (ID) Clinicians whereby patients will be routed either to GRI or Lanarkshire ID unit. Chief Nurse (CN) for Paediatrics discussing with clinical teams a pathway for children.	Heath Protection Scotland (HPS) have been sent information on these rooms and we await their advice on whether they can be used for patients with IDHC or if not what actions could be taken to modify these rooms to provide negative pressure. This advice was sought in 2016 & 17.
3	Lack of isolation rooms in the emergency department.	ED was designed with input from clinical staff and observation of patients was a priority. There are single rooms in ED but not negatively pressured isolation rooms.	Property Procurement Facilities Management (PPFM) has commissioned a feasibility study to ascertain if negatively pressured rooms are technically feasible
4	Rooms not built to the standard expected as a tertiary referral centre.	The transfer of the Infectious Diseases Unit was a late addition to the project and was not fully commissioned as an ID unit at the outset.	Actions as described in item 2.
5	Microbiologists not aware of plans to upgrade areas.	Lead Infection Control Doctor (ICD) was aware of this proposal.	Work continues with input from the Coordinating ICD.
6	HEPA filters in PICU for the protection of patients in the Bone Marrow Transplant Unit (BMTU) that might need critical care during treatment. The BMTU is ward also referred to as ward 2A.	HEPA filters were installed within PICU/Ward 2a week commencing 6 November 2017, within room numbers 12 and 17 – previously installed within room 18. HEPA filter still to be fitted in room 5 (access to be agreed with clinical colleagues). HEPA filters were also fitted into RHC Ward 3c week commencing 13 November 2017 within rooms 9 & 10.	Work commenced mid November 2017, therefore ahead of May 2018, as noted above.

Item	Issue	Current Position	Future Actions
7	HEPA filters in prep room	HEPA filters have not been routinely fitted (as standard) within prep rooms, however HEPA filters are fitted within QEUH Ward 4b. Instruction required to determine whether HEPA filter should be fitted into RHC Ward 2a prep room.	A feasibility study will be undertaken to ascertain if HEPA filters can be installed in the prep room.
8	IVs prepared in treatment room.	IVs are prepared in the preparation room but not chemotherapy which is prepared in a specialist unit.	CN paediatrics confirmed that this was the standard practice.
9	Outbreak of Aspergillus associated with poor air quality	There were two cases of aspergillus associated with the ward in March 2017. This was fully investigated and was possibly associated with a leak into the ceiling space which was not immediately apparent. On review of cases in the new BMTU and the unit previously located in Yorkhill there is no significant increase in the number of cases of this infection. This was fully reported as per Chapter 3 of the National Infection Prevention and Control Manual to Health Protection Scotland.	HPS have been contacted for advice on what would be an appropriate regime for air monitoring in this area.
10	Concern that the statement issued advised that BMT services in RHC were unaffected by issues identified in the adult BMTU.	Clarification from the NHSGGC Comms Team "To the recollection of colleagues involved, the Communications team were not briefed at the time of the release about the adult BMT move of any testing underway at the Royal Hospital for Children. The final line of the press release of 8th July 2015 "Bone Marrow Transplant Service Temporary Relocation" was written to make clear to media that the move of the adult service did not include the paediatric service at the Royal Hospital for Children and that the latter was not moving. "	Clarification issued to the meeting attendees. No further action required. This perhaps appears to be misinterpretation of the media communication.
11	HEPA filters not in place in PICU	Action complete as previously agreed and noted within point 6.	

Item	Issue	Current Position	Future Actions
12	Increase in the number of line infections in Ward 2A	Two years' retrospective data were analysed in May 2017 and it was noted that there was an increase in line related infection. The initial baseline infection rate per 1000 total line days was 3.25 and this had risen to 6.33. A group led by CN Paediatrics first met in **May 2017** to review this information and put actions in place to reduce this incidence. The last 4 months (July to October) have shown improvement in infection rates. CN Paediatrics presented a paper to the Board Infection Control Committee on the 27 November 2017 outlining several work streams and the most recent infection rates in this area.	There are currently four work streams in place to look at key initiatives to reduce line infections in BMTU, these include: • Line Insertion and access in theatre. • Access and Maintenance of lines • Staff Education • Patient and Parent engagement Next Steps From 1st December 2017 every CLABSI (line associated infections) will be subject to rigorous review utilising Event Cause Analysis methodology within 72 hours of a reported CLABSI
13	Increase in the number of line infections	IPCT participating in above work. Line related surveillance was subsequently picked up by the Directorate.	Ongoing assessment of surveillance activity and resource within the IPCT to enable IPCT to respond to local clinical needs.
14	Dr Redding concerned that the ongoing work would not accurately pick up any concerns.	• As above work streams in place re line infections. • IPCT audit process is in place and ongoing; this includes audit of the environment, audits of line and urinary catheter care. Audits of standard Infection Control Precautions (SIPS). • IPCT twice weekly visits. • GGC compliant with the National IPCT Manual – this lists all types of infections that should be reviewed and what should be reported if an outbreak or incident occurs. • Weekly report to Board and Acute Directors weekly on an IPC issues throughout GGC.	IPCT and CN Paediatrics will continue to have a clear focus on this area.
15	Microbiologists do not have the information to advise clinical staff on where to place immunocompromised patients.	Director of Regional Services stated that this had never been raised as an issue by clinicians within his service that care for patients who are immunocompromised. Most patients who are immunocompromised are cared for within this directorate. It was agreed by the group that placement of immunocompromised patients was a decision that should be taken by the clinical team looking after the individual patients.	Dr Peters agreed to circulate a document she had used in another board area. David Loudon (Director of PPFM) agreed to send the microbiologists a list of where the PPVL rooms were in the QEUH and RHC. It was agreed that this would be reviewed at the Regional Services Governance Forum

Item	Issue	Current Position	Future Actions
16	Infection rates are not being monitored.	• GGC compliant with the National IPCT Manual – this lists all types of infections that should be reviewed and what should be reported if an outbreak or incident occurs. • Every patient with a notifiable infection is reviewed and monitored. • NHSGGC is fully compliant with all elements of the national Mandatory Surveillance of Infection Programme (mainly specific surgical site and blood stream infections. • Weekly report on exceptions is sent to the Board Directors. • Monthly reports are sent to Senior Management teams. • All outbreak and incidents are reviewed by the Board, Partnership and Acute Infection Control Committees. • The most recent National Point Prevalence Survey in 2016 indicated that both the QEUH and RHC were under the national average in terms of the incidence of Hospital Acquired Infections.	ICM has invited HPS to review the NHSGGC systems for surveillance and reporting of infections – this assessment took place on the 29.11.17, the initial feedback was positive but we await the full report.
17	There are three air changes and chilled beam technology instead of the 6 air changes recommended.	There are three air changes in the single rooms within both QEUH and RHC.	Director of Facilities agreed to take this issue forward with NHS D&G to share learning with regards to this type of technology and draw to their attention concerns regarding cleaning of the beams. Action complete.
18	Use of cleaning agents.	NHSGGC has for several years changed the cleaning regimens each winter to include a chlorine based detergent as a strategy to reduce norovirus outbreaks. This switch commences on the 1st of November and continues until the 30 April each year or longer if the season is prolonged. This is not recommended in the National Infection Control Manual because of lack of scientific evidence but is put in place in GGC based on local site knowledge.	This policy and practice will continue unless new evidence emerges

Item	Issue	Current Position	Future Actions
19	Roles and responsibilities with regards to cleaning of the dishwashers in the ward pantries was not clear.	IPCT held an Incident Management team Meeting (IMT) on 22nd of September. Dishwashers were removed from use until they could be serviced and re-sampled.	Catering staff agreed to assume the responsibility for cleaning of the dishwashers going forward.
20	Issue with dishwasher not picked up during routine monitoring.	GGC fully compliant with the National Monitoring of Domestic Services	Roles and responsibilities had been clarified and a process in now in place.
21	Cleaning of Temperature Control Values (TCVs)	TCVs are maintained in all high risk areas and plans are in place to carry this out in all areas despite this not being mandatory. Protocols are in place to manage this process.	Agreed works within QEUH-plant room 31, almost complete and being led by Site Maintenance Manager. Anticipated date of completion by end of January 2018.
22	Water testing is not as per national guidance	Board water safety is in place and water systems and processes are monitored as per national guidance.	None
23	Sewage leaks in institute not reported to microbiologists	Leaks in any clinical areas that required advice from an ICD are reported	Ensure reporting is ongoing.
24	Plumbing not replaced in Neuro Surgical Block	The Director of Regional Services advised that there is ongoing work in the neuro building that would because of its complexity, take several years to complete, in the meantime the new operating theatres were due to open in January 2018.	Works are ongoing as planned.
25	Perceived Increase in surgical site infections	Regional Services has funded 1.5 WTE surveillance nurses to carry out prospective surgical site surveillance in this area. For context, there are 3 surveillance nurses that provide this service for the rest of GGC therefore the investment in the INS to monitor SSI is significant. Although it is difficult to obtain benchmark rates for SSI in this area, continuous surveillance will pick out trends and therefore any increase. This is monitored via a group unique to Regional Services – the RS Surgical Site Infection Group. The group in turn reports into the Regional Service Clinical Governance Group	Continue to monitor trends in surgical site infection in this area.

Item	Issue	Current Position	Future Actions
26	Decontamination facilities	Most decontamination of equipment is conducted in the central Decontamination Unit or Endoscopy facilities. Respiratory equipment is easily damaged and advice from manufacturers is often difficult to implement. There should be dedicated facilities with established work flow patterns (dirty to clean). At this point in time the Decontamination group (which is a sub group of the Board Infection Control Committee) has give advice on many items of equipment and had obtained room designs which could be used if space was identified in QEUH and RHC. This has been submitted to management colleagues for consideration. In addition a list of specialist equipment that we require national advice on has been submitted to Health Protection Scotland.	Pursue HPS for advice regarding the list of equipment provided. Establish status of planning for new decontamination areas.
27	Roles of IPCT have changed	The current IPCT all have Job Descriptions which have been in place for several years. There is a clear documented governance structure that has been reviewed by Price Waterhouse Cooper and approved by the Infection prevention Committees within NHSGGC. There is a clear management structure which complies with the recommendations contained within the Vale of Leven Report and the Healthcare Environment Inspectorate Standards	A review of the roles and responsibilities of the Infection Control Doctors in South Glasgow will be undertaken by the Chief of Medicine for Diagnostics. The ICM has invited HPS to undertake a review of IPC surveillance and reporting systems in place.

Minutes of Meeting
Meeting Room L02-001, Teaching & Learning Centre
Queen Elizabeth University Hospital

Wednesday 4th October 2017 at 8:00am

PRESENT

Dr Jennifer Armstrong (**Chair**)	JA	Medical Director
David Loudon	DL	Director of Property, Procurement & FM
Morag Gardner	MG	Chief Nurse
Sandra McNamee	SMcN	Associate Nurse Director IPC
Ian Powrie	IP	Depute General Manager, Estates
Professor Brian Jones	BJ	Head of Service, Microbiology
Tom Walsh	TW	Infection Control Manager
Anne Harkness	AH	Director, South Sector
Jonathan Best	JB	Acting Chief Operating Officer
Gary Jenkins	GJ	Acting Director, North Sector
Dr Penelope Redding	PR	Consultant Microbiologist
Dr Christine Peters	CP	Consultant Microbiology
[redacted]	[redacted]	[redacted]
Dr Rachel Green	RG	Chief of Medicine, Diagnostics

In Attendance

Ann Lang	(Minutes) PA, Infection Prevention and Control

Item	Action

1. Welcome & Introductions

Dr Armstrong welcomed everyone to today's meeting to discuss Infection Control and estates issues at QEUH and RHC and round the table introductions were made. The group noted that colleagues from Women's and Children's Directorate were not in attendance but were aware of the issues raised and had helpfully submitted information via email which could inform the relevant areas of the discussion.

2. Purpose, Format and Conduct of Meeting

Dr Armstrong advised that a series of emails have been received from Dr Redding and Dr Peters regarding Infection Control and estates issues on the QEUH and RHC site. Dr Armstrong had requested a document setting out the issues of concern and thanked Drs Redding and Peters for providing the SBAR document which provided a helpful basis for the discussion. Dr Armstrong proposed that the meeting is focused on patient safety and a review and update on the current status of the issues identified.

She asked that if there are any comments during the meeting if these could be addressed through the chair and to adhere to the GMC and Board guidance regarding respect, professionalism and working as part of a team. The group agreed the importance of issues raised being discussed in the context of the appropriate roles, responsibilities and governance structures.

Item		Action

3. Review of SBAR / Concerns

It was agreed to go through the items detailed in the SBAR from Dr Redding and Dr Peters, to look at the points raised and address any outstanding issues.

- Patient Placement

Dr Redding outlined that there are challenges for the microbiologists regarding source isolation of infected patients.

She said the current situation is that the positive pressure ventilated lobby rooms were not built to SHTM standard and she and others were concerned that they do not provide appropriate protection when managing a small number of patients with significant respiratory pathogens of high consequence such as MERS and MDRTB **(Items 1&2)**. Dr Peters advised that Microbiologists and ICDs and ID colleagues feel there is a lack of provision for isolation rooms in A&E **(Item 3)**. David Loudon replied that this specification was signed off by the board and clinical teams; he also confirmed that remedial work had been carried out due to issues raised at the snagging stage of the build. David also stated that although there were some modifications to the design the rooms did conform to SHTM 04-01 and that it was incorrect to state that this was not the case. Ian Powrie addressed specific points raised in respect of the ventilation specification and agreed to provide the detailed information to support this.

Sandra McNamee commented that the inclusion of the Infectious Diseases service was a late amendment to the QEUH project and therefore not commissioned as an ID unit at the outset. The group noted that the Brownlee Clinical Team put a strong clinical case to the board to be co-located on QEUH site with the Intensive Care Unit and other critical clinical services. The issues identified were discussed with HPS at the time and they agreed to advise the Board on what standard these rooms would need to be to accommodate these patients. When this information has been received, estates colleagues will review the advice to determine if these modifications were feasible. Dr Redding stated she would like to see the evidence relating to this. Sandra advised that a follow up meeting took place with HPS on Monday 2nd October and that the relevant information was expected in the next few weeks, however in the meantime a patient pathway has been in place which routes these patients to appropriate isolation rooms in other hospitals.

Dr Peters reported that these patients with significant airborne pathogens are being sent from A&E to the isolation rooms in ITU before being transferred to other hospitals as reported by ID colleagues. The group noted that this would be the case for other hospitals within NHSGGC and across NHS Scotland.

Dr Peters however intimated that there is a risk of exposure to a large number of patients and staff and reiterated that, in her opinion, the ITU isolation rooms are not adequate for these types of patients. Furthermore other hospitals have not been recently built and are not a tertiary ID referral centre such as the QEUH **(Item 4).** Dr Redding also recognised that work may be ongoing but the microbiologists are not aware of this **(Item 5).**

Anne Harkness advised that as these issues were raised she met with Directors and ID Physicians and they agreed a pathway for these patients to be transferred to other sites. She also commented that based on the external advice, unless the existing rooms can be modified in some way the only alternative was to build a new Infectious Disease Unit which would require a significant resource. David Loudon confirmed that changing the specification to negative pressure would be reviewed to assess technical feasibility.

Item	Action
It was agreed to await the response from HPS and to deal with any further issues via the Acute and Board Infection Control Committees and the relevant Directorate Governance Committees.	
• <u>Protective Isolation</u> Currently HEPA filters are not fitted in PICU isolation rooms **(Item 6)** and in the prep rooms in Ward 2A **(Item 7).** Dr Redding also commented that IVs are prepared in the treatment room **(Item 8).** She stated that there has been a perceived high rate of infections in immune compromised patients in Ward 2A and air quality has remained an issue in this ward since it opened. She also commented that there was an outbreak of Aspergillus **(Item 9)** in the unit and that there is still a risk to patients. Dr Peters said there was a public statement made by NHSGGC that BMT services at RHC are separate and unaffected and that both she and an ICD colleague had objected to the wording of the statement at the time and had asked to step down from ICD roles immediately after it was released. Dr Armstrong advised that she will check with the Comms team regarding the wording in the statement as this required some additional clarity around context **(Item 10).**	**JA**
With regards to the cases of Aspergillus, Sandra McNamee updated that there were two cases in March and April associated with a leak in the ceiling space. This was investigated and the tiles were removed and replaced with no further cases of Aspergillus. Ian Powrie advised that the HEPA filters were installed in two of the rooms in adult ITU but there has been no request to add these to isolation rooms throughout the adult or children's hospital. Work in RHC, Ward 2A is scheduled to start this month and with the scribe being signed off he can now contact the contractors to start the work. Sandra McNamee confirmed that this was raised at a meeting she attended yesterday and that she was aware that there is a plan to put HEPA filters in two of the rooms in PICU as contingency. (this action is complete) Ian Powrie said that the only reason this had not been done is that there was a requirement for the rooms to be unoccupied for 24 hours whilst this work was done and validation carried out and that up to this time it was not possible because the beds had been fully occupied and that there were ongoing discussions with the team in Ward 2A as to whether these patients could be accommodated in isolation rooms within other wards where HEPA Filters could be fitted to address the overspill contingency. Dr Peters commented that this was necessary in PICU, not just as an overspill for Ward 2A, but for these extremely vulnerable patients if they required intensive care treatment because of their illness **(Item 11).** Dr Redding advised that the clinical team in Ward 2A have reported that in their experience there seemed to be an increase in the number of line related infections and Sandra advised that this was investigated by Infection Prevention Control and the clinical team when first raised and work had been ongoing for several months **(Item 12)**.	

Item	Action
She also reported that IPCT and the Clinical Team were working with Timothy Bradnock, Consultant Paediatric Surgeon to look at improvement work. Sandra noted that there was no effective benchmark available for this area. Dr Peters noted that rates of line infection were important to determine and that IPCT had stated there was no resource to do this (**Item 13**).	
Jen Rodgers, Chief Nurse has an improvement group looking at PVC and CVC bundles and Sandra said that this should have an impact on the number of infections. Dr Armstrong added that there has been a focused piece of work carried out in Ward 2A and they were on a weekly reporting process to ensure compliance with infection control standards had improved. Dr Redding was concerned that this may not accurately pick up any concerns **(Item 14).**	
In relation to the chemotherapy being prepared in the treatment rooms Gary Jenkins advised the group that chemo was prepared in a designated area and there was an audit process to confirm this. He also commented that this process had been reviewed recently and offered to provide Dr Redding the document that was produced. Dr Armstrong confirmed that chemo is not being made up in these rooms and is carried out in the Aseptic Dispensing unit. Dr Armstrong agreed to confirm this with Pharmacy.	**JA**
With regards to safe placement of immunocompromised patients, Dr Peters asked if there was a list of which rooms were of the standard that would be acceptable for this group of patients. She commented that when she worked in Crosshouse Hospital they had a list of where these particular patients could be placed. She said the microbiologists receive calls asking this question by clinical staff (**Item 15**).	
The group debated the definition and severity of immunocompromised patients and agreed, with input from Sandra McNamee and Prof Jones that this was a decision best considered by the clinical team looking after the individual patients. Dr Armstrong advised that this should be discussed at AICC and Gary Jenkins commented that this has not been raised as an issue via his Regional Clinical Governance Committee. Dr Armstrong recommended that this be addressed through the Regional Clinical Governance Committee. She also said it would be helpful to have a copy of the document that Dr Peters used in Crosshouse. Dr Redding reiterated that Microbiologists need to know which rooms are the most suitable for different categories of patients.	**GJ** **CP**
Dr Redding commented that she feels the infection rates are not being monitored **(Item 16)** and Dr Armstrong replied that the Board and Acute Directors receive a weekly report of all outbreaks and infection control incidents.	
Dr Armstrong agreed to ask the Women & Children directorate to take forward the points raised above.	**JA**
• <u>Single Side Room Accommodation</u> Dr Redding outlined that air changes per hour for all clinical accommodation in QEUH and RHC are 3 instead of 6 as per guidelines with the inclusion of chilled beam technology. The grills also collect dust as air is entrained over chilled beams which she suggested is not recommended in a healthcare setting **(Item 17).** Dr Peters advised this initially came to light when investigating issues regarding CF patients.	

Item	Action
David Loudon advised that Dumfries and Galloway have chilled beam technology and Dr Peters stated that Monklands Hospital is at the commissioning stage of a new build and suggested that we share our learning with them. It was agreed that it was important to share the GGC knowledge around chilled beam technology with colleagues in other Boards and David Loudon agreed to take this forward. Ian Powrie informed the group that all chilled beams on site are being cleaned and maintained and Dr Redding asked if the air changes can be changed from 3 to 6 in some rooms but not in all areas and David Loudon advised this was not realistically possible. Ian Powrie confirmed that cleaning and monitoring is being carried out to determine how quickly dust has built up and once this has been established a cleaning schedule will be organised and this can be shared with other hospitals. Dr Redding suggested involving Microbiologists regarding cleaning to look at the microbiological counts. Dr Jones suggested that rates of infection may also be a useful indicator. In this context Sandra McNamee reported that during the point prevalence survey QEUH was under the national average for infections and that all alert organism/conditions were monitored by the IPCT and that there were no indications that this site had a higher than average infection rates. It was noted that infections occurring post discharge would not be picked up by the point prevalence survey.	**DL**
• <u>Cleaning</u> In relation to cleaning Dr Redding stated that cleaning agents were not being used on floors in clinical areas **(Item 18).** Dr Redding also outlined that dishwashers had not been cleaned, installed or operated according to manufacturing instructions **(Item 19).** This was brought to light with the investigation into CF patients with Exophiala. Sandra McNamee updated regarding the occurrence of Exophiala in CF patients and said this was referred to HPS as an amber HIIAT score but they downgraded this to a green HIIAT as this is considered to be a ubiquitous organism and the modes of spread, incubation period and occurrence in the population and environment was largely unknown. Dr Peters stated that she had already discussed the outbreak in her role as CF Microbiologist with mycology experts and given the striking epidemiology of increasing numbers, it is a reasonable hypothesis to assume a link to the dishwashers as a possible source. She had also discussed the HIIAT rating with HPS and agreed with green rating as the intervention with dishwasher was rapidly and appropriately dealt with. With reference to the cleaning agents Sandra McNamee responded that Actichlor cleans are used throughout the winter norovirus season which normally runs from November to April. She also stated that Actichlor was used in specific areas at the recommendation of IPCT, for example. Actichlor was used in GGH for a month in the summer due to an increase in CDI across the site. This has also been introduced for general cleaning into the wards with CF patients in QEUH and RHC, PICU, NICU and Ward 2A. At a recent meeting with HPS Sandra said HPS have found no evidence that using Actichlor is effective but further guidance was awaited. With regards to dishwashers in the ward area there had been some debate in the ward regarding whose responsibility it was to clean these but Sandra said this has been addressed. The manufacturer has come in to check the dishwashers and Catering Services have confirmed they will commence a cleaning programme for the dishwashers. It was also noted that Environmental Health Officers prefer dishwashers to be used over hand washing in sinks/ basins.	

Item	Action

Dr Peters commented that the audit system did not pick up this problem **(Item 20),** and raised concerns about gaps in the environmental audit programmes and this was possibly the same with regards to ward refrigerators or other equipment. Sandra McNamee advised that nursing staff have a requirement to check the temperature in fridges and stated again that the catering department have agreed to take responsibility for the ward dishwashers. The group noted that dishwasher maintenance had been overlooked in the overall system but that this had now been rectified.

- Water Quality and Testing

  In the SBAR it stated that all taps are fitted with TMVs and the cleaning and maintenance policy has not been reported and Dr Redding stated that we need to ensure this is up-to-date **(Item 21)** She also commented that the water in Ward 4B has not been tested to a high standard **(Item 22).**

  The group was assured that there was a Board Water Safety Policy in place that is approved by the appropriate governance committees.

  David Loudon reported that we have strict guidance on how to monitor water systems and processes are in place to comply with ECOPs. Ian Powrie also confirmed that water testing is carried out as per protocol and only exceptions are reported to the Infection Control Teams and this was previously agreed with Dr Inkster.

  He said testing is mainly carried out in high risk areas. David Loudon stated that we are not required to test all taps but a sample and that this was in accordance with guidance. He also confirmed that if requested by an ICD additional sampling was undertaken. [redacted] said that Dr Inkster was managing the water testing and [redacted] perceived there was a problem with the environment. [redacted] said that [redacted] requested gram negative testing but did not receive the results from Estates. Ian Powrie replied that recent changes in staff in both estates and IPC could have been the reason why he did not receive the information. It was agreed that GGC are compliant with the water testing protocol. Dr Peters stated that the issue was not the overall testing protocols but the ICD role in requesting and receiving the results in a timely manner in exceptional circumstances where a water source of infection needed to be investigated.

  In relation to TMVs Ian Powrie advised that these are maintained in all high risk areas and they are working towards carrying this out in all areas. He said the end piece of the taps cannot be removed and an SBAR is in place for this. Estates are finalising the installation of a heat sanitation system and once complete this will be sent to the Board Water Safety Committee for approval.

  In terms of serratia Ian said they would test the water for this if requested by a clinician.

- Plumbing in Neuro Surgical Block

  Dr Redding stated that there has been sewage leaking in the theatre suite since before 2015 and is still ongoing and not all incidents have been reported to ICDs **(Item 23).**

  Gary Jenkins advised that there is ongoing work in the neuro building that would, because of its complexity, take several years to complete. In the meantime the new operating theatres were due to open in January 2018.

Item	Action

He stated that his directorate has a specific focus on IPC and that they had a dedicated group to look at surgical site infection. He said they funded 1.5 WTE surveillance nurses to carry out prospective surgical site surveillance in this area. Dr Armstrong updated that Dr Inkster carried out a detailed inspection of the area previously and she suggested that SSI surveillance was carried out here. Sandra McNamee advised for context that there are 3 surveillance nurses that cover all of GGC so the resource to actively do this in the INS was significant.

She acknowledged that the ICDs were concerned about infections in EVD and stated that the clinical teams were currently developing an EVD bundle. Ian Powrie reported that remedial work was carried out in this building over the past year but that there had been an incident with sewage last week.

There has been a delay in the opening of the ICE theatres as GGC were not satisfied with the standard but a programme of work has been agreed with the clinicians.

Dr Peters said she requested to know the number of instances from when the theatres closed two years ago due to problems with the pipe work to date and she stated that she was told at the time of the initial problems that the plumbing was to be replaced **(Item 24)**. Gary Jenkins responded that that the pipes run through multiple floors and a process is in place with IPC and Capital Planning to take this forward in stages.

Anne Harkness commented that increases in SSI should be discussed at the Regional Clinical IPC Group which [redacted] is a representative of **(Item 25).** Ian Powrie advised that he has arranged to meet with [redacted] and Dr Balfour to discuss the INS theatre issue.

- <u>Decontamination Provision for Respiratory Clinics</u>
  The SBAR also stated that the decontamination facilities in both Paediatric and adult respiratory clinics have been identified as inadequate on a number of occasions **(Item 26).** Sandra McNamee informed that remedial actions have been put in place and a list of items has been sent to HPS for advice on how to decontaminate them.

  Dr Peters stated that QEUH ICD had not been informed of timeline for revision works to decontamination area to take place.

- <u>Infection Control Structure</u>
  Dr Redding advised that the ICDs in the South Sector had stated that the roles within the Infection Control team are unclear and appear to have changed **(Item 27)**. Dr Armstrong proposed that consideration is given to having a further separate meeting to discuss the issues referred to in this section. Jonathan Best offered to support this discussion.

Item		Action
4.	**Agreement of Further Actions / Next Steps** - Ian Powrie to provide documents supporting work on PPVL rooms - David Loudon to liaise with colleagues re GGC experience with chilled beams - In relation to safe patient placement and availability of isolation rooms, this is to be raised via the Regional Clinical Governance Committee. - Dr Peters to issue the group a copy of the document listing isolation rooms from Crosshouse Hospital. - Dr Armstrong to relay issues pertaining to Ward 2A to Women & Children directorate. - Dr Armstrong to confirm chemotherapy preparation in Aseptic Unit. - Consideration to be given to a further meeting with a smaller group to discuss the issues contained in the Infection Control Structure section of the SBAR. - Dr Armstrong to check with the Comms team regarding the wording in the public statement regarding BMT services	
5.	**A.O.C.B.** Nil. Dr Armstrong thanked everyone for their attendance today.	

Notes from meeting on 25/9/19

Introductions:
Chair: Robert Gardiner (RG): General Manager Diagnostics
Jonathan Best: Chief Operating Officer
Christine Peters
Kam Khalsa
Alison Balfour
Teresa Inkster
Nitish Khanna
Pepi Valyraki
[redacted]
Rachel Greene (RGr)
Alistair Leonard
Arwel Williams, General Manager
Scott Davidson, Deputy Med Director
Brian Jones, HoS

Apologies: PW

RG: Need IC cover at South. How can this happen. It's your meeting.
CP: Thank you for organising this meeting. Email from PW read: IC now very complex. Undermining of the ICD apparent. Unclear guidance regarding patient placement. Most experienced ICDs can't work in system – suggests the system is broken. No wish to go back to IC after 5 years in the role.

All in different positions
CP: Raising concerns for some time and not willing to go back to IC
KK: Recently appointed. Huge differences North v South. More complex at South. Covering IC – feel I do not have expertise for this role and unsupported in IC role as there is no lead IC on this site
AB: CM for 20 years, Partnership IC for 16y. SS IC since 2018. Pressure put on IC apparent after interview with HSE – do not have competency, experience or qualification in ventilation etc – should not be signing off on HAI scribes involving water/vent. Undue pressure to sign these off. Nonsense in terms of pt safety.
Demitted on 4/9/19. Contractual obligations met. Losing Teresa is a huge blow. No longer in role is huge loss to GGC. System is broken. Impasse reached. Hoping to find solutions

TI: ICD over 10y, worked across GGC, area of expertise in built environment, complex IMTs since taken over in 2016. Lack of respect, undermined, battle every day, team chronically under resourced. Resignation details given.

NK: ICD. Previous: Shocked and no confidence in IC system and no wish to work in IC because if those issues

PV: Former ICD, took on role with plan to work under Teresa. Took on role with understanding there would be training and a deputy IC leader. This never happened. With TI resignation, impossible for me to continue

[redacted] Came from RAH in 2016. 2nd everything said in Pw email. Made conscious decision in IC after TI came back as it is a super specialty. Pressure to sign things off and environment was not supported

RG: Training – what training is required?

TI: Need resource. Agreed to train PV. But under-resourced so impossible to train. Not enough people to do ICD role to free TI up to train. When opportunity arises often competing priorities in terms of MM required in duty room.
Diff in S/L as dept over stretched
Comes down to resource

CP: Not had a/l. I feel that I've had enough training. Different issues here.
Should be sitting nationally, what does ICD need to do. Vague understanding. Problem for those who have not done IC in a long time (NK, PW) – not possible to parachute in.

AL: ICD role definition never defined
IC role moved on from add on from micro
New cohort of people need to get lifted up to level of expertise
Curriculum is reaction IC
What we're talking about is different
No longevity in system if we don't adapt
Skill sets have changed – very specialised subject area

JB: discussion is around how we can't do things
Action is devising an action plan for training that fits other places
Need to take away from personalities
Move from how we cant to how we can

SD: Cant have service that relies on individuals in modern workplace

CP: Luckier than most centres as we have people with expertise such as TI. How do we make things right

JB: Starting point: Action plan to develop training plan coming from management structure.

KK: Need people with experience. TI had that expertise and losing that makes it difficult

RG: Complexity. Find hard to believe there is no scale in complexity. Where is line between normal IC work and what is more complex?

AB: Hazy line. What starts off as a single bug in blood culture results in a full blown IMT/PAG involving aspects of vent/water. Difficult to pin point a specific line.

CP: Tried this before when TI was off when BJ took over complex issues and south micro duty dealt with simple things and it didn't work. Does anybody disagree? Silence.
Still have left over problems form that time. Not a helpful differential but can see why you think it would be.

RG: What support is needed to run service here?

TI: Challenges is built environment. Sig workload. Need dedicated person with experience and time to manage. Eg: give CP who is very experienced with vent 2 sessions that might help. TI could do water. This would help these areas significantly

JB: Interested in a service for GGC as all equally as deserving. Need to watch we don't miss areas. Start of conversation is about complexity of work and patients, and now you're moving into other areas.

CP: there are links

JB: hold on – you need to look at pt pop across GGC to identify complex pts across GGC. Need to define where complex patients are and what is required for whole of GGC. May be other things prevalent at time that need to be sorted (eg: VOL issue). What is expertise required across GGC to get equitable service – right people in right place to serve patients. Want to make sure we don't confuse a whole host of issues.

CP: Understand this, however the point to note is that the issues with vent/water directly impacts the infections we see & hence the ICP work required to do. So if you're asked about patient placement, there are systems set up to aid placement decisions. In other hospitals systems have been set up to deal with complex issues. In this situation locally, what we have is an ever moving feast of changing information around safety or otherwise of some of built environment so we cannot make those simple calls with knowledge base that we have, so the issues are interlinked.

RG: What would be your suggestion to make these calls?

CP: We could make these calls if we were given the right info. I have a dossier of evidence around diff people (none of my emails included) being given info that wasn't accurate, meaning we are unable to make accurate judgement calls. Also have documentation here that is not correct around advice given. Also have undermining currently around proffessional advice and what we've been saying. Feeling that the organisation would like us to give advice and take responsibility for that advice as long as that advice is palatable to the organisation

JB: That is a very strong statement to make. You need be able to…
We're here to talk about how to drive the department forward and not for you to bring in your personal opinions. I'm not hearing a lot of other people speak here. A lot of others are waiting for the lead. We know to go back to what we need to talk about. We need equitable system. We need to watch we don't go into he said/she said accusations.

CP: I am
JB: You need to take these to Jane Grant
CP: We have already taken these to JG via the WB policy.
JB: that's fine – the WB policy will carry on. What we're here to talk about how we re-organise the dept to get everybody up to speed...

CP: Would anybody else like to comment

TI: Nothing like complexity on this site and I have covered across the site. To the point where colleagues come across to help but can't do the work, they have to ask me or CP for help to do a simple scribe as it's too complex. So there is a definite complexity on this site linked to built environment that generates massive workload, 4-5 docs/day to sign off. This doesn't happen on other sides. Look at all ICD minutes, you can see where complex work comes from.

RG: This discussion is about how to put those issues over here and deal with patients over here

NK: personally speaking, I don't think you can. All of the issues that we have documented there are the reasons why we cannot and personally speaking I cannot do IC. I think the role is a complete nightmare because I have no confidence in any information that anyone is giving to me, how can you work in that situation?

JB: Can you give us the evidence?

NK: Its right there in front of you

RG: Give me an example of someone who has given you false information? Is this coming from the labs?

NK: Colleagues who are more currently doing IC will give you more info about that but there is clear evidence of lack of correct information being given to the right people, and I'm hearing all of this, not as an ICD, and am aghast at what I'm hearing, absolutely appalled at the way they have been treated, absolutely appalled, I think it shocking.

[redacted]: I suppose 1 example might be a couple years ago with 4b, trying to get consensus re sig off. Huge back-story back to 2015 that no one told me about but all of the ICNs knew about. I was told that TI had been happy with design, but she wasn't. Only way I found out is via CP TI. There may be some training issues/systems think, but I had colleagues with patient's interests in mind and gave me the info that the ICT had failed to tell me.

RGr: Are we talking about estates? Give me some clues

[redacted]: reasons why CP/TI had resigned. 4B vent system – we're moving pts back in, but multiple concerns had been raised that no one had told me about. Hoped that people would have told me these issues.

RGr: coercion to sign documents is a problem I've heard before

[redacted]: didn't sign anything. Back-story knew about that weren't made aware to me. Made me feel very uncomfortable.

RGr: If individual covering was to sit down with another individual ensuring the info given is trustworthy and accurate

[redacted]: You need trust that info given to you is accurate/complete to help you make informed decision. Trust is soft thing. Having experienced a situation like that, why would I voluntarily be placed in that situation again?

SD: Need confidence In system
RG: What needs changed

AB: Suggestion: Take MM/ICD out of system. Specialised engineers who know system – pay external folk to carry out work.
TI: Have them but don't understand pt groups.

AB: Clinical people face pressure to sign off engineering spec that they don't have expertise on. Need to combine knowledge. Vent/Water group exist but to gather folk together to get a composite sign off will take ages. A shame that everything landed on shoulder of ICD who feels they are at end of

line and are the ones who will be hung out to dry if they haven't had all of the evidence and that's why there is resistance

RG: North view from AL

AL: There is obvious an issue with built environment. I didn't understand what normal looks like. We don't know what normal looks like. We are in a new area of how we deal with environment. Not entirely convinced that what's in environment is what you see in patients. It's possible
North sign off, best to ask Brian or TI – you've stated not the same issues at north.

TI: GRI – refurbs. Worked hard to smooth out process but still not working. Still getting reports to sign off late on Friday pm

RG: if system working at GRI can you not just place same system at qeuh

TI: raised 2 y ago, document with Jennifer Armstrong (JA), but doesn't not make its way to those on ground. Flaws in ventilation and not right folk around table. Crucially at south, no clinicians around table. They don't see need to have clinicians at table. Really important as they understand pt population eg how many npenic pts. Not working in south. Asked for Project Manager to take over but nothing happened. Something fundamentally wrong.

JB: 1 structure, 1 board, 1 single procedure we should follow and working to same standard

SD: all about teams Service planning (TSP). Look at sessions and how to manage work. Involve Teams putting sessions in middle and redesigning sessions around work. TSP something that should be thought about, accepting all challenges around that. Successful in breast service in lanarkshire.
We can access colleagues who have done it successfully. Find some target areas to apply this.

AB: is this not like RIE (rapid improvement event)? Is that different?

TI: IC is very different: unpredictability of IC. Lots of competing issues each of which are high priority so can't win with managers. Criticised for not signing off RAH ITU work but I prioritised MSSA NICU issue as didn't want kids dying. If I had a colleague to pass this on to, then this would be less of a problem. All about lack of resource.

JB: Unless you do TSP you don't know your gaps. Everyone knows their role and gaps identified – team approach. This is us all together in GGC

RG: Thoughts on getting involved

AL: Brian had a few pan ggc bfast meetings. Not strictly TSP – air issues. Don't get into nitty gritty.

RG: This would be a way to tackle boards issues as one team

SD: I know how many sessions in IC. I cannot see what those issues on Friday come to to you Teresa. Need to look at that as cant fall to an individual like that.

RG: Other themes, talked about complexity, training, sign off processes

TI: some examples of lack of info sharing at IMTs.

Cryptococcal meeting: Accused of generating myth, seen dead birds myself. Asked about pigeon problems on site – no info forthcoming from people who should know. Plant room = pigeons faeces. Photographic evidence.
IMT: Pest control reports documenting scale of problem. Photos for every plant room bar room in question. History of 3 dead birds being removed. IMT with insufficient info. Info withheld throughout IMT

CP: 6a IMT: give evidence of chilled beams. Photos of leaking CB. Denied at IMT that this ever happened. Repeatedly denied at IMT and not minuted. Not just me – this is a trust issue.
Need to move past this. I love IC. We wanna do ic but not at expense of job we can do safely.
We don't want to be in a position where Public Enquiry (PE) looking at IMTs not having necessary correct info.
Need open transparency, its good practice

TI: water incident hugely complex with trying to generate hypothesis. Pple around table having access to risk assessments - steno/cup/psaer present in bdlg when opened. Recommend to put carbon dioxide in room. People at imt had that info but wasn't given to me. Huge pt implications as would have dosed system immediately without need to get national experts. Detrimental to pt care with people coming to meeting and not sharing info. Understand political pressure but detrimental to pts

RG: what non PE enquiries going on to help move forward.

JB: work underway under JA. Who attends, what is required. Inconsistent membership, need chair who's happy with minutes, get external folk involved, hfs, hps. External review – can speculate what it will contain but that's not up to us. Not had any contact as yet. Done in due course and we will comply as necessary. Submit what were told to submit. Internally hse report, they're concluding evidence gather. External review – ongoing, commissioned by cabinet secretary. Requests for docs/emails being made and adhered to.

RG: won't get answer tomorrow – what to do in here and now.

CP: will be a large undertaking for dept as its all ICD related. What you're asking is what's going to get us back to normal

RG: to put it bluntly yes

CP: don't think enquiry is a solution to anything. What a solution is to solve problem were trying to unpick. Anybody think things sare changing?

Ab: No

RG: always looking for 1st step – won't accept that there's not areas we can identify to get normality back to south

Silence

CP: comes down to trust
RG: not overnight
CP: can't in all consciousness go back to ic tomorrow
RG: can't get trust without doing job

CP: no, done it before- I need something to show me things have changed
RG: what does that look like?
CP: Think it looks like a discussion with JA
TI: as lead icd last time hai exec lead med director spoke to me individually is march, not supported, hse visit, public enq, starting point is a report from hai exec lead.
AW: good start, you've got knowledge skills exp to do job
CP; this is big step forward, have this seniority of management is great and a step forward. We've tried v hard to make things work. Tried to pursue these issues internally – documents exist. Agree there are other processes for handling how disagreements have been handled.
So if I was asked to get involved in 6a, so much I am blind to that I can't do job properly.

RG: TJP: includes everybody to find solution – do we launch into training or TSP.

RG: needs more than 1 person to do vent/water across patch, and with TSP see how we can do that practically. What can we do to make you more secure, group discussions?

CP: perfectly capable of making judgements, problem is when these are rejected or undermined, or you don't have correct data at right time to make decision,. Teresa resigned all together which is accepted. So pushes things to OOH

PV: if ti wasn't resigning we wouldn't be here. This is main issue. For me, if ti not back I would never do ic here, ever.

RG: can't make this person specific

PV: no I'm saying from me

RG: as dept, can't all say if 1 person

PV: but she is person is knows how to do things. She is expert, she has all knowledge.
SD: this come back to individuals – if someone retires, can't be in situation that no one can take over. Team needs to take over ic.

PV: that's why it was decided that we would have a deputy and training, that's why me and AB
SD: you just said you can't do job without TI
PV: as a leader not TI as a person, I want leader who knows job very well, I want a deputy leader I case TI is off and training to stand on our own 2 feet.
RG: structure with robust esc policy with named people

CP: 20 sessions
SD: relying on 1 person not right way
CP: very few places that have more than 1 person doing the ultra specialist work that TI does
SD: that's why I'm thinking to have subgroups of people who can do job

RG: in regards of time anything else we can cover
BJ: a few years ago I suggested a model that, ic and micro are joined at hip, we should all as part of work, what I call rudimentary ic, I suggested that 2-3 cons on each site who take icd role and develop sp interest and get sent on training courses etc and then after a period of timing a few would go off conveyer belt, others would replace them, so after a decade we have a complement of micro who can deal with issues

CP: Nobody around table who has not done ic apart from Kam who has a masters in IC Here issue not so much.
RG: need a structure of how we share knowledge, have discussions about individual wants/needs and team needs. Re future meetings, wed afternoon meetings, maybe alternate weeks to keep issues live – would that be useful.
CP: I'm not sure what happening – I've got a rota to write and icns to inform. Who is doing ic?
RG: need discussions around JP disputes and discussions with individuals. Need to have service at south
CP: good that were looking at why it's not working. As you can see three's a good bunch of mm. back Friday to discuss how to take it next step

RG: meet weekly, wed would be my thoughts.
CP: wed?
RG: not long drown out, perhaps if you have issue that week, that can be raised to stop things festering, we can actually work through what our plan is agreed, re training and teamwork and job planning
SD: think JP essential, get dates in diary asap, formal process around them.

RG: Anything to be raised
CP: Meeting with JA – possible to organise
RG: JB?
JB: work within acute structure, Rachel, johnathan, scott to work to a service model. Clinically, via scott. My role is to provide service across ggc. We need to put a model on piece of paper.
SD: I can help with TSP part of that

CP: not sure on SD role
SD: I'm dep med director for acute. Anything acute is me
CP: issue with ic – we need direct access to hai exec and that's a huge issue
RG: will discuss day to day structure, and management structure
CP: problem is that IC is in extremis

End

From: Peters, Christine [redacted]
Sent: 23 August 2024 19:20
To: Louise Mackinnon; Lyn Beattie
Subject: FW: Environmental sample Mycobacterium

And I followed up

Dr Christine Peters
Consultant Microbiologist
QEUH/RHC
NHSGGC
From: Peters, Christine
Sent: Friday, October 13, 2017 4:19 PM
To: Jones, Brian [redacted]; Barmanroy, Jacqueline (NHSmail) [redacted]; Joannidis, Pamela [redacted]; Walsh, Tom [redacted]
Cc: Bicknell, Steve [redacted]; MacGregor, Gordon [redacted]; Ross, Ewen [redacted]; Powrie, Ian [redacted]; Ic Doctor, South [redacted]
Subject: RE: Environmental sample Mycobacterium

Thanks
From: Jones, Brian
Sent: 13 October 2017 16:16
To: Peters, Christine; Barmanroy, Jacqueline (NHSmail); Joannidis, Pamela; Walsh, Tom
Cc: Bicknell, Steve; MacGregor, Gordon; Ross, Ewen; Powrie, Ian
Subject: RE: Environmental sample Mycobacterium

Hi Christine,

Pamela will pick this up with Ian.

BJ

From: Peters, Christine
Sent: 13 October 2017 15:33
To: Jones, Brian; Barmanroy, Jacqueline (NHSmail); Joannidis, Pamela
Cc: Bicknell, Steve; MacGregor, Gordon; Ross, Ewen
Subject: Environmental sample Mycobacterium

Hi Brian,

Re Environmental sampling for M abscessus following IMT

I have received a report from the SMRL which has identified that the ZN positive colonies from the shower head in ward 7D are Mycobacterium chelonae.

The other isolates have yet to be identified (other shower heads, taps and sinks)

This organism can cause infections in CF, however I am not aware of any recent cases in our cohort.

Nevertheless I suggest that shower head cleaning protocols need to be looked into.

regards,

Christine
Dr Christine Peters
Consultant Microbiologist
Head of Department
Southern General Hospital
GGC
Ex [redacted]
Mobile: [redacted]

Appendix 1

Public Health Commentary

The Case Note Review acknowledges the known hazard of blood stream infections in Paediatric Haematology Oncology patients and included a summary of the published evidence of increased morbidity and mortality, with a quoted study saying that 45% of patients required at least one admission due to sepsis concerns.

The Review carried out an extensive data collection and descriptive epidemiology analysis of the NHSGGC patient's cohort to elicit any factors within the case mix that could have a bearing on the clinical outcomes, and establish a causal link for the infections within the environment.

Given the known and well published risk of infections among this group of patients, it would be useful to overcome the limitations of descriptive epidemiology (time, place, person) showing crude numbers of patients, by pathogens along timeline, through additional epidemiological analysis.

Useful additional analysis would be: calculating incidence of infections of interest in the population at risk and establishing the trend of the infection incidence in time; Comparison of incident rates to other comparative Units within Scotland /UK or published data; standardisation of infection rates to account for known confounders like age, sex, ethnicity, deprivation; calculate expected rates of infection within the cohort based on published data.

NHSGGC commissioned HPS to carry out data analysis that included statistical comparisons of infection rates within the NHSGGC Unit to the combined Aberdeen and Edinburgh Units and we believe the findings of the analysis should be included in the Case review.

When establishing the number of patients at risk due to environment, the causality test assessed using the Bradford-Hill criteria (J Roy Soc Med 1965:58:295-300) would be more appropriate as any observed association may in fact be due to the effects of one or more of the following: chance (random error) ; bias (systematic error) ; or confounding.

Indeed, the Case Review acknowledges the difficulty in assessing links to the environment as the cause of infections. We believe that the use of statistical methods (like indirect standardisation) would be more suitable to assess the chance of a real excess number or cluster to avoid the cognitive bias of "Clustering Illusion". The control measures instituted on the basis of the precautionary principle should not be used as evidence of causality.

The assessment of pathogen transmission and identification of sources in outbreaks has benefited vastly from the introduction of whole genome sequencing that provides the most robust microbiological evidence. Public Health England introduced WGS in 2014 in foodborne outbreak investigation and Glasgow University has developed the technique locally to help manage outbreaks. WGS analysis carried out in September 2019 allowed the IMT to understand the degree of relatedness among cases and, together with the Root Cause Analysis findings make final recommendations for the incident. We would like to see the findings of the WGS carried out for the common pathogens included in the Case Review as robust microbiological evidence that helps map the causality relationships among the infections seen and also avoids publication bias.

NHS National Services Scotland

SHFN 30
Part B: HAI-SCRIBE

Implementation strategy and assessment process

Health Facilities Scotland
Engineering and Environment

October 2014

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Contents

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Health Facilities Scotland would like to thank the SHFN30/HAI-SCRIBE Steering Group for their efforts in producing Part B of SHFN 30: HAI-SCRIBE. Their input has been gratefully appreciated.

Thanks are also due to the Pilot Study Group for their assistance with trialling the process.

Finally, HFS would take this opportunity to express gratitude to everyone who contributed to the consultation phase of completing this document.

Preface

Collaboration among Capital Planners, Infection Prevention & Control Teams, Clinical staff, Design Teams and Estates & Facilities Teams is the key to ensuring that infection control risks are highlighted, managed and mitigated.

Scrutiny of this guidance will highlight the frequent use of the word "Partnership". Successful use of HAI-SCRIBE requires participation and cooperation particularly between Estates & Facilities staff and Infection Prevention and Control Teams.

To manage or mitigate the risks highlighted through use of HAI-SCRIBE requires knowledge from many sources. However, it is not expected that any group will possess full knowledge or experience of another's discipline. It is expected, therefore, that there will be an ongoing liaison during each stage of development where appropriate specialist knowledge from all sources of relevant expertise can be derived and incorporated into the project briefing, contract conditions, specification, and quality control of construction and maintenance.

The principal stages of development of any healthcare facility comprise:

- consideration of the proposed site and relevant implications;
- design and planning;
- construction and refurbishment;
- ongoing maintenance.

Note: The Scottish Government's 2020 Vision is that by 2020 everyone should be able to live longer healthier lives at home, or in a homely setting. It states that when hospital treatment is required, and cannot be provided in a community setting, day case treatment will be the norm.

Good infection prevention and control to reduce the spread of infection is no less important in these community-based settings so an extension of this guidance to these settings, when appropriate, would appear to be a logical progression. However, there is a perception that conditions in community-based settings could potentially be less demanding than in an acute setting. Additionally, there is an awareness of the need to project a more homely environment. Despite these views, the need to minimise the risk of cross-infection is no less important in community health settings than in the acute sector, but other factors such as creation of a homely environment will need to be taken into consideration when managing the risks associated with the prevention and control of infection.

HAI-SCRIBE: a point of reference

This document introduces the main components of HAI-SCRIBE and identifies the steps required to ensure that HAI-SCRIBE is successfully utilised and implemented and that the assessment process is carried through.

Note: This document can provide an insight to the key factors within the built environment which can impact on prevention and control of infection. It is intended as a point of reference for healthcare estates and facilities managers, designers, project managers, contractors, engineers, surveyors, health planners and Infection Prevention and Control Teams working on healthcare estate new build and refurbishment projects. It will also be useful as a guide for best practice in existing healthcare facilities.

This guidance consists of two parts:

- **SHFN 30 Part A: Manual**: This provides Built Environment Infection Prevention and Control information for Design Teams, Construction Teams, Infection Prevention and Control Teams and Estates & Facilities Teams.
- **SHFN 30 Part B: HAI-SCRIBE:** comprises the Implementation and Assessment Process which describes the process for identifying, eliminating or managing built environment infection control risks. It also describes the key personnel involved in this process together with their roles and responsibilities and the fact that collaboration among all those involved in the process is pivotal to its success.

It is envisaged that participants will use the HAI-SCRIBE document (SHFN 30 Part B) to help them identify, manage and record built environment infection control risks. The same Group will use the Manual document (SHFN 30 Part A) on sourcing information to help in the decision making process so that identified risks can either be eliminated or successfully managed.

Questionsets and Proformas

Arrangements have been made to make available on the HFS Website, separately, the portfolio of Questionsets and Pro-formas for each stage of project development suitable for photocopying and application to individual projects as appropriate.

1. Setting the scene

Healthcare Associated Infection

1.1 Healthcare Associated Infection (HAI) is the term used to describe infections that occur as a result of medical care, or treatment, in any healthcare setting. It is seen as a widespread issue and the prevention and control of these infections is a priority issue for NHSScotland.

1.2 Infection originating or spread in hospitals and other healthcare facilities is recognised as a serious and widespread problem. Although standards of hygiene in healthcare facilities and standards of personal hygiene have been identified as potential sources of infection and infection spread, it can also be said that the design, planning, construction, refurbishment and ongoing maintenance of a healthcare facility also have an important role to play in the prevention and control of infection. For example, controls can be designed-in and risks designed-out such as extending wall storage units right up to ceiling level to avoid having the potential build up of dust on high level ledges that are difficult to clean.

The Challenge

1.3 Patients using healthcare facilities are more likely to be immuno-compromised and also more likely to receive intensive medical interventions, which in turn increase their vulnerability to opportunistic infections. Every effort must be taken to acknowledge and ultimately reduce these risks. This includes risks associated with the built environment that can arise from, for example, demolition, construction and refurbishment activities.

1.4 Research and investigation have consistently confirmed that the healthcare environment can be a reservoir for organisms with the potential for infecting patients, whether internally or from external sources (via openable windows or fresh air intakes). For HAIs to be reduced, it is imperative that Infection Prevention and Control (IPC) measures are “designed-in” and IPC risks are “designed-out” at the very outset of the planning and design stages of a healthcare facility and that input continues up to, into and beyond the final building stage. Inevitably, there will be residual risks which will require identification, registering and monitoring.

1.5 To achieve this, it is necessary that designers, architects, engineers, facilities managers and planners work in collaborative partnership with IPC teams, healthcare staff and the users to deliver facilities in which IPC needs have been anticipated, planned for and met.

Note: HAI-SCRIBE is an acronym for **H**ealthcare **A**ssociated **I**nfection **S**ystem (for) **C**ontrolling **R**isk **I**n the **B**uilt **E**nvironment. The procedure has been developed as a framework for these groups to work together to identify, manage and mitigate issues in the built environment impacting on infection prevention and control risks.

Throughout this document, the term 'Project Team' is referred to. The term describes the team of NHS Staff assembled to fulfil the role of 'The Client' and to manage the delivery of the project. Through the various stages of the project it may include NHS Project Managers, Clinicians, Estates Staff and Infection Prevention and Control specialists.

This would be best achieved with the establishment of a Project Team with HAI-SCRIBE procedures as part of their responsibilities. (The note box above and Paragraphs 1.8 and 2.1 to 2.4 also refer).

1.6 HAI-SCRIBE aims to ensure that IPC measures are not only designed-in but also maintained throughout the lifetime of the healthcare facility. It also aims to highlight potential IPC risks so that these can be designed-out. This is achieved through identifying the infection control risk associated throughout each of the following stages of lifecycle of the healthcare facility.

- Development Stage 1 - consideration of the initial brief and **proposed site for development.** This coincides with Business Case Stage: 1A**;**
- Development Stage 2 - **Design and planning;**
- Development Stage 3 - **Construction and refurbishment;**
- Development Stage 4 - **Pre-handover check, ongoing maintenance and feedback.**

(Many maintenance-related projects do not necessarily go through this approval process but the need for collaboration remains undiminished).

1.7 The purpose of HAI-SCRIBE is to provide a framework around which potential risks associated with the proposed site development, design and planning, construction/refurbishment and ongoing maintenance of Healthcare Facilities can be identified assessed and subsequently managed or mitigated.

1.8 To facilitate this and for ease of use the Implementation Strategy document is divided into three key parts which describe the activities associated with its use, namely;

Part A Assembling the Project Team with HAI-SCRIBE forming part of its responsibilities.

Part B Assessing the risk via use of Questionsets (1) – (4).

Part C Gathering the information to inform dialogue. NB: This is set out in the planning and design manual (SHFN 30, Part A) which accompanies this document.

Getting Started - preparation

1.9 It is important that the following procedures are followed:

- always consult the Estates & Facilities Management and Infection Prevention and Control Team at an early stage:
  - whenever refurbishment is planned;
  - whenever major capital bids are planned;
- do not wait until patients are ready to move in;
- do not wait until fixtures, fittings and furnishings have been purchased;
- do not let immediate cost or space consideration override reason or functional requirements;
- long-term value for money/risk reduction considerations should prevail.

Note: The best products or designs may be more expensive initially but in the long term they will probably realise cost benefits as they may prevent outbreaks. They may last longer, require less maintenance and be more durable.

Who should implement HAI-SCRIBE?

1.10 Successful use of HAI-SCRIBE is dependent on meaningful and ongoing dialogue and exchanges of information generated from representatives from Infection Prevention and Control and Estates & Facilities Managers, Project Managers and construction professionals who can contribute individual and relevant expertise in their own disciplines. Their active partnership and participation is essential. Similar dialogue is necessary when these parties are not involved, such as routine or periodic maintenance activities.

Note: NHS Boards' internal governance should identify who is responsible for implementing or taking ownership of HAI-SCRIBE procedures. These procedures may vary among NHS Boards. Typical NHS Board organisational structure is provided in Appendix 9.

1.11 It is recognised that the risks identified from the design process will be competing against other risks identified via other risk management processes. Consideration and prioritisation of all risks identified will have to take place.

1.12 Implementation of HAI-SCRIBE should be the responsibility of a specialist multi-disciplinary professional team who possess the necessary skills in relation to the healthcare facility being planned, designed, constructed, refurbished or maintained. The multi-factorial nature of projects and activities dictate the need for a multi-disciplinary team and include an array of both healthcare professionals and contractor personnel where appropriate to take ownership of relevant documents and risk assessments throughout each stage. It is essential, however, that all members of the assembled Team have a

background understanding of the principles of prevention and control of infection in the built healthcare environment for the specific project.

1.13 There are instances where the need to implement HAI-SCRIBE assessments will not be obvious (e.g. external works, offices, laboratories). Any decision to do so should be based on the impact any works would have on accommodation in the nearby area used for patient care.

1.14 The services of a member of administration staff will be helpful in providing administration support to members of the Project Team throughout the project.

1.15 Project Teams should not succumb to unacceptable pressures of time and financial expenditure that would compromise decision-taking and clinical outcomes. It is essential that proposals should be signed-off by the Project Team before any start on site.

1.16 It is essential that members of the Project Team including the Project Manager should be aware that externally funded projects have the potential to proceed without prior knowledge of Infection Prevention and Control specialists or representatives of Estates and Facilities department and Project Managers. This must not be allowed to happen.

Refurbishment issues

1.17 Implementation of HAI-SCRIBE is aimed at all personnel who may be involved in providing not only new build, but also refurbished or extended healthcare establishments.

Note: For the avoidance of any doubt, there is a clear demarcation between “redecoration” or “refreshing of accommodation” and “refurbishment”. The need for input from Infection Prevention and Control specialists should be verified when upgrading of facilities is limited to cosmetic attention as even in these circumstances attendant activities could generate risks from dust generation or disruption to air or water systems or switchgear.

1.18 Any of the following “refurbishment” activities would have the potential to generate dust. This is not an exhaustive list:

- removal of lay-in or screwed-in ceiling tiles from a suspended ceiling grid;
- unscrewing of service ducts access panels;
- unscrewing of panels forming part of integrated plumbing systems and general services concealment;
- removal of protective covers from radiators;
- lifting and replacement or repair of floor coverings;
- drilling masonry or plasterboard walls;
- replacement of door-sets;
- drilling through plasterboard partitions;

- replacement of sanitary fittings;
- removing or patching thermal insulation on pipes and ducts;
- raggling of plastered walls;
- general hammering;
- sanding and planing of surfaces;
- plasterwork, (new work, patching and repair);
- removal of redundant electrical socket outlets;
- dismantling luminaires;
- dismantling grilles and diffusers;
- inadequate sealing of ductwork serving adjacent areas during modifications;
- bagging and disposal of debris.

Note: Any premises constructed pre-2000 have the potential to contain asbestos as part of the fabric (e.g. thermal insulation, suspended ceiling tiles, thermo-plastic floor tiles, etc.) This would be confirmed in the NHS Board's Asbestos Management Plan where presence and condition of asbestos containing materials (ACMs) should be recorded.

1.19 Events such as the generation of dust or disruption to a facility's air or water system have the potential to spread micro-organisms. These could disperse, if not checked, into adjacent areas where patients may continue to be treated. It can be seen that advice from and liaison with Infection Prevention and Control specialists is essential under these circumstances whereas this would be less likely when work is restricted to redecoration. As individual circumstances could vary from site to site, all such work in or adjacent to patient treatment accommodation should be risk assessed and appropriate precautions implemented.

Note: Appendices 6 and 7 show in flow chart form, the procedures to be followed where demolition work or removal of fixed structures is involved where moderate or high levels of dust can be expected. Appendices 4 and 5 show the procedures for activities where little or no dust is generated.

1.20 Given that NHS procurement can be by Framework, Non-Profit Distribution (NPD) or HUB essentially to achieve a transfer of risk from public to private sector, it should be noted that its application to existing premises subject to refurbishment or alteration will entail risks that cannot be predicted with certainty. Therefore cost effectiveness will be difficult to predict.

1.21 Advances in technical and therapeutic methodologies are among the range of factors which present further challenges in relation to control of infection. Organisms with antimicrobial resistance have become a major public health threat, making infection occurring within healthcare premises increasingly difficult to treat. Infection originating in hospitals and other healthcare facilities

is now recognised as a serious and widespread problem. The physical environment has to assist, not hinder, good practice.

1.22 Routine maintenance should follow the NHS Board's Standard Operating Procedures (SOPs) for the various applications and departments. SOPs should in themselves be subject to risk assessments which may be iterative reflecting changes in parameters. NHS Boards have developed HAI-SCRIBE method statements for common, repetitive, activities which allow common tasks to be risk assessed and generic control measures put in place. Communication between Infection Prevention & Control and Estates staff when this process was being carried out is still necessary.

The neighbourhood environment

1.23 Neighbourhoods change whereby new or extended industries and commercial operations could have been developed since initial assessment of the site. The Capital Planning managers of the healthcare facility need to be alert to this as it may present a new HAI risk.

Record keeping

1.24 A detailed record of the initial application of HAI-SCRIBE and all subsequent applications and reviews must be kept in legible writing and be available for reference, retained in a central register and an audit trail maintained highlighting good and bad practice. The records of the applications of HAI-SCRIBE and the regular reviews of the system should be available for the appropriate management group of the healthcare facility. This may be the NHS Board's risk management steering group headed by the Chief Executive Officer which addresses risk management. However, this arrangement may vary from Board to Board. There should also be checks to ensure that control measures are being adhered to; these should also be recorded.

1.25 Internal governance should ensure that records are kept of out-of-hours working and any contractors involved. This should also identify who oversees the HAI-SCRIBE processes.

Works involving low risk

1.26 In attempting to differentiate between minor and major works in the context of applying the correct level of HAI-SCRIBE procedures, this will come down to the project's complexity or impact of activities, rather than size or extent. It is not always appropriate to follow the entire HAI-SCRIBE processes when dealing with small scale and minor works projects, Figure 1 on the following page comprises a decision-making tool for evaluating the extent of proposed activities and their impact. It might be helpful to maintain an ongoing log of activities. A typical exemplar for minor works is shown in Appendix 8.

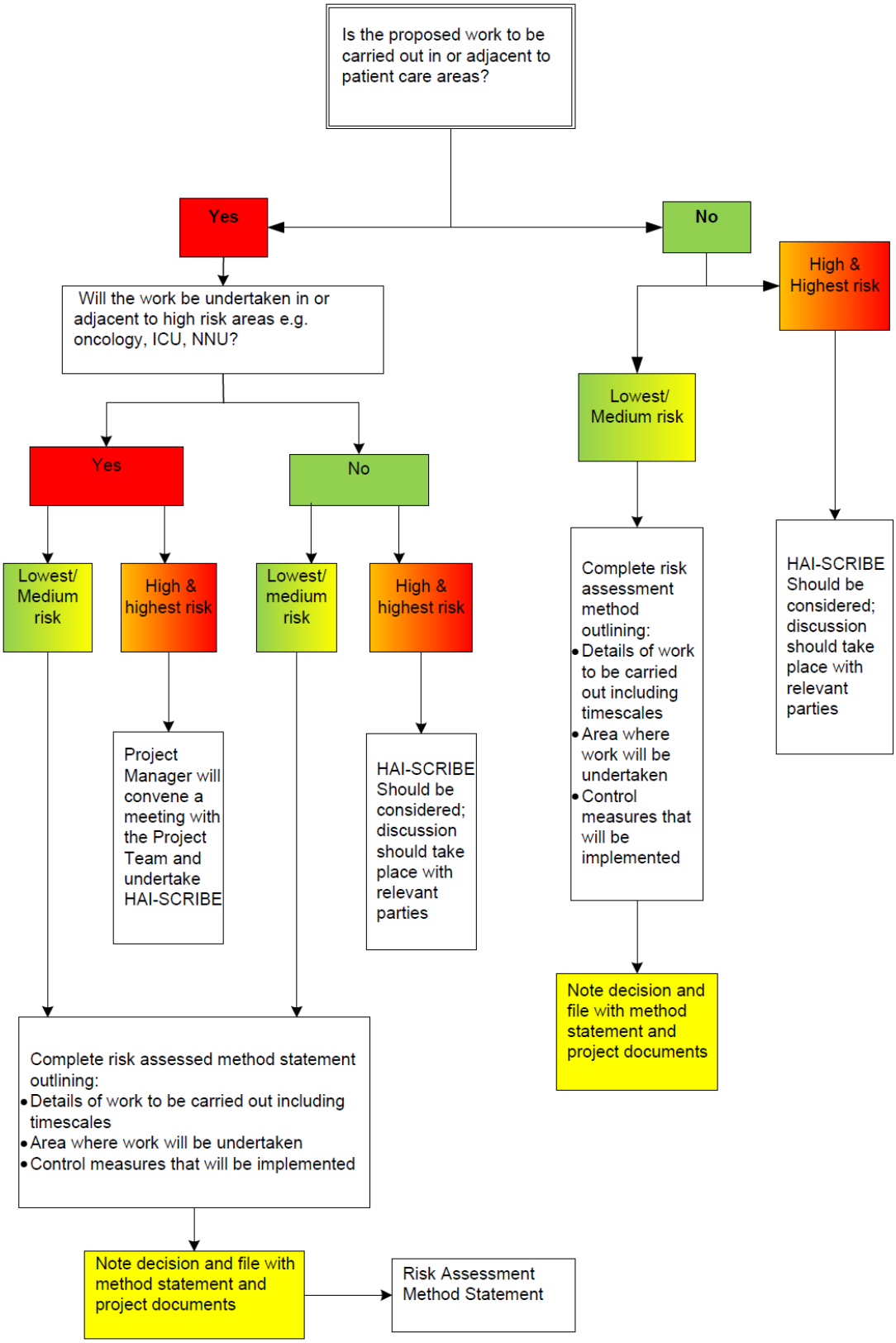


Figure 1: Decision-making tool for evaluating need for Minor Works and Small Repairs

Note: Consideration could be given to employing proformas such as contained in the following Appendices:

Appendix 1: Pre-start and construction proforma for particulars of project comprising a routine reporting procedure for submission to the Project Team before and during works setting out performance checks and assessment of hazards.

Appendix 2: Commissioning stage proforma comprising contract particulars setting out requirements prior to commissioning activities.

Appendix 3: Permit-to-work form comprising particulars, processes and criteria relative to the issue of Permits-to-Work, where required.

Appendix 4: Flow chart for work stages and procedures associated with minor works and small repairs in areas categorised as High, Medium and Low Risk.

Appendix 5: Ditto for small scale works.

Appendix 6: Ditto for works involving removal of fixed structures or where moderate to high levels of dust are generated.

Appendix 7: Ditto for major demolition and construction.

Appendix 8: Overview exemplar comprising typical monitoring spreadsheet for minor works.

Appendix 9: Gives an example of a Typical NHS Board organisational structure.

Appendix 10: Overview exemplar of a completed questionset.

1.27 Whatever risk designation is agreed, there will be a need for the NHS Board to re-visit the project prior to handover to verify that the brief has been completely fulfilled.

Note: Common maintenance tasks should be assessed and method statements produced setting out how to manage risks. There should be no need to reassess every time the same task is repeated unless parameters change such as working in a low risk patient group risk area and then in a high patient group risk area.

2. Part A

Assembling the Project Team

2.1 This part of the documentation sets out the responsibilities of all those involved in implementing HAI-SCRIBE and the processes to be employed in doing so.

Responsibilities in relation to HAI-SCRIBE

2.2 The successful implementation of HAI-SCRIBE requires input from a wide range of professionals including Managers, Facilities Staff, Planners, Infection Prevention and Control Staff and Clinical Staff. Overall responsibility for ensuring the implementation of HAI-SCRIBE is determined by the Development Stage as indicated in the following text. Some NHS Boards may wish to give responsibility to another project team member. In such instances it is important that the responsible person for each stage is named.

Development stage

- Stage 1: “Initial brief and Proposed site for development” - the responsible officer is the Project Owner/Sponsor;
- Stage 2: “Design and planning stage” - the responsible officer is the Project Manager;
- Stage 3: “Construction and refurbishment” - the responsible officer is the Project Manager;
- Stage 4: “Pre-handover check (carried out by the Project Team) and ongoing maintenance” (carried out by the Estates team).

2.3 For Capital Project and Refurbishment schemes, the Project Team will have been assembled already. HAI-SCRIBE implementation will be one of their responsibilities as part of ensuring that an accurate design brief is developed. Regular meetings and communication with stakeholders in the Team to discuss design, tendering, build and commissioning will ensure the facility is functionally suitable and fit for purpose. This will ensure that due attention is paid to prevention and control of infection risks for subsequent elimination or mitigation.

Who should lead?

2.4 The allocation of the lead role will be a function of the type, size and complexity of the project, its adjacency to sources of contamination (known or suspected), its proximity to other operational departments and the type of patients being treated. Priorities will vary depending on these issues. The principal role of the designated leader of the Project Team is to ensure that the most appropriate representation is achieved with specialist knowledge provided when it is required.

2.5 The following suggested activities and allocation of responsibilities are offered for guidance.

Project Owner/Sponsor

2.6 In ensuring that HAI-SCRIBE is completed for all major Development Stage 1 Projects, the Project Owner/Sponsor shall:

- identify an appropriate individual to lead the HAI-SCRIBE process;
- ensure that a formal risk assessment is undertaken by a designated clinical member of the Project Team in relation to the risk to patients for all construction activity. This is in addition to the HAI-SCRIBE Risk Assessment and should be recorded with an entry made in the risk register;
- ensure that the risk assessment includes the identification of "particularly at risk" patients and that designated clinical members of the Project Team will generate options for care. The rationale for deciding upon a course of action should be recorded and reviewed on a regular basis throughout the contract period;
- ensure that key personnel are involved in undertaking HAI-SCRIBE i.e. Infection Prevention and Control, Health & Safety and other specialist advisors as necessary. As a minimum at Stage 1, representatives from the Project Manager, Infection Prevention and Control, Health & Safety, Estates, Clinical Environment, Domestic Services and Fire Safety should be in attendance;
- ensure that HAI-SCRIBE documentation has been signed-off by key representatives involved in the process;
- ensure that the requirements identified by HAI-SCRIBE are incorporated into the contract documentation including a requirement that the contractor signs a specific statement relating to the implementation of HAI-SCRIBE and that it is adhered to during the project.

HAI-SCRIBE Project Manager

2.7 The main responsibilities of the Project Manager are:

- taking ownership of and leading the HAI-SCRIBE process;
- ensuring that HAI-SCRIBE is completed for all **Development Stage 2, 3 and 4** projects;
- identifying appropriate individuals to undertake the HAI-SCRIBE process;
- ensuring that a formal risk assessment is undertaken by a designated clinical member of the Project Team in relation to the risk to patients for all construction activity. This is in addition to the HAI-SCRIBE Risk Assessment and should be recorded with an entry made in the risk register;
- ensuring that value for money in capital and life cycle costs are taken into account;

- ensuring that the risk assessment includes identification of "particularly at risk" patients and that designated clinical members of the Project Team will generate options for care. The rationale for deciding upon a course of action should be recorded and reviewed on a regular basis throughout the contract period;
- ensuring that key personnel are involved in undertaking HAI-SCRIBE i.e. Infection Prevention and Control, Health & Safety and other specialist advisors as necessary. As a minimum at Stage 2 and 3, representatives from the Project Manager, Infection Prevention and Control, Health & Safety, Estates, Clinical, Environment, Domestic Services and Fire Safety should be in attendance. This applies to major projects;
- ensuring HAI-SCRIBE documentation has been signed-off by all key representatives involved in the process;
- ensuring that the requirements identified by HAI-SCRIBE are incorporated into the contract documentation, including a requirement that the contractor signs a specific statement relating to the implementation of HAI-SCRIBE and that it is adhered to during the project;
- ensuring that systems are in place to monitor contractors' compliance throughout the duration of the project, including documented evidence of compliance with agreed monitoring arrangements;
- exercising authority to stop work if there is a breach of any infection control preventive measures during construction or refurbishment;
- reporting any issues on the risk management system (e.g. Datix) from ongoing activity that may affect HAI-SCRIBE and require re-assessment. Datix investigation must clearly identify causes and assurance that these will then be managed accordingly;
- ensuring that the HAI-SCRIBE assessment is reviewed should there be any significant changes to the management of the project;
- keeping a record of the initial application of HAI-SCRIBE and all subsequent applications and reviews for reference in a central register.

Estates/Facilities Manager/Maintenance (Soft FM and Hard FM)

2.8 The above responsibilities undertaken by the Project Manager include involvement of the Project Team in the HAI-SCRIBE process. This will include full briefing of the Estates Manager. Where no Project Manager is appointed the person authorising the work will assume the main responsibilities.

The Estates/Facilities Manager must also keep the Project Team up-to-date on new projects where the project work itself potentially increases the risk of HAI as determined by the Infection Prevention and Control Risk Assessment for the Project as specified in HAI-SCRIBE.

- Other responsibilities of the Estates/Facilities Manager:
  - **Partnership Working** with the Infection Prevention and Control specialists and other members of the Project Team and designers;

- **Communication** with the Infection Prevention and Control specialists to keep everyone up to date on all new projects where the work potentially increases the risk of HAI;
- **Safe methods of working** - ensuring that all visiting contractors work safely in the existing healthcare environment.

Note: 'Turnkey' procurement arrangements occur where the supplier carries out everything for the project and enables the user to "turn the key". This kind of arrangement would apply for, say, a supplier of an X-ray machine who would be handed a 'stripped-out space' in which they would fit out an X-ray room with power, lighting and other services from identified interface points on the services installations, provide and install floor coverings, wall panels and ceilings, connect up and commission the room, the machine and all the supply systems before handover to the user with manuals etc. Typical applications would comprise MRI installations, CT Scanners, Linear Accelerators and other large pieces of specialist equipment such as Sterilisers, etc.

Infection Prevention and Control

2.9 The main responsibilities of Infection Prevention and Control specialists are:

- advising the Project Team on the principles of infection prevention and control of infection as applied to the built environment;
- contributing to risk assessment and providing advice on infection risk to susceptible patients;
- contributing to advice and guidance on control measures to be implemented;
- advising Project Manager/Estates Manager as to the need to stop work where infection prevention and control measures have not been adequately implemented or have failed;
- providing education on infection prevention and control measures to relevant staff involved in the project where required;
- determining with the Project Team and Health & Safety representatives a suitable and sufficient dust monitoring methodology for each project;
- assisting in the review of all HAI-SCRIBE assessments within agreed timescale.

Health and Safety

2.10 The main responsibilities of Health & Safety representatives are:

- advising the Project Team on the principles of risk assessment as applied to the built environment;
- contributing to the risk assessment process and providing advice and guidance on control measures to be implemented;

- inspecting the construction site in order to evaluate on-site health and safety competence of contractors employed where the risk has been determined as significant;
- advising the Project Manager/Estates Manager of the need to stop work where health and safety measures have not been adequately implemented or have failed;
- providing education on health and safety risk management and control measures to relevant staff involved in the project where required;
- contributing to and understanding the roles of the various members of the Project Team;
- assisting in the review of all HAI-SCRIBE assessments within agreed timescales.

Note: To ensure compliance with HAI-SCRIBE procedures during the construction/refurbishment phase it is recommended that a Supervising Officer is designated by the NHS Board with the remit of recording deviations, liaising with Infection Prevention and Control Specialists and given delegated authority immediately to stop work or advise the Project Manager of the need to do so until remediation has been satisfactorily completed, this may be the Project Supervisor.

Lead Consultant/Architect (if appointed)

(NB: Parts of these responsibilities can be undertaken by the Project Manager)

2.11 The main responsibilities of the Lead Consultant/Architect/Design Team are:

- facilitating partnership working with the Infection Prevention and Control specialists, Estates and Facilities Managers and other members of the Project Team;
- ensuring outcomes of HAI-SCRIBE are incorporated into the design of the building;
- ensuring design enhances the prevention and control of infection;
- ensuring that materials utilised are suitable and enhance the prevention and control of infection;
- ensuring compliance with professional standards, NHS guidance and statutory regulations in development and design;
- maintaining up to date knowledge and understanding of infection prevention and control principles.

Note: The Lead Consultant and Design Team should consider the views of all relevant healthcare personnel into the final design of the new healthcare facility. In addition, the timescale involved to plan a new healthcare build or refurbish an existing establishment can vary from a short period of a few months in the case of a small refurbishment to as long as three or four years for a major capital project.

It is important that Infection Prevention and Control teams are notified of potential projects or contracts awarded, at the earliest possible opportunity. This applies irrespective of the form of contract adopted or whether in-house facilities or consultant or contractor design teams are employed.

Every consideration should be given to the quality of composition of the Design Team. Selection of Design Teams entirely, or primarily, on cost is contrary to public sector procurement requirements which demand a best-value approach. Architects and Designers for healthcare projects must be suitably experienced in terms of their knowledge and understanding of prevention and control of infection**.** Deficiencies in knowledge of or experience with HAI-SCRIBE will be informed by interview and should be determined during the pre-qualification stages *prior to appointment*. In Non Profit Distribution (NPD), HUB and Framework Projects the appointment of designers is through the Contractor team. It is therefore essential that those responsible for appointments are acquainted as to these issues and that the NHS Board takes account of the Contractor's selected designers and their relationship with and attitude towards them.

Lead Contractor/Contractors

2.12 The main responsibilities of the Contractor, under this guidance, are:

- coordinating and advising the Infection Prevention & Control Team to assist in identifying potential risks and control measures prior to and during construction;
- incorporating and coordinating above in pre-construction H&S Plan and construction method statements to enable safe working during works;
- regular monitoring of risks, control measures and documentation; updating as project develops to ensure continuous safe working during and after works.

The above may also include post-completion works, e.g. snagging and latent defects.

Note: The Lead Contractor is the representative of the team responsible for delivering the works. In most cases this is also the 'Principal Contractor' as defined in the Construction (Design and Management) Regulations 2007. This requires a Principal Contractor and a CDM Co-ordinator to be appointed if a project is notifiable. Construction is notifiable if it lasts more than 30 working days or involves more than 500 person-days (for example 50 people working over ten days). In smaller projects, this may be the site manager of the firm contracted to deliver the works. The works may include construction, demolition, repairs and /or maintenance.

NB**:** The role of CDM Co-ordinator is currently under review by the Health & Safety Executive.

Domestic Services Manager/Soft Facilities Manager

2.13 The main responsibilities of the Domestic Manager are:

- ensuring that staff are monitoring dust levels and advising when increases in dust levels occur;
- advising on any additional cleaning requirements required, either within the area in which the work is being undertaken or adjacent areas;
- advising on cleaning required from contractors on completion of work and prior to hand over;
- advising on and ensuring that cleaning required from domestic services is undertaken after handover and before the area is put into use.

Departmental Representatives

2.14 Key healthcare staff, currently working in relevant wards and/or departments, should be involved in the project from the earliest opportunity to ensure that the needs of patients and staff are taken into consideration when planning the new or refurbished facility.

- Main responsibilities of the Ward/Departmental representatives:
  - **Partnership Working** with the Infection Prevention and Control specialists and other members of the Project Team;
  - **Patient safety** - awareness of the patient population and the potential health risks that may occur during a project;
  - **Special precautions** - require to be identified to mitigate risks for specific patient groups e.g. patients who are immuno-compromised or who have underlying medical conditions;
  - **Fit for Purpose** - advice on the new facility being functionally suitable for healthcare delivery and patient use.

Note: The required input from the various representatives will be at varying levels dependent on the type of accommodation being provided and during various stages of design development and construction.

Minimising infection risks

2.15 A variety of measures will contribute to the prevention and control of infection. However, despite every best effort, not all infections are preventable. Resources must be directed towards minimising the risk where infection can be prevented and facility design plays an important role in achieving this. HAI-SCRIBE can be applied to other operational areas of NHSScotland.

2.16 There are three key steps involved in HAI-SCRIBE:

- identifying the hazard;
- assessing the risk from the identified hazard;
- managing the risk to eliminate or minimise its impact.

2.17 The application of these three key steps of HAI-SCRIBE is aided by a range of questions set out in Section 3 which are appropriate for particular development stages of the healthcare facility.

Note: Care needs to be taken to ensure that the System does not solely become a mechanical 'box-ticking' exercise, but rather a rigorous questioning and auditing of proposals and of operating facilities.

2.18 In assessing the risk from the identified hazards, and in determining how to manage the risk to eliminate or minimise its impact, the nature of exposed population is a critical consideration.

2.19 In most cases there will be no option but to manage the risk to eliminate or minimise its impact. Health economics will inevitably be applied by the management of the healthcare facility in circumstances where there are several competing bids for resources and where those with an infection risk have a number of options suggested for the management of the risk. In such cases, the assessment of risk and the measures necessary to manage the risk must be evaluated carefully as part of the health economics decision-making.

2.20 This dedicated Project Team should be representative of the appropriate specialists but small enough in number to ensure effective decision-making.

2.21 Implementation of HAI-SCRIBE requires an accurate record of the process of hazard assessment and risk management which is essential 'due diligence' information.

2.22 Records of the applications of HAI-SCRIBE and the regular reviews of the System should be reported to the Project Manager of ongoing work.

2.23 In circumstances where HAI-SCRIBE is being applied to the site for a proposed development, design and planning, or the construction of a new- build

healthcare facility, the Project Board needs to be advised of the outcome. In cases where it is being applied to the refurbishment or operational management of an existing healthcare facility, the organisation's risk management steering group should be advised of the outcome of the HAI-SCRIBE applications on an annual basis.

Summarising

2.24 The following questions should be answered:

- have all members of the multi-disciplinary Project Team been identified?
- has it been confirmed that all members of the Project Team have background knowledge and access to specialist knowledge in infection prevention and control?
- has a person been identified who will lead on HAI-SCRIBE assessments?
- have full telephone and e-mail contact details been obtained to confirm full commitment and availability to participate in the project?

Note: Do not proceed to the questionsets within the next Step until you can answer "**Yes**" to the above questions.

3. Part B

Assessing the risk via use of Questionsets

3.1 The assessment process has been developed into a series of questionsets for each of the four stages of development. It will be noted that, although the framework and process for each stage is broadly similar, the construction and refurbishment stage poses particular problems arising from dust and other pollutants which could potentially impact on nearby facilities for ongoing patient care. Much of the content of the questionsets for the post-construction stage will refer to decisions already taken but should be revisited to allow responses to verify that they were correctly implemented and maintained in optimum condition.

3.2 The various questionsets forming part of the assessment process are set out for self-assessment. All questions in each of the Development Stages of HAI-SCRIBE should be answered.

Note: It is expected that many of the questions will have a 'Yes' response but the process should not be regarded as a 'box ticking' exercise.

3.3 Each "Yes" or "No" answer should be backed up with additional written information relevant to the particular question, as some questions may require further consideration. Such information will be useful for reference at different stages of a new build project. (A worked example of a Development Stage 1 Questionset is contained in Appendix 10).

3.4 For example, if answering 'Yes' to the following question at Development Stage 1:

"Are there industries or other sources in the neighbourhood which may present a risk of noise, other pollution or infection e.g. animal by-products processing plant?"

It is necessary to describe fully what these 'industries' or 'other sources' are.

Similarly, if answering 'Yes' to:

"Will lack of space limit the proposed development and future expansion of the facility?"

It is necessary to describe fully what the "limitations" are and what actions need to be taken to eliminate or minimise the risk they pose together with who is responsible for ensuring that the actions are carried out.

Situations can arise when a decision related to managing risk cannot be taken in a satisfactory or compliant manner. When this happens the issue should be recorded and escalated to a higher authority.

Detailed assessments

Note: The following section comprises the questionsets that should be scored for each of first two Stages of development of projects from inception to ongoing use. They follow basically the same format except that the Questionset covering construction and refurbishment involving dust and pollutants arising from construction and refurbishment activities sets out additional risks to be assessed and managed. The Questionset for ongoing use etc. covers similar ground to Questionset applicable at the design and planning stage in that the latter reflects decisions taken in the former and should be seen as a checklist.

Questionset for Initial brief and proposed site for development

3.5 The initial application of HAI-SCRIBE examines the intended brief and site for the new build healthcare facility.

3.6 If any actual or potential hazards are identified during this initial stage, it is important that a full risk assessment is carried out to identify the nature of the risk. If risks are highlighted, remedial measures need to be identified in order that systems and processes can be designed into the project plans so that the impact of the risk can either be eliminated or its impact reduced.

3.7 The risks and the remedial actions should be clearly documented.

Constraints of developing on a pre-determined brief or site

3.8 In some cases the brief is driven by outside factors or there is no choice in the use of a particular site and steps must be taken to minimise any inherent adverse issues encountered. These would include a lack of space limiting the proposed development and any future expansion or reconfiguration of the facility (e.g. to increase single room provision). This might potentially create or increase the risk of infection.

(Further information is set out in greater detail in the Manual (SHFN 30 Part A) of this document).

3.9 The questionsets do not necessarily comprise an exhaustive list of points that need to be considered.

3.10 Where a potential hazard is identified a careful assessment of that hazard must be undertaken. Some hazards may present a risk of pollution rather than direct infection but the consequences for the healthcare facility may be to keep windows and ventilation intakes closed and this, in turn, may increase the risk of HAI in the healthcare facility. Solving one problem can lead to another and clinical outcomes should themselves be risk assessed. It may be necessary, therefore, to seek further information as part of the assessment of the hazard and this may include questions about:

- the extent of the dust, noise, smell and other pollution;
- the hours of operation;

- the volume of traffic;
- the kind of materials being handled and processed;
- the volumes of materials being handled and processed;
- the time/frequency of deliveries and traffic movement volume;
- the deliveries being in closed or open containers;
- the transfer arrangements from delivery vehicles to storage/processing facilities;
- the exhaust flues from the processing plant;
- the prevailing wind direction;
- the areas of the healthcare development most likely to be affected;
- the measures which could be designed into the proposed healthcare development to eliminate or minimise the impact of the pollution and if these measures might increase the risk of HAI.

3.11 Other existing industries in the area of the proposed healthcare facility development may present a more obvious and direct risk of bacterial or fungal infection e.g. any cooling towers posing a potential *Legionella* risk, and/or any demolition or construction work posing a fungal infection risk. The assessment must take account of the source of the potential risk, its relationship to the healthcare facility and particular areas of the healthcare facility, the exposed population, and the measures which are available to the healthcare facility to reduce the impact of the infection risk. Consideration should also be given to infection risks at outpatient departments within the healthcare facility and access to the facility and outpatient departments.

In considering whether a site presents a potential HAI hazard, the following questions should be examined. In signing-off or initialling resolution of issues, it is necessary also to print the name of the individual completing the responses.

Note: Records of cooling towers in the vicinity of the NHS premises will be held by the Local Authority if not the NHS Board's own public health department with whom consultation should take place in assessing the locality.

Risk assessments require to be kept up to date and amended as and when new circumstances/issues come to light both in surrounding premises and on site.

Initial brief and proposed site for development HAI – SCRIBE Sign off		
HAI-SCRIBE Name of Project		
Name of Establishment		National allocated number
HAI-SCRIBE Review Team		
Completed By (Print Name)		Date
Signature(s)		Date
Stage 1:		
Additional Notes:		

Note: Advice may be required from specialists on issues such land engineering, etc.

Development stage 1: Initial brief and proposed site for development

Some Hazards in the surrounding areas may present a risk of pollution rather than direct infection with the control measures for the healthcare facility to keep windows and ventilation intakes closed however. However, this may increase the risk of HAI in the healthcare facility. It may be necessary to seek further information as part of the assessment of the hazard. Potential hazards from adjacent sites may include:

- the extent of the dust, noise, smell and other pollution;
- the risk of bacterial or fungal infection from existing industries in the area which may be present e.g. cooling towers and/or demolition or construction works;
- the hours of operation;
- the volume of traffic;
- the kind of materials being handled and processed;
- the volumes of materials being handled and processed;
- the time/frequency of deliveries and site traffic movement volume;
- the deliveries being in closed or open containers;
- the transfer arrangements from delivery vehicles to storage/processing facilities;
- the exhaust flues from the processing plant;
- the prevailing wind direction;
- the areas of the healthcare development most likely to be affected;
- the measures which could be designed into the proposed healthcare development to eliminate or minimise the impact of the pollution and if these measures might increase the risk of HAI;
- risk of flooding;
- asbestos in any existing buildings;
- proximity of rivers or streams;
- previous use of site, greenfield/brownfield site;
- land contamination;
- potentially polluting activities during periods of high rainfall.

Initial Brief and proposed Site for development identification of hazards, associated risks and control measures		
1.a	Brief description of the proposed development project and the planned development site.	
1.b	Identify any potential hazards associated with the design and/or proposed site.	
1.c	Identify any risk associated with the hazards above.	
1.d	Outline the control measures that require to be implemented to eliminate or mitigate the identified risks. Ensure these are entered on the project risk register.	
	Control Measures.	
1.e	It has been recognised that control measures identified to address the project risk may have unintended consequences e.g. closure of windows can lead to increased temperatures in some areas. Such issues should be considered at this point, they should be noted and action to address these taken.	
	Potential Problems.	
	Control Measures.	
1.f	Actions to be addressed.	
By		Deadline

Initial Brief and proposed site for development, development stage 1: checklist to ensure all aspects have been addressed		
1.1	Is contaminated land an issue? e.g. asbestos, oils and heavy metals. (Refer to the Contaminated Land Register) Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
1.2	Is there a locally recognised increased risk of contamination or infection e.g. cryptosporidium? If yes give details. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
1.3	Are there industries or other sources in the neighbourhood which may present a risk of infection or pollution e.g. animal by-products processing plant? If yes give details. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
1.4	If there are any industries or other sources identified in question 1.3 above, will they affect the designed operation of the healthcare system? Consider the planned function of the design as well as issues such as: Ventilation Opening of doors and windows Water systems etc. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		

Initial Brief and proposed site for development, development stage 1: checklist to ensure all aspects have been addressed continued		
1.5	Are there construction/demolition works programmed in the neighbourhood which may present a risk of pollution or infection (including fungal infection)? Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
1.6	Are there cooling towers in the neighbourhood which may present a risk of *Legionella* infection? Consider also air handling units, water pipes etc. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
1.7	Does the topography of the site in relation to the surrounding area and the prevailing wind direction present any HAI risk e.g. from entrainment of plumes containing *Legionella*? Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
1.9	Will the proposed development impact on the surrounding area in any way which may present potential for infection risk? Consider possible restrictions being applied to the operation of the proposed facility e.g. Facilities Management routes. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		

Initial Brief and proposed site for development, development stage 1: checklist to ensure all aspects have been addressed continued		
1.10	Will lack of space limit the proposed development and any future expansion or change of use of the facility? Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
1.11	Has a demolition/refurbishment asbestos survey been carried out? Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
1.12	Has consideration been given to the projected lifespan of the facility and its impact on planning and development?	Yes ☐ No ☐ N/A ☐
Comments		
Additional notes - Stage 1		

Development Stage 1: HAI-SCRIBE applied to the initial brief and proposed site for development			
Certification that the following documents have been accessed and the contents discussed and addressed at the Infection Control and Patient Protection Meeting held on.			
Venue		Date	
'Healthcare Associated Infection System for Controlling Risk in the Built Environment' *'HAI-SCRIBE' Implementation Strategy: Scottish Health Facilities Note (SHFN) 30: Part B*			
Declaration: We hereby certify that we have co-operated in the application of and where applicable to the aforesaid documentation.			
Present			
Print name	Signature	Company	Telephone Numbers	Email address

Questionset for design and planning stage

Note: The application of HAI-SCRIBE is essential in the detailed planning and design of a new healthcare facility or a major redevelopment, refurbishment or extension of an existing healthcare facility. It is at the planning and design stage that hazards associated with potential HAI risk should be identified and assessed and measures taken to manage the risks. It is sensible to 'design-in' at this stage, measures which will eliminate or minimise the impact of identified hazards and effectively manage the HAI risk. It is also essential to ensure that the appropriate guidance as applicable in Scotland is being followed.

3.12 HAI-SCRIBE, as applied to healthcare facility plans and designs, will involve a systematic and thorough review of the plans with a view to identifying and assessing potential hazards and managing the risks by eliminating or minimising their impact. This may well involve amendments to plans, bearing in mind that it is likely to be more cost effective to achieve the management of HAI risk at the planning stage rather than after physical completion.

3.13 Issues to be considered include the following:

- while the introduction of people to a healthcare facility immediately introduces challenges in terms of managing infection risk, the design and layout of the healthcare facility should discourage the spread of infection;
- the design and layout of the healthcare facility should take account of the proposed healthcare procedures and services and the appropriate management of risk required for the range of population groups.

3.14 Issues to be considered at the design and planning stage of the development will include:

- an overall assessment of infection and infection spread risk from the design and layout of the healthcare facility;
- an assessment of infection risk from detailed engineering and building features. Further issues to be considered at this stage might include those set out below.

Logistics

3.15 The design of the healthcare facility must realistically consider the logistics of a functioning facility. It is essential that systems are in place which will reduce the risk of spread of infection and resources and personnel are managed so they do not contribute to the risk of infection.

3.16 Examples of logistical issues to consider include:

- the delivery and distribution of materials and people via connecting corridors and lifts;
- the collection, transportation and storage pending removal or management of waste materials;

- clinical workflows.

3.17 These issues require careful planning and design which recognise the potential for infection spread through the mismanagement of such issues.

3.18 Initial planning and design in new builds need to consider:

- numbers of beds;
- provision of single bed rooms (paragraphs 4.14 and 4.15 in SHFN 30 Part A (Manual)) refer;
- appropriate space required between beds;
- design, accessibility and space in patient areas;
- access to equipment around the bed;
- access for staff to hand hygiene facilities;
- sufficient space for equipment (e.g. hoists);
- sanitary facilities and showers/bathrooms for easy access, convenience and independence where possible;
- sufficient space for activities to take place and to avoid transmission of organisms either by air or by contact with blood, body fluid or equipment.

3.19 Particular aspects for consideration include:

- patient groups;
- transmission of micro-organisms:
  - avoiding cross-infection;
  - the environment and its role in cross infection;
  - shared equipment;
  - movement of patients.
- management of patients:
  - clinical pressures;
  - best use of single rooms;
  - avoiding unnecessary movement of patients between areas.
- implications of choosing natural ventilation;
- optional forms of heat emitters;
- provision and pattern of sanitary fitting and types of taps;
- concealment of pipes and ducts;
- importance of maintenance;
- access for maintenance.

3.20 HAI-SCRIBE, as applied to healthcare facility plans and designs, will involve a systematic and thorough review of the plans with a view to identifying and assessing potential hazards and managing the risks by eliminating or minimising their impact. This may well involve amendments to plans, bearing in mind that it is likely to be more cost effective to achieve the management of HAI risk at the planning stage rather than after physical completion.

3.21 The design and layout of the facility should take account of the proposed healthcare procedures and services and the appropriate management of risk required for the range of population groups.

3.22 Reference should also be made to the Questionset applied to the built healthcare facility in operation for more detail of the issues to be addressed in relation to:

- finishes and floors, walls, ceilings, ceiling voids, doors, windows, fixtures and fittings;
- space around beds;
- isolation rooms;
- provision of hand-wash basins, liquid soap dispensers, paper towels and alcohol-based hand rub dispensers;
- provision of sinks for decontamination purposes;
- engineering services;
- storage;
- laundry and linen services;
- spaces for large pieces of equipment;
- disposal of healthcare and food waste.

Development stage 2: Design and planning		
HAI-SCRIBE Name of Project		
Name of Establishment		National allocated number
HAI-SCRIBE Review Team		
HAI – SCRIBE **Sign Off**		
Completed by (Print name)		Date
Signature(s)		Date
Stage 2		
Additional notes		

Development Stage 2: HAI-SCRIBE applied to the design and planning stage of the development

Issues to be considered at the design and planning stage of the development will include an overall assessment of the project and any infection spread risk from the design and layout of the facility. An assessment of infection risk from detailed engineering and building features should also be undertaken.

Issues to be considered include (but are not limited to) the following:

- the design and layout of the healthcare facility should inhibit the spread of infection;
- the design and layout of the healthcare facility should take account of the healthcare procedures and services to be provided and the appropriate management of risk required for the range of population groups (refer to Table 2) verification of work carried out);
- finishes and floors, walls, ceilings, doors, windows, fixtures and fittings;
- space around beds;
- isolation rooms;
- provision of hand-wash basins, liquid soap dispensers, paper towel and alcohol hand rub dispensers;
- provision of sinks for decontamination purposes;
- engineering services;
- storage facilities;
- laundry and linen services.

Note: It should be noted that this document can be used for clinical and non clinical areas and some of the questions in the checklist may not apply e.g. building external plant rooms, car parking facilities. In these cases other issues may require to be addressed and the project team should consider these. All additional information should be added to the appropriate section of this document.

Design and Planning: checklist to ensure all aspects have been addressed		
2.a	Brief description of the work being undertaken.	
2.b	Identify any potential hazards associated with this work.	
2.c	Identify any risk associated with the hazards identified above.	
2.d	Outline the control measures that require to be implemented to eliminate or mitigate the identified risks. Ensure these are entered on the project risk register.	
	Control Measures.	
2.e	It has been recognised that control measures identified to address the project risk may have unintended consequences e.g. closure of windows can lead to increased temperatures in some areas. Such issues should be considered at this point, they should be noted and action to address these taken.	
	Potential Problems.	
	Control Measures.	
2.f	Actions to be addressed.	
By		Deadline

General overview		
2.1	In order to minimise the risk of HAI contamination is there separation of dirty areas from clean areas? Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
2.2	Are the food preparation areas (including ward kitchens) and distribution systems fit for purpose and complying with current food safety and hygiene standards? Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
2.3	Are waste management facilities and systems robust and fit for purpose and in compliance with the Waste (Scotland) Regulations? Consider: Local and central storage Systems for handling and compaction of waste Systems for segregation and security of waste (especially waste generated from healthcare requiring specialist treatment/disposal) to avoid mixing with other waste and recyclates. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		

General overview continued		
2.4	Are there satisfactory arrangements for effective management of laundry facilities? Consider: Local and central storage Systems for movement of laundry to central storage Systems for handling laundry Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
2.5	Are there sufficient facilities and space for the cleaning and storage of equipment used by hotel services staff? Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
2.6	Are staff changing and showering facilities suitably sited and readily accessible for use, particularly in the event of contamination incidents? Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
2.7	Is the space around beds for inpatients, day case and recovery spaces in accordance with current relevant NHSScotland guidance?	Yes ☐ No ☐ N/A ☐
Comments		

General overview continued		
2.8	Are there sufficient single rooms to accommodate patients known to be an infection or potential infection risk?	Yes ☐ No ☐ N/A ☐
Comments		
2.9	Are all surfaces, fittings, fixtures and furnishings designed for easy cleaning?	Yes ☐ No ☐ N/A ☐
Comments		
2.10	Are soft furnishings covered in an impervious material in all clinical and associated areas, and are curtains able to withstand washing at disinfection temperatures?	Yes ☐ No ☐ N/A ☐
Comments		
2.11 P	Is the bathroom/shower/toilet accommodation sufficient and conveniently accessible, with toilet facilities no more than 12m from the bed area?	Yes ☐ No ☐ N/A ☐
Comments		
2.12 D	Are the bathroom/shower/toilet facilities easy to clean?	Yes ☐ No ☐ N/A ☐
Comments		
2.13	Where required are there sufficient en-suite single rooms with negative/positive pressure ventilation to minimise risk of infection spread from patients who are a known or potential infection risk?	Yes ☐ No ☐ N/A ☐
Comments		

NB: In the above and following Table “D” refers to “Design” and “P” refers to “Planning”.

Provision of hand-wash basins, liquid soap dispensers, paper towels and alcohol rub dispensers		
2.14	Does each single room have clinical hand-wash basin, liquid soap dispenser, paper towels, and alcohol rub dispenser in addition to the hand-wash basin in the en-suite facility?	Yes ☐ No ☐ N/A ☐
Comments		
2.15	Do intensive care and high dependency units have sufficient clinical hand-wash basins, liquid soap dispensers, paper towels, and alcohol rub dispensers conveniently accessible to ensure the practice of good hand hygiene? An assessment should be made, however, to ensure that there is not an over-provision of hand-wash basins resulting in under-use.	Yes ☐ No ☐ N/A ☐
Comments		
2.16	Is there provision of clinical l hand-wash basins, liquid soap dispensers, paper towels, and alcohol rub dispensers in lower dependency settings like mental health units, acute, elderly and long term care settings appropriate to the situation with a ratio of 1 basin/dispenser to 4–6 beds?	Yes ☐ No ☐ N/A ☐
Comments		
2.17	Do out-patient areas and primary care settings have a clinical hand-wash basin close to where clinical procedures are carried out?	Yes ☐ No ☐ N/A ☐
Comments		
2.18	Do all toilets have a hand-wash basin, liquid soap dispenser and paper towels?	Yes ☐ No ☐ N/A ☐
Comments		
2.19	Are all clinical hand-wash basins exclusively for hand hygiene purposes?	Yes ☐ No ☐ N/A ☐
Comments		

Provision of hand-wash basins, liquid soap dispensers, paper towels and alcohol rub dispensers continued		
2.20	Does each clinical hand-wash basin have wall mounted liquid soap dispenser, paper towel dispenser?	Yes ☐ No ☐ N/A ☐
Comments		
2.21 D	Does each clinical hand-wash basin satisfy the requirement not to be fitted with a plug?	Yes ☐ No ☐ N/A ☐
Comments		
2.22 D	Are elbow-operated or other non-touch mixer taps provided in clinical areas?	Yes ☐ No ☐ N/A ☐
Comments		
2.23 D	Does each hand-wash basin have a waterproof splash back surface?	Yes ☐ No ☐ N/A ☐
Comments		
2.24 D	Is each hand-wash basin provided with an appropriate waste bin for used hand towels?	Yes ☐ No ☐ N/A ☐
Comments		

Provision of facilities for Decontamination LDU		
2.25 D	Are separate, appropriately sized sinks provided locally, where required, for decontamination? (The sinks should be large enough to immerse the largest piece of equipment and there should be twin sinks, one for washing and one for rinsing. A clinical hand-wash basin should be provided close to the twin sinks).	Yes ☐ No ☐ N/A ☐
Comments		
2.26 P	Are appropriate decontamination facilities provided centrally for sterilisation of specialist equipment?	Yes ☐ No ☐ N/A ☐
Comments		
2.27 P	Is there adequate provision in terms of transport, storage, etc. to ensure separation of clean and used equipment and to prevent any risk of contamination of cleaned equipment?	Yes ☐ No ☐ N/A ☐
Comments		
2.28 P	Does the system in operation comply with the current guidance on decontamination facilities and procedures?	Yes ☐ No ☐ N/A ☐
Comments		

Storage		
2.29 P	Is there suitable and sufficient storage provided in each area of the healthcare facility for the following if required patients' clothes and possessions, domestic cleaning equipment and laundry, large pieces of equipment e.g. beds, mattresses, hoists, wheelchairs, trolleys, and other equipment including medical devices, wound care, and intravenous infusion equipment, consumables etc?	Yes ☐ No ☐ N/A ☐
Comments		
2.30 P	Is there separate, suitable storage for contaminated material and clean material to prevent risk of contamination?	Yes ☐ No ☐ N/A ☐
Comments		
Engineering services (Ventilation)		
2.31 P	Are heat emitters, including low surface temperature radiators, designed, installed and maintained in a manner that prevents build up of dust and contaminants and are they easy to clean?	Yes ☐ No ☐ N/A ☐
Comments		
2.32 D	Is the ventilation system designed in accordance with the requirements of SHTM 03-01 'Ventilation in Healthcare Premises'?	Yes ☐ No ☐ N/A ☐
Comments		
2.33 D	Is the ventilation system designed so that it does not contribute to the spread of infection within the healthcare facility? *(Ventilation should dilute airborne contamination by removing contaminated air from the room or immediate patient vicinity and replacing it with clean air from the outside or from low-risk areas within the healthcare facility.)*	Yes ☐ No ☐ N/A ☐
Comments		

Engineering services (Ventilation) continued		
2.34 D	Are the ventilation system components e.g. air handling, ventilation ductwork, grilles and diffusers designed to allow them to be easily cleaned?	Yes ☐ No ☐ N/A ☐
Comments		
2.35 P & D	Are ventilation discharges located a suitable distance from intakes to prevent risk of contamination?	Yes ☐ No ☐ N/A ☐
Comments		
2.36 P	Does the design and operation of re-circulation of air systems take account of dilution of contaminates and the space to be served? *(NB: Recirculation would only arise in UCV theatres)*	Yes ☐ No ☐ N/A ☐
Comments		
2.37	Is the ventilation of theatres and isolation rooms in accordance with current guidance?	Yes ☐ No ☐ N/A ☐
Comments		
2.38	Do means of control of pathogens consider whether dilution or entrainment is the more appropriate for particular situations?	Yes ☐ No ☐ N/A ☐
Comments		
2.39	Where ventilation systems are used for removal of pathogens, does their design and operation take account of infection risk associated with maintenance of the system?	Yes ☐ No ☐ N/A ☐
Comments		
2.40	Are specialised ventilation systems such as fume cupboards installed and maintained in accordance with manufacturers' instructions?	Yes ☐ No ☐ N/A ☐
Comments		

Engineering services (Lighting)		
2.41 D	Is the lighting designed so that lamps can be easily cleaned with minimal opportunity for dust to collect?	Yes ☐ No ☐ N/A ☐
Comments		
Engineering services (Water services)		
2.42 D	Are water systems designed, installed and maintained in accordance with current guidance?	Yes ☐ No ☐ N/A ☐
Comments		
2.43	Are facilities available to enable special interventions for *Legionella*?	Yes ☐ No ☐ N/A ☐
Comments		
2.44	Is the drainage system design, especially within the healthcare facility building, fit for purpose with access points for maintenance carefully sited to minimise HAI risk?	Yes ☐ No ☐ N/A ☐
Comments		
2.45	Are surface mounted services avoided and services concealed with sufficient access points appropriately sited to ease maintenance and cleaning? (These services would include water, drainage, heating, medical gas, wiring, alarm system, telecoms, equipment such as light fittings, bedhead services, heat emitters.)	Yes ☐ No ☐ N/A ☐
Comments		

Estates services (Pest control)		
2.46	Is the concealed service ducting designed, installed and maintained to minimise risk of pest infestation?	Yes ☐ No ☐ N/A ☐
Comments		
Estates services (Maintenance access)		
2.47	Does the design and build of the facility allow programmed maintenance of the fabric to ensure the integrity of the structure and particularly the prevention of water ingress and leaks and prevention of pigeon and other bird access?	Yes ☐ No ☐ N/A ☐
Comments		
Additional notes - Stage 2		

Development stage 2: HAI-SCRIBE applied to the planning and design stage of the development.			
Certification that the following documents have been accessed and the contents discussed and addressed at the Infection Control and Patient Protection Meeting held on.			
Venue		Date	
'Healthcare Associated Infection System for Controlling Risk in the Built Environment' *('HAI-SCRIBE) Implementation Strategy Scottish Health Facilities Note (SHFN) 30: Part B).*			
Declaration: We hereby certify that we have co-operated in the application of and where applicable to the aforesaid documentation.			
Present			
Print name	Signature	Company	Telephone Numbers	Email address

Questionset for construction and refurbishment

Refurbishment of existing healthcare facilities

3.23 HAI-SCRIBE would be appropriate in redevelopment and refurbishment situations where the business of the healthcare facility continues concurrently with construction work on site. There are obligations on the contractors to undertake their construction operations in such a way that health and safety and other issues are adequately addressed.

3.24 Redevelopment and refurbishment of healthcare facilities in Scotland are common and the kind of work involved is varied.

3.25 In assessing the hazards of the above construction activities and the management of the potential risks, account has to be taken of the exposed population (in this case the patients), staff and visitors likely to be affected.

3.26 A range of precautions is needed to eliminate or manage the risk of infection.

- In order to ensure the risk of infection is minimised during construction works consideration must be given to:
  - the type of construction/refurbishment work being carried out (Table 1);
  - the population group being treated (Table 2);
  - the risk associated with these two factors (Table 3).

Table 1 highlights different types of construction/refurbishment activities likely to take place in the healthcare facility.

Table 2 highlights the different population groups within the healthcare facility and the risk associated with each group.

Table 3 estimates the overall risk of infection arising and indicates the level of precaution that should be implemented.

Note: Appendices 4-8 show a proposed process chart for each type of activity.

Type	Construction/Refurbishment Activity
Type 1	**Inspection and non-invasive activities.** Includes, but is not limited to, removal of ceiling tiles or access hatches for visual inspection, painting which does not include sanding, wall covering, electrical trim work, minor plumbing and activities which do not generate dust or require cutting of walls or access to ceilings other than for visual inspection.
Type 2	**Small scale, short duration activities which create minimal dust.** Includes, but is not limited to, installation of telephone and computer cabling, access to chase spaces, cutting of walls or ceiling where dust migration can be controlled.
Type 3	**Any work which generates a moderate to high level of dust, aerosols and other contaminants or requires demolition or removal of any fixed building components or assemblies.** Includes, but is not limited to, sanding of walls for painting or wall covering, removal of floor coverings, ceiling tiles and casework, new wall construction, minor duct work or electrical work above ceilings, major cabling activities, and any activity which cannot be completed within a single work shift.
Type 4	**Major demolition and construction projects.** Includes, but it not limited to, activities which require consecutive work shifts, requires heavy demolition or removal of a complete cabling system, and new construction.

Table 1: Redevelopment and refurbishment construction activity.

Risk to patients of infection from construction work in healthcare premises, by clinical areas	
Risk rating	**Area**
Group 1 Lowest risk	1. Office areas; 2. Unoccupied wards; 3. Public areas/Reception; 4. Custodial facilities; 5. Mental Health facilities.
Group 2 Medium risk	1. All other patient care areas (unless included in Group 3 or Group 4); 2. Outpatient clinics (unless in Group 3 or Group 4); 3. Admission or discharge units; 4. Community/GP facilities; 5. Social Care or Elderly facilities.
Group 3 High risk	1. A & E (Accident and Emergency); 2. Medical wards; 3. Surgical wards (including Day Surgery) and Surgical outpatients; 4. Obstetric wards and neonatal nurseries; 5. Paediatrics; 6. Acute and long-stay care of the elderly; 7. Patient investigation areas, including; • Cardiac catheterisation; • Invasive radiology; • Nuclear medicine; • Endoscopy. Also (indirect risk) 8. Pharmacy preparation areas; 9. Ultra clean room standard laboratories (risk of pseudo-outbreaks and unnecessary treatment); 10. Pharmacy Aseptic suites.
Group 4 Highest Risk	1. Any area caring for immuno-compromised patients*, including: • Transplant units and outpatient clinics for patients who have received bone marrow or solid organ transplants; • Oncology Units and outpatient clinics for patients with cancer; • Haematology units • Burns Units. 2. All Intensive Care Units; 3. All operating theatres; Also (indirect risk) 4. CSSUs (Central Sterile Supply Units).

Table 2: The different areas within the healthcare facility and the risk associated with each area.

Immuno-compromised patients are:

- those patients whose immune mechanisms are deficient because of immunologic disorders (e.g. human immunodeficiency virus [HIV] infection or congenital immune deficiency syndrome);
- patients with chronic diseases (e.g. diabetes, cancer, emphysema, or cardiac failure);
- patients undergoing immuno-suppressive therapy (e.g. radiation, cytoxic chemotherapy, anti-rejection medication, or steroids. (CCDR 2001).

Immuno-compromised patients who are identified as high-risk patients have the greatest risk of infection caused by airborne or waterborne micro-organisms. Patients in this subset include:

- persons who are severely neutropenic for prolonged periods of time (ie an absolute neutrophil count [ANC] of ≤ 500 cells/mL);
- allogeneic Haemopoietic Stem Cell Transplantation patients;
- renal dialysis patients;
- those who have received the most intensive chemotherapy (e.g. childhood acute myelogneous leukaemia patients). (CDC 2003).

Immuno-suppresive conditions identified as risk factors for construction-related nosocomial fungal infections include:

- graft-versus-host disease requiring treatment;
- prolonged neutropenia or granulocytopenia because of cytoxic chemotherapy;
- prolonged use of antibiotics; and steroid therapy. (CCDR 2001).

Other risk factors for the development of *aspergillosis* include dialysis and mechanical ventilation, smoking and patient age, the very young and very old being at greater risk.

	Construction Project Type			
Patient Risk Group	**TYPE 1**	**TYPE 2**	**TYPE 3**	**TYPE 4**
Lowest Risk	Class I	Class II	Class II	Class III/IV
Medium Risk	Class I	Class II	Class III	Class IV
High Risk	Class I	Class II	Class III/IV	Class IV
Highest Risk	Class II	Class III/IV	Class III/IV	Class IV

Table 3: Estimates the overall risk of infection arising and will indicate the class of precaution that should be implemented.

3.27 Having highlighted the overall degree of infection risk, appropriate infection prevention and control measures can be implemented to manage or eliminate the risk of transmission. Table 4 highlights the appropriate prevention and

control of infection precautions. Appendices 4-8 give an indication of how this can be processed.

3.28 Consideration should be given to the likelihood of patient movement outwith their speciality care area and the need for appropriate measures to control infection risk.

Surveillance and monitoring during renovation or construction work

3.29 There have been several documented outbreaks due to construction work however routine bacteriological sampling of floors, walls, surfaces and air is rarely indicated.

Note: The need for additional surveillance and environmental monitoring may be identified by the Project Team through risk assessment.

3.30 In 1995 there was widespread contamination of potable water with *Legionella pneumophila* during a period of major construction resulting in two fatal cases of healthcare associated *Legionellosis*. Multiple outbreaks of healthcare associated A*spergillosis* have also been described, including one specifically attributed to hospital renovation. It has been suggested that heightened surveillance and preventive measures may be warranted during periods of excavation on hospital grounds or when potable water supplies are otherwise shut down and later depressurised.

3.31 Since the airborne spores of *Aspergillus* spp. can travel significant distances, this will apply generally to all works in the immediate vicinity or within the boundary of the healthcare site.

Some further points for consideration

3.32 It is necessary to ensure that robust documentary evidence can be provided when considering the above issues. This will ensure that facts and data are available for reference at future stages of the project.

3.33 Barriers with signage will require to be positioned to make staff, patients and visitors aware of works.

3.34 There are key issues to be considered in assessing the hazard with a view to managing the risk. Therefore, in each situation where there is to be construction and refurbishment or repair work, the multi-disciplinary team of specialists referred to in Section 2 entitled “Assembling the Project Team” should be involved and the following questions need to be addressed.

Certain situations will require the use of barrier structures to contain contamination whilst others will require different measures eg a change of process. Therefore the following questions need to be addressed for each of these situations:

Control measures			
	During Construction Work	**After Construction Work**	**By**
Class I	• Execute work by methods to minimise raising dust from construction operations;. • Immediately replace any ceiling tiles displaced during inspection.	• Clean areas by damp dusting with neutral detergent in warm water;. • Vacuum floor and damp mop.	Request via domestic supervisor. Request via domestic supervisor.
Class II	• Provide active means to prevent airborne dust from dispersing into atmosphere; • Water mist work surfaces to control dust while cutting; • Seal unused doors with duct tape; • Block off and seal air vents; • Place dust mat at entrance and exit of work area; • Remove or isolate HVAC system in areas where work is being performed.	• Dampwork surfaces and ledges with neutral detergent solution; • Contain construction waste before transport in tightly covered containers; • Damp mop and/or vacuum with HEPA filtered vacuum before leaving work area; • Remove isolation of HVAC system in areas where work is being performed.	Request via domestic supervisor. Estates staff. Request via domestic supervisor. Estates staff.
Class III	• Remove or Isolate HVAC system in area where work is being done to prevent contamination of duct system; • Complete all critical barriers eg plasterboard, plywood, plastic, to seal area from non work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum for vacuuming prior to exit) before construction begins; • Maintain negative air pressure within work site utilizing HEPA equipped air filtration units; • Contain construction waste before transport in tightly covered containers; • Cover transport receptacles or carts. Tape covering unless solid lid.	• Do not remove barriers from work area until completed project is inspected by the Board's Health & Safety representative and Infection Control Department and thoroughly cleaned by the Board's domestic services staff;. • Remove barrier materials carefully to minimise spreading of dirt and debris associated with construction; • Vacuum work area with HEPA filtered vacuums; • Damp mop area with neutral detergent and warm water; • Remove isolation of HVAC system in areas where work is being performed.	Request by Estates Dept. Contractor/Estates Staff. Request via domestic supervisor. Request via domestic supervisor. Contractor/Estates Staff.

Table 4: Describes the required Infection Control Precautions depending on class of risk

	During Construction Work	After Construction Work	By
Class IV	• Isolate HVAC system in area where work is being done to prevent contamination of duct system; • Complete all critical barriers eg plasterboard, plywood, plastic to seal area from non work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum for vacuuming prior to exit) before construction begins; • Maintain negative air pressure within work site utilizing HEPA equipped air filtration units; • Seal holes, pipes, conduits, and punctures appropriately; • Construct anteroom and require all personnel to pass through this room so they can be vacuumed using a HEPA vacuum cleaner before leaving work site or they can wear cloth or paper coveralls that are removed each time they leave the work site; • All personnel entering work site are required to wear shoe covers. Shoe covers must be changed each time the worker exits the work area; • Do not remove barriers from work area until completed project is inspected.	• Remove barrier material carefully to minimise spreading of dirt and debris associated with construction; • Contain construction waste before transport in tightly covered containers;. • Cover transport receptacles or carts. Tape covering unless solid lid; • Vacuum work area with HEPA filtered vacuums; • Damp dust area with neutral detergent and warm water; • Scrub floor area with neutral detergent in warm water; • Remove isolation of HVAC system in areas where work is being performed.	Contractor. Contractor. Contractor. Request via domestic supervisor. Request via domestic supervisor. Contractor/Estates Staff.

Table 4 continued: Describes the required Infection Control Precautions depending on class of risk

Note: Temporary critical barrier partitions should be inspected and their condition monitored and signed off on a daily basis to assess any damage, gaps, etc. Polythene sheeting and tape would only be suitable in small areas for limited periods.

Development stage 3: Construction and refurbishment work		
HAI-SCRIBE Name of Project		
Name of Establishment		
National allocated number		
HAI-SCRIBE Review Team		
HAI-SCRIBE Sign Off		
Completed By (Project Manager) (Print Name)		Date
Signature		Date
Stage 3		
Additional Notes		

Immuno-compromised patients who are identified as high-risk patients have the greatest risk of infection caused by airborne or waterborne micro-organisms. Patients in this subset include persons who are severely neutropenic for prolonged periods of time (ie an absolute neutrophil count [ANC] of ≤ 500 cells/mL), allogeneic HSCT patients, and those who have received the most intensive chemotherapy (e.g. childhood acute myelogneous leukaemia patients). (**CDC 2003**)

Immuno-suppresive conditions identified as risk factors for construction-related nosocomial fungal infections include graft-versus-host disease requiring treatment; prolonged neutropenia or granulocytopenia because of cytoxic chemotherapy; prolonged use of antibiotics; and steroid therapy. Other risk factors for the development of aspergillosis include dialysis and mechanical ventilation, smoking and patient age, the very young and very old being at greater risk Grauhan and colleagues reported that the risk of a fungal infection increases in patients who exhibit three or more risk factors ($p<0.001$). **CCDR (2001)**

Development stage 3: HAI-SCRIBE applied to the proposed site for development Prior to the commencement of work		
3.1.1	Brief description of the work being carried out.	
3.1.2	Using the matrix above establish the type and extent of construction and refurbishment /repair work, patients at risk and level of control measures.	
Type of work.		
Patient risk group.		
Risk class.		
3.1.3	Identify any potential hazards associated with this work.	
3.1.4	Identify any risk associated with the hazards identified above.	
3.1.5	Outline the control measures that require to be implemented to eliminate or mitigate the identified risks. Ensure these are entered on the project risk register.	
Control measures		
3.1.6	It has been recognised that control measures identified to address the project risk may have unintended consequences e.g. closure of windows can lead to increased temperatures in some areas. Such issues should be considered at this point, they should be noted and action to address these taken.	
Potential problems		
Control measures		
3.1.7	Actions to be addressed	
By		Deadline

In terms of infection risk have the following been addressed		
3.2.1	The population groups most susceptible to infection. Items to be considered: Adjacent rooms, wards and departments Relocation of susceptible patients Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
3.2.2	The hours of operation of the construction work and the impact of this on the clinical area. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
3.2.3	Separation of construction and healthcare activities including delivery and supply routes, removal of waste and patient transfers. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
3.2.4	The construction of temporary barriers and/or sealing of doors and windows to minimise contamination of the environment by dust and potentially infectious particles created during the construction works. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		

In terms of infection risk have the following been addressed continued		
3.2.5	Airflow patterns including:	
	Internal and external ventilation systems	Yes ☐ No ☐ N/A ☐
	Exhaust ventilation	Yes ☐ No ☐ N/A ☐
	Sealing of doors and windows	Yes ☐ No ☐ N/A ☐
	Oxygen and Suction points	Yes ☐ No ☐ N/A ☐
	Air handlers, coils, fans and grilles	Yes ☐ No ☐ N/A ☐
	Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐
Comments		
3.2.6	Work with sinks or plumbing which could give rise to aerosol water droplets in high risk areas.	Yes ☐ No ☐ N/A ☐
	Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐
Comments		
3.2.7	Impact on stock storage areas including:	
	Sterile and non-sterile items	Yes ☐ No ☐ N/A ☐
	Patient care equipment	Yes ☐ No ☐ N/A ☐
	Medications	Yes ☐ No ☐ N/A ☐
	Medical records and documentation	Yes ☐ No ☐ N/A ☐
	Linen and waste facilities including sharps	Yes ☐ No ☐ N/A ☐
	Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐
Comments		

During the construction phase have the following been addressed?		
3.3.1	Where external work is being carried out: Prevention of insect and rodent entry and prevention of weather/water entry to internal areas during the construction phase. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
3.3.2	Cleaning of site and adjacent areas both during the construction phase and prior to handover. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
3.3.3	Enforcement of control and reporting system to ensure compliance with above issues. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes ☐ No ☐ N/A ☐ Yes ☐ No ☐ N/A ☐
Comments		
Additional notes - Stage 3		

Development stage 3: HAI-SCRIBE applied to the construction/redevelopment phase				
Certification that the following documents have been accessed and the contents discussed and addressed at the Infection Control and Patient Protection Meeting held on				
Venue		Date		
'Healthcare Associated Infection System for Controlling Risk in the Built Environment' *('HAI-SCRIBE) Implementation Strategy Scottish Health Facilities Note (SHFN) 30: Part B).*				
Declaration: We hereby certify that we have co-operated in the application of and where applicable to the aforesaid documentation.				
Present				
Print name	Signature	Company	Telephone Numbers	Email address

Contractor Endorsement Certificate

(I) Statement of Intent:

Healthcare Associated Infection (HAI) is a complex issue involving the many different elements of patient care and provision. Due to its multi-factorial nature, there is a need to develop a holistic approach to minimising the risk of infection in the built environment.

NHS National Services Scotland Health Facilities Scotland (NSS HFS), in conjunction with other organisations, has endeavoured comprehensively to tackle this situation through the creation of documents such as the 'Healthcare Associated Infection System for Controlling Risk of Infection In the Built Environment': (HAI-SCRIBE) comprising 'Scottish Health Facilities Note (SHFN) 30: Parts A & B.

Non-application of these documents is extremely detrimental in preventing the spread of infection and to the healthcare sector in general. In certifying this endorsement you verify that you will endeavour to do all within your power to aid in this process and reduce the risk of infection within the built environment.

(II) Certification of the following documents;

'Healthcare Associated Infection System for Controlling Risk In the Built Environment' (HAI-SCRIBE) comprising 'Scottish Health Facilities Note (SHFN) 30': Parts A & B.

(III) Declaration:

We hereby certify that we agree to co-operate in the application of, on whole or where applicable to the aforementioned documentation and any amendment /revision forthwith enclosed or existing at the time of this declaration.

Name (please print) _____

Signed _____

Designation _____

Company Name_____

Witnessed by (please print)_____

Signed _____

Designation _____

Company Name _____

Questionset for pre-handover check - Ongoing use of HAI-SCRIBE in an existing healthcare facility

3.35 Once a Project (new build or refurbishment) is ready for operation, This Questionset would be used as an assessment that the outcomes from the earlier Questionsets have been successfully fulfilled. The Questionset relevant to this stage should be seen as a final, pre-handover checklist that everything briefed has been provided.

Design in use

3.36 Within the built healthcare facility it is important to ensure there will be an ongoing application of HAI-SCRIBE. This is a verification process of particular importance not only where there are subsequent alterations to the building, but also to arrangements within the building, and to procedures and practices. The three key stages involved in HAI-SCRIBE have a continuous application:

- identifying the hazard;
- assessing the risk from the identified hazard;
- managing the risk to eliminate or minimise impact.

Physical monitoring

3.37 Physical monitoring of the healthcare environment includes temperature, humidity, air change rates, leak rates, direction of air and water flow, particle counts and filter efficiency.

3.38 Testing methods can help ensure that environmental conditions in the healthcare facility are such that they do not contribute to the spread of infection.

3.39 Stagnant air, possibly through poor ventilation, can contribute to fungal contamination whilst excessive air turbulence can increase airborne particulate levels and contribute to the dispersal of micro-organisms.

3.40 Visual inspection must be part of physical monitoring to ensure for instance that filters are fitted correctly, that surfaces are smooth, impermeable, free of cracks and joins, and without the accumulation of dust which may harbour fungi and bacteria.

Microbial monitoring

3.41 In terms of quality assurance, microbial monitoring may be required on the advice of the Project Team. Microbial sampling of the air, water and surfaces of the healthcare facility has an important role to play in helping combat the spread of infection within the built healthcare environment.

3.42 NHS Boards should have a formal protocol for infection prevention and control monitoring of the built healthcare environment with regard to the prevention and control of infection. When sampling of the area is carried out, the laboratory should have appropriate accreditation for carrying out the sampling. Some

sampling may have to be performed in response to an investigation of an outbreak of infection. Results obtained should be interpreted using scientifically established baseline values for comparison e.g. Health and Safety Executive guidelines. On completion of analysis, actions to be implemented should be based on the results obtained.

3.43 It may be necessary for an NHS Board to seek specialist advice on microbial monitoring protocols to allow the Project Team to take responsibility. Areas where the built environment is suspected of contributing to the spread of infection or where construction or refurbishment work is proposed should be referred to the Infection Prevention and Control Team for consideration of monitoring and advice as appropriate.

Feedback

3.44 The Scottish Capital Investment Manual states that feedback is a mandatory requirement as part of Post Project Evaluation to ensure lessons are learned and disseminated for future projects.

HAI-SCRIBE auditing of accommodation *in use* should also make use of the following questionsets:

Development stage 4: Review of completed project	
HAI-SCRIBE Name of project	
Name of Establishment	National allocated number
HAI-SCRIBE Review Team	
HAI-SCRIBE **Sign Off**	
Completed by (Print name)	Date
Signature(s)	Date
Stage 4	
Additional notes	

General overview		
4.1	Is the space around beds in accordance with current NHSScotland guidance?	Yes ☐ No ☐ N/A ☐
4.2	Are there sufficient single rooms to accommodate patients known to be an infection of potential infection risk?	Yes ☐ No ☐ N/A ☐
4.3	Are all surfaces, fittings, fixtures and furnishings designed for easy cleaning?	Yes ☐ No ☐ N/A ☐
4. 4	Are soft furnishings covered in an impervious material in all clinical and associated areas, and are curtains able to withstand washing at disinfection temperatures?	Yes ☐ No ☐ N/A ☐
4. 5	Is the bathroom/shower/toilet accommodation sufficient and conveniently accessible, with toilet facilities no more than 12m from the bed area?	Yes ☐ No ☐ N/A ☐
4.6	Are the bathroom/shower/toilet facilities easy to clean?	Yes ☐ No ☐ N/A ☐
4.7	Where required are there sufficient en-suite single rooms with negative/positive pressure ventilation to minimise risk of infection spread from patients who are a known or potential infection risk?	Yes ☐ No ☐ N/A ☐
Provision of hand-wash basins, liquid soap dispensers, paper towels and alcohol rub dispensers		
4.8	Does each single room have a clinical hand-wash basin, liquid soap dispenser, paper towels, and alcohol rub dispenser over and above the hand-wash basin in the en-suite facility?	Yes ☐ No ☐ N/A ☐
4.9	Do intensive care and high dependency units have sufficient clinical hand wash basins, liquid soap dispensers, paper towels, and alcohol rub dispensers conveniently accessible to ensure the practice of good hand hygiene? An assessment should be made, however, to ensure that there is not an over-provision of hand-wash basins resulting in under-use.	Yes ☐ No ☐ N/A ☐
4.10	Is there provision of clinical hand-wash basins, liquid soap dispensers, paper towels, and alcohol rub dispensers in lower dependency settings like mental health units, acute, elderly and long term care settings appropriate to the situation with a ratio of 1 basin/dispenser to 4–6 beds?	Yes ☐ No ☐ N/A ☐
4.11	Do out-patient areas and primary care settings have a clinical hand-wash basin close to where clinical procedures are carried out?	Yes ☐ No ☐ N/A ☐
4.12	Do all toilets have a hand-wash basin, liquid soap dispenser and paper towels?	Yes ☐ No ☐ N/A ☐
4.13	Are all clinical hand-wash basins exclusively for hand hygiene purposes?	Yes ☐ No ☐ N/A ☐
4.14	Does each clinical hand-wash basin have wall mounted liquid soap dispenser, paper towel dispenser?	Yes ☐ No ☐ N/A ☐

Provision of hand-wash basins, liquid soap dispensers, paper towels and alcohol rub dispensers continued		
4.15	Does each clinical hand-wash basin satisfy the requirement not to be fitted with a plug?	Yes ☐ No ☐ N/A ☐
4.16	Are elbow-operated or other non-touch mixer taps provided in clinical areas?	Yes ☐ No ☐ N/A ☐
4.17	Does each hand-wash basin have a waterproof splash back surface?	Yes ☐ No ☐ N/A ☐
4.18	Is each hand-wash basin provided with an appropriate waste bin for used hand towels?	Yes ☐ No ☐ N/A ☐
Provision of facilities for Decontamination		
4.19	Are separate, appropriately sized sinks provided locally, where required, for decontamination? *(The sinks should be large enough to immerse the largest piece of equipment and there should be twin sinks, one for washing and one for rinsing. A clinical hand-wash basin should be provided close to the twin sinks).*	Yes ☐ No ☐ N/A ☐
4.20	Are appropriate decontamination facilities provided centrally for sterilisation of specialist equipment?	Yes ☐ No ☐ N/A ☐
4.21	Is there adequate provision in terms of transport, storage, etc. to ensure separation of clean and used equipment and to prevent any risk of contamination of cleaned equipment?	Yes ☐ No ☐ N/A ☐
4.22	Does the system in operation comply with the current guidance on decontamination facilities and procedures?	Yes ☐ No ☐ N/A ☐
Storage		
4.23	Is there suitable and sufficient storage provided in each area of the healthcare facility for the following if required patients' clothes and possessions, domestic cleaning equipment and laundry, large pieces of equipment e.g. beds, mattresses, hoists, wheelchairs, trolleys, and other equipment including medical devices, wound care, and intravenous infusion equipment, consumables etc?	Yes ☐ No ☐ N/A ☐
4.24	Is there separate, suitable storage for contaminated material and clean material to prevent risk of contamination?	Yes ☐ No ☐ N/A ☐

Engineering services (Ventilation)		
4.25	Are heat emitters, including low surface temperature radiators, designed, installed and maintained in a manner that prevents build up of dust and contaminants and are they easy to clean?	Yes ☐ No ☐ N/A ☐
4.26	Is the ventilation system designed in accordance with the requirements of SHTM 03-01 'Ventilation in Healthcare Premises'?	Yes ☐ No ☐ N/A ☐
4.27	Is the ventilation system designed so that it does not contribute to the spread of infection within the healthcare facility? *(Ventilation should dilute airborne contamination by removing contaminated air from the room or immediate patient vicinity and replacing it with clean air from the outside or from low-risk areas within the healthcare facility.)*	Yes ☐ No ☐ N/A ☐
4.28	Are the ventilation system components e.g. air handling, ventilation ductwork, grilles and diffusers designed to allow them to be easily cleaned?	Yes ☐ No ☐ N/A ☐
4.29	Are ventilation discharges located a suitable distance from intakes to prevent risk of contamination?	Yes ☐ No ☐ N/A ☐
4.30	Does the design and operation of re-circulation of air systems take account of dilution of contaminates and the space to be served? *(NB: Recirculation would only arise in UCV theatres)*	Yes ☐ No ☐ N/A ☐
4.31	Is the ventilation of theatres and isolation rooms in accordance with current guidance SHTM 03-01, SHPN 04-01 Supplement 1 and the Scottish Hospital Infection Manual)?	Yes ☐ No ☐ N/A ☐
4.32	Do means of control of pathogens consider whether dilution or entrainment is the more appropriate for particular situations?	Yes ☐ No ☐ N/A ☐
4.33	Where ventilation systems are used for removal of pathogens, does their design and operation take account of infection risk associated with maintenance of the system?	Yes ☐ No ☐ N/A ☐
4.34	Are specialised ventilation systems such as fume cupboards installed and maintained in accordance with manufacturers' instructions?	Yes ☐ No ☐ N/A ☐
Engineering services (Lighting)		
4.35	Is the lighting designed so that lamps can be easily cleaned with minimal opportunity for dust to collect?	Yes ☐ No ☐ N/A ☐
Engineering services (Vacuum Units)		
4.36	Are vacuum-controlled units with overflow protection devices for mechanical suction used to avoid contaminating the system with aspirated body fluid?	Yes ☐ No ☐ N/A ☐

Engineering services (Water services)		
4.37	Are water systems designed, installed and maintained in accordance with current guidance? (SHTM 04-01 series – Water safety)	Yes ☐ No ☐ N/A ☐
4.38	Are facilities available to enable special interventions for *Legionella* such as chlorination/chlorine dioxide, copper/silver ionisation treatment of water?	Yes ☐ No ☐ N/A ☐
4.39	Is the drainage system design, especially within the healthcare facility building, fit for purpose with access points for maintenance carefully sited to minimise HAI risk?	Yes ☐ No ☐ N/A ☐
4.40	Are surface mounted services avoided and services concealed with sufficient access points appropriately sited to ease maintenance and cleaning? (These services would include water, drainage, heating, medical gas, wiring, alarm system, telecoms, equipment such as light fittings, bedhead services, heat emitters.)	Yes ☐ No ☐ N/A ☐
Estates services (Pest control)		
4.41	Is the concealed service ducting designed, installed and maintained to minimise risk of pest infestation?	Yes ☐ No ☐ N/A ☐
Estates services (Maintenance access)		
4.42	Does the design and build of the facility allow programmed maintenance of the fabric to ensure the integrity of the structure and particularly the prevention of water ingress and leaks and prevention of pigeon and other bird access?	Yes ☐ No ☐ N/A ☐
Additional notes – Stage 4		

Development stage 4: HAI-SCRIBE Review of completed project	
4.43	Brief description of the work carried that was carried out.
4.44	Identify any issues associated with this work.
4.45	Identify any risk associated with the issues identified above.
4.46	Outline the measures that required to be implemented to eliminate or mitigate the identified issues. Ensure these are entered on the project risk register.

Appendix 1

Construction and Refurbishment Stage – Minor Works

Work in progress

Form to be submitted to the Project Team before work commences, with minimum monthly updates for the duration of complex/long-term projects.

Name of person completing: _____

Date: _____

Project *(brief Summary including site, specialty)*				
New build	Yes	☐	No	☐
Redesign	Yes	☐	No	☐
Near patient activity likely	Yes	☐	No	☐
Date of initial meeting	_____			
Work expected to commence	_____			
Work due for completion	_____			

Responsible Officers

Department	Name	Designation
Estates & Property		
Infection prevention & Control		
Domestic Services		
Health & Safety		
Procurement		
Clinical representative		

While work is being carried out and particularly where there are building activities in or near patients' areas there should be regular, recorded visits and inspections to the site by appropriate members of the group.

Issues to be considered for Construction and Refurbishment Stage

This is not exhaustive and, depending on the specialty and facility; there may be further issues which require consideration.

Onsite contractors aware of safety measures	Yes	☐	No	☐
Limited spread of dust	Yes	☐	No	☐
Additional cleaning ongoing	Yes	☐	No	☐
Water/ventilation to surrounding areas isolated	Yes	☐	No	☐
Staff in surrounding areas satisfied with precautions	Yes	☐	No	☐

The answers to the questions above should be "yes". Where a potential hazard is identified a careful assessment of that hazard must be undertaken.

Additional Issues/Potential Hazards
Discussion
Outcome

Appendix 2

Commissioning Stage

To be with Project Team before expected completion date.

Name: _____ Date: _____

Project *(brief Summary including site, specialty)*

New build	Yes	☐	No	☐
Redesign	Yes	☐	No	☐
Near patient activity likely	Yes	☐	No	☐

Date of initial meeting _____
Work commenced _____
Work completed _____

Responsible Officers

Department	Name	Designation
Estates & Property		
Infection Prevention & Control		
Domestic Services		
Health & Safety		
Microbiology		

Issues to be considered for Commissioning Stage

This is not exhaustive and, depending on the specialty and facility, there may be further issues which require consideration.

Approved plans followed	Yes	☐	No	☐
Infection Prevention & Control measures adhered to	Yes	☐	No	☐

The answers to the questions above should be "yes". Where a potential hazard is identified a careful assessment of that hazard must be undertaken.

Additional Issues/Potential Hazards
Discussion
Outcome

What commissioning checks are required for this project?

Settle plates	Yes	☐	No	☐
Air sampling	Yes	☐	No	☐
On site inspection	Yes	☐	No	☐

Appendix 3

Permission to Work (if necessary)

Description of work to be completed:

Specific area e.g. room number within ward area.

Risk assessment completed Yes ☐ No ☐

Signature _____ Date _____

Risks identified

Comments/Actions taken

Date work planned _____

Estimated completion _____

Nurse in charge Signature _____Date _____

Acceptance of work

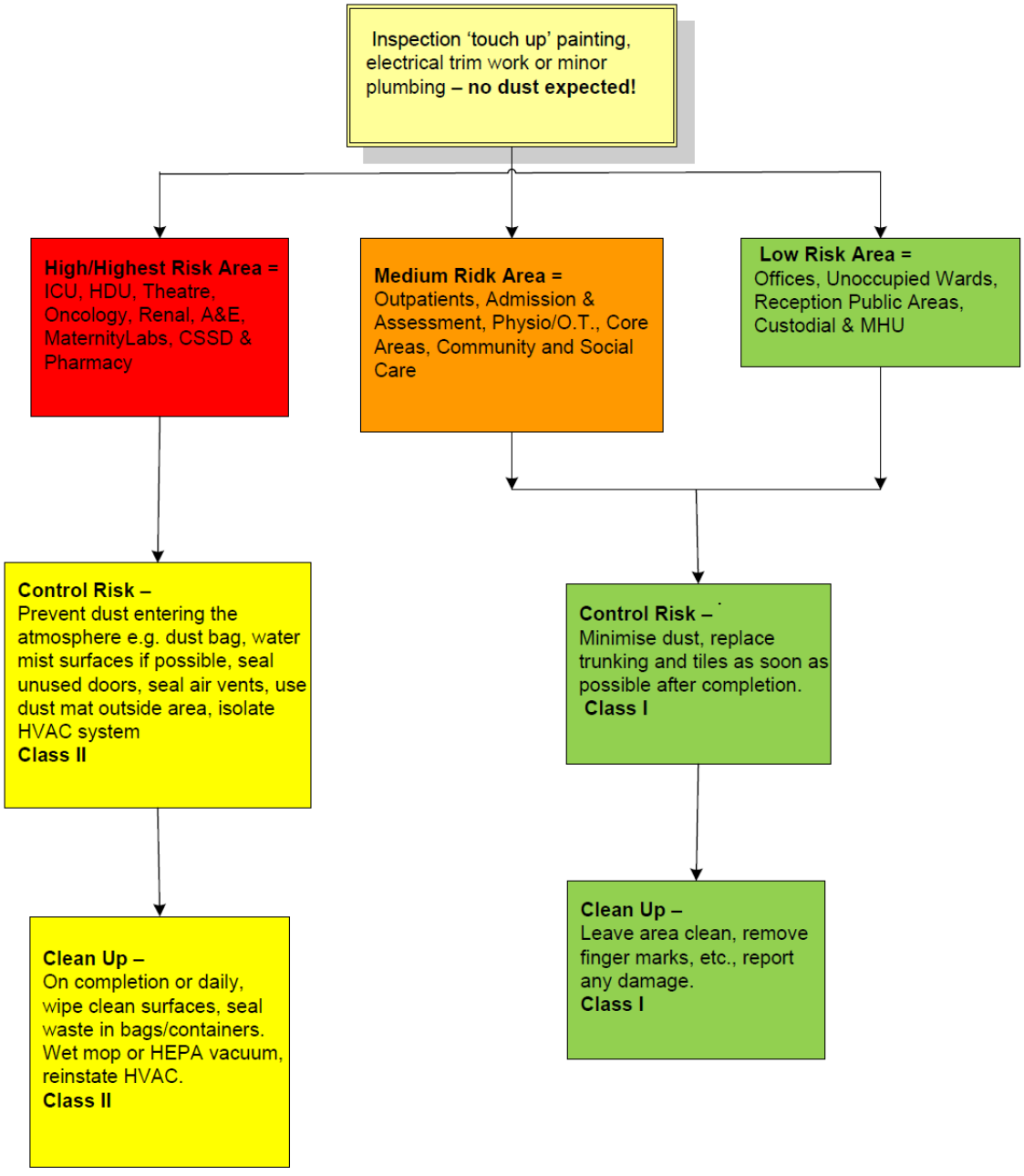
Sister/Charge Nurse acceptance of work on completion _____

Estates Officer Signature _____

Comments:

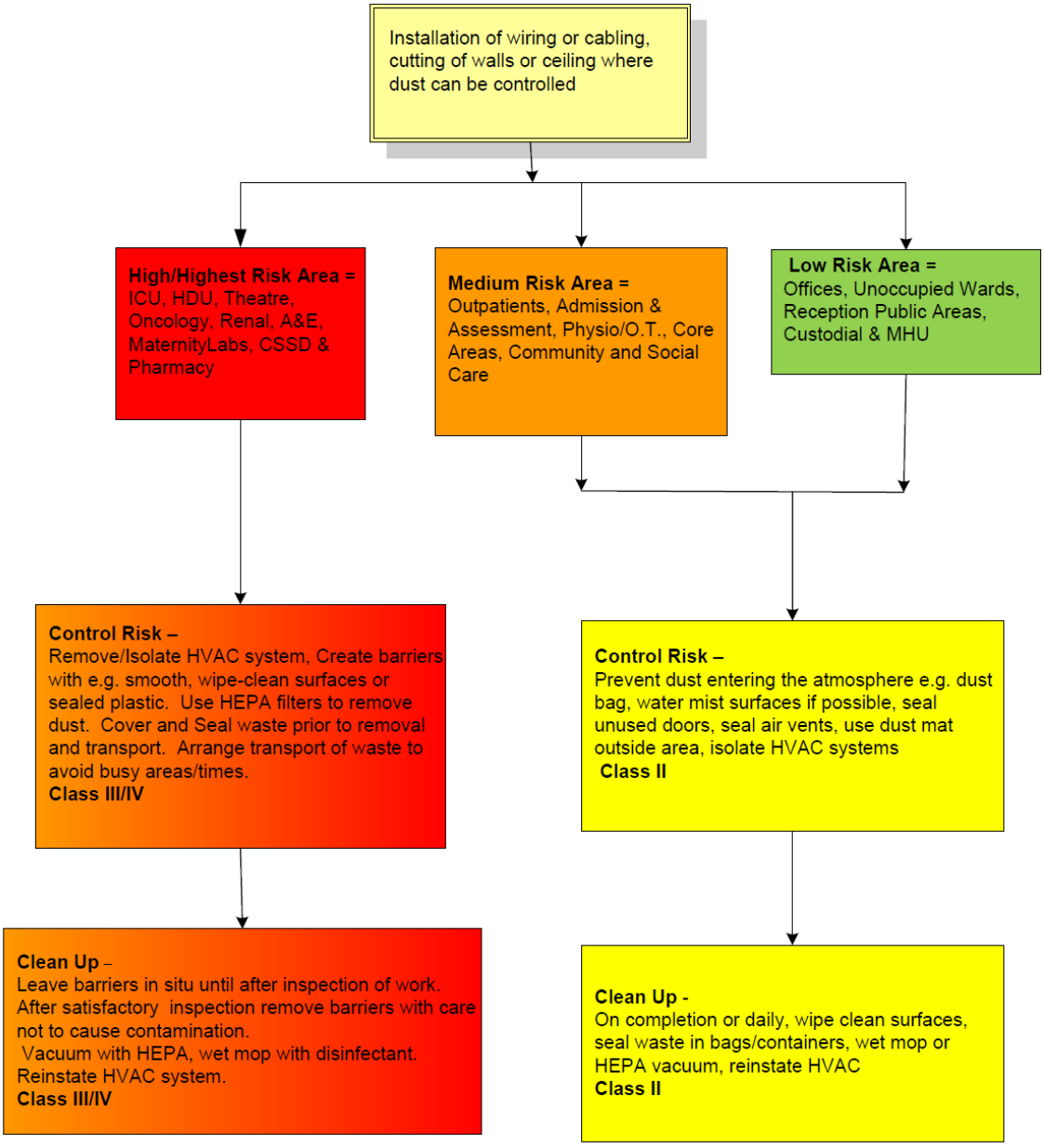
Appendix 4

Minor Works and Small Repairs



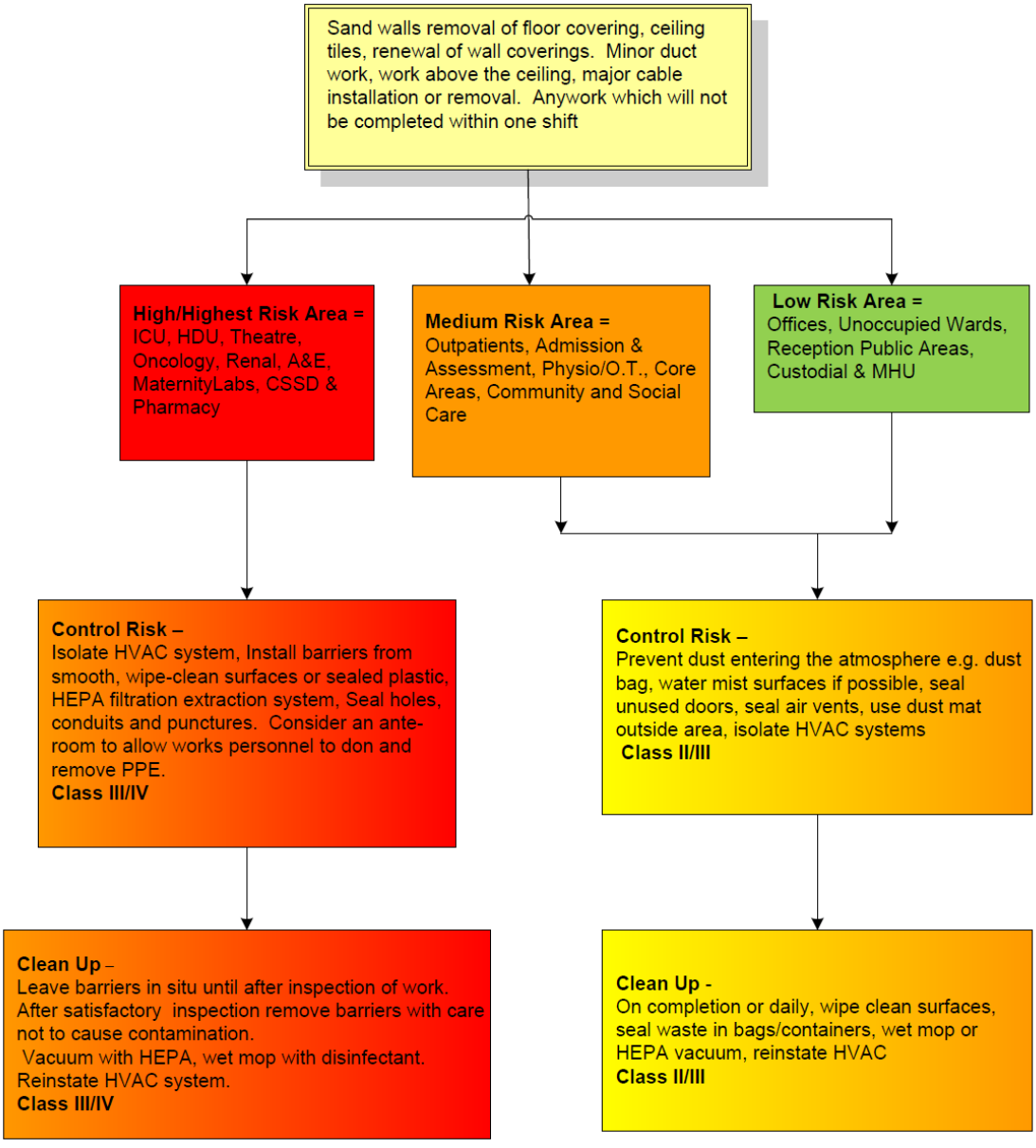
Appendix 5

Small Scale Work



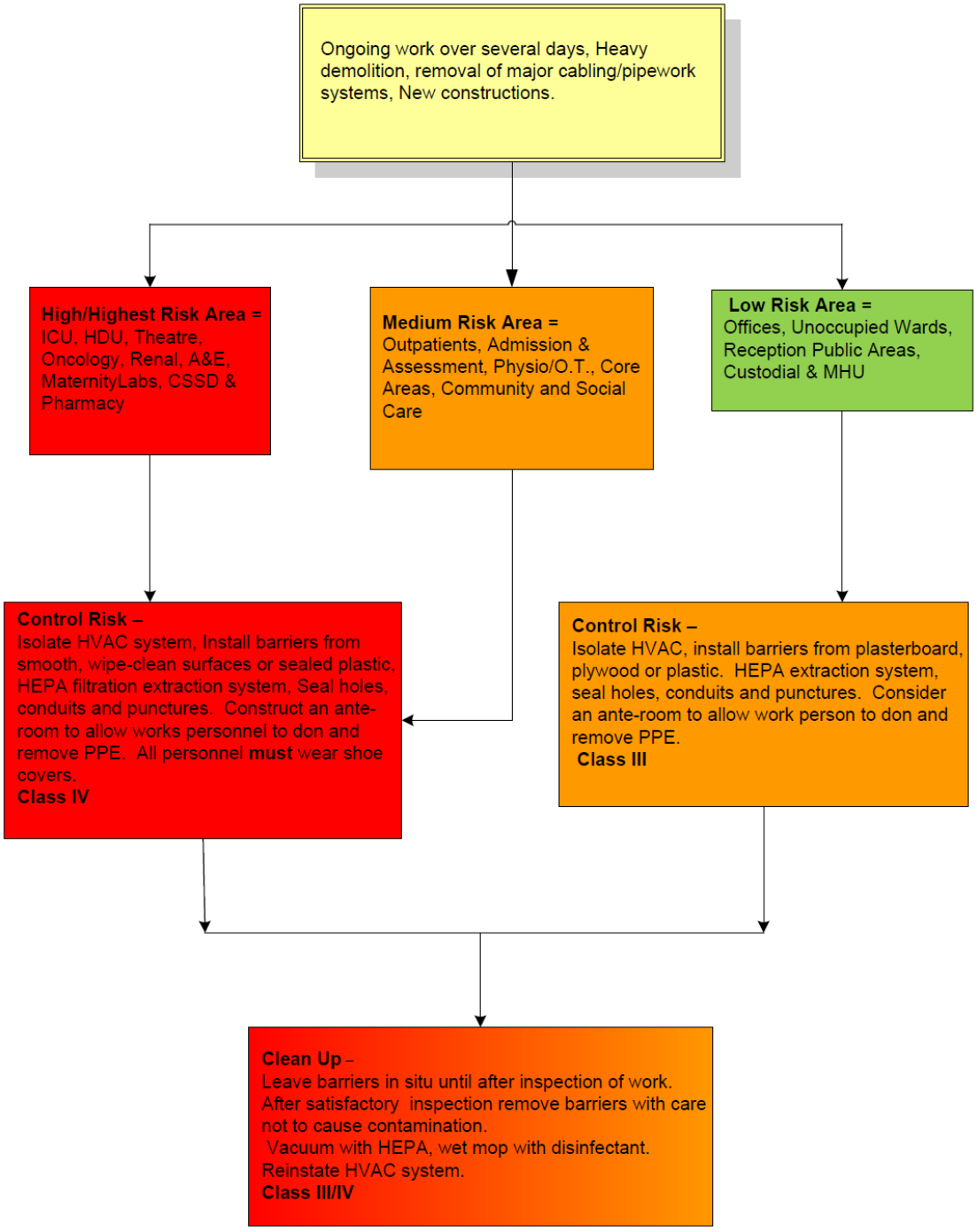
Appendix 6

Demolition work or removal of fixed structures or work where moderate-high level dust expected



Appendix 7

Major demolition work and construction



Appendix 8

A typical exemplar is set out below comprising an overview of various ongoing HAI-SCRIBE activities for minor works.
The entries are fictitious.

HAI-SCRIBE Reg No.	Date of issue by	Site location	Project details	Stage	Risk level	Date Assess review (optional)	Date Assess complete	Date Project started	Date Project finished	Comments
W/1	11-8-12 IGS	West ward block, Level 3	Painting bedrooms	Stage 3	Low	N/A	N/A	01/10/2012	30/10/2012	Access problems
L/6	20-8-12 BB	Lab Block	Replacing defective pipework at risers	Stage 3	Low	N/A	N/A	03/09/2012	05/10/2012	No issues
W/12	02/09/2012 WD	East ward block isolation rooms	HEPA filter replacement	Stage 3	Low/Medium	05/09/2012	Cancelled			Bedroom occupied
D/23	06/10/2012 FF	Dining Room entrance	Replacement floor covering	Stage 3	Low/Medium		31/10/2012	15/11/2012	Delayed	Asbestos found

Appendix 9

The following sets out typical NHS Board organisation showing the inter-relationship between the Board's internal organisation and external resources, when employed. This should be read in conjunction with Section 2.

NHS Board internal organisation

- **NHS Board** - should monitor cost and progress of all capital investment projects at regular meetings. If problems are identified, it needs to be satisfied that appropriate steps are being taken to resolve them;
- **Chief Executive Officer** (CEO) – accountable to the NHS Board and perhaps the only person with total responsibility for project and any other related activities. The CEO takes responsibility for management of all major capital schemes at all stages of the process from inception to post project evaluation;
- **Project Board** - comprising senior staff within the NHS Board who are responsible for the project and whose activities will be affected by the project, such as staff from clinical areas including infection prevention and control specialists and Estates & Facilities managers;
- **Project Director** - responsible for overall project management also managing the NHS Board's interest in the Project. Other responsibilities include evaluating competence of and appointing Consultants and Contractors who will undertake design and construction activity and acting as point of contract in dealings with Contractors;
- **Estates Adviser** - experienced in procuring construction, design and operation of healthcare facilities;
- **User Panel** - representatives of each of the relevant service departments, in each case authorised to define their department's needs and to review and agree how those needs are to be met.

NHS Board External resources:

- **Project Manager** – NHS Boards do not necessarily have capacity in-house to develop and manage all aspects of the project, therefore it is often necessary to appoint external Consultants. The Project Manager's role is to provide a single point of responsibility for the project brief and design. A list of responsibilities is set out in paragraph 2.7.
- **External Consultants** – this includes CDM Coordinator, Medical Planners, Designers and Contractor. They are managed by the Project Manager, appointed by the Project Director. However, their responsibility will be to, and their contracts with, the NHS Board.

Appendix 10

Exemplar questionset

Initial Brief and proposed Site for development identification of hazards, associated risks and control measures		
1.a	Brief description of the proposed development project and the planned development site	New build two-storey development at Lochee Hospital comprising treatment wards and clinics for haematology patients.
1.b	Identify any potential hazards associated with the design and/or proposed site.	Adjacent brewery has cooling towers on site.
1.c	Identify any risk associated with the hazards above	There is the potential for air with water-borne bacteria to be drawn into the new accommodation.
1.d	Outline the control measures that require to be implemented to eliminate or mitigate the identified risks. Ensure these are entered on the project risk register.	Windows may require to be non openable and mechanical ventilation relied upon. Air intakes will have to be located on the lee side of the building.
Control Measures		
1.e	It has been recognised that control measures identified to address the project risk may have unintended consequences e.g. closure of windows can lead to increased temperatures in some areas. Such issues should be considered at this point, they should be noted and action to address these taken	
	Potential Problems Patient and staff discomfort and fatigue due to potential overheating during hot weather if building is sealed.	
	Control Measures Mechanical ventilation will be required	
1.f	Actions to be addressed • Check out climate profile to determine extent of summer temperatures in excess of internal design temperatures. • Make initial assessment of extent of sources of internal heat gains. • Determine need for mechanical cooling of incoming ventilation supply air using rule of thumb method. • Check affordability.	
By Gordon Strachan		Deadline 31st March 2015

Initial Brief and proposed site for development, development stage 1: checklist to ensure all aspects have been addressed						
1.1	Is contaminated land an issue? e.g. asbestos, oils and heavy metals. (Refer to the Contaminated Land Register) Have these issues and actions to be taken been noted in actions to be addressed section?	Yes		No	x	N/A
		Yes		No		N/A	x
Comments Contaminated Land Register and geotechnical surveys confirmed that historical use of site was non-industrial						
1.2	Is there a locally recognised increased risk of contamination or infection e.g. *cryptosporidium*? If yes give details. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes		No	x	N/A
		Yes		No		N/A	x
Comments No record has been traced. (see comments re 1.1)						
1.3	Are there industries or other sources in the neighbourhood which may present a risk of infection or pollution e.g. animal by-products processing plant? If yes give details Have these issues and actions to be taken been noted in actions to be addressed section?	Yes	x	No		N/A
		Yes	x	No		N/A
Comments Adjacent brewery produces smells and vapour-laden discharges from plant and cooling towers. This confirms need for sealed windows, mechanical ventilation and (potentially) cooling. Charcoal filters may be required to mitigate ingress of odours.						
1.4	If there are any industries or other sources identified in question 1.3 above, will they affect the designed operation of the healthcare system? Consider the planned function of the design as well as issues such as: Ventilation Opening of doors and windows Water systems etc. Have these issues and actions to be taken been noted in actions to be addressed section?	Yes	x	No		N/A
		Yes	x	No		N/A
Comments As per section 1.3. The water system is unaffected.						

Initial Brief and proposed site for development, development stage 1 – checklist to ensure all aspects have been addressed continued							
1.5	Are there construction/demolition works programmed in the neighbourhood which may present a risk of pollution or infection (including fungal infection)?	Yes		No	x	N/A	
	Have these issues and actions to be taken been noted in actions to be addressed section?	Yes		No		N/A	x
Comments No issues arising							
1.6	Are there cooling towers in the neighbourhood which may present a risk of *Legionella* infection? Consider also air handling units, water pipes etc.	Yes	x	No		N/A	
	Have these issues and actions to be taken been noted in actions to be addressed section?	Yes	x	No		N/A	
Comments See under 1.3							
1.7	Does the topography of the site in relation to the surrounding area and the prevailing wind direction present any HAI risk e.g. from entrainment of plumes containing *Legionella*?	Yes	x	No		N/A	
	Have these issues and actions to be taken been noted in actions to be addressed section?	Yes	x	No		N/A	
Comments							
1.9	Will the proposed development impact on the surrounding area in any way which may present potential for infection risk? Consider possible restrictions being applied to the operation of the proposed facility e.g. Facilities Management routes	Yes	x	No		N/A	
	Have these issues and actions to be taken been noted in actions to be addressed section?	Yes		No	x	N/A	
Comments Previous 'issues to be addressed' related to the new build. For surrounding accommodation, consideration will have to be given to the need for temporary closure of windows, impact on internal environmental conditions, suppression of dust from excavations, plant noise, creation of segregated routes for waste removal.							

Initial Brief and proposed site for development, development stage 1 – checklist to ensure all aspects have been addressed continued		
1.10	Will lack of space limit the proposed development and any future expansion or change of use of the facility? Have these issues and actions to be taken been noted in actions to be addressed section?	Yes [x] No [ ] N/A [ ] Yes [x] No [ ] N/A [ ]
Comments It cannot be ruled out that restricted space may inhibit future development or impact on the current project but this cannot be determined until the extent and type of project is known.		
1.11	Has a demolition/refurbishment asbestos survey been carried out? Have these issues and actions to be taken been noted in actions to be addressed section?	Yes [x] No [ ] N/A [ ] Yes [x] No [ ] N/A [ ]
Comments Question 1.1 also refers. No demolition is necessary as part of this new-build project. The hospital asbestos register is held in the estates office and confirms that no asbestos is present in the vicinity of the proposed site.		
1.12	Has consideration been given to the projected lifespan of the facility and its impact on planning and development?	Yes [ ] No [ ] N/A [ ]
Comments		

Additional notes - Stage 1

This project would not normally incorporate mechanical ventilation/cooling within a sealed building. It is necessary to verify that the cost allowance will accommodate this abnormal provision to avoid the need for unwanted compromises later in order to reduce costs.

Restricted site space will not necessarily impact on the current development but may have an impact in future on both the current Project and surrounding areas.

Development Stage 1: HAI-SCRIBE applied to the initial brief and proposed site for development			
Certification that the following documents have been accessed and the contents discussed and addressed at the Infection Control and Patient Protection Meeting held in			
Venue	Seminar Room 2, Lochee Hospital	Date	15th July 2014
'Healthcare Associated Infection System for Controlling Risk in the Built Environment' *(HAI-SCRIBE), comprising 'Scottish Health Facilities Note (SHFN) 30: Parts A & B..*			
Declaration: We hereby certify that we have co-operated in the application of and where applicable to the aforesaid documentation.			

Present

Print name	Signature	Company	Telephone Numbers	Email address

References

CCDR (2001), **Construction-related Nosocomial Infections in Patients in Health Care Facilities Decreasing the Risk of Aspergillus, Legionella and Other Infections**, Division of Nosocomial and Occupational Infections, Bureau of Infectious Diseases, Centre for Infectious Disease Prevention and Control, Population and Public Health Branch, Health Canada, Ottawa, Ontario, Canada K1A 0L2

CDC (2003), **Guideline for Environmental Infection Control in Health-Care Facilities, 2003 Recommendations of CDC and the Healthcare Infection Control Practices Advisory Committee (HICPAC)**, Hospital Infection Control Practices Advisory Committee.

Bundle of documents for Oral hearings commencing from 19 August 2024 in relation to the Queen Elizabeth University Hospital and the Royal Hospital for Children, Glasgow

Bundle 27 – Volume 4 – Miscellaneous Document

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