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

Miscellaneous Documents

Volume 8

SCOTTISH HOSPITALS INQUIRY

Table of Contents

Governance and Quality Assurance Framework for the Infection Prevention and Control Service for NHS Greater Glasgow and Clyde

2019

Lead Manager:	Infection Prevention and Control Manager
Responsible Director:	Board Medical Director
Approved by:	Board Infection Control Committee
Date approved:	
Date for Review:	
Replaces previous version:	Brings together various existing documents

Contents

Introduction

The NHS Scotland Health Boards and Special Health Boards - Blueprint for Good Governance sets out clearly the elements that should be considered when describing good governance within NHS organisations. This document aims to embed these principles into a Governance and Quality Assurance Framework for the Infection Prevention and Control Service for NHS Greater Glasgow and Clyde. This document will describe how we set and deliver our strategic aims, the risk management process and how we give stakeholders and the public assurance that the service is delivering for patients, staff and the organisation. It will also describe how we use information from the point of care to the NHS Board to improve outcomes for patients and how we report incidents and outbreaks that may affect the health of our patients or staff or visitors.

Background

Infection prevention and control requires an organisation-wide approach which involves everyone and is everybody's responsibility to deliver. Healthcare Facilities have a legal responsibility to provide a safe work environment, safe systems of work and a safe environment for patients and visitors. Clinical governance refers to the system by which managers and clinicians share responsibility and are held accountable for patient care. This involves minimising risks to patients and staff, and continuously monitoring to improve the quality of clinical care as described in **The Pursuit of Healthcare Excellence,** NHS Greater Glasgow and Clyde Healthcare Quality Strategy.

1. Roles and Responsibilities

NHS Boards in Scotland have public health responsibilities to make arrangements for the surveillance, prevention, treatment and control of communicable diseases. The Public Health responsibility covers the entire population of a NHS Board including patients and staff within the health service.

The Chief Executive of the NHS Board is responsible for ensuring that there is successful prevention and control of infection throughout the NHS Board area. The accountabilities of this role are outlined in the NHS Healthcare Improvement Scotland (HIS) Standards for Healthcare Associated Infection (HAI) and have been further emphasised within the NHS HIS interim report on the second review of these standards. This accountability requires that the Chief Executive:

- is aware of their legal responsibilities to identify, assess and control risks of infection in the workplace,
- has appointed an Infection Control Manager as required by HDL(2001)10 and HDL(2005)8 with sufficient resources to undertake this role,
- is aware of factors within services deliverer/NHS Boards which promote low levels of HAIs and ensures that appropriate action is taken,
- has designated the prevention and control of infection as a core part of their organisation's clinical governance and patient safety programmes,
- ensures that there is progress towards appropriate provision of isolation facilities within their healthcare facilities,
- ensures that Infection Prevention and Control (IPC) Teams work with nursing, medical staff and bed managers to optimise bed use, assess the infection impact of bed management policies, and implement changes to local policy to minimise the risks of infection.

The Chief Executive has delegated to the Board Medical Director the role of Executive Lead for Infection Prevention and Control in NHS Greater Glasgow & Clyde.

Executive Lead for Infection Prevention Control (IPC) or their Designated Deputy (Acute Associate Medical Director)

Will on behalf of the Chief Executive, oversee and provide assurance on infection prevention and control to the NHS Board.

Infection Prevention & Control Senior Management Team

- Infection Prevention and Control Manager (IPCM)
- Lead Infection Prevention and Control Doctor (LIPCD)
- Associate Nurse Director Infection Prevention and Control (ANDIPC)
- Nurse Consultant Infection Prevention and Control (NCIPC)

Infection Prevention and Control Manager (IPCM) Defined in HDL (2001)10 & HDL (2005)8

The IPCM will:

- co-ordinate IPC throughout the Board area
- deliver the Board approved Infection Control Programme in conjunction with the Board Infection Control Committee (BICC) and Senior IPCT
- provide clear mechanisms for access to specialist infection prevention and control advice and support, including primary care (e.g. general medical practitioners)
- assess the impact of all existing and new policies and plans on HAI, and make recommendations for change
- challenge non-compliance with local and national protocols and guidance relating to prevention and control of infection, decontamination, antimicrobial prescribing and cleaning
- report directly to the Board Executive Lead
- be an integral member of the organisations clinical governance structures
- produce the bi-monthly Healthcare Associated Infection Reporting Template (HAIRT) report for the NHS Board

Lead Infection Prevention and Control Doctor (LICD)

- The LIPCD reports directly to the IPCM on all issues relating to IPC and is responsible for supporting the IPCM and the ANDIPC to deliver the IPC Programme and associated Work Plan.
- The LIPCD attends Board IPC Committee meetings and other groups relevant to the prevention of infection.
- The LICD provides leadership to medical staff within IPC on clinical issues.
- Act as a key member of the Senior IPC Team.
- Co-ordinate the available ICD sessions across NHSGGC.

Associate Nurse Director Infection Prevention and Control (ANDIPC)

- The ANDIPC is a clinical expert in the specialist clinical field of IPC. The ANDIPC practices at an advanced clinical level and exercises higher levels of judgement, discretion and decision-making in clinical care throughout NHSGGC.
- The ANDIPC provides clinical leadership, expert practice, and advanced knowledge, integrating research evidence into practice.
- The ANDIPC is an expert resource both internal and external to NHSGGC in the field of IPC and manages the IPC nursing team and administrative assistants across NHSGC.
- The ANDIPC monitors and improves standards of care through supervision of practice, clinical audit, disseminating research, teaching and supporting professional colleagues and the provision of skilled professional leadership.

Nurse Consultant Infection Prevention and Control (NCIPC)

The NCIPC is a senior member of the IPC Team who under the leadership of the ANDIPC provides strategic and clinical leadership in IPC across NHSGGC as it relates to nursing, midwifery and health visitors, and other professional groups.

The NCIPC:

- Contributes to the delivery and achievement of NHS Scotland Healthcare Associated Infection Policy and Guidelines.
- Ensures NHSGGC has consistent standards and training strategies in place to minimise the risk of healthcare associated infection (HAI) to patients, staff, visitors and others.
- Through close collaboration with the higher education sector contributes to the development of education, training and development of nurses, midwives and health visitors and other healthcare workers.

Infection Prevention and Control Teams (IPCTs)

Each sector in NHSGGC is supported by a local IPCT. This team is comprised of the following:

- Infection Control Doctor
- Infection Prevention and Control Lead Nurse
- Infection Prevention and Control Nurses
- IPCT Administrator

These teams are supported by a dedicated Surveillance and DataTeam which is led by a Lead Nurse and includes data managers, surveillance nurses and administration staff.

The IPCT is responsible for:

- Ensuring advice on infection prevention and control is available.
- In liaison with other relevant staff, the preparation, review and updating of evidence based policies and guidelines in line with relevant Department of Health notifications and/or national guidelines, when available and applicable.
- Ensuring that compliance with IPC policies are monitored by the IPCT, Divisional Leads and designated Managers as appropriate.
- Identifying, control and investigation of outbreaks with the Public Health Protection Unit (PHPU) and other colleagues as appropriate.
- Ensuring the provision of appropriate education to all grades of staff working within the scope of this policy in line with the current NHSGGC IPC Education Strategy.
- Participating in the planning and upgrading of hospital facilities.
- Providing specialist advice to key committees, groups, departments or individual staff members in relation to IPC practice.
- Carrying out alert organism/disease/condition and mandatory Surgical Site Infection (SSI) surveillance as required; liaising with medical and nursing staff as appropriate.
- Informing the Executive Lead or their designated deputy of any serious problems or issues relating to IPC.
- Ensuring liaison with the Occupational Health Department (OHD) with regard to staff health and transmission of infectious diseases.
- Adhering to the Boards Clinical Governance and the Management of Significant Clinical Risks policies.

An organisational structure is included in **Appendix 2** for reference purposes.

2. Infection Prevention and Control Committees

NHSGGC Board Infection Control Committee (BICC)

The BICC is a standing committee within NHSGGC consisting of a range of multi-disciplinary members. This committee may set-up standing or ad hoc sub-groups to address particular issues, e.g. decontamination, vCJD, policy development. The committee is chaired by the Board Medical Director and membership includes; the Head of the Antimicrobial Team, the IPC Manager, the Associate Nurse Director (IPC), the Nurse Consultant in IPC, the Lead IPC Doctor, Acute and Partnership Services, Occupational Health, Pharmacy, Public Health Consultant, Infectious Disease Consultant, Health & Safety, Facilities Services and lay representatives.

The Medical Director will bring an Hospital Acquired Infection Report (HAIRT) to every NHS Board meeting as a standing agenda item. This report also goes to the Board Clinical Governance Forum. **This report will be informed by the outputs of the Board, Acute, and Partnerships Infection Control Committees and Groups.**

Acute Infection Prevention and Control Committee (AICC) and Partnerships Infection Control Support Group (PICSG)

The AICC and the PICSG both mirror the membership and Terms of Reference (TOR) of the BICC. These groups were set-up to review IPC with a specific focus on acute and primary care. These groups both report to the BICC and the chairs of both are members of the BICC to ensure flow of information. All of the groups contribute to and approve the Annual IPC Programme and IPC Work Plan, and review the contents of the HAIRT.

Terms of Reference (TOR)

The Terms of Reference for the three groups and the committee structure can be seen in **Appendices 3-6**. The committee structure includes other committees IPC play a significant role in (**Appendix 6**).

Infection Prevention and Control Services to others

IPC services to non-NHS facilities, i.e. not covered by the Acute and Partnerships IPC services, are the responsibilities of the organisation themselves. However Public Health Protection Nurses based in the Public Health Protection Unit, Department of Public Health will provide them with IPC advice and training if required. The PHPU team will also liaise with appropriate regulatory agencies and monitor IPC standards in these institutions (e.g. Nursing / Residential Homes, other Care Homes and educational establishments such as nurseries and schools).

The National Infection Prevention and Control Policy Manual (NIPCM) including specific appendices are mandatory for <u>all</u> staff who deliver care to patients in the NHS in Scotland.

3. Risk Management and the Monitoring to Assure Healthcare Quality within IPC

Introduction

The Health Act 1999 requires that NHSGGC; *"put and keep in place arrangements for the purpose of monitoring and improving the quality of health care which it provides to individuals" (GGC* Clinical Governance Policy Improving and Assuring the Quality of Clinical Care). The GGC Clinical Governance Policy is the basis for all service specific documents and should be read with the IPC Governance Framework. This document can be viewed in full by clicking on the following link:
http://www.staffnet.ggc.scot.nhs.uk/Corporate%20Services/Clinical%20Governance/PCHC/NHS%20GGC%20Clinical%20Governance%20Policy%20June%202016.pdf

Organisational management and clinical governance can have a positive impact on the effectiveness of IPC by driving continuous quality improvement. Where clinical governance and management encourage collaboration between healthcare managers and clinicians, change is more likely to be achieved than where there is unilateral governance. Change is also more likely to be achieved and sustained when the role of patients as partners in their healthcare is strengthened and where there is a shared understanding of the role of patients, healthcare workers and organisations in achieving the best possible outcomes. IPC has a role to play in both quality improvement and in quality assurance. Quality Assurance is defined as the process of checking that standards are met and encouraging continuous improvement (Public Health England).

Surveillance of Infection

Alert Organism or Condition

All patients with alert organisms or conditions (AO/AC) are referred to the IPC Teams directly from the laboratories via a software application called ICNet (Baxter Healthcare). These AO/AC are generally micro-organisms/infections which could potentially cause harm to others, e.g. tuberculosis, meningitis or that have the potential to be a risk to the wider public health, e.g. multi-resistant organisms such as MRSA or Carbapenemase-producing Enterobacteriaceae (CPE). They are referred specifically, so that additional precautions can be implemented such as Transmission Based Precautions (TBPs).

Patients with AO/AC are visited by an IPC Nurse (IPCN) who explains the condition and the precautions necessary to prevent spread, e.g. the requirement for isolation. Written information is left with the patient/relative and the patient/relative are advised that if they require further information the IPCN will visit again. Ward staff are given care plans or a check list with the precautions required to prevent spread and they are asked to review this daily. Advice on the correct antibiotics to administer to patients is given by the ICD or antimicrobial pharmacist on request of the clinical teams.

Healthcare Associated Infection Surveillance

The IPCT have utilised a software system called ICNet for over 5 years to undertake surveillance of specified organisms. This system links information from three hospital systems: Microbiology/ virology laboratories, theatres (Opera) and TrakCare. This ensures that results are received in real time (every 15 minutes) by the IPC Teams who in turn can act upon this promptly. A full record of the patients' diagnosis and management is included in the system which also facilitates IPC nursing documentation audit. Direct links to microbiology and theatre systems makes surveillance of less complex surgical procedures, e.g. cataract surgery, possible with minimal manpower. The system allows the IPC senior management team to view the records of any patient referred via this system in any hospital across the board.

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.

Below is a list of the procedures where active surveillance is undertaken by IPC in NHSGGC. Those in bold are in addition to the mandatory procedures that are reported to Healthcare Protection Scotland as part of the national SSI Surveillance programme and to clinical and senior management teams within sectors and directorates:

- Caesarean section
- Hip arthroplasty
- Large bowel surgery
- Major vascular surgery

- **Knee arthroplasty**
- **Repair of neck of femur**
- **Cranial surgery (INS only)**
- **Spinal surgery (INS only)**
- **Oral Maxillo-facial surgery**

Point of Care to Board Reports

All of the above information is used to provide information and assurance from the Point of Care to the NHS Board. The full reporting structure is contained in **Appendix 1**.

HAIRT, HAI tables and HEI reports can be viewed by clicking on the following link: http://www.nhsggc.org.uk/your-health/infection-prevention-and-control/

Audit, Quality Assurance and Improvement

Audit is a way to assess the application in practice of national policies and standards to prevent infection. It allows IPC to target specific areas for support and education. The IPC Audit Tool (IPCAT) focuses on four main areas of clinical practice:

- Standard Infection Control Precautions (SICPS) aligned to the National Infection Prevention and Control Manual (Chapter 1).
- Transmission Based Precautions (TBPs) - precautions required when a patient has a suspected or known infectious disease.
- Safe Patient Environment - audit of any issues in the physical environment which could cause infection, e.g. cleanliness of the re-usable patient equipment and clinical environment.
- Application of improvement care bundles focussing on safe practice. Care bundles are a set of agreed evidence based actions, usually four or five, that if in place will reduce the risk of specific infections. The current tool aims to reduce risk associated with three invasive devices, i.e. peripheral vascular cannula, central venous cannula both associated with bacteraemia and also indwelling urethral urinary catheters associated with urinary tract infection. The aim is to improve the outcomes for patients who have to have these devices in situ due to treatment or condition.

IPCAT is completed a minimum of annually in acute wards. The frequency of re-audit is determined by the outcome of the last audit. Following completion of the IPCAT, an action plan is immediately available to clinical teams via the electronic IPC audit dashboard. The response to each question where criteria are not met is available and an action is generated with an appropriate timescale. IPC have agreed a set of critical non-compliance criteria which must be actioned within 24 hours of audit. An example would be blood/body fluid spillage identified on a piece of re-usable patient equipment.

Actions highlighted as a critical non-compliance must be addressed within 24 hours of completion of IPCAT with a period of one month allowed for other actions to be completed. Where actions for improvement will require work to be undertaken by Facilities staff, e.g. a replacement sink, the identified risk will be added to the risk register for the clinical area to ensure that all required actions are completed. Chief Nurses and Senior Managers all have access to the dashboard and can view their wards and implement additional actions if required.

IPC audit activity is undertaken by Facilities, clinical and infection control staff across NHSGGC. The aim of the activity is to provide assurance that the environment in which we deliver healthcare is safe and clean as described in the HPS National Monitoring Framework to Support Safe and Clean Care Audit Programmes (2018).

By monitoring the application of standard and transmission based precautions, we can identify areas where improvement activity is required. This activity may include written protocols, education of staff or replacement of equipment and changes to the care environment.

By measuring compliance with evidence based practice for care of invasive devices, we support the application of high quality care to our most vulnerable patients.

Where audit identifies areas for improvement, a rapid improvement process will ensure that actions can be taken as soon as possible to rectify the issue and re-audit to provide assurance that there is a focus on completion of all necessary actions to close the loop.

The Senior Charge Nurse undertakes SICPs audits every 6 months as part of the care assurance activity across NHSGGC. This allows local ownership of standards of practice towards a safe and clean environment.

IPC audit activity also involves our public partners who accompany IPC and Facilities staff during environmental monitoring visits to clinical areas. They provide an assurance of the monitoring process. Public partners are also invited to take part in audit of SICPs with members of the IPCT.

NHSGGC IPCAT Strategy document can be viewed by clicking on the following link: https://www.nhsggc.org.uk/your-health/infection-prevention-and-control/ipc-team-documents/

HPS (2018) National Monitoring Framework - a National Monitoring Framework to Support Safe and Clean Care Audit Programmes: An Organisational Approach to Prevention of Infection Auditing can be viewed below: https://hpspubsrepo.blob.core.windows.net/hps-website/nss/2678/documents/1_national-monitoring-framework.pdf

Risk Register

The IPC Risk Register is reviewed yearly and is submitted and considered for inclusion on the Corporate Risk Register. The risk register will be monitored / reviewed on a quarterly basis.

4. Reporting of Incidents and Outbreaks

In 2015, Health Protection Scotland (HPS) published the first version of Chapter 3 of the National Infection Prevention and Control Manual (NIPCM) and reporting of incidents and outbreaks became mandatory in Scotland using a reporting template in April 2016. Chapter 3 provides a definition of an incident or outbreak, a tool to assess the incident or outbreak, a list of those who should be considered to attend an Incident Management Team (IMT) meeting and the agenda for these meetings. The communication to be undertaken is also part of the agenda and the assessment and includes a review of our responsibilities with respect to our Duty of Candour.

An incident or outbreak is defined as one of the following:

- An exceptional infection incident, e.g. a single case of any serious illness which has major implications for others (staff, patients and/or visitors), the organisation or wider public health, e.g. VHF.
- Two or more 'linked' cases with the same infectious agent associated with the same healthcare setting over a specified time period.
- A higher than expected number of cases of HAI in a given healthcare area over a specified time period.
- 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 (new criterion added 2019).

Suspected incidents / outbreaks are discussed at a Problem Assessment Group (PAG) initiated and attended by members of the IPC Team. The Healthcare Infection Incident Assessment Tool (HIIAT) will be used to assess the incident using patient epidemiological data and/or other results and gathered information. The assessment will consider the impact on severity of illness, the ongoing risk of transmission of the causative organism, the impact on clinical services and public anxiety. Based on this assessment the IPCT will decide if an IMT is required.

Membership of the IMT

An IMT is usually chaired by either the ICD or Consultant in Public Health Medicine (CPHM). The other members will be from the IPCT and include clinical teams, Facilities, Occupational Health, pharmacy and representatives from any other relevant groups, as determined by the nature of the incident.

Remit of an IMT

- To review all epidemiological data collected as part of the investigation.
- To agree a case definition.
- To consider any information from investigations.
- To agree control measures and responsibilities for those.
- To agree communications required to patients and visitors, staff and the public.

- To update the Healthcare Incident Infection and Outbreak Reporting Template (HIIORT) as per chapter 3 and this should be returned to HPS at least weekly.
- To continue to meet to review data and assess the impact of control measures.
- Meetings will stop when all members are satisfied that control measures have been successful in controlling the incident.
- The IMT will finalise a de-brief report to share with the Board which includes sharing of experience and assurance that controls have been effective.
- Review the Hospital Infection Impact Assessment Tool (HIIAT) at every meeting or at least weekly.

Duty of Candour

All health and social care services in Scotland have a duty of candour. This is a legal requirement which means that when unintended or unexpected events happen, the people affected understand what has happened, receive an apology, and that organisations learn how to improve for the future.

Duty of candour is a standing agenda item at every Incident Management Team Meeting. Members of the IPCT are required to follow the NHGGC Duty of Candour Board Policy which can be viewed by clicking on the following link:
http://www.staffnet.ggc.scot.nhs.uk/Corporate%20Services/Clinical%20Governance/Clinical%20Risk/Duty%20of%20Candour/DoC%20Policy%20and%20Guidance%20GGC%20Final%20v1%20(2018).pdf

In addition to the above guidance, in 2019 the Chief Nursing Officer (CNO) issued additional guidance for IPCTs in a letter to Boards; HAI-related incidents, outbreaks and data exceedance: assessment, and reporting requirements and communication expectations. In summary:

It is a requirement for all infection incidents/outbreaks that the IMT:

- Communicate with all patients affected and where appropriate their families;
- Communicate with all other patients and where appropriate families who may be affected or concerned, e.g. those in the same ward/unit as patient(s) affected;

- Prepare a press statement (holding or release) for all HIIAT AMBER or RED assessed outbreaks / incidents. If a proactive media communication is planned then this should be undertaken in consultation with HPS and Scottish Government communication team colleagues.

NHSGGC Standard Operating Procedure (SOP) - Outbreak of Communicable or Alert Organisms in Healthcare Premises

NHSGGC has a SOP which describes in more detail how incidents and outbreaks are managed within hospitals in NHSGGC https://www.nhsggc.org.uk/media/245201/outbreak-sop-final-version-oct-2017-_2_.pdf

This SOP is informed by the following documents:

- Chapter 3 HPS National Infection Prevention and Control Manual http://www.nipcm.hps.scot.nhs.uk/chapter-3-healthcare-infection-incidents-outbreaks-and-data-exceedance/
- Management of Public Health Incidents: Guidance on the Roles and Responsibilities of NHS Led Incident Management Teams. Scottish Health Protection Network. Scottish Guidance No12 (2017 edition). https://www.hps.scot.nhs.uk/guidance/shpn-guidance/

An algorithm with embedded documents is contained in **Appendix7**. This also describes the process of assessment used by the IPCT in NHSGGC.

HIIAT 'GREEN' assessed incidents (PAGs and IMTs) are reported to HPS every Tuesday by all health boards in Scotland. All AMBER and RED assessed incidents (IMTs) are reported to HPS via a reporting template at the end of each IMT as per:

DL(2015)19 http://www.sehd.scot.nhs.uk/dl/DL(2015)19.pdf

Appendix 1 – NHSGGC Infection Prevention & Control Team Point of Care to Board Reporting

NHS Board (Level 1)

- NHS Board Meeting – HAIRT
- NHS Board Clinical Governance Forum – HAIRT
- CEO and Board Medical and Nurse Directors, Service Directors – Weekly IPC Report and daily update norovirus and influenza (seasonal).
- Board Infection Control Committee – HAIRT, ASC Summary, minutes of Acute ICC and Partnerships IPSG, Quarterly and Yearly National reports (HPS) Implementation plan progress report, hot debriefs and outbreak and incident reports and reports from the sub groups.

Division Acute and Health & Social Care Partnerships (Level 2)

- Partnership IC Support Group (PICSG) – HAIRT, Monthly Reports, Quarterly and Yearly National reports (HPS) Implementation plan progress report, hot debriefs and outbreak and incident reports.
- Health & Social Care Partnerships (HSCP) Integrated Joint Boards (IJB) CGC – HAIRT, Partnerships Monthly Report, Minutes of the PICSG, Partnership IPC Work Plan
- Acute IC Committee (AICC) – HAIRT, SAB Reports, IPC Sector Report, Quarterly and Yearly National reports (HPS) Implementation plan progress report, hot debriefs and outbreak and incident reports, reports from the sub groups.
- Acute Services Clinical Governance Group (ASCGG) –Activity report, includes incidents and outbreaks, audit, KPI results, educational update.
- Antimicrobial Utilisation Committee (AUC) – data on request and HAIRT

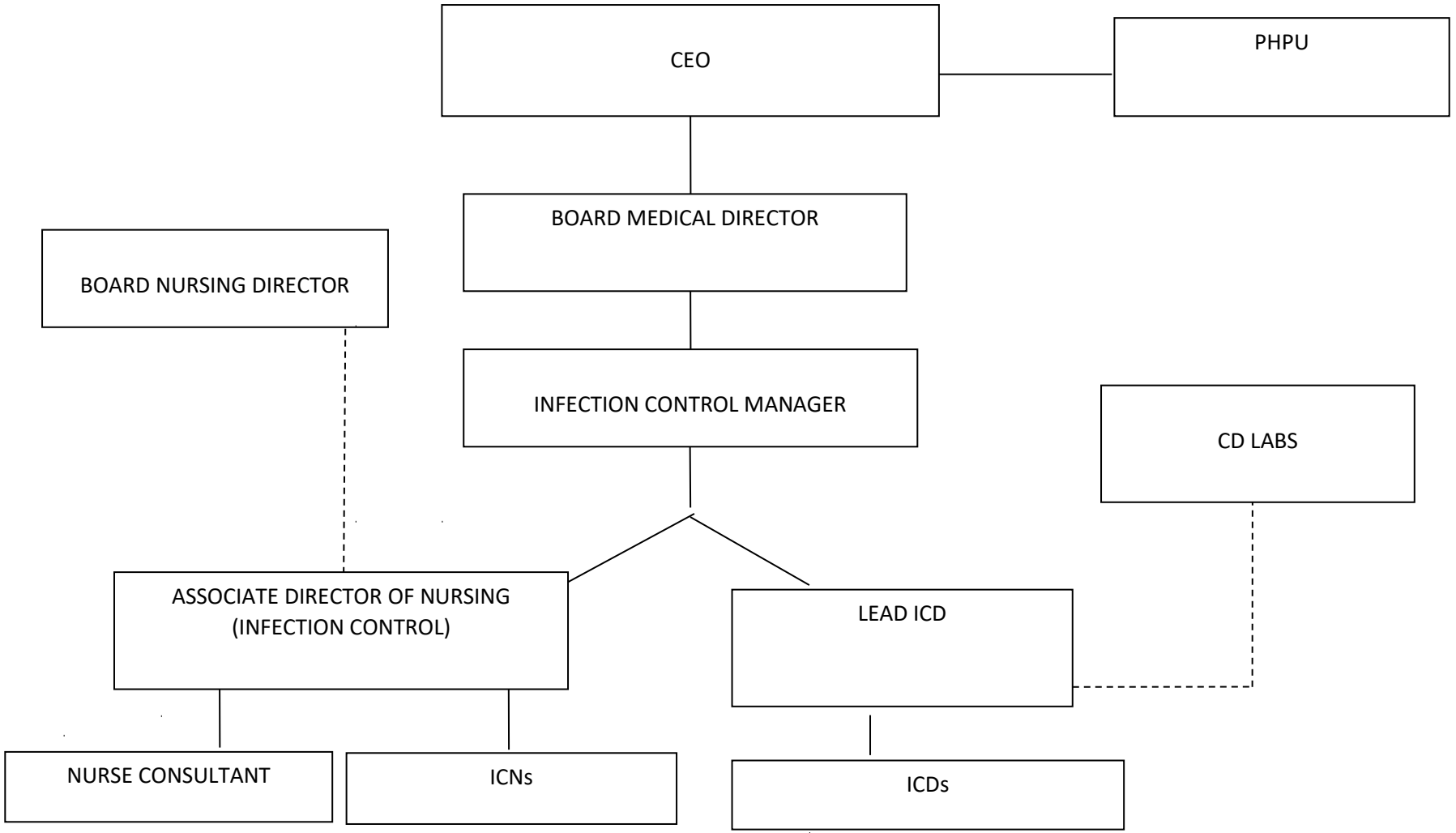
Sector and Health & Social Care Partnerships (Level 3)

- Sector Directors and PICSG – Sector / Partnership Monthly Activity Reports
- Chief Nurse / Chief of Medicine – Sector Surgical Site Infection (SSI) Reports and SAB Reports
- Chief Nurses / Professional Nurse Advisors – IPCAT results
- Results of PVC/CVC Audits in response to cases of SABs associated with IV access devices

Point of Care/ Ward (Level 4)

- SCN - Statistical Process Control Charts (SPCC) – issued monthly
- Hand Hygiene Audits – undertaken by SCN – monthly – aggregated into HAIRT
- SCN - Results of IPCAT – aggregated into monthly activity report
- Standard IPC Precautions Audit (Lead by SCN)
- SSI Reports to clinicians IPCAT – Report at Ward level

Appendix 2 - ORGANISATIONAL CHART- IPCT



Appendix 3 – TOR NHSGGC Board Infection Control Committee – UPDATE MARCH 2017

Update 2017	**NHSGGC Control of Infection Committee**
Reports to:	Board Chief Executive NHSGGC Clinical Governance Forum
Representatives sit on:	Acute Infection Control Committee Partnership Infection Control Support Group Board Clinical Governance Forum
Objectives:	To reduce the risks of infection to members of the public and patients by: Advising the Chief Executive, NHSGGC on all matters relating to communicable diseases throughout the NHS Board area. Functioning as the single corporate function for policy approval and strategic monitoring in relation to Infection Prevention and Control. Facilitating collaboration and co-ordination between NHS organisations, local authorities and other relevant agencies. Liaising with other appropriate committees within the NHS Board area and monitoring performance. Ensuring consistency in Infection Prevention and Control Policy application and cross system working.
Terms of Reference:	Provide leadership and support to the Infection Prevention and Control service in the implementation of IPC policy and practice from board to ward (point of care). Review and implement the National Infection Prevention and Control Policy Manual within NHSGGC. Develop and approve local addendums to the National Infection Prevention and Control Policy Manual where required/appropriate. Advise the Board Clinical Governance Forum where NHSGGC requires any deviation from the National Infection Control Policies and present evidence to support this. Receive Annual Infection Control Programme and Annual Report from Board Infection Control Manager and draw the attention of the Chief Executive and NHS Board to any serious potential or actual risks relating to Infection Prevention and Control. Receive the bimonthly report on KPIs (HAIRT) from the Infection Control Manager. Provide regular reports on progress with implementation of programme and exception reports on KPIs to the Clinical Governance Forum and NHS Board. Receive and review regular reports and updates on key HAI related Performance Indicators from AICC and PICSG. Provide core personnel for any outbreak control team, set up within the NHS Board area. Consider national guidance, letters from the Scottish Government and other national agencies and advise on implications and required actions. Promote and facilitate the education of all Healthcare Workers on Infection Prevention and Control policies and procedures. Draw up and agree plan to deal with communicable diseases outbreaks. Responsibility for assessment of Glasgow and Clyde-wide compliance levels with the HAI Code of Practice and HEI Standards.

Membership	Board Medical Director (Chair) Board Nurse Director (Vice Chair) Infection Control Manager Associate Nurse Director (Infection Prevention and Control) Consultant Public Health Medicine Lead Infection Control Doctor Chairs of both Acute and Partnership ICCs Board Pharmaceutical Policy Adviser Health and Safety Manager Facilities Representatives (decontamination and cleaning services) ID Physician(s) / AMT Reps Occupational Health Reps Clinical service representatives e.g. Chiefs of Medicine/Nursing Staff Partnership Representative Public Partner(s)
In addition to the membership, minutes are circulated to:	Chief Executive Risk Management Committee Clinical Governance Forum NHS Board Acute Infection Control Committee Partnership Infection Control Support Group Infection Prevention and Control Senior Management Team
Meetings	Two monthly in a cycle with Clinical Governance Forum and NHS Board

Appendix 4 – TOR PICSG NHSGGC Partnerships Infection Control Support Group (PICSG) Terms of Reference (January 2019 - agreed)

Update 2018	NHSGGC Partnerships Infection Control Support Group (PICSG)
Reports to:	Board Infection Control Committee (BICC)
Representatives sit on:	• Board Infection Control Committee (BICC) • Acute Infection Control Committee (AICC) • Mental Health Services Healthcare Associated Infection Group (MHS HAI) • Board Clinical Governance Forum
Roles and Responsibilities	• It is the responsibility of the representatives of this group to communicate to their own area of responsibility all relevant issues raised at the group, and facilitate any agreed actions.
Objectives:	To reduce the risks of infection to members of the public and patients by: • Facilitating collaboration and co-ordination between NHS organisations, local authorities and other relevant agencies. • Liaising with other appropriate committees within the NHS Board area and monitoring performance. • Ensuring consistency in Infection Prevention and Control Policy application and cross-system working. • Reporting risks/issues to the Board Infection Control Committee (BICC).
Terms of Reference:	• Provide leadership and support to the Infection Prevention and Control service in the implementation of IPC policy and practice from board to ward (point of care). • Review and implement the National Infection Prevention and Control Policy Manual (NIPCM) within NHSGGC. • Comment on local addendums to the National Infection Prevention and Control Policy Manual (NIPCM) where required / appropriate. • Receive the Annual Infection Prevention and Control Programme from the Board Infection Prevention and Control Manager. • Receive the bi-monthly report on Key Performance Indicators (KPIs) Healthcare Associated Infection Reporting Template (HAIRT) from the Board Infection Prevention and Control Manager. • Consider national guidance, letters from the Scottish Government and other national agencies and advise on implications and required actions. • Promote and facilitate the education of all Healthcare Workers on Infection Prevention and Control policies and procedures. • Responsibility for assessment of Glasgow and Clyde-wide compliance levels with the HAI Code of Practice and Healthcare Environment Inspection (HEI) Standards in directly managed services. • This group will be quorate as long as at least half of those present are from service areas.

Update 2018	**NHSGGC Partnerships Infection Control Support Group (PICSG)**
Membership	• Health & Social Care Partnerships (HSCP) Chief Nurse (Chair) • Board Infection Control Manager • Associate Nurse Director Infection Prevention and Control • Nurse Consultant Infection Prevention and Control • Lead Infection Prevention and Control Nurse (West & HSCP) • Senior Infection Prevention and Control Nurse (West & HSCP) • Lead Infection Prevention and Control Doctor • Health Protection Nurse Specialist (HPNS) / Consultant Public Health Medicine (CPHM) Public Health Protection Unit (PHPU) • Public Health Pharmacist • Clinical Risk Representative • Facilities Partnerships Representative • Estates Partnerships Representative • Nominated Health & Social Care Partnerships (HSCP) Clinical Services Representatives including Practice Development, Sexual Health and In-Patient Services (Mental Health Services (MHS)) • Public Partner Representative

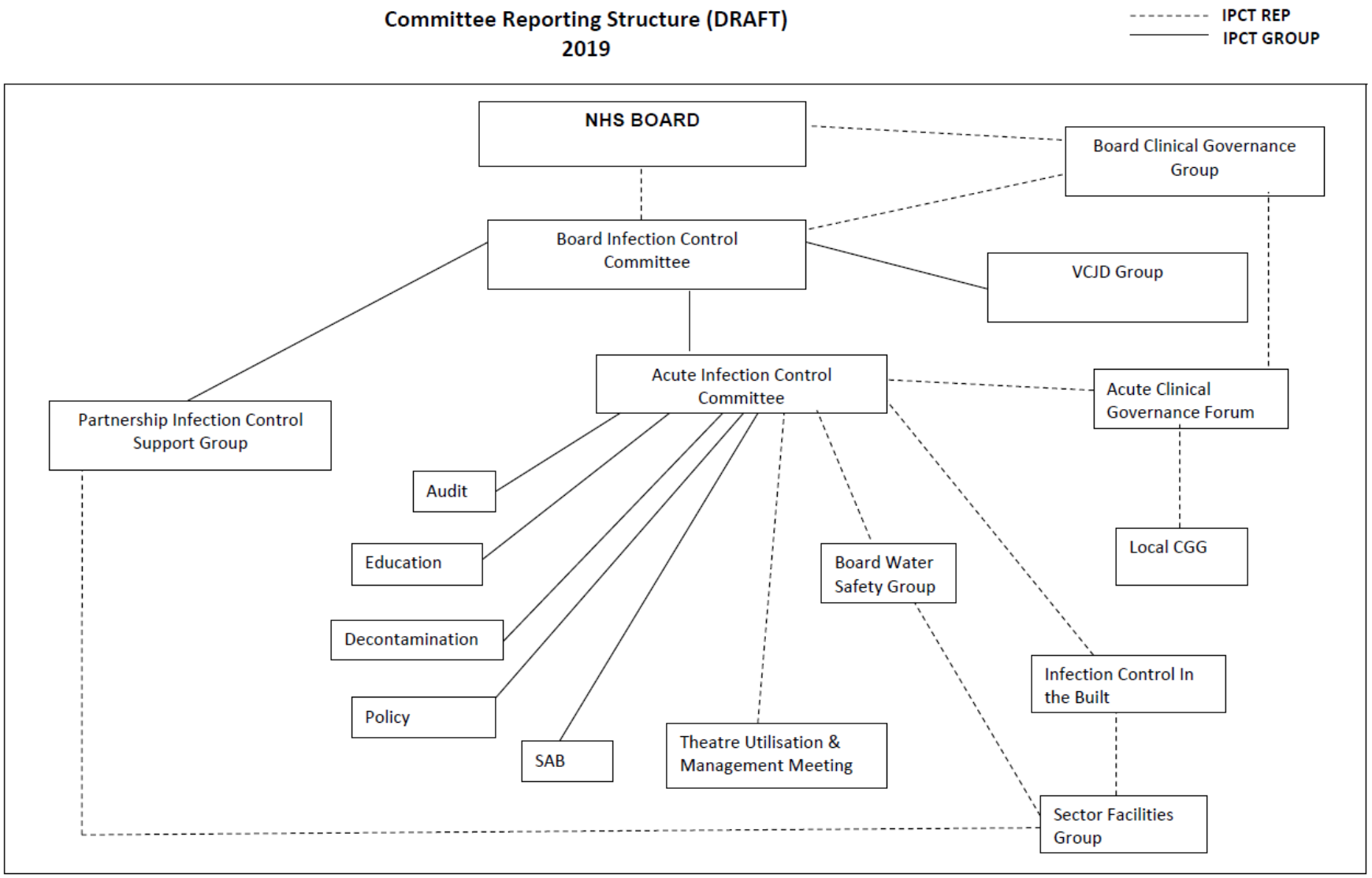
In addition to the membership, minutes are circulated to:	• Primary Care & Clinical Governance Forum
	• Clinical and Care Governance Groups
	• Infection Prevention and Control Senior Management Team
	  • Board Infection Control Committee and Chair
	  • HSCP Chief Officer of Operations
	  • HSCP Chief Officers
	  • HSCP Directors (Clinical)

Meetings	Two monthly in a cycle with the Acute Infection Control Committee (AICC) and the Board Infection Control Committee (BICC).

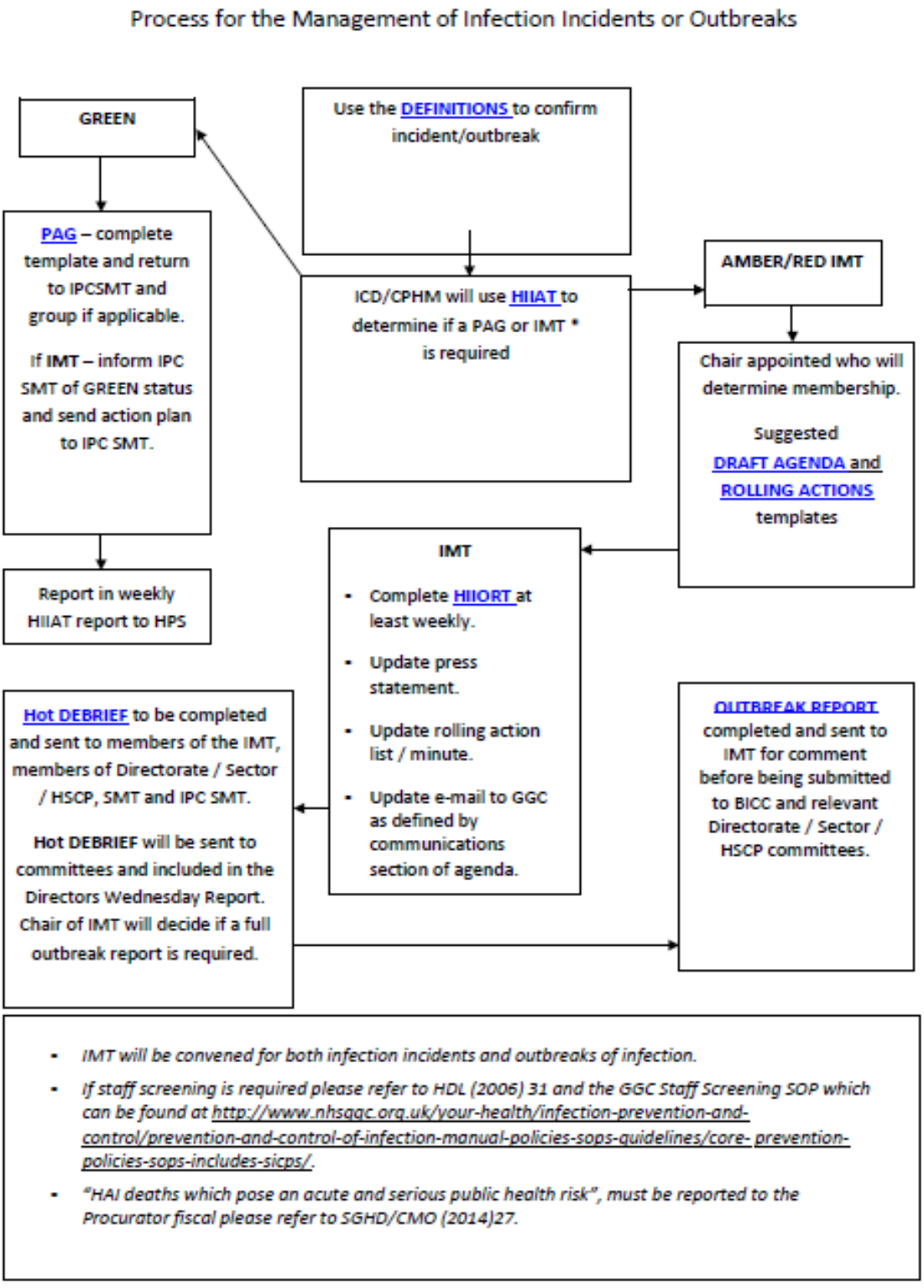
Appendix 5 – TOR AICC

2019	**Acute Infection Control Committee**
Reports to:	NHSGGC BICC Infection Control Manager (ICM) Executive Lead IPC NHSGGC
Representatives sit on:	BICC Acute Clinical Governance Committee Infection Control in the Built Environment Committee
Objectives:	To reduce the risks of healthcare associated infection to patients, relatives and healthcare workers by: • Reporting to the BICC on any matter which has wider infection control implications for the services. • Support the local infection control team in discharging their responsibilities by identifying resources and facilitating changes in work practice.
Terms of Reference:	• Monitor and review the epidemiology of alert organisms and patients with alert conditions and ensure action taken. • Devise and approve the individual site specific aspects of the Annual Infection Control Programme and implementation plan. • Assist in the implementation of policies. • Monitor compliance with infection control HEI standards. • Report to the BICC any identified infection control incidents or outbreaks. • Report to the BICC any unresolved infection control risks or challenges. • Assess local risks in relation to building and engineering services including water and ventilation.
Membership	Pharmacy Facilities and Estates Lead IPCD, Sector IPCD, Lead IPCN ID Consultant ICM ANDIPC Nurse Consultant IPC Chief Nurses &Chief of Medicine Chair - Associate Medical Director (Acute) Leads from Acute Directorates
In addition to membership minutes are circulated to:	BICC and others as appropriate
Meetings	Bimonthly

Appendix 6 - Committee Reporting Structure



Appendix 7 - Algorithm Incidents and Outbreaks



5. Reference List

- Chapter 3 HPS National Infection Prevention and Control Manual http://www.nipcm.hps.scot.nhs.uk/chapter-3-healthcare-infection-incidents-outbreaks-and-data-exceedance/
- Management of Public Health Incidents: Guidance on the Roles and Responsibilities of NHS Led Incident Management Teams. Scottish Health Protection Network. Scottish Guidance No12 (2017 edition). https://www.hps.scot.nhs.uk/guidance/shpn-guidance/
- NHS Greater Glasgow and Clyde Healthcare Quality Strategy.
- The NHS Scotland Health Boards and Special Health Boards - Blueprint for Good Governance (2019)
- Healthcare Associated Infection (HAI) and Antimicrobial Resistance (AMR) Policy Requirements (2019) DL(2015)19 http://www.sehd.scot.nhs.uk/dl/DL(2015)19.pdf
- Funding for Infection Control Managers Posts – HDL(2005)8
- https://www.hps.scot.nhs.uk/web-resources-container/surgical-site-infection-surveillance-protocol-and-resource-pack-edition-71/

6. Glossary

ACDP	**Advisory Committee on Dangerous Pathogens**
AMT / AUC	**Antimicrobial Management Team / Antimicrobial Utilisation Committee**
AICC	**Acute Infection Control Committee**
AO/AC 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).
BICC	**Board Infection Control Committee**
CMO / CNO	**Chief Medical Officer / Chief Nursing Officer**
CVC	**Central Vascular Catheter**
FM	**Facilities Management**
HAI	Originally used to mean hospital acquired infection, the official Scottish Government term is now **Healthcare Associated Infection**. HAI 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 is not always an avoidable infection.
HDL	**Health Department Letter**
HEAT Target	**Health Efficiency and Access to Treatment**. Targets set by the Scottish Government.
HPS	**Health Protection Scotland**
IPCAT	**Infection Prevention Control Audit Tool**
IPCN/ T/ D / M	**Infection Prevention and Control Nurse / Team / Doctor / Manager**
MRSA /	**Meticillin resistant *Staphylococcus aureus.*** A *Staphylococcus aureus* resistant to first line antibiotics; most commonly known as a hospital acquired organism
PHPU	**Public Health Protection Unit**
PVC	**Peripheral Vascular Catheter**
SAB	***Staphylococcus aureus* bacteraemia**
SICPs	**Standard Infection Control Precautions**
SOP	**Standard Operating Procedure**
TBPs	**Transmission Based Precautions**

From: Armstrong, Jennifer
To: Shariff, Imran
Subject: FW: Infection Control input to new SGH
Date: 06 August 2021 14:41:26

From: Walsh, Tom
Sent: 30 July 2014 12:09
To: Armstrong, Jennifer [redacted]; Crocket, Rosslyn [redacted]
Cc: McNamee, Sandra [redacted] Lang, Ann [redacted] Stewart, David [redacted]
Subject: FW: Infection Control input to new SGH

Hi Jennifer, Rosslyn

As agreed yesterday I have contact David Loudon regarding IPCT input to the new SGH project. His response below echoes the current support we described , I have suggested Fiona McCluskey attends a future meeting of BICC to provide a further update.

I will forward David's response to BICC members for information.

Kind regards

Tom

From: Loudon, David
Sent: 30 July 2014 11:42
To: Walsh, Tom
Cc: McNamee, Sandra; McCluskey, Fiona
Subject: RE: Infection Control input to new SGH

Tom,

Thanks for your message. The project team and the IPCT have successfully engaged throughout the project and are actively involved in the completion of the project. We very much appreciate the support provided by IPCT.

Fiona met with Sandra McNamee on the 22nd July 2014 to discuss the Infection Control input to the Project. The ongoing planned zone checks and any snagging issues are being taken forward by the team at the SGH. Sandra has offered Stefan Morton the Hand Hygiene Co-ordinator to assist Fiona with the Dispenser Strategy. To ensure that the Infection Control team are aware of any future or emerging issues Fiona has asked all Project Team members to ensure that she is informed when /if any infection control issues arise. She will then pass the query on to Sandra so that she can field the relevant Infection Control staff member to assist.

I should also note that the IPCT was consulted during the design stages of the project and I am not anticipating any changes to the design at this stage.

I would anticipate that Sandra with support from Fiona will provide regular update reports to the ICC if required.

Regards

David

David W. Loudon, MCIOB, CBIFM, MBA
Project Director - South Glasgow Hospitals Development / Director of Facilities and Capital Planning - Designate
NHS Greater Glasgow & Clyde
New South Glasgow Hospital Site Offices
Top Floor, NHS Offices
Hardgate Road
Glasgow
G51 4SX

[redacted]

From: Walsh, Tom
Sent: 29 July 2014 11:32
To: Loudon, David
Cc: McNamee, Sandra
Subject: Infection Control input to new SGH

Dear David

The commissioning of the new SGH was discussed at the Board Infection Control Committee yesterday. The NHSGGC Infection Prevention and Control Team (IPCT) have been, and are, engaged in a number of groups advising on aspects of the new build through liaison between Fiona McCluskey and our Assistant Director of Nursing, Sandra McNamee.

The Infection Control Committee were keen that the IPCT are appropriately involved in the on-going and future commissioning of the new facilities, and asked that I contact you to offer any support required.

Happy to discuss if that would be helpful.

Kind regards

Tom

Tom Walsh
Board Infection Control Manager
NHSGGC

NHS GREATER GLASGOW & CLYDE BOARD INFECTION CONTROL COMMITTEE

UPDATE ON INFECTION CONTROL INPUT TO THE NEW SOUTH GLASGOW HOSPITAL PROJECT

1ST OCTOBER 2014

Introduction

The purpose of this paper is to give an update to the Board Infection Control Committee on the Infection Control input to the New South Glasgow Hospital Project. BICC is asked to note and approve the contents of the paper.

Background

A general background has been included in this paper to provide a foundation on which to assess the infection control input on the build design. It should be noted that from the beginning and throughout the process, HAI Scribe has been complied with and the relevant documentation completed.

The infection control team has been closely involved throughout the new hospital design process. The design of the hospital follows the Department of Health Primary Guidance contained within Infection Control in the Built Environment (2002), to ensure a robust and consistent approach to HAI prevention and to demonstrate commitment to improving patient safety.

In preparing the Employers' Requirements for the New South Glasgow Hospitals the Project Team, which included a representative from the Board's Infection Control Team and Medical Planners as well as other clinical staff, gave considerable weight to infection control issues. Below are the Employers Requirements given to the contractors.

The Board wish to procure Works which shall enable it to carry out its clinical functions, to combat health acquired infection and to maintain physical assets and clinical and non-clinical functionality with ease; and it shall be the responsibility of the Contractor to deliver a design and construction solution that optimises these requirements.

Prevention and control of infection shall remain a primary consideration of the Contractor in the design and construction of the Works. The Contractor will be required to demonstrate to the satisfaction of the Board's Infection Control Team that the design and construction of the Works fully reflects and incorporates the following key infection control challenges;

From March 2009 – March 2010 a number of Infection Control staff were included in the Project. In 2010 a full time Project Consultant Infection Control Nurse was appointed to take the lead for advising on all aspects of HAI within the new build and to support NHS GGC & Facilities Management to ensure consistent standards and training strategies were in place. The postholder reported to the Senior Nurse Advisor nSGH and the Assistant Director of Nursing Infection Control. The Consultant ICN nurse was present at all 1:200 and 1:50 design meetings for the Adult and Childrens Hospital to ensure consistency of approach. Regular reports were given at the Infection Control Leads Meeting where any contentious issues could be debated.

Current Approach

Post 1:50 design it was agreed that any ongoing planned zone checks and snagging issues would be taken forward by the Infection Control team at the SGH. It was also agreed that any future or emerging issues would be directed to the Assistant Director of Nursing for Infection Control so that she could field the relevant Infection Control staff member to assist. The full range of Infection Control input during and post design period to date are given in Table 1. It has been identified that there will be a significant requirement for Infection Control input during the 12 week commissioning period particularly in relation to the supervision of the placement of hand hygiene dispensers.

TABLE 1

Issue	IC Staff Member	Date
Facilities Infection Control Workplan	Annette Rankin	2009
Project OBC	Annette Rankin	2008 - 2009
NCH Medical day Unit & Theatres Bed Spacing (Partitions vs Curtains)	P Joannidis	February 2010
Location of treatment bathroom in Adult Dermatology ward	P Joannidis	February 2010
Numbers of Isolation Rooms within NCH & Adult Hospital	P Redding /P Joannidis	March 2010
Use of Electric Hand Driers within Lab Project	J Barmanroy	April 2010
Mock Up Rooms	J Barmanroy	June 2010
Bed Spacing- Glass Partitions vs Curtains in Critical Care	SMcNamee	June 2010
Single Room Provision for Critical care	T Walsh	July 2010
Washer Disinfectors vs Macerators	J Barmanroy	December 2010
No Hand wash basins in Psychology & Psychiatry Consulting rooms	J Barmanroy	January 2011
Cleaning & Maintenance of Sky Ceilings	J Barmanroy	January 2011
Domestic Services Teaching Sessions	J Barmanroy	January 2011 – April 2013
Renal Bed Spacing – Renal Dialysis Day Unit	J Barmanroy	July 2011
Construction Site Interface Group – weekly meetings	J Barmanroy	2011 - ongoing
NCH Medical Day Unit Bed Spacing	J Barmanroy	January 2012
Bed Screens – disposable vs washable	J Barmanroy	February 2012
Critical Care Bed Configuration	T Walsh/S McNamee	November 2012
Shower Curtians	S McNamee	April 2013
Generic Ward Operational Policy Group	S McNamee /P Joannidis	October 2013 - ongoing
Infectious Patient Flows/ Immunosuppressed Patient Flows in NCH ED	Dr Hague/ P Joannidis	October 2013
Zone Checks & Snagging	C Mitchell /J Barmanroy	December 2013 - ongoing
Open Mailbox Systems within new Clean Utilities	S McNamee	December 2013
Care Tray Trollies	C Mitchell/ S McNamee	December 2013 -
Mock Up Clean Utility	South ICT	December 2013
Pantry Hand Rinse Sinks	S McNamee	December 2013
Scope Decontamination Unit	J Barmanroy	February 2014
Plastic Bedpan holders	J Barmanroy	February 2014
Pc's in near patient spaces	S McNamee /P Joannidis	July 2014
Sanitary Waste Bins vs Clinical bins in en- suites	J Barmanroy	July 2014
Horne taps Pseudomonas Risk Assessment – non removal of flow straighteners	S McNamee	July 2014
Infection Control Signage-	S Morton	August 2014

Six Step Posters Hand Hygiene Posters		
Use of the Pneumatic Tube System & blood samples within clean utilities	S McNamee	August 2014
Migration Plan - Numbers of Infectious /MRSA patients	Stephanie Walsh	August 2014
Operational Policy for Freezers and microwaves in Oncology wards	P Joannidis	August 2014
NCH Roof Garden – Operational Policy for Schiehallion	P Joannidis	August 2014
Placements of Danicentres for Adult/NCH	C Mitchell/P Joannidis/S Morton	August 2014
Locations for Hand Hygiene Dispensers	S Morton	August 2014 - ongoing
Dirty Utility Signage for sluice hopper sinks	C Mitchell/P Joannidis	August 2014
Specification for waiting room chairs	C Mitchell J Barmanroy	September 2014
Infectious Patients within New Hospital – plans for Ebola patients	C Williams D Bell	September 2014
Ventialtion- Lobbied Room specification – MDRTB patients	C Williams/T Inkster/Pjoannidis/S McNamee	September 2014 - ongoing

From: Armstrong, Jennifer
To: McCamley, Pamela
Cc: Dunn, Patricia
Subject: RE: Lobbied side rooms in NSGH
Date: 14 January 2015 15:59:00
Attachments: image001.jpg

Yes, happy for Craig to attend; the BICC asked for a review so Craig needs to feedback to the committee; if there are really significant problems then he needs to escalate to me as David needs to with me/Robert early doors
j

From: McCamley, Pamela
Sent: 14 January 2015 15:59
To: Armstrong, Jennifer
Cc: Dunn, Patricia
Subject: FW: Lobbied side rooms in NSGH

Jennifer – see note from Craig. I assume you are happy not to attend and just let Craig brief you for the time being?

P

From: Williams, Craig
Sent: 14 January 2015 09:58
To: McCamley, Pamela
Cc: Walsh, Tom
Subject: FW: Lobbied side rooms in NSGH

Dear Pamela

This is about the specification for side rooms for the Brownlee and BMT moving to the NSGH. I am happy to report back to Jennifer if she thinks that is appropriate but if you wouldn't mind letting David Loudon know

Best wishes

Craig

From: Loudon, David
Sent: 13 January 2015 16:47
To: Walsh, Tom; Williams, Craig
Cc: Armstrong, Jennifer; 'David Hall'; Moir, Peter; Hirst, Allyson
Subject: RE: Lobbied side rooms in NSGH

Craig

Can we arrange a meeting next week to discuss please?

I'll ask Peter Moir and David Hall to join me. Would be helpful if Jennifer could also attend.

Regards

David

David W. Loudon, MCIOB, CBIFM, MBA
Project Director - South Glasgow Hospitals Development / Director of Facilities and Capital Planning - Designate
NHS Greater Glasgow & Clyde
New South Glasgow Hospital Site Offices
Top Floor, NHS Offices

Hardgate Road
Glasgow
G51 4SX

[redacted]

From: Walsh, Tom
Sent: 13 January 2015 15:08
To: Loudon, David; Williams, Craig
Cc: McCluskey, Fiona; Armstrong, Jennifer; 'David Hall'; Moir, Peter; Wrath, Frances
Subject: RE: Lobbied side rooms in NSGH

Dear David

Using Tom's computer. Thanks for your reply, my main concern is section 1.10 of the SHPN that you sent to me which states that:

Exclusions

1.10 This Supplement does not describe the specialist facilities required in infectious disease units or on wards where severely immuno-compromised patients are nursed. Guidance for these facilities will follow in a further Supplement to SHPN 04.

If we are to house the ID unit and BMT in premises built to SHPN 04 then the specification has specifically excluded these units.

Craig

From: Loudon, David
Sent: 06 January 2015 09:59
To: Williams, Craig
Cc: Walsh, Tom; McCluskey, Fiona; Armstrong, Jennifer; 'David Hall'; Moir, Peter; Wrath, Frances
Subject: RE: Lobbied side rooms in NSGH

Craig,

Thanks for your message below and please also see the response below from Currie & Brown and Brookfield Multiplex. I hope that this is a satisfactory answer to your query. Please confirm. I have also attached a copy of SHPN 4 Supplement 1.

Regards

David

David W. Loudon, MCIOB, CBIFM, MBA
Project Director - South Glasgow Hospitals Development / Director of Facilities and Capital Planning - Designate
NHS Greater Glasgow & Clyde
New South Glasgow Hospital Site Offices
Top Floor, NHS Offices
Hardgate Road
Glasgow
G51 4SX

[redacted]

David,

Further to your note prior to Christmas, I tasked Brookfield & their design team with reviewing the guidance document 'The Prevention and Control of Tuberculosis in the United Kingdom' with particular reference to ANNEX D ENVIRONMENTAL CONTROLS: VENTILATION.

As you will note below, they have confirmed that, in their professional opinion, they see no reason as to why the isolation rooms cannot be used under the guidance as they have been designed in accordance with SHPN 04 supplement 1, attached.

Regards

David

David Hall
FCIOB/MAPM
Director
Currie & Brown
Email: david.hall[redacted]
Building 3, 2 Parklands Avenue, Maxim Office Park, Eurocentral
Lanarkshire ML1 4WQ
United Kingdom
[redacted]
Website: www.curriebrown.com

From: Colin Grindlay [redacted]
Sent: 05 January 2015 16:24
To: David Hall
Cc: Darren Pike
Subject: FW: Christmas Reading

David,

Please see attached correspondence from Wallace Whittle advising the Isolation rooms throughout the hospital have been designed in line with SHPN 04 Supplement 1.

Wallace Whittle see no reason as to why the isolation rooms cannot be used under the guidance issued previously by NHS.

Regards,

Colin Grindlay
M&E Manager - Construction

From: Williams, Craig
Sent: 22 December 2014 09:29
To: Loudon, David
Cc: Walsh, Tom; McCluskey, Fiona
Subject: Lobbied side rooms in NSGH

Dear David

At the last Board Infection Control Committee I was asked by Jennifer Armstrong to contact you to find out where we are with information from the project team around lobbied side rooms at the NSGH.

Sandar MacNamee and I met with Fiona McCluskey and a ventilation expert from the project team several months ago to discuss two things in particular:

1) Whether the lobbied side rooms meet the current guidance for housing Bone marrow transplant patients

2) Whether the lobbied side rooms meet the DH guidance for housing Multi-Drug resistant TB patients

Fiona has all of the relevant technical information from our meeting. The suitability of these rooms impacts on the move of the BMT and ID units from GGH to NSGH so it would be helpful to gat an answer as soon as possible.

Best wishes

Prof Craig Williams
Lead ICD NHSGGC

From: Armstrong, Jennifer
To: Calderwood, Robert
Subject: Fwd: High risk airborne infecitons
Date: 29 January 2015 21:52:24
Attachments: image001.png

Robert
This is the Ebola debate. An 'isolator ' used to transfer patients. However they will walk the route and review. Awaiting email from David re this and also to confirm the BMT spec
J

Sent from my iPad

Begin forwarded message:

From: "Williams, Craig" [redacted]
Date: 29 January 2015 16:22:32 GMT
To: "Seaton, Andrew" [redacted] "Armstrong, Jennifer" [redacted]
Cc: "McNamee, Sandra" [redacted], "Kennedy, Iain" [redacted] "Harkness, Anne" [redacted] "Loudon, David" [redacted]
Subject: RE: High risk airborne infecitons

Dear Andrew

This is broadly what we have been discussing at BICC for the last while. The positive pressure ante-room prevents ingress and egress of organisms from the room and can be used for source or protective isolation without the need to flip any switches.

The problem has been that in Scottish Health Planning note 04 there is an Exclusion which states " This Supplement does not describe the specialist facilities required in infectious disease units or on wards where severely immuno-compromised patients are nursed. Guidance for these facilities will follow in a further Supplement to SHPN 04.

However the planning team and HFS have been unable to locate further definitive guidance. This being the case I asked David Louden and his team to specifically cross reference our lobbied rooms with the DH guidance on rooms for MDRTB. At a meeting last week he confirmed that their view is that the lobbied isolation rooms at the NSGH provide equivalent protection, he will confirm this by e mail. As such I have no concerns about the suitability of the rooms for MDRTB etc.

In terms of the Ebola, following your comments at BICC Sandra about the size of the ante-rooms, Iain Kennedy, Sandra and I met with Emma Thompson, who was nominated by the ID physicians to represent them. I explained that we were content that the lobbied side rooms at NSGH are sufficient under the ACDP guidance to manage an Ebola patient prior to transfer to a designated secure unit, but, that they are not sufficient for anything other than short term management, in

particular my understanding was that GGC is not planning to act as a referral unit or accept transfers of these patients. If a severely unwell patient requires to be manged in Glasgow the view was that this wouyld constitute a Major Incident and be managed accordingly.

She expressed concern about the transfer of patinets through the NSGH to the designated room and suggested that an isolator may be required to support the tarnsfer. We agreed that she or other ID physicians would walk the route and take upm their concerns through the directorate.

I hope this gives you sufficient detail to address your concrens but if there is anything else please let me know.

Best wishes

Craig

Prof Craig Williams
Consultant Microbiologist Royal Hospital for Sick Children, Glasgow
Lead Infection Control Doctor, NHSGGC
Professor of HAI, UWS

[redacted]
w. www.uws.ac.uk/hai

From: Seaton, Andrew
Sent: 27 January 2015 10:55
To: Williams, Craig; Armstrong, Jennifer
Cc: Dunn, Patricia
Subject: High risk airborne infecitons

Dear Jennifer and Craig,
This is a follow on from BICC. From the discussion yesterday around the 2 dedicated ID beds within HDU I had understood them to be negative pressure. One of my colleagues, Alisdair MacConnachie, has told me that Craig had informed him that the ante room is positive pressure but the patient room is not under negative pressure. Please can this be confirmed? We do need capacity to properly isolate patients with suspected MERS, avian FLU and MDRTB etc. It is essential this is clarified that these rooms are fit for purpose. As discussed yesterday assuming good size of ante room and appropriate channels/ contingency for patient entry/exit etc the VHF facility in these rooms should be appropriate for short term patient management before transfer to Royal Free.
Kind regards,
andrew

Dr R A Seaton
Consultant in Infectious Diseases and General Medicine
Lead doctor NHS Greater Glasgow and Clyde Antimicrobial Management Team
Gartnavel General Hospital
1053 Great Western Road
Glasgow
G120YN
[redacted]
[redacted]
Out of office email for non patient-related matters: [redacted]

From: Armstrong, Jennifer
To: Loudon, David
Subject: RE: High risk airborne infecitons
Date: 09 February 2015 09:41:00
Attachments: image001.png

david
are you getting the additional information for the BMT unit or is that someone else?
j

From: Loudon, David
Sent: 06 February 2015 12:21
To: Williams, Craig; Redfern, Jamie
Cc: Mitchell, Clare; Walsh, Tom; Armstrong, Jennifer
Subject: RE: High risk airborne infecitons

Craig ,

Please see my comments below in red.

Regards

David

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
New South Glasgow Hospital Site Offices
Top Floor, NHS Offices
Hardgate Road
Glasgow
G51 4SX

[redacted]

From: Williams, Craig
Sent: 05 February 2015 15:21
To: Redfern, Jamie
Cc: Loudon, David; Mitchell, Clare; Walsh, Tom
Subject: RE: High risk airborne infecitons

Dear Jamie

The problem has been a paragraph in Scottish Health Planning note 04 which is an exclusion stating " This Supplement does not describe the specialist facilities required in infectious disease units or on wards where severely immuno-compromised patients are nursed. Guidance for these facilities will follow in a further Supplement to SHPN 04.

However the planning team and HFS have been unable to locate further definitive guidance. This being the case I asked David Loudon and his team to specifically cross reference the positive pressure lobbied rooms for use as Infectious disease rooms with the DH guidance on rooms for MDRTB. At a meeting last week he confirmed that their view is that the lobbied isolation rooms at the NSGH provide equivalent protection, he will confirm this by e mail. As such I have no concerns about the suitability of the rooms for MDRTB so the ID rooms present no problem. We can confirm that the designers, Wallace Whittle, have reviewed the documentation and have advised that there is o reason to prevent use of the lobbied rooms for MDRTB patients.

In terms of BMT the positive pressure ante rooms prevent ingress and egress of organisms from the room and can be used for source or protective isolation without the need to flip any switches. They are of a similar specification to those that we have been using on Schiehallion since they were rebuilt a number of years ago and I am unaware of any problems occuring. David Louden and his team are looking for other new builds across the UK to see what specifications were used. I do not think there is any problem with us continuing to use rooms of this specification in Paediatrics, we may need to note in the risk register that we are aware of the SHBN but I will await further guidance on this from David Loudon and his team. It is correct that there is no clear guidance for BMT facilities are available in the UK. Therefore, the project team will require relevant information to be provided by others to confirm the required specification. On receipt of the specification, the project team will assess the stated requirements against the installation at the SGUH. It may be that there are other BMT installations in the UK that could be defined as the benchmark.

I hope this gives you sufficient detail to address your concerns but if there is anything else please let me know.

Best wishes

Craig

Prof Craig Williams
Consultant Microbiologist Royal Hospital for Sick Children, Glasgow
Lead Infection Control Doctor, NHSGGC
Professor of HAI, UWS

[redacted]
w. www.uws.ac.uk/hai

From: Redfern, Jamie
Sent: 03 February 2015 11:02
To: Williams, Craig

Cc: Hill, Kevin; Robertson, Lynne; Dawes, Heather; Hague, Rosie; Doherty, Conor; Beattie, Jim; Macleod, Mairi; Love, Elaine
Subject: FW: High risk airborne infecitons

Hi Craig

Can you confirm so I can close this matter off hopefully

jamie

From: Macleod, Mairi
Sent: 03 February 2015 10:57
To: Redfern, Jamie
Subject: RE: High risk airborne infecitons

Jamie

This is one for Craig – he met with Brookfield and I understood that he building was suitable for RHSC patients – it is the Ebola question that caused the debate

But Craig should be able to advise

Mairi

From: Redfern, Jamie
Sent: 02 February 2015 13:31
To: Williams, Craig; Macleod, Mairi
Cc: Hague, Rosie; Hill, Kevin; Hughes, Janis
Subject: FW: High risk airborne infecitons

from reading the attached set of emails I have to confirm suitability for paediatric accommodation re above
can either of you guys confirm as per what has been agreed for adult services at the nsgh

---

From: Hill, Kevin
Sent: 02 February 2015 10:53
To: Redfern, Jamie
Cc: Beattie, Jim; Love, Elaine
Subject: Fw: High risk airborne infecitons

For review and action please.
Kind regards

Sent from my BlackBerry 10 smartphone on the EE network.

From: Harkness, Anne [redacted]
Sent: Monday, 2 February 2015 10:13
To: Hill, Kevin
Subject: Fw: High risk airborne infecitons

Can you address this please, ta

A
****
Sent from a NHSGG&C BlackBerry device
****

From: Hague, Rosie
Sent: Monday, February 02, 2015 08:47 AM GMT Standard Time
To: Seaton, Andrew; Williams, Craig; Armstrong, Jennifer
Cc: McNamee, Sandra; Kennedy, Iain; Harkness, Anne; Loudon, David
Subject: RE: High risk airborne infecitons

It would also be good to have confirmation of the position for severely immuno-compromised patients.

Rosie

From: Seaton, Andrew
Sent: 01 February 2015 16:03
To: Williams, Craig; Armstrong, Jennifer
Cc: McNamee, Sandra; Kennedy, Iain; Harkness, Anne; Loudon, David; Hague, Rosie
Subject: RE: High risk airborne infecitons

Dear Craig,
Thanks. If they are signed off as safe and appropriate then we're all content. Just to check suspected MERS, SARs, Avian FLu etc. Same specifications as MDRTB? Presume all ok for paediatric facility as well?
Kind regards,
andrew

Dr R A Seaton
Consultant in Infectious Diseases and General Medicine
Lead doctor NHS Greater Glasgow and Clyde Antimicrobial Management Team
Gartnavel General Hospital
1053 Great Western Road
Glasgow
G120YN
[redacted]
[redacted]
Out of office email for non patient-related matters: r[redacted]

From: Williams, Craig
Sent: 29 January 2015 16:23
To: Seaton, Andrew; Armstrong, Jennifer
Cc: McNamee, Sandra; Kennedy, Iain; Harkness, Anne; Loudon, David

Subject: RE: High risk airborne infecitons

Dear Andrew

This is broadly what we have been discussing at BICC for the last while. The positive pressure ante-room prevents ingress and egress of organisms from the room and can be used for source or protective isolation without the need to flip any switches.

The problem has been that in Scottish Health Planning note 04 there is an Exclusion which states " This Supplement does not describe the specialist facilities required in infectious disease units or on wards where severely immuno-compromised patients are nursed. Guidance for these facilities will follow in a further Supplement to SHPN 04.

However the planning team and HFS have been unable to locate further definitive guidance. This being the case I asked David Louden and his team to specifically cross reference our lobbied rooms with the DH guidance on rooms for MDRTB. At a meeting last week he confirmed that their view is that the lobbied isolation rooms at the NSGH provide equivalent protection, he will confirm this by e mail. As such I have no concerns about the suitability of the rooms for MDRTB etc.

In terms of the Ebola, following your comments at BICC Sandra about the size of the ante-rooms, Iain Kennedy, Sandra and I met with Emma Thompson, who was nominated by the ID physicians to represent them. I explained that we were content that the lobbied side rooms at NSGH are sufficient under the ACDP guidance to manage an Ebola patient prior to transfer to a designated secure unit, but, that they are not sufficient for anything other than short term management, in particular my understanding was that GGC is not planning to act as a referral unit or accept transfers of these patients. If a severely unwell patient requires to be manged in Glasgow the view was that this wouyld constitute a Major Incident and be managed accordingly.

She expressed concern about the transfer of patinets through the NSGH to the designated room and suggested that an isolator may be required to support the tarnsfer. We agreed that she or other ID physicians would walk the route and take upm their concerns through the directorate.

I hope this gives you sufficient detail to address your concrens but if there is anything else please let me know.

Best wishes

Craig

Prof Craig Williams
Consultant Microbiologist Royal Hospital for Sick Children, Glasgow
Lead Infection Control Doctor, NHSGGC
Professor of HAI, UWS

[redacted]
w. www.uws.ac.uk/hai

From: Seaton, Andrew
Sent: 27 January 2015 10:55
To: Williams, Craig; Armstrong, Jennifer
Cc: Dunn, Patricia
Subject: High risk airborne infecitons

Dear Jennifer and Craig,
This is a follow on from BICC. From the discussion yesterday around the 2 dedicated ID beds within HDU I had understood them to be negative pressure. One of my colleagues, Alisdair MacConnachie, has told me that Craig had informed him that the ante room is positive pressure but the patient room is not under negative pressure. Please can this be confirmed? We do need capacity to properly isolate patients with suspected MERS, avian FLU and MDRTB etc. It is essential this is clarified that these rooms are fit for purpose. As discussed yesterday assuming good size of ante room and appropriate channels/ contingency for patient entry/exit etc the VHF facility in these rooms should be appropriate for short term patient management before transfer to Royal Free.
Kind regards,
andrew

Dr R A Seaton
Consultant in Infectious Diseases and General Medicine
Lead doctor NHS Greater Glasgow and Clyde Antimicrobial Management Team
Gartnavel General Hospital
1053 Great Western Road
Glasgow
G120YN
[redacted]
[redacted]
Out of office email for non patient-related matters: [redacted]

From:	Armstrong, Jennifer
To:	Armstrong, Jennifer
Subject:	FW: Board Seminar
Date:	09 July 2024 14:10:14
Attachments:	Board S water brief.docx Boardsemwaterv2.pptx

From: Armstrong, Jennifer
Sent: 02 July 2018 22:49
To: Grant, Jane [Chief Exec] [redacted]
Subject: Fw: Board Seminar

Jane

This is the presentation for tomorrow with short note we.can perhaps circulate afterwards.

I discussed with Tom and asked him to keep it brief.

I have also discussed with Mary Anne who is content with approach. Hopefully it is ok. J.

Sent from my BlackBerry 10 smartphone on the EE network.

From: Walsh, Tom [redacted]
Sent: Monday, July 2, 2018 5:32 PM
To: Armstrong, Jennifer
Cc: Kane, Mary Anne; O'Brien, Bernadette
Subject: Board Seminar

Hi Jennifer

Briefing paper and updated presentation.

Have contacted Teresa and she will review the reports tomorrow.

Kr

Tom

Review of commissioning and maintenance of Water Systems QUEH and RHC

Briefing Note for Board Seminar Tuesday 3rd July 2018.

Background

Recent laboratory tests were undertaken as part of the investigation into the previously reported increased rates of infection within ward 2a at RHC. The test results indicated higher than normal levels of bacterial counts in the water supply which have been managed through an Incident Management Team (IMT), lead by the NHSGGC Lead Infection Control Doctor. Further testing in other clinical areas yielded similar results.

Health Protection Scotland (HPS) and Health Facilities Scotland (HFS) were involved in the IMT process and a broader review of the water systems, including commissioning, was instigated at the request of Scottish Government. The Board has to date been responding to a number of questions on the water system and a formal external review has been commissioned from HPS.

Recently reports commissioned from external contractors in 2015 and 2017 relating to the commissioning and maintenance of the water systems have been identified which detail a number of recommendations and actions which the Board needs to retrospectively review in terms of both internal and external assurance on the implementation. The board recognises the paramount importance of patient safety and the need to ensure that the water systems are compliant with all relevant safety standards. We have therefore instigated an internal review of these reports and associated documentation to dove-tail with the external review and ensure all relevant current and retrospective information is available for review.

Actions

To provide optimum support to the internal and external review processes a structured approach to communication, review and management of documentation, and local coordination of resources is being adopted. This will be coordinated by the Board Infection Control Manager, supported by a Project Manager from the NMAHP Service, a Senior Facilities Lead and admin support.

The Project team will act as the single point of contact for both internal and external colleagues and will focus on three primary and interlinked work streams:

1. **Review and management of all relevant documentation and written communications to support the SG commissioned external review and the GGC internal review.**
2. **Ensure that the QUEH water reports have been reviewed and all actions are either completed or in the process of being enacted with clear evidence**
3. **Liaison with and support to the internal review process when commissioned.**

The Executive Team, NHS Board and its committees will be regulatory apprised of progress, findings and further actions.

Review of the commissioning and maintenance of water systems and QUEH and RHC

Dr Jennifer Armstrong

Board Medical Director

NHS Greater Glasgow & Clyde

Background

- Water Incident Ward 2a RHC, managed by Incident Management Team (IMT)
- Testing identified higher than normal bacterial counts in the water system.
- Health Protection Scotland commissioned by Scottish Government to investigate design and commissioning of water systems at RHC and QEUH.
- External Contractor reports from 2015 and 2017 identified recently, with considerations around implementation.

Immediate Priorities and actions

- **Ensure ongoing safety of the water supply through the agreed IMT and Water Group Actions.**
- **GGC Project Team established and progressing three primary interlinked work streams:**

1. Review and management of all relevant documentation to fully support SG commissioned external review.
2. Ensure 2015 and 2017 water reports are fully reviewed and all actions complete or progressing with clear supporting evidence.
3. Liaison with and support to the internal review process when commissioned.

From: Armstrong, Jennifer
To: Armstrong, Jennifer
Subject: FW: Board Seminar
Date: 02 May 2022 12:21:36

From: Grant, Jane [Chief Exec]
Sent: 02 July 2018 23:37
To: Armstrong, Jennifer [redacted]
Subject: Re: Board Seminar
Looks fine - thanks for doing this.
I have arranged to meet Mary Anne at 8am to discuss further and have also spoken to Jonathan and asked him to support the process and he is happy to do so.
Thanks.
Jane

Sent from my iPad

On 2 Jul 2018, at 22:49, Armstrong, Jennifer [redacted] wrote:

> Jane
> This is the presentation for tomorrow with short note we.can perhaps circulate afterwards. I discussed with Tom and asked him to keep it brief.
> I have also discussed with Mary Anne who is content with approach. Hopefully it is ok. J.
> Sent from my BlackBerry 10 smartphone on the EE network.
>
> **From:** Walsh, Tom [redacted]
> **Sent:** Monday, July 2, 2018 5:32 PM
> **To:** Armstrong, Jennifer
> **Cc:** Kane, Mary Anne; O'Brien, Bernadette
> **Subject:** Board Seminar
> Hi Jennifer
> Briefing paper and updated presentation.
> Have contacted Teresa and she will review the reports tomorrow.
> Kr
> Tom
> <Board S water brief.docx>
> <Boardsemwaterv2.pptx>

From: Armstrong, Jennifer
To: Armstrong, Jennifer
Subject: FW: [ExternaltoGGC]Fw: 2A
Date: 09 July 2024 17:37:53

From: Armstrong, Jennifer
Sent: Monday, March 12, 2018 7:31 AM
To: Hill, Kevin [redacted] Mathers, Alan [redacted]
Kane, Mary Anne [redacted]
Cc: Best, Jonathan [redacted] O'Brien, Bernadette
[redacted]
Subject: Fw: [ExternaltoGGC]Fw: 2A

I will speak to Theresa but would wish am urgent telephone call this am to discuss. I have cancelled some early meetings take time jn

Sent from my BlackBerry 10 smartphone on the EE network.

From: Armstrong, Jennifer [redacted]
Sent: Monday, March 12, 2018 7:23 AM
To: Inkster, Teresa (NHSmail)
Subject: Re: [ExternaltoGGC]Fw: 2A

Sorry teresa. Just picked this up. Will try to call you this am. J

Sent from my BlackBerry 10 smartphone on the EE network.

From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)
Sent: Sunday, March 11, 2018 8:21 PM
To: Armstrong, Jennifer
Subject: [ExternaltoGGC]Fw: 2A

Jennifer -see email below. Are you free for a call to discuss the situation in 2a tomorrow morning?

Kind regards

Teresa

Sent from my BlackBerry 10 smartphone on the EE network.

From: Gibson, Brenda [redacted]
Sent: Sunday, 11 March 2018 6:51 PM
To: Redfern James (NHS GREATER GLASGOW & CLYDE); INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); alan.mathers[redacted]
Subject:

Good Evening,

If I understand correctly , despite what we understood was a sanitisation of the water supply on Ward 2A bacteria is still present . These bacteria are potentially lethal to an immune compromised child. I would suggest that we have an emergency Control of Infection meeting tomorrow and that Jennifer Armstrong be present in person or on a TC. I hope that I have understood this correctly , but if the water supply remains a problem , I would suggest that the ward be closed until this is corrected.

I hope that I understood you Teresa correctly on Friday night , but I was in the middle of major confrontation with PICU who insisted on sending back a child who had been intubated on the ward and taken to PICU for what was thought initially to be a prolonged anaphylaxis to ATG , but then thought by the neurologist to be pseudo seizures. We are neither neurologists nor psychiatrists , so I am not sure why such a patient was sent back to us, but we were given no option and I was trying to stop this happening.

You will also know that we had a problem with a leaking pipe and had no water in the transplant section on Saturday morning. I was washing my hands with a nurse pouring a small bottle of

water over them. We have now run out of large bottles of water. Could I suggest that this borders on the ridiculous. The children can't have a shower or a bath and over the weekend have had their face and hands washed in cold water .I don't see the sense of a parent showering and then cuddling their child. We have not been able to bath a baby. The parents are now all talking about what is going on and that is to be expected.
We have a transplant due for admission on Wednesday and I need to be convinced that this should happen.
Brenda

From: Armstrong, Jennifer
To: O"Brien, Bernadette
Subject: FW: HPS SBAR taps
Date: 12 March 2018 10:47:00
Attachments: SBAR_taps_amends version 2 (1).docx
Importance: High

Can you print this for 11am meeting

From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]
Sent: 12 March 2018 08:41
To: Armstrong, Jennifer; Mathers, Alan; Kane, Mary Anne; Redfern, Jamie
Subject: [ExternaltoGGC]HPS SBAR taps
Importance: High

Hi all

I attach an SBAR from HPS in 2014 in relation to the Horne taps for discussion at the TC this morning

My understanding is that the taps had already been installed in both hospitals and the decision was to keep them in situ

However, we have now had a significant incident relating to these taps in 2A and I think we need to revisit the recommendations and look at the feasiblity of replacing taps in high risk areas with new complaint taps

KR
Teresa

Dr Teresa Inkster
Lead Infection Control Doctor NHSGGC
Training Programme Director Medical Microbiology
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

Situation
NHS Greater Glasgow and Clyde (GG&C) seeking advice from Health Protection Scotland (HPS) on the removal of flow straighteners from the taps procured for the new Southern General Hospital (SGH).

Background
The Horne Optitherm tap which incorporates flow straighteners, was procured for all clinical environments within the new SGH prior to the publication of UK and Scotland-wide pseudomonas guidance in June 2013 (ref). The HPS, Guidance for Neonatal Units (NNUs) and adult and paediatric ICUs, June 2013, states; *"Bio film can develop on flow straighteners and it is recommended that these are removed from taps."* This recommendation is also made within SHTM 04-01: part A Design, Installation and Testing, section 9.51, note 12; suggesting that it should be applied universally in all clinical areas across the hospital.

Assessment
It is recognised that any alterations made to the taps may make the warranty of the devices invalid and therefore this assessment focuses on the:

- Function of the flow straighteners as advised by Horne; and
- Current guidance on minimising the risk of *Pseudomonas aeruginosa* infection from water.

In assessing the HAI risks associated with flow straighteners HPS also sought the advice of Dr Jimmy Walker, Water System Microbiology and Decontamination Expert, Public Health England. In addition advice was sought from a Consultant Microbiologist from NHS Lothian and the Estates Department at NHS Forth Valley.

Our response to Horne's statements on the function of flow straighteners is set out below:

- Provide laminar flow: Agreed. Flow straighteners are there to provide laminar flow which reduces the dispersal of droplets from running water.
- Regulate the flow rate: Agree in part. Some sites have issues with too much flow/pressure resulting in water droplets being disseminated from the wash hand station which can be an issue near medicine preparation areas or where medical equipment is being decontaminated. The fitting of flow control devices would have to be balanced with a risk of HAI issues (where too much flow is present) resulting in water droplets contaminating the surrounding area.
- Retain water inside the tap: There is no evidence for this claim. Yes, bacteria will be present in the air as aerosols and in a hospital ward environment there will be dispersal of both aerosols and larger droplets which will tend to drop out and land on surfaces. As these larger droplets land on surface, the bacteria contained will tend to proliferate where the environment is moist and wet so it is not entirely convincing that water retention within a tap would prevent contamination.

In considering water safety for healthcare premises, in particular minimising the risk of *Pseudomonas aeruginosa* infection from water, the removal of flow straighteners from taps in high risk units is one of a number of critical controls to be considered in the hospital water delivery system. The positioning of hand hygiene products around hand wash stations, water pressure, and flow rate are highlighted together with other considerations on pages 8 and 9 of the 2013 HPS guidance. (ref).

In relation to tap installation in the SGH there are three options:

1. Instruct the contractor to install the procured taps in all clinical areas across the SGH. This would subsequently require NHS GG&C to commence a water sampling regimen to monitor for *Pseudomonas* in high risk units.

2. Instruct the contractor to install the:
   - Procured taps in all clinical areas across the hospital excluding high risk units; and
   - Procured taps without flow straighteners in high risk units.

3. Instruct the contractor to install:
   - The procured taps in all clinical areas across the hospital excluding high risk units; and
   - New compliant taps (without flow straighteners) in high risk units.

Recommendation

The HPS Guidance for NNUs, adult and paediatric ICUs in Scotland, June 2013, is designed to minimise the risk of infection with *Pseudomonas aeruginosa* – the risk however can never be eliminated.

Based on the above assessment and the extant national guidance on water safety and potential infection risks to patients, particularly in high risk units (ref all) , HPS recommend NHS GG&C proceed with option 2 or 3.

From: Armstrong, Jennifer
To: Armstrong, Jennifer
Subject: FW: Conference Call 4.30pm today (12th March 2018)
Date: 09 July 2024 17:29:09

From: Calderwood, Joanne
Sent: Monday, March 12, 2018 1:40 PM
To: Calderwood, Joanne [redacted] Rodgers, Jennifer [redacted] Stuart, John [redacted] Hill, Kevin [redacted]; Farrell, Marie [redacted]; Jenkins, Gary [redacted]; Dunipace, Lorna [redacted]; Ross, Lynn [redacted] Kane, Mary Anne [redacted]
Cc: Grant, Jane [Chief Exec] [redacted]; Armstrong, Jennifer [redacted]
Subject: Conference Call 4.30pm today (12th March 2018)

There will be a further conference call today at 4.30pm. Jonathan will Chair
DIAL IN NUMBER (FOR ALL) [redacted]
PARTICIPANT PASSCODE [redacted] followed by hash key (#).
Thanks
Joanne

From: Devine, Sandra
To: Armstrong, Jennifer
Cc: Walsh, Tom
Subject: taps
Date: 13 March 2018 10:26:50

Hi
I know you will probably not have time to read everything so in summary:

Meeting with GGC, HFS and HPS re taps on the 5/6/2014

Key paragraph

> 1.2 **The South Glasgow Hospital**: it was unanimously agreed that as the taps installed within the new build development had complied with guidance current at the time of its specification and briefing and that the hospital was in the process of being commissioned, it should be regarded as being in the "retrospective" category, not "new build". There was no need to apply additional flow control facilities or remove flow straighteners and any residual perceived or potential risks would form part of the routine management process.

A risk assessment detailing additional controls was approved by the Board Water Safety Group in August/September of 2014.

Kind regards
Sandra

Sandra Devine
Associate Nurse Director
Infection Prevention & Control
[redacted]

From:	Armstrong, Jennifer
To:	Walsh, Tom; Devine, Sandra
Subject:	FW: RHC Water Briefing
Date:	15 March 2018 20:23:00
Attachments:	WATER ISSUES - Royal Hospital for Children 2018.docx

FYI

From: Kane, Mary Anne
Sent: 15 March 2018 08:22
To: Grant, Jane [Chief Exec]; Armstrong, Jennifer
Cc: Redfern, Jamie; Inkster, Teresa
Subject: FW: RHC Water Briefing

Sorry for delay please see attached briefing note on current position on ward 2A

Regards

Mary Anne

Royal Hospital for Children – Water Issues – Ward 2A

Background on Cupriavadis

In February 2016 a patient tested positive for Cupriavadis in a blood culture. The patient had a TPN administered which was reconstituted in the Aseptic Pharmacy. Samples from water outlets in the Aseptic Pharmacy also isolated Cupriavadis and typing of both isolates were found to be the same. The Aseptic Pharmacy was dosed with Sanasil general biocide which resulted in the water samples becoming negative.

In September 2017 a 2nd patient was identified who had received chemotherapy from the Aseptic Pharmacy in ward 2A. The Aseptic Pharmacy water outlets were tested for Cupriavadis and dosed with Sanasil (Hydrogen Peroxide)which resulted in the water samples becoming negative.

Ward 2A at RHC is a 26 bedded paediatric ward which provides paediatric Haematology,Oncology and Immunology specialities. This includes 8 dedicated transplant cubicles and the Teenage Cancer Unit

Current Position

In January 2018 a third case was identified who had IV chemotherapy reconstituted in the Aseptic Pharmacy. A Problem Assessment Group (PAG) was convened on 5th February 2018. Initial investigations focused on the Aseptic Pharmacy. Practice in the Aseptic Pharmacy has been found to be satisfactory and water testing negative.

Focus then shifted to 2A where the second and third case has been and inpatient around the time of their Cupriavidis Bacteraemias. Water samples were taken from ward 2A. Cupriavadis was isolated from ward 2A treatment room and prep room (clean utility) on ward 2A on 19th February 2018.

On 19th February the contaminated sinks in ward 2A were dosed with Sanasil at a 1000ppm dilution rate and resampled. Sanasil was selected as this had proved to be efficient within the Aseptic Pharmacy for this organism

The treatment with Sanasil in these areas was unsuccessful and water sampling extended in the ward to all areas where the patients affected had been located and some random outlets were also sampled. On 1st March the results were reported as positive. Immediate infection control precautions were put in place including the removal of showers for use by patients. Alcohol gel after hand hygiene for staff and visitors, bottle water for personal hygiene and teeth brushing was provided for patients. The incident was reported to HPS as a red HIIAT. Prior to the IMM being convened due to adverse weather conditions.

On 2nd March 2018 an Incident Management Meeting was convened to discuss the outcome of the samples. Multiple outlets from showers and taps within 2A were identified as positive for Cupriavadis. One outlet also tested positive for Pseudomonas. One patient in 2A had been treated for a Pseudomonas Bacteraemia from a sample on [redacted] February 2018. The bulk filtration tanks for the site which supplied ward 2A were tested and found to be negative. Again on 2nd March a further dose of Sanasil was administered and further samples taken. The dilution rate of the Sanasil was 1000ppm.

On 6th March 2018 an Incident Management Meeting was convened. Cupriavadis remained in water samples and was also isolated in multiple tap components. Sphingimonas had now also been detected from tap components. There have been no patients isolates of Sphingimonas. The ward was then dosed with Sanasil at a dilution rate of 1000PPM and resampled.

On 9th March 2018 at 8pm sample results from the labs indicated that Cupriavadis was still present in water samples despite the measures described above. Stenotrophomonas had now also been isolated from one showerhead. On patient on the ward is colonised with this organism.

Infection prevention and control measures previously described were reinstated on 9th March in the evening.

An Incident Management Team was convened on 12th March 2018 to discuss the results. On the same day all showerheads were replaced in the ward and 8 taps disinfected and replaced. Portable sinks were supplied with hand washing by patients and to facilitate access to warm water.

On 12th March 2018 ward 2A was dosed with Sanasil at a dilution rate of 3000ppm. Samples have been taken post dosing and the results will be available on Friday 16th March 2018. The ppm dilution increase was agreed by the Interim Director of PPFM in an attempt to eradicate any contamination and on the advice of the water management specialists who indicated that it was unusual for two doses of Sanasil not to have worked. The dilution rate of 3000ppm is the strongest concentration of the product which can be used.

What remains unclear is whether Sanasil will effectively combat these micro organisms due to the lack of available data or experience on these micro organisms within the water industry. However it had been effective in the Aseptic Unit.

An alternative plan for decontamination has been considered and is being worked on which will use Sodium Chloride if the results are positive. The use of Sodium Chloride will be reviewed on 14th March by the PPFM and clinical teams to identify if it is suitable for use in the area as it gives off a very strong chlorine type smell which the patients may not be able to tolerate. If this product is accepted by the clinical team as being tolerable for use in the ward while occupied the system will be dosed with this product before the Sanosil dose results are returned. This will support the ward remaining open while the samples are being analysed at the labs. If the results are negative for Sanasil dosing (it has been successful) then the sodium chloride will have been a precautionary measure to further back up that the system is clear.

If these measures are unsuccessful the final decontaminate that could be used is Chloride Dioxide which would be administered in a concentrated does to eradicate any contamination. However in order to use the Chloride Dioxide the ward will require to be emptied due to the fumes/smell.

The requirement for further decontamination will not be known until 16th March 2018.

<u>Impact on Service</u>

The ward remains open for elective and emergency admissions. Patients, parents and staff are all being kept informed of the situation using normal briefing formats. Corporate Comms are also involved in this process.

The clinical impact for patients currently is one bone marrow transplant patient has been delayed and minor disruption to the chemotherapy programme. No patients are giving cause for concern at this time.

There is the potential for significant impact on services if decontamination measures are unsuccessful. A clinical plan for patient treatment in this event is being worked on currently.

From: Armstrong, Jennifer
To: Armstrong, Jennifer
Subject: FW: ward 2a
Date: 02 July 2024 09:40:19
Attachments: Ward 2A Update for BICC May 2018 JRo.docx

From: Rodgers, Jennifer
Sent: Thursday, May 24, 2018 10:40 AM
To: Armstrong, Jennifer [redacted] O'Brien, Bernadette [redacted]
Subject: RE: ward 2a

Dear Jennifer

Attached as requested. Some detail which is not in this doc

- Visitors are restricted to two per child
- Rules list which will be signed by parents is under construction to be given on induction
- This will work alongside the IC leaflet currently going to AICC
- Order Laundry bins for all bathrooms
- Tally of all other people entering ward and scoping those visits that can be culled
- Increase frequency of room checks and remove any items sitting on inappropriate surfaces e.g. hand washing sinks
- Current theme of the month work around 'clutter'
- Await domestic feedback as per TI yesterday

Any other queries Jennifer and I will get the information prior to the call?

Jen

From: Armstrong, Jennifer
Sent: 24 May 2018 09:49
To: O'Brien, Bernadette
Cc: Rodgers, Jennifer
Subject: ward 2a

B

Can you ask jen to send out the document which was tabled at yesterday's meeting please for phone call at midday

j

Ward 2A Update for BICC: May 2018

The Purpose of this paper is to update the BICC on actions underway in ward 2A in regards to:

1. Service
2. Infection Control
3. Domestic
4. Estates

1. Service

a) Quality Improvement Group to Reduce Central Line Associated Bacteraemia Infections

Background

The CVL QI Project Steering Group was formed in May 2017 following an upsurge in central line infections in the unit. The Group was formed to draw together frontline members of staff working on 2A, with other key stakeholders, including surgeons, anaesthetists, intensivists, radiologists, oncologists and local experts in QI methodology, to work collaboratively and share expertise. The primary aim of the project is to reduce the central line associated blood stream infection (CLABSI) rate in ward 2A and 2B to 1 per 1000 *total* line days by Dec 31st 2018. This is benchmarked against Cincinnati Childrens Hospital in Ohio.

The group collects data on CLABSI prospectively on a week by week basis. CLABSI is defined according to the CDC classification (Appendix 1) as:

'A CLABSI is a primary BSI in a patient that had a central line within the 48-hour period before the development of the BSI and is not bloodstream related to an infection at another site. However, since some BSIs are secondary to other sources other than the central line (e.g., pancreatitis, mucositis) that may not be easily recognized, the CLABSI surveillance definition may overestimate the true incidence of CRBSI'

It is important to note this data only includes lines that are inserted in RHC site. The reason for this is that we were keen to evaluate the whole package of care from insertion through to access and maintenance. Lines inserted elsewhere were excluded as we had no ownership of the insertion or initial access episodes. It is our intention to collect this data separately.

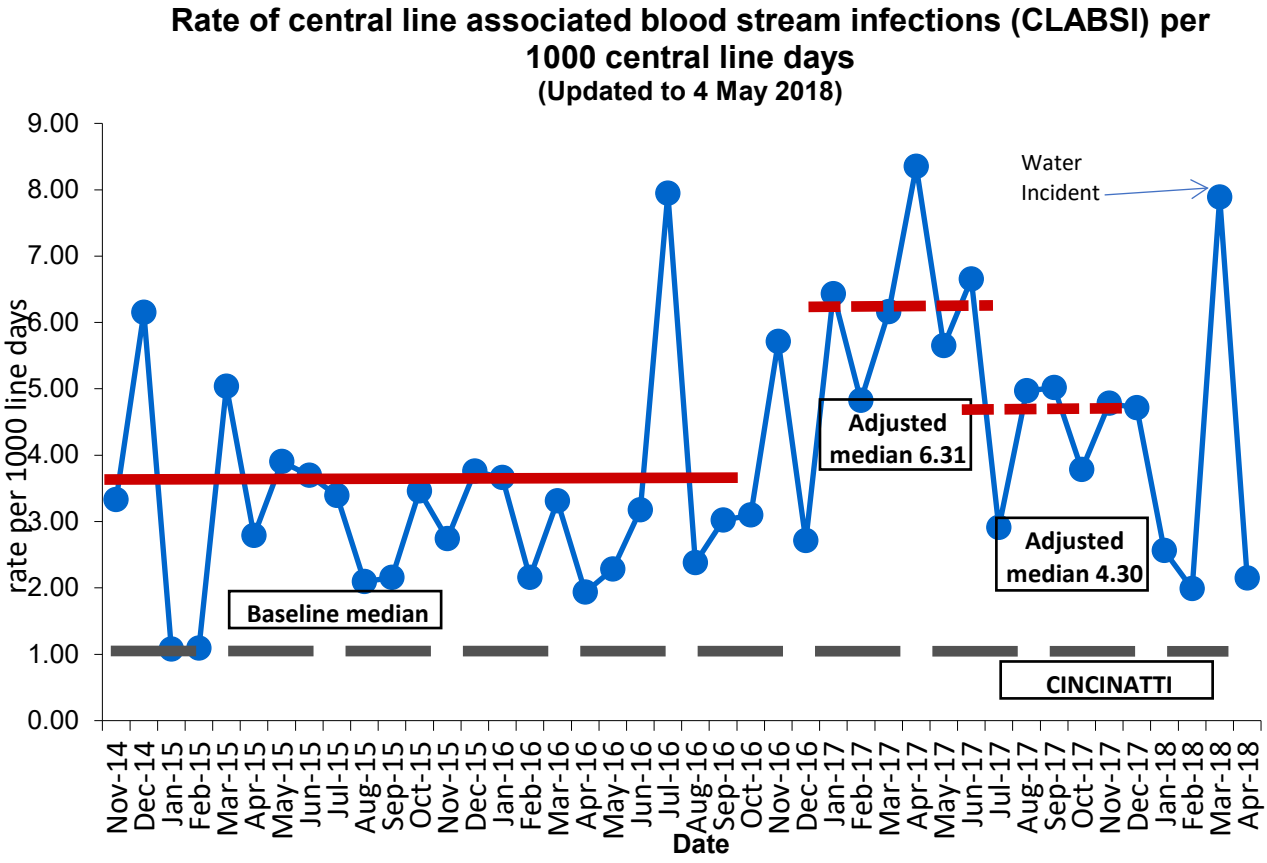
The data also includes all patients within the haemato-oncology cohort, so inclusive of those cared for at home by the outreach nurses, those attending day care and those who are inpatients in ward 2A including Bone Marrow Transplant, and teenage cancer patients.

Two years' worth of retrospective data were collected and presented in the form of a run chart. The initial baseline CLABSI rate per 1000 total line days was 3.25. In June 2017 the adjusted median had increased to 6.33. The group first met in May 2017 following multiple discussions and attempts to improve practice locally.

Current Position

Following the implementation of four defined QI work streams (Line Insertion and access in theatre; Access and maintenance; Staff education; Patient and parent engagement) the data from July 2017 improved and in December 6 data points below the median

demonstrated a shift downwards to an improved rate of 4.3 cases per 1000 line days. January and February data witnessed continued improvement.



From the 1st of March 2018 an issue with the water supply was identified and measures were put in place to limit the use of tap water and showers until the issue could be resolved. Measures included patients not having showers, washing with wipes or portable sinks. Staff washing hands with bottled water and portable sinks with an additional alcohol gel step. There was a subsequent impact on ability to deliver SCIPS. April's data has seen an improvement with a rate of 2.15. The full report detailing the water incident can be found in Appendix 1.

b) Medical

- There have been robust and ongoing arrangements in place with the senior haematology oncology medical team and microbiology doctors to discuss matters affecting the unit. Medical staff are fully engaged in the process.
- All haematology oncology consultant medical staff working within the unit have completed hand hygiene training. The need for refresher training of this group is monitored on an ongoing basis.
- All doctors visiting the unit are reminded of the need for correct hand hygiene techniques to be used at all times. Open challenge is encouraged.

c) Nursing

- Ward Occupancy and acuity remains high with approximately 70% of patients being reported each day as high dependency.
- The ward has no vacancies and a mat leave pressure of 3 wte registered nurses.
- In April 2018 the average day time staffing levels were 12.96 nurses on duty, of those 10.23 were registered and 2.73 non registered

2. Infection Control

a) Incidents (from April 2018)

- *Water*: All outlets now have filters in place which are currently being changed weekly. A plan is underway to expand the changes to every 30 days based on advice from 2 external water experts. Outlets on 2A are tested weekly. To date there has been one failure in the treatment room. This fault is thought to be due to a fault in the fitting of the filter (testing carried out by the manufacturer found no fault with the filter components). IPCT continue to monitor for blood cultures associated with the organisms found in the water.
- *Astrovirus*: 5 confirmed cases positive for Astrovirus. The first case was confirmed on the 26th of March with the last new case confirmed from a sample taken on the 4th of April. A PAG was held on the 9th (following bank holiday weekend) and HIIAT graded Amber. Full outbreak control measures were in place which included limiting admissions to the unit (cases by case assessment based on clinical requirement for chemo/BMT). Following negative virology results for symptomatic, the ward was fully terminally cleaned on Tuesday 17th April and control measures discontinued on completion.
- *VRE*: An increase in VRE cases reported form the beginning to end of April. A totals of 10 cases were identified, 6 of which were HAI. The usual run at around 1-2 HAI per month). The hypothesis is that there was increased loose stools due to an outbreak of Astrovirus which generated an increase in testing resulting in an increase in recorded cases. There were no clinical infections with VRE, all were stool colonisations.
- *Enterobacter clocae* in blood cultures: 4 positive blood cultures between 28th April and 14th May. 2 are HAI by the 48 hour rule. 2 are non HAI but these 2 have had day visits to 2B in the days preceding the positive blood cultures. This is an enteric organism and not one associated with water.
- Stenotrophomonas in blood cultures: 3 patients with positive blood cultures since 4th May. No new cases reported. 1 case is confirmed HAI and 2 are non HAIs by the 48 hour rule. The 2 non HAIs have had visits to 2B prior to positive isolates although it is plausible that the source of the steno in the 2 non HAIs is external to the healthcare environment.

b) Infection Control Team Input

The infection control team have been working closely with the clinical team in ward 2a since April 2017.

- An infection control nurse currently visits ward 2a between two and four times per week. As of the 21st of May visits will be daily. The purpose of the visit is to provide additional support to both staff and families. The visits also aim to raise awareness and provide opportunity to observe practice and work collaboratively to make improvements where required.
- One visit per week includes the Paediatric Lead Nurse, Infection Control Lead Nurse and Domestic Services Representative. The purpose of the joint visit is to scrutinise nursing,

infection control and domestic practice, equipment cleaning and patients care plan documentation. Learning points are raised with the team for action in real time as well as documented and logged.

- The latest hand hygiene audit carried out on the 12th April 2018 achieved a compliance score of 95% for opportunities taken. The Combined Compliance Score was 85% - this score is based on staff taking the opportunity *and* utilising the Correct Technique Criteria. Immediate action was taken.
- Staff knowledge as assessed by infection control is reported to be high. Continued education sessions underway for staff and parents with a focus on Standard Infection Control Procedures.
- IPCAT 94% Gold November 2018
- The design of a unit focussed infection control patient information leaflet is underway and will be tabled at the next AICC.
- The infection control nurses are delivering learning sessions to families within the unit.
- Wardrobe units are now in place in patient rooms in an effort to minimize clutter and aid cleaning.
- Laundry bins to be purchased for rooms.

3. Domestic

- In recognition of the complexities within the ward environment domestic hours have been increased to 2 wte from 1.5 wte.
- Further additional domestic hours were added during the recent Astrovirus outbreak on ward 2A which total 4 hours from 1pm until 5pm daily. This will remain in place in addition to the 2 WTE and will be reviewed regularly by domestic managers.
- Access to Clean: Facilities Integrated Supervisors and Domestic staff are required to document any issues relating to 'access to clean', which are brought to the attention of the Senior Charge Nurse, in order to facilitate regular access. If any issues arise the Facilities supervisor and SCN will agree and initiate a plan to ensure required cleaning is achieved.
- Parent poster in place
- Parent/ Carer poster updated to emphasise minimise clutter and ensure items are removed from floors and surfaces to allow for cleaning.
- Cleanliness Monitoring has been increased to a weekly frequency.
- Facilities Interface: The Deputy Site Facilities Manager liaises with the SCN on a weekly basis to review cleaning arrangements and any other relevant business.
- Latest Domestic Audit score 94%

4. Estates

- There remains very close working relationships with facilities colleagues
- There has been successful capital works recently completed in the ward e.g. upgrading of 4 BMT rooms
- More capital works are required over the next 12 months. Planning processes are in place to take this forward with Facilities, capital planning and infection control.
- There is also a robust maintenance programme with estates colleagues and close links with SCN on unit

- There has been a repeated concern raised about the temperature and humidity in the unit, this is currently under review
- Scoping underway to undergo Hydrogen Peroxide Vapour in all rooms.

Appendix 1

Full report water incident.docx

From:	Redfern, Jamie
To:	Best, Jonathan; Armstrong, Jennifer; Mathers, Alan; Rodgers, Jennifer; Devine, Sandra; Inkster, Teresa; Connelly, Karen; Hunter, William
Cc:	Hill, Kevin
Subject:	NHS GGC ward 2a infection control
Date:	24 May 2018 18:58:01
Attachments:	NHS GGC ward 2a infection control.docx

My draft action plan following discussion today at the conference call
Happy to amend actions, named responsible officers and timescales for completion

Intention being these will be the key areas we will focus on every Friday in brief to Exec Directors

I have spoken briefly to Brenda Gibson and she was okay with what we were planning to do.

Jamie

Karen / Billy

Does 3pm suit tomorrow to meet up and discuss as per voice message left with me earlier today

Jamie

NHS GGC

Acute Division

Women and Children's Directorate / Hospital Paediatrics and Neonatology

24th May 2018

Ref	Action	Responsible Officer	Time Line for Completion	Status (Red, Amber, Green)	Comments
1	Agree a set of rules for inpatients to ward 2a and their families on visiting, use of kitchen, and belongings	Jennifer Rodgers, Teresa Inkster	End of May 2018	Red	Needs to be linked to best practice in other hospitals. Noting risk for adverse media interest corporate communications need to be formally involved
2	Agree a set of rules for visiting clinical teams to ward 2a that minimises the number of staff on the ward at any set time	Alan Mathers, Teresa Inkster	End of May 2018	Red	This does not extend to the haematology oncology clinical team
3	Complete a review of domestic staffing rosters to ward 2a / 2b and implement any recommendations for change in respect of enhanced input to either ward	William Hunter	TBC – meeting tomorrow 25th May 2018 with William Hunter and Karen Connelly	Red	Provide ongoing assessment of domestic input to the ward and immediate escalation of difficulties in domestics getting access to clean etc. Immediate consideration should be given to a second housekeeper recruited through domestics. Working arrangements with current nursing housekeeper need to be considered.

4	Ensure all Standard Operating Procedures for cleaning are agreed by nursing, infection Control and facilities	Jen Rodgers, Teresa Inkster, William Hunter	25th May 2018	Red	SOPS where current confusion exist? - Under bed side - Parent kitchen
5	Agree a routine program of external cleaning using Hydrogen Peroxide Vapour	Teresa Inkster, Jennifer Rodgers, Jamie Redfern	End of May 2018	Red	Teresa Inkster to obtain a quote. Jamie Redfern to agree a funding route to cover this cost. Teresa Inkster to agree frequency of vapour program per year. Jamie Redfern / Jennifer Rodgers to agree a SOP for facilitating this program
6	Complete a program of external benchmarking with other haematology oncology wards to explore comparisons with ward 2a/2b	Teresa Inkster and Jennifer Rodgers	End of June 2018	Red	Benchmarking should include a number of other comparable haematology oncology UK sites including Alderheigh, Liverpool. Benchmarking should include visits, telephone conference calls etc. Benchmarking needs to cover infection control, service (nursing and medics), domestics and managerial/ patient engagement
7	Complete a review of on the floor registered and non registered nursing cover to match professional judgement/ workload	Jennifer Rodgers	End of May 2018	Red	Current staffing profile is Day Time - 10 registered nurses - X non registered nurses Night Time - X registered nurses - X non registered nurses Routine reports on

					vacancy management, turnover, sickness absence and other staffing kpis need to be reported routinely through the Directorate
8	Provide a weekly brief to Jonathan Best, Jennifer Armstrong, Kevin Hill and Mary Ann Kane on ward 2a performance	Jamie Redfern	1st June 2018	Red	This report should be circulated every Friday. The report needs to cover service, infection control, domestics and estates. Service should extend to nursing, medical and wider mdt involvement. All briefs should be shared with SCN, and Haematology Oncology Consultants
9	Agree a formal IPCAT infection control reporting structure for ward 2a / 2b	Teresa Inkster	End of May 2018	Red	Formal reporting needs to work in tandem with informal day to day infection control checks
10	Review clinical workload within ward 2a noting strategic changes being taken over the next 12 months	Jamie Redfern	Ongoing	Red	No changes to strategic direction for activity being managed within Ward 2a / 2b. Longer term review of current inpatient arrangements for haematology oncology patients should be considered once all short term measures implemented / impact assessed

Jamie Redfern

General Manager HPN

Version 1draft 1 24th May 2018

Follows 12noon conference call 24th May 2018 with Jonathan Best, Jennifer Armstrong, Mags McGuire, Teresa Inkster, Jamie Redfern, William Hunter and Jen Rodgers

From: Redfern, Jamie
To: Best, Jonathan; Armstrong, Jennifer; Hill, Kevin; Mathers, Alan
Cc: Inkster, Teresa; Dodd, Susie; Rodgers, Jennifer; Cook, Claire; Dick, Lorraine
Subject: FW: Incident Control Meeting - Ward 2a/2b
Date: 04 June 2018 17:22:47

Hi Jonathan / Jennifer

I chaired the Incident Control meeting for above and note we scored it red. The minute which will come shortly will describe why. HPS were present and will alert Scottish Govt.

Actions from the meeting

1. Estates are going to initialise an immediate plan to cleanse the sinks/drains in ward 2a and 2b plus change filters to taps. This is not full precaution but more a preliminary step. Completion of this expected tonight into tomorrow morning. This can be completed without moving patients.
2. Ian Powrie is going to check with the commercial company commissioned to carry out HPV works. Can they
    a. Bring the start date forward for ward 2a? Original start date was planned for Monday 11th June 2018 and finished Friday 15th June 2018
    b. Do more than x 2 cubicles at a time
    c. Change start date for ward 2b from Friday/ Sat 15th and 16th June 2018 to Friday / Saturday 8th June 2018 (or earlier)
3. Reason for point 2 is full sink / drain cleanse must be carried out before the HPV. For full cleanse product agreed and Scottish Water will be informed.
4. All clinical activity being reviewed on a case by case basis with avoidance of admission / treatment unless clinically necessary. Urgent need to get answers to point 2 as this will influence decision making. Likely that a BMT patient planned for Wednesday will be delayed treatment. Also work plan for 2b to be reviewed with chemotherapy delays etc. Given the details of case at weekend all requests for children going on pass to be refused. Theresa Inkster to discuss this in more detail with BG.
5. A fully function area in ward 2c (8 cubicles) will be made available for 2a patients to be decanted if work in 2a can be progressed faster. This area will have sinks appropriately cleansed and tap filters fitted (see point 8)
6. All children with lines will now be treated with prophylaxis. Possibility this will be extended to children on pass if we reintroduce this with patients / families. All other started infection control measures in place and action plan as agreed at previous teleconference meeting being progressed.
7. Need to agree press and patient / family communications. Decision to be taken with press whether we take a proactive approach to this. Informally, ward staff say a parent has already gone to MP/MSP. Highly likely release of information to parents on reasons for delay of treatment will trigger possibility of media interest.
8. Need to consider that the issue of drains/ sinks not confined only to ward 2a/2b but in fact a wider campus issue needing to be faced. These to clinical areas appropriately prioritised but urgent need to also review other high risk areas: ward 1d rhc and ward 4b QEUH

From: Redfern, Jamie
To: Armstrong, Jennifer
Cc: Best, Jonathan; Hill, Kevin; Rodgers, Jennifer; Mathers, Alan
Subject: FW: ward 2a update report week ending 1st June 2018 B, can you print please
Date: 04 June 2018 18:06:23
Attachments: ward 2a update report week ending 1st June 2018.docx

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Printed and left on Jennifers desk

Hi Jennifer

Weekly update as promised. Events for this been slightly overtaken by issues faced over weekend /today.

We will meet again on Friday to provide weekly update.

In meantime next Incident Control meet is on Wednesday.

Happy to answer questions on email sent earlier or this relating to ward 2a

Jamie

Ward 2a update –Friday 1st June (period covered Friday 25th May to Friday 1st June)

Standard weekly status report for Ward 2a RHC to the Board Medical Director covering:

1. Infection Control
2. Service
3. Estates
4. Domestic
5. Corporate Reporting
6. Footnote 5th June 2018

1. Infection Control

- No further Stenotrophomonas bacteraemia. All are unique strains pointing towards environmental issue rather than passed via hands or kit.
- Last Enterobacter case 27th may. Non HAI but with links to 2B. 2 of the 5 cases are unique suggesting that there is an environmental source rather than direct cross transmission. HIIAT Amber (assessments of HIIAT made on 29/5 and 1/6).
- No patients causing concern as a result of outbreak infections.
- Swab results from Chilled Beams have so far grown nothing of significance, further results awaited.
- Drains swabbed no results back as yet. Further update on this to follow in next week's report
- Hydrogen Peroxide Vapour treatment to be carried out commencing 11th June completing 17th June ward 2a and 2b inclusive.
- Three rooms will be closed to accommodate HPV cleans. Meeting held on 1st June to plan logistics around process.
- Daily visits from the Infection control team are in place supporting staff and observing practice, SCIPS and cleanliness of the ward.
- Peer reviews underway with ICP Nurses from other NHSGGC sites. Points for learning noted: consider moving ward leaflets SCN will review.
- Friday walk round with Paediatric Lead Nurse, Infection Control Lead Nurse and Domestic Services Representative. The purpose of the joint visit is to scrutinise nursing, infection control and domestic practice, equipment cleaning and patients care plan documentation. Learning points are raised with the team for action in real time as well as documented and logged. Today's walk around found staff knowledge, PPE, CVC planning and hand washing were good. Points to note, one inappropriate item on hand hygiene sink, some equipment dusty, escalated to nurse in charge and auctioned.
- Parent leaflet with infection control rules to be implemented next week.
- Parent education sessions underway.
- No update on benchmarking against other sites. Will be prioritised for next reporting week Friday 1st June 2018 to Friday 8th June 2018

2. Service

- Ward 2a has achieved a 'safe to start' status every day last week with one adjustment to nurse staffing required.
- Quality Improvement group for line associated bacteraemia rate is ongoing and demonstrating a positive shift in the data.
- Aseptic Non Touch Technique (ANTT) fully rolled out in ward 2a and 2b.
- Meeting arranged to agree SOP for parent kitchen 5th June.
- Scope project for moving ward main entrance to non BMT side of unit. Includes fitting fingerprint recognition door entry system.

- Visitor protocol successfully reinforced. Good engagement between SCN and families around de clutter of rooms. All of this being routinely monitored.
- Discussions between service and facilities being progressed in support of additional housekeeper capacity to the ward.
- Paediatric workforce planning tool run completed Friday 25th May 2018. Data being updated and reviewed.
- Communication drafted to all clinical teams regarding limitation of staff involved in grand ward rounds etc. To be circulated Friday 1st June 2018 vis Clinical Directors in HPN.

3. Estates

- Room 11 currently closed with blocked sink. Estates aware.
- Chilled Beams to be cleaned prior to HPV.
- Agree actions to be taken with drains in ward 2a/2b once test results received

4. Domestic

- Twice weekly audits 95%. Results now to be shared weekly with JR/ JRo
- No issues raised this week regarding access for cleaning rooms. Escalation process to SCN for problems with access to rooms in place and being used as an when appropriate by domestic staff
- Discussion with SCN during the course of the week, no further issues reported.
- Position as at Friday 1st June ward 2a reviewed as appropriately clean. Further inspection of ward 2a today planned by HPS with focus on domestic cleaning.

5. Corporate Reporting

- Weekly reporting cycle in place to Jennifer Armstrong, & Jonathan Best. Week 1 report 1st June 2018.
- Monthly update of the action plan agreed following meeting held on Thursday 24th May 2018; next updated 29th June 2018

Jamie Redfern General Manager
Jennifer Rodgers Chief Nurse

1st June 2018 (amended version)

Footnote 4th June from 11AM meeting with Infection Control and Clinical Team

1. Discussed the clinical incident at the weekend.
2. Also discussed the series of emails between Brenda Gibson and Teresa Inkster re concerns with test results from ward 2a drains
3. Incident Control meeting to be called by infection control for today 4th June 2018 at 2pm
4. Need to consider
    1. Fast track program for cleaning of drains in ward 2a/2b. Aware this needs Scottish Water approval
    2. A decision on whether the rest of the hospital has same issue with drains as now identified in 2a/2b. How quickly can a decision on this be made?
    3. If answer to point 4(2) is that likelihood of problem is hospital wide then do we need to
        1. create a decant area in ward 2c (winter beds) and / or other clinical areas in hospital
        2. clean drains in these decant areas, and

3. start a decant process from ward 2a to them
4. allowing an accelerated program for cleaning drains in ward 2a/2b

4. Can we fast track the vapour program for wards 2a / 2b (start and end date)

5. Revert to previous contingency plans for new patients being admitted to ward 2a during previous incident control issues with water supply to wards 2a/2b

From: Armstrong, Jennifer
To: Armstrong, Jennifer
Subject: FW: BMT unit new RHSC
Date: 30 June 2024 12:59:02

From: Williams, Craig
Sent: Friday, June 5, 2015 9:44 AM
To: Armstrong, Jennifer [redacted]
Cc: McNamee, Sandra <[redacted] Walsh, Tom
[redacted]
Subject: BMT unit new RHSC

Dear Jennifer

Further to our discussion:

On the 29th May Clare Mitchell the lead ICN and myself went to do a walkround on ward 2a in the New RHSC to determine the best points for air sampling which we planned to undertake prior to the move of the paediatric BMT unit. On arrival at the unit we found that there were some holes in the walls of the BMT cubicles and the ventilation had not been switched on.

I met with Mary Anne Kane who said she would look into it, the project team were confident that the work could be undertaken over the next week to allow the unit to be cleaned and air sampling performed today.

Upon further investigating Mary Anne found that the HEPA filters had not been fitted. If this is the case then we will be unable to validate the rooms.

From an infection control point of view it would be potentially unsafe to move children from their current HEPA filtered rooms to rooms in the new hospital until we can provide appropriate facilities.

Craig

Prof Craig Williams
Consultant Microbiologist Royal Hospital for Sick Children, Glasgow
Lead Infection Control Doctor, NHSGGC
Professor of HAI, UWS
[redacted]
w. www.uws.ac.uk/hai

From:	Armstrong, Jennifer
To:	Armstrong, Jennifer
Subject:	FW: RHSC BMT Update
Date:	30 June 2024 12:59:51

From: Williams, Craig
Sent: Friday, June 5, 2015 1:52 PM
To: Armstrong, Jennifer [redacted]
Cc: McNamee, Sandra [redacted] Walsh, Tom
[redacted]
Subject: RHSC BMT Update

Dear Jennifer

Just to update you after this mornings meeting. Facilities have sourced some HEPA filters in Ireland which should be fitted on Sunday. This will allow the BMT unit to move on the 12th June, later than planned but within the overall migration schedule.

I have asked facilities to double check the Adult BMT rooms and have been assured that they have the appropriate filters and have been fully validated

Craig

From: Armstrong, Jennifer
To: Armstrong, Jennifer
Subject: FW: HEPA filters update
Date: 30 June 2024 13:00:40

From: Redfern, Jamie
Sent: Sunday, June 7, 2015 3:59 PM
To: Archibald, Grant [redacted] Stewart, David [redacted] Love, Elaine [redacted] Beattie, Jim [redacted] Armstrong, Jennifer [redacted]; Kane, Mary Anne [redacted]; Williams, Craig [redacted]
Subject: Re: HEPA filters update

Thanks Grant
Much appreciated.
Jamie
Sent from my Samsung device

-------- Original message --------
From: "Archibald, Grant" [redacted]
Date: 07/06/2015 11:10 AM (GMT+00:00)
To: "Archibald, Grant" [redacted] "Stewart, David" [redacted], "Love, Elaine" [redacted] "Beattie, Jim" [redacted] "Redfern, Jamie" [redacted] "Armstrong, Jennifer" [redacted] "Kane, Mary Anne" [redacted] "Williams, Craig" [redacted]
Subject: RE: HEPA filters update

Dear all
RHSC Isolation Rooms uodate report 1030am Sunday 7th
1 All filters fitted
2 6 have passed their engineering testing: 2 still to be done - this will be completed by early afternoon
3 deep clean scheduled for 4.00pm Sunday
4 Microbiology testing can be performed Monday am.
regards
Grant

From: Archibald, Grant
Sent: 06 June 2015 10:24
To: Stewart, David; Love, Elaine; Beattie, Jim; Redfern, Jamie; Armstrong, Jennifer; Kane, Mary Anne; Williams, Craig
Subject: HEPA filters update

Morning. Saturday 1015 update
HEPA filters on site
Grant.

Sent from my iPhone

On 5 Jun 2015, at 15:58, Archibald, Grant [redacted] wrote:

Dear all
please find attached the notes I developed from our meeting - happy to receive comments.
Jim, can you send copies to Jean and Brenda
thanks for all the effort invetsed in resolving this matter.
Grant

Grant Archibald
Chief Officer
Acute Services

<BMT Childrens UPDATE 200PM.doc>

FW: Paediatric BMT

Armstrong, Jennifer [redacted]
Tue 19/07/2022 15:06
To: Cameron, Rosie [redacted]

From: Armstrong, Jennifer
Sent: 15 July 2022 09:44
To: Armstrong, Jennifer [redacted]
Subject: FW: Paediatric BMT

From: Archibald, Grant
Sent: 24 August 2015 08:02
To: Williams, Craig [redacted]
Cc: Stewart, David [redacted] Redfern, Jamie [redacted] Powrie, Ian [redacted]; Walsh, Tom [redacted] Armstrong, Jennifer [redacted]; Mathers, Alan (NHSmail) [redacted]; Cannon, Paul [redacted]; Calderwood, Joanne [redacted]
Subject: Re: Paediatric BMT

Dear Craig

Thank you for the note.

What we require is a clear statement of the specification of the rooms, how they shall be operated and how they shall be quality assured on an ongoing basis. For this we need both expert engineering and ICT guidance. I am content to arrange another meeting , however for that meeting to serve a useful purpose it needs to be on the basis we have both a clear engineering and ICT view. The previous meetings have involved considerable debate re different ICT / microbiology aspects - whilst this debate is essential , I believe it requires to be conducted in another forum where the expert debate can take place and then a considered expert view agreed upon.

As a result, if we have a clear position on the ICT dimensions of this facility I will arrange for the senior officers to meet: Jennifer , David, David Louden (and whomever David needs in the meeting) Jamie and Alan, and you and whomever you wish to bring.

Please advise me when you would be available for such a meeting. I will ask others to do the same in response to this email

Kind regards

Grant.

Sent from my iPad

On 21 Aug 2015, at 17:41, "Williams, Craig" [redacted] wrote:

> Dear Grant

To update you on progress since Wednesday. Room 18 which had a small amount of leakage has now been resealed and has passed both parts of the leakage test. The room has been cleaned and we will repeat the microbiological testing on Monday and in addition will repeat the smoke test. This sealing should prevent any ingress of dust into the room and render it safe for use.

In room 19 we have been able, by varying the existing air system managed to achieve a positive pressure in the patient area. This mitigates the longer term concerns relating to any failure of the seals. Ian Powrie is going to brief David Loudon about the details, which are beyond my expertise but applying this fix to the other rooms across the site will require the input of a design engineer and input from Brookfield

I think it would be helpful to meet again as soon as possible next week to put in place a detailed implementation program and confirm timelines.

Best wishes

Craig

From:	Armstrong, Jennifer
To:	Armstrong, Jennifer
Subject:	FW:
Date:	30 July 2022 08:04:41

From: Armstrong, Jennifer
Sent: 04 September 2015 18:25
To: Archibald, Grant [redacted]; Calderwood, Robert [redacted]
Subject: Fw:

Both

I will speak to Craig later to find out issues. Then respond

Sent from my BlackBerry 10 smartphone on the EE network.

From: Gibson, Brenda [redacted]
Sent: Friday, 4 September 2015 17:30
To: Armstrong, Jennifer
Cc: Williams, Craig; Redfern, Jamie
Subject:

Dear Jennifer,

I have just meet with Craig Williams and I understand that the problem with the isolation rooms on ward 2A has not been resolved. This has now gone of for two months and every deadline has been

breached. As a clinical team we have lost faith and find it difficult to repeatedly be unable to give the families any firm timelines. At least one of these children's outcome is at the point of being compromised. Suggesting referral to another centre is not the solution it may appear , because all centres have a waiting list and will not be in a position to accommodate a transplant in the timeframe needed.

We feel that we are due an explanation as to how this problem arose. If this were a commercial enterprise - a drug company- who required a clean facility , only a company with a sound track record in this area would have been engaged. Did this happen here? Any problem would have been promptly resolved because of the financial penalty. We have no feeling that the appropriate sense of urgency is in place. Is NSD , the funders of the transplant programme , aware that the transplant programme has been severely compromised?

B.W.

Brenda

Prof Brenda Gibson
Consultant Haematologist
Schiehallion Ward (Ward 2A)
Royal Hospital for Sick Children
1345 Govan Road
GLASGOW G51 4TF
[redacted]

From:	Armstrong, Jennifer
To:	Armstrong, Jennifer
Subject:	FW: BMT unit at RHS: proposed urgent meeting @ 4.45 at RHC today
Date:	30 July 2022 08:05:11
Importance:	High

From: Armstrong, Jennifer
Sent: 07 September 2015 10:26
To: Calderwood, Robert [redacted]
Cc: Law, Leanne [redacted]
Subject: FW: BMT unit at RHS: proposed urgent meeting @ 4.45 at RHC today
Importance: High

Robert
can we disuss at 11.30;
j
L; can you print 2 copies
j

From: Armstrong, Jennifer
Sent: 07 September 2015 08:14
To: Gibson, Brenda; Loudon, David; Archibald, Grant; Williams, Craig
Cc: Mathers, Alan; Redfern, Jamie; Law, Leanne
Subject: RE: BMT unit at RHS: proposed urgent meeting @ 4.45 at RHC today
Importance: High

All
As you can see, there are significant concerns which are set out below. I am acutely aware of the imperative to address the concerns and I know we have had daily calls/meetings to drive this forward. On Friday, we met and discussed this issue.
I suggest that we meet today at 4.45 in the new RHC to set out
1. Previous situation at the old Yorkhill unit for baseline (CW/DL)
2. Current position of the new unit in terms of build and recent sealing etc (CW/DL)
3. Further proposed work (DL)
4. Position of patients (BG)
5. Risk assessment (all)
6. Agreed Way Forward and conclusion. ALL

I wonder if both Craig and David can perhaps prepare the first 3 areas please

I will ask Leanne to seek times and a place to meet

From: Gibson, Brenda
Sent: Friday, 4 September 2015 17:30
To: Armstrong, Jennifer
Cc: Williams, Craig; Redfern, Jamie
Subject:

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We feel that we are due an explanation as to how this problem arose. If this were a commercial enterprise - a drug company- who required a clean facility , only a company with a sound track record in this area would have been engaged. Did this happen here? Any problem would have been promptly resolved because of the financial penalty. We have no feeling that the appropriate sense of urgency is in place. Is NSD , the funders of the transplant programme , aware that the transplant programme has been severely compromised?
B.W.
Brenda

Prof Brenda Gibson
Consultant Haematologist
Schiehallion Ward (Ward 2A)
Royal Hospital for Sick Children
1345 Govan Road
GLASGOW G51 4TF
[redacted]

MEETING TO DISCUSS BMT UNIT RHC
Monday 7 September 4.45pm to 6:15PM
Held in Dr Alan Mathers Office Ground Floor RHC

In Attendance	Apologies
Dr Jennifer Armstrong (Chair) - JA Dr Alan Mathers - AM Mr Billy Hunter - BH Mr Jamie Redfern - JR Mr Grant Archibald (by telephone) - GA Prof. Brenda Gibson - BG Prof. Craig Williams – CW Mr. David Brattey - DW	Mr. David Louden - DL

1.Purpose of the meeting:

This meeting was brought together to identify the progress made in resolving the Bone Marrow Transplant (BMT) room estates issues in RHC and determine position for the paediatric haematology oncology service in being able to start new cases. JA acknowledged the clinical frustration about progress and the need to plan for patients currently waiting transplant. Group were reminded that the two rooms / suites currently under scrutiny were 18 and 19. There are a further 6 rooms / suites which over time should reach the level of BMT specification / performance required. These are room / suites 17, 20, 22, 23, 24 and 25.

2. Agenda

The meeting was informed by the Agenda set earlier and circulated by JA and a stepwise debate took place around:

1. Previous situation at the old RHSC / Yorkhill unit for baseline (CW/DL/ BH)
2. Current position of the new unit in terms of build and recent sealing etc (CW/DL)
3. Further proposed work (BH/ DL)
4. Position of patients (BG)
5. Risk assessment (all)
6. Agreed way forward and conclusion. ALL

3. RHSC and RHC transplant rooms / suites specifications and Performance	BH/ DL were tasked with
1. BH described the former BMT unit rooms within RHSC, it was noted that the suite configuration was consistent with the 18 / 19 rooms / suites within Ward 2A of the RHC: i.e. lobby/in-patient room and en-suite. 2. Air pressure within the former RHSC BMT suites achieved 10 pascals of positive pressure and this was provided by an air handing unit - input within the lobby and patient room, with extract located within the en-suite. 3. The air handing units within the suites of the new RHC provide air input within the lobby and there is extract within	1. Formally writing up a summary document which compared old RHSC and current RHC unit in terms of specification and performance. The purpose of this was to provide formal audit trail that the new arrangements for transplanting children in current RHC were as good if not better than the previous arrangements in old RHSC / Yorkhill. This document also needed to formally confirm that the specification in RHC was built to all appropriate building note regulations and clearly reference these. The document needed to confirm that there was no technical / engineering

the patient room and ensuite. This is available in all 8 rooms / suites. 4. Air pressure monitoring of the new RHC BMT rooms /suites 18 and 19 has taken place four times per day since Wednesday 2nd September and reading consistently measure 9.5/10 pascals. Readings have been taken at six hourly intervals by Estates staff (i.e. 03:00/09:00/15:00/21:00) 5. BH confirmed that the two BMT suites (RHC) have been sealed (which should safely last one year) to avoid air penetration from a source outwith the air handling unit. 6. Recent air permeability testing took place week commencing 31st August 2015 and satisfactory results. This process was undertaken by Lead Consultant Microbiologist/Brookfield colleagues & Estates Management. 7. BH indicated that from an engineering perspective, the BMT suite conditions within the new RHC provided no lesser standard by comparison to the former RHSC transplant suites. 8. BH confirmed that Brookfield could retro fit air handling unit modifications to the 8 BMT room / suites (in accordance with the design parameters of Leeds) at an approx cost of [redacted] per room - (excluding VAT). Timeline for the completion of one BMT suite is estimated to take 4 – 6 weeks and depending upon access, two suites could be done at the same time. The group agreed to explore this option in more detail. 9. BH confirmed that he saw no technical/ engineering risk to providing transplants in the identified rooms / suites 18 and 19 based on comparison to RHSC and recent test results of RHC rooms /suites. Also noting specifications met all relevant building note regulations.	risk to transplanting in rooms 18 and 19 based on test results to date and comparison specification to old RHSC. 2. Circulating the air pressure results for new RHC. These pressure tests should continue with an agreed forward reporting mechanism in place and described by estates. Process for escalation identifying any problems with the test results and impact on room performance to 10 pascals should be described and implemented. 3. Liaising with Brookfield colleagues to seal two further rooms/ suites. In doing this the aim was to meet the same standard of air permeability within the two BMT suites currently fully sealed. Further to this there should be further work undertaken to fully seal the remaining 4 BMT rooms/ suites. On completion of this work plan service would have an incremental uplift of 2 – 4 – 8 fully performing BMT suites over an agreed project time. Project plan for taking this work forward to be drafted between service, estates and Brookfield. Noted that completion of this work plan will be linked to ongoing clinical activity and use of cubicles 4. Liaising with Brookfield around a work plan which would on completion provide service with at least 2 rooms which matched specification used in Leeds. In taking this work plan forward there needed to be clarity on any impact it would have on clinical services within the unit.
Cleaning in ward area: 1. Due to the high level of pedestrian activity in Ward 2A corridor, and as part of risk mitigation, it was agreed that increased cleaning of the wards circulation areas would take immediate	BH was tasked with 1. Implementing the proposed changes to cleaning for BMT cubicles and corridor in the unit as described. A standing operating procedure for domestic services should be in place

effect and with a chlorine based solution.	with robust reporting lines regarding daily compliance. This should be implemented with immediate effect.
Microbiology 1.CW updated on recent microbiology testing in rooms / cubicles 18 and 19. He confirmed that testing from 31st August showed 1 colony growing at 22C in the ensuite, further sealing has been undertaken in Rm 19 since the testing and sampling repeated on 4th September. After 3 days incubation Room 18 - ensuite at 30 degrees incubation - 1 colony - main at 22 degrees incubation - 1 colony Room 19 - ensuite at 22 degrees incubation - 2 colonies - main at 30 degrees incubation - 1 colony	CW was tasked with 1. Providing the outcome of sampled testing when results became available between Wednesday 9th and Friday 11th September and clarifying implication of results re performance of rooms / suites 18 and 19 suitability to begin transplanting.
Clinical Services 1. BG confirmed that there was a standard operating procedure in place and used by staff for when BMT cubicles were in use 2. BG noted there were 3 patients awaiting [redacted]. 3. BG confirmed patient1 from [redacted] (acute relapse) was described as urgent and needed to start treatment within circa 2 weeks. BG confirmed it was not clinically possible to transfer patient 1 to another unit for transplant noting capacity issues, waiting lists and clinical work up etc. 4. BG confirmed that patient 2 [redacted] was not clinically urgent. However this patient had experienced a [redacted] date previously because of room / suite difficulties. [redacted] were anxious that the [redacted] completed as soon as possible. 5. BG updated on patient 3 who had received news recently of a [redacted] and was also now classed as clinically urgent with a start date for treatment required within the next [redacted] weeks 6. All agreed that patient 1 should be [redacted] subject to	Clinical team were tasked with providing 1. Providing a copy of the standard operating procedure used by nurses and other clinical / support staff when BMT room/ cubicle in use 2. Provisional transplant start times for patient 3 and patient 2. This work would be carried out in conjunction with ongoing estate work and clinical timelines. 3. A standard operating procedure for transfer of any transplant patient between cubicles if problems with a sealed room/ other microbiology results emerge which cause concern. CW would also have to be involved in draft and implementation of this SOP.

pending microbiology test results being satisfactory. Subject to estate work (sealing of additional rooms / cubicles) being carried out timeously and any further ongoing microbiology testing plans should also be set for patients 2 and 3 to [redacted] next few weeks.	
Conclusions 1. On completion of the relevant engineering / microbiology documentation there is a need for 3 way Directorate sign off for patient 1 to [redacted] within the next 2 weeks.	1. Three way Directorate agreement sign of being JA, DL and GA.

Draft V2 2015-09-09
Jamie Redfern General Manager HPN/ Acting Director W&Cs

From:	Armstrong, Jennifer
To:	Armstrong, Jennifer
Subject:	FW: MEETING TO DISCUSS BMT UNIT RHC
Date:	30 July 2022 08:03:16
Attachments:	MEETING TO DISCUSS BMT UNIT RHCv2.doc

From: Armstrong, Jennifer
Sent: 09 September 2015 17:02
To: Loudon, David [redacted]; Archibald, Grant [redacted]
Cc: Calderwood, Robert [redacted]
Subject: FW: MEETING TO DISCUSS BMT UNIT RHC

David

- can you action the issues set out in the minutes and confirm that they are complete/underway
- There is also a need, perhaps by email, for formal sign off that the rooms are now fit for purpose as set out by billy hunter with the agreed audit document as set out in the minutes

I would wish this before we go ahead with child 1 transplant?

j

From: Redfern, Jamie
Sent: 09 September 2015 09:18
To: Loudon, David; Brattey, David; Gibson, Brenda; Archibald, Grant; Hunter, William; Mathers, Alan; Williams, Craig; Armstrong, Jennifer
Subject: FW: MEETING TO DISCUSS BMT UNIT RHC

Dear all

Attached are the minutes from Monday night meeting on BMT Unit.

Can we please look to have the requested engineering document and test results on rooms 18 / 19 (as appendix to document) completed by cop today as agreed on Monday night.

This document needs to be signed off at Director level again as agreed.

Appreciate Craig the out standing microbiology results are expected between now and Friday so earliest possible clinical interpretation of these required.

When we have brought all this together we will then look to agree the required 3 director sign off.

Following this the clinical team under Brenda can look to schedule a confirmed transplant date for patient 1 and provisional transplant dates for patients 2 and 3 based on family circumstances and some further estate work (sealing on two further rooms being completed to same specification as rooms 18 and 19).

I will continue to liaise with all stakeholders in this process to make sure all actions are completed and everyone remains briefed of where we are in the process to hopeful end point completion.

Thanks for everyone's efforts in this matter.

Jamie

I will also get my secretary to reformat this document but because of importance and urgency have sent out as is so everyone has early sight of their actions and timescales

From: Armstrong, Jennifer
To: Redfern, Jamie
Cc: Archibald, Grant
Subject: Re: Schiehallion ventilation
Date: 15 September 2015 09:38:25

Jamie
I think the directorate team need to set out along with Craig and Brenda the whole picture and come to a recommendation for us to consider as I set out last night. So would explore the options, set then out with pros and cons then come to a recommendation.
This is urgent and needs to be concluded today
J

Sent from my iPad

On 15 Sep 2015, at 09:32, "Redfern, Jamie" [redacted] wrote:

> I will try to get a summary position on [redacted] from [redacted] from BG
> My understanding is though that the longer we wait for transplant greater risk this [redacted] has of relapse. Moving to another centre would we expect build in some delay. Do you wish us to formally explore this option and what delay might be? Some interesting information from Craig. If thru our new cleaning routines and now that we have sealed rooms future samples keep us on 10pc trajectory or below we would be performing at least to the expected environment standard in paediatric bmt units according to the published studies.
> Jamie
>
> Sent from my Samsung device
>
> -------- Original message --------
> From: "Williams, Craig" [redacted]
> Date: 15/09/2015 8:42 AM (GMT+00:00)
> To: "Redfern, Jamie" [redacted], "McNamee, Sandra" [redacted], "Mathers, Alan" [redacted]
> Subject: Fw: Schiehallion ventilation
>
> Dear Jamie
>
> Tried to summarize yesterday's discussion.
>
> Best wishes
>
> Craig
>
> Sent from my BlackBerry 10 smartphone on the EE network.
>
> **From:** Craig Williams [redacted]
> **Sent:** Tuesday, 15 September 2015 8:40 AM
> **To:** Williams, Craig

Subject: Schiehallion ventilation

<BMT document.docx>

From: Gibson, Brenda
To: Redfern, Jamie
Subject: RE: Bmt
Date: 16 September 2015 14:37:47

This is fine.

Brenda

Prof Brenda Gibson
Consultant Haematologist
Schiehallion Ward (Ward 2A)
Royal Hospital for Sick Children
1345 Govan Road
GLASGOW G51 4TF

[redacted]

From: Redfern, Jamie
Sent: 16 September 2015 12:35
To: Gibson, Brenda; Williams, Craig
Cc: Bruce, Jacquie; Mathers, Alan
Subject: FW: Bmt
Importance: High

Dear Brenda and Craig

Can I ask if you agree with the recommendation and assumptions recorded by Alan in email attached below

If yes then I think we have a clinical agreement on moving forward between service and microbiology / infection control which we can afdd to conclusions in final paper.

Jamie

From: Mathers, Alan
Sent: 15 September 2015 20:28
To: Redfern, Jamie
Cc: Armstrong, Jennifer
Subject: RE: Bmt

Dear Jamie,

Here are my thoughts about all that has been discussed / debated over past weeks.
They are simplified to what are the pertinent matters and informed by listening to all of the opinions and not being unduly influenced by any.
There will be details below that I need to have corrected (if wrong)

2 SBARs to follow

Situation 1 ; Pressing and Acute

We have to determine if BMT is viable treatment option in the current service at RCH for a critically time dependent case that has been through MDT process and has a BM donor available

Background

The service has no track record because it has moved. Two cases have successfully undergone treatment. Apart from moving Facilities the rest of the service including clinicians (doctors-nurses-paramedical) are the same as are their hygiene SOP's etc.
The facilities are at least as good as the RHSC and are believed to be built to a higher spec. They are NOT identical. They are not as high spec as the Beatson Adult system. This does not mean that they are a suboptimal standard.
Testing of particle counts and fungi have been put in place. There is no agreed national standard requiring such testing and no agreed interpretation of wht the testing means and how it correlates with actual risk of clinical harm to a patient. Some units do not do any such testing. It appears that there was no standardised approach between GGC units.
When fungi were detected and there were concerns about various estate issues these have been discussed and where possible immediate corrective measures put in place into two rooms to ensure "sealed" and positive pressure ventilation and extraction
Subsequent test results are of limited utility (see above) but have to be seen as the current *post corrective* measure assessment. There is therefore a need to consider the "sealing" and cleaning measures as "controls" and any subsequent testing as a way of assessing if these have altered the paradigm in a positive way : i.e. less particles, fewer or no fungi.
There is published evidence that suggest that complete elimination of growths, etc . is a noble aspiration and an appropriate goal to use as a marker of cleaning, ventilation and sealing performance and should be used in conjunction with clinically measureable auditable standards such as actual infection rates in patients, etc (these need to be determined)
There are short term solutions (sealing rooms / cleaning regimes / emphasis on rigorous application of SOP's, etc).
There are longer term options (seal all rooms and consider further Estates work on extraction/ ventilation air flow). These options are seem as expanding treatment area options, standardising each room and building in a security measure in case of primary failure to provide a 10 pa positive air flow.
There is a pressing need to treat [redacted] with relapsed disease from [redacted].
There may be limited scope, if any, to identify and refer for treatment elsewhere given: the time-critical situation, the further inherent delays in the inevitable "re-assessment" of the diagnosis and preferred treatment, the availability of the donor.
There is a variety of opinion about how the environmental tests should be interpreted, how often they should be done, what risk to he patient the results actually mean (increased, neutral or reduced) and there is no certain way of addressing these in the foreseeable future (and without a National standard this may be an aspiration to far).
There is a reputational, media and related risk: I note this but my primary consideration is what

the balance of risks are for this child in context that they have an *a priori* mortality risk.
So the narrow question is whether we have any *evidence* that treating the child in the current environment poses more of a threat than not treating him taking all of the related risks into account (donor loss, deterioration, delay in another centre accommodating case-if option-infection, etc)

Assessment

Without a clearly defined "show stopping" finding (ege pending results), if Brenda and Craig concur, then I would support treatment at RHC.
Rationale is that the clinical team are the same and therefore that expertise is unchanged, there is on site PICU (critical adjacency) there is a pressing clinical need and no viable local alternative option. Whilst much uncertainty has been introduced about environmental matters and tests have been conducted there are no actual standards and conflicting literature about utility of the tests.

Response

A final decision is required from BMD and COO given the risks involved. This paper is to help form that view.
I sense there is NOT going to be any more useful debate. As ever the patient outcome will be binary.

SBAR 2.

Situation

There are cases in train , one of which can wait (Haemoglobinopathy but there is a social contect) and another that may well become time critical (for several reasons that echo Case 1:very complex case).

Background

As above.
Any enhanced work may not be completed / tested in time frame for the latter case.
Further testing could be available but given caveats about the utility we may be in similar situation.

Assessment

We should progress Estates Work ASAP to build contingency and infrastructure options ASAP.

Response

Decision to refer (or not) the potential time critical case and inform family ASAP given potential for further work-up, etc. The other case also requires family contact.

Hope the above helps inform debate.
Note that it needs to be corrected if there are factual or interpretational issues.
Have cc to Jennifer Armstrong as a Rough Draft so that she knows my take on this.
Brenda and Craig's views obviously critical (I am not the expert here is specifics) but I have not copied to them at present.

Kind regards

Alan

Dr Alan M Mathers
Chief of Medicine Women and Children
Consultant Obstetrician and Gynaecologist
Greater Glasgow and Clyde Health Board
[redacted]

.

From: Redfern, Jamie
Sent: 15 September 2015 18:03
To: Mathers, Alan
Subject: Fwd: Bmt

Jacquie
Didn't get back to me Alan
Were we able to progress this?
I haven't went back to Grant and Jennifer. Might be you guys have dealt with this direct.
I'm just trying to gauge how close we are to what she is looking for and how tomorrow is going to look re what possibly still to do.
Cheers
Jamie

Sent from my Samsung device

-------- Original message --------
From: "Redfern, Jamie" [redacted]
Date: 15/09/2015 4:13 PM (GMT+00:00)
To: "Bruce, Jacquie" [redacted]
Subject: Re: Bmt

Can you confirm Jacquie?

Sent from my Samsung device

-------- Original message --------
From: "Redfern, Jamie" [redacted]
Date: 15/09/2015 2:18 PM (GMT+00:00)
To: "Bruce, Jacquie" [redacted]
Subject: Bmt

Hi Jacquie
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Jamie

Sent from my Samsung device

From: Archibald, Grant
To: Armstrong, Jennifer
Subject: FW: Bmt
Date: 16 September 2015 15:38:17

Craig and Brenda support the position proposed by Alan

Grant Archibald
Chief Officer
Acute Services

I am moving to J B Russell House on Friday 4th September 2015. My new phone number will be [redacted]

From: Redfern, Jamie
Sent: 16 September 2015 15:35
To: Archibald, Grant
Subject: FW: Bmt

Both in agreement

PS: the samples taken at the weekend on cubicles 18 and 19 seem to be improvement on previous ones

From: Williams, Craig
Sent: 16 September 2015 15:23
To: Redfern, Jamie
Subject: Re: Bmt

Dear Jamie

I think that Alan's SBAR summarizes the discussions very well and I am in agreement with his conclusions

Best wishes

Craig

Sent from my BlackBerry 10 smartphone on the EE network.

From: Redfern, Jamie
Sent: Wednesday, 16 September 2015 12:35 PM
To: Gibson, Brenda; Williams, Craig
Cc: Bruce, Jacquie; Mathers, Alan
Subject: FW: Bmt

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If yes then I think we have a clinical agreement on moving forward between service and microbiology / infection control which we can afdd to conclusions in final paper.

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So the narrow question is whether we have any *evidence* that treating the child in the current environment poses more of a threat than not treating him taking all of the related risks into account (donor loss, deterioration, delay in another centre accommodating case-if option-infection, etc)

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Without a clearly defined "show stopping" finding (ege pending results), if Brenda and Craig concur, then I would support treatment at RHC.
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A final decision is required from BMD and COO given the risks involved. This paper is to help form that view.
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SBAR 2.

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There are cases in train , one of which can wait (Haemoglobinopathy but there is a social contect) and another that may well become time critical (for several reasons that echo Case 1:very complex case).

Background

As above.
Any enhanced work may not be completed / tested in time frame for the latter case.
Further testing could be available but given caveats about the utility we may be in similar situation.

Assessment

We should progress Estates Work ASAP to build contingency and infrastructure options ASAP.

Response

Decision to refer (or not) the potential time critical case and inform family ASAP given potential for further work-up, etc. The other case also requires family contact.

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Kind regards

Alan

Dr Alan M Mathers
Chief of Medicine Women and Children
Consultant Obstetrician and Gynaecologist
Greater Glasgow and Clyde Health Board
[redacted]

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Cheers
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Jamie

Sent from my Samsung device

From: Calderwood, Robert
To: Armstrong, Jennifer
Cc: Archibald, Grant; Stewart, David; Loudon, David
Subject: RE: Royal Hospital for Children- Schiehallion Ward Rooms 18 & 19
Date: 17 September 2015 12:38:45

Jennifer
Thank you for the very comprehensive email ,setting out all the issues and background to this complex situation.
I believe you and collegues have taken all reasonable steps to review and rectify problems and the decision to proceed with the treatment of this BMT patient is arrived at after
due consideration of all risks and benifets and I agree with your recommendation.
Thank you
Robert

From: Armstrong, Jennifer
Sent: 17 September 2015 11:25
To: Calderwood, Robert
Cc: Archibald, Grant; Stewart, David; Loudon, David
Subject: Royal Hospital for Children- Schiehallion Ward Rooms 18 & 19
Importance: High

Robert

As you know, there has been much activity and discussion over the last few weeks around estates issues, clinical issues and infection control issues connected with BMT unit at RHC and in particular whether it is safe to [redacted]) from [redacted] next week.

Grant, David S, David L and I have reviewed all the information available to us. The key issues and information relating to the [redacted] being admitted today have been summarised by the Chief of Medicine for the directorate and are set out below together with other relevant information:

Patient/Clinical Factors

Situation

The clinical situation relating to [redacted] pressing and acute.

The overriding question is whether [redacted] option in the current service at RCH for a critically time dependent case that has been through the MDT process and has a Bone Marrow donor available.

Background

The service has no track record because it has moved from RHSC at Yorkhill to the new RHC. Two cases have successfully undergone treatment. Apart from moving facilities the rest of the service including clinicians (doctors/nurses/paramedical) are the same as are their hygiene SOPs etc.

The facilities at RHC are at least as good as the RHSC and are believed to be built to a higher spec. They are NOT identical. They are not as high spec as the Beatson Adult system. This however does not mean that they are a suboptimal standard.

Testing of particle counts and fungi have been put in place. There is no agreed national standard requiring such testing and no agreed interpretation of what the testing means and how it correlates with actual risk of clinical harm to a patient. Some units do not do any such testing. It appears that there was no standardised approach between GGC units.

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There is a pressing need to treat [redacted] relapsed disease from [redacted]. There may be limited scope, if any, to identify and refer for treatment elsewhere given 1) the time-critical situation, 2) the further inherent delays in the inevitable "re-assessment" of the diagnosis and preferred treatment, and 3) the availability of the donor.

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There is a reputational, media and related risk. Whilst this is noted, however, the primary consideration is what the balance of risks is for this child in the context that they have an *a priori* mortality risk. So the narrow question is whether there is any *evidence* that treating the child in the current environment poses more of a threat than not treating him, taking all of the related risks into account (i.e. donor loss, deterioration, delay in another centre accommodating case, infection, etc)

Assessment

In the absence of any further clearly defined major finding, treatment of this child at RHC should

proceed, on the grounds that

1. the clinical team are the same and therefore that expertise is unchanged;
2. there is on site PICU (critical adjacency);
3. there is a pressing clinical need and no viable local alternative option;
4. although much uncertainty has been introduced about environmental matters and tests have been conducted, there are no defined standards and there is conflicting literature about utility of the tests.

The Chief of Medicine, the acting director of women and children, the treating consultant haematologist and the Board's Lead Infection Control Doctor all support this assessment and conclusion.

Facilities Issues

The Director of Facilities has confirmed that

1. the rooms at RHC have been constructed and commissioned in accordance with the specifications and plans signed off by the Board to Brookfield Multiplex and this has been verified by our NEC 3 Supervisor.

2. the issues regarding mastic sealing around the IPS panel have been repaired satisfactorily and that regular inspections of the rooms have noted that the air pressures in the lobbies are consistently sitting around 9.5 to 10 Pascals. The air pressures are currently being checked three times per day.

3. the facilities team have increased intensive cleaning of the rooms and have extended this to the public corridors immediately outside of the rooms.

Decision/Recommendation

Taking all of the foregoing into account and balancing all risks, we have concluded that further debate is unlikely to be of any benefit in this situation. We are agreed that BMT for this child should proceed as planned with the child being admitted today for transplant w/c 21st September.

We would be grateful if you could review this summary and advise if there are any actions or considerations you believe we have missed and should be undertaken before proceeding to transplant this child.

Kind regards
Jennifer, Grant and David

From:	Armstrong, Jennifer
To:	Armstrong, Jennifer
Subject:	FW: Bone marrow transplant
Date:	01 March 2020 10:46:21
Attachments:	80715 BMT News Release.doc image001.jpg

From: Armstrong, Jennifer
Sent: 07 July 2015 16:48
To: Catherine. Calderwood [redacted]
Subject: Fw: Bone marrow transplant

Catherine

Here is a press release relating to temporary relocation of the BMT unit to the Beatson.

We will issue tomorrow morning or sooner if we get any inquiries. J

Sent from my BlackBerry 10 smartphone on the EE network.

From: Edwards, Emma [redacted]
Sent: Tuesday, 7 July 2015 16:42
To: Armstrong, Jennifer
Subject: FW: Bone marrow transplant

From: Edwards, Emma
Sent: 07 July 2015 15:31
To: 'Suzanne.Hart[redacted]
Subject: Bone marrow transplant

Hi Suzanne,

As discussed here is the current draft of the media release. I will let you have final version if there are any changes to this.

Regards,

Emma

Emma Edwards | Media Relations Manager | NHS Greater Glasgow and Clyde
JB Russell House | Gartnavel Royal Hospital | 1055 Great Western Road | GLASGOW G12 OXH
[redacted]
24 hour media enquiries t [redacted]
Visit our Media Centre at: www.nhsggc.org.uk/mediacentre
Follow us on Twitter: @nhsggc

PRide-2014-Gold-Button

From: Armstrong, Jennifer
To: Williams, Craig
Cc: Walsh, Tom
Subject: RE: BMT summary
Date: 07 July 2015 23:16:00

thanks Craig, got this earlier and passed to CE
j

From: Williams, Craig
Sent: 07 July 2015 11:18
To: Armstrong, Jennifer
Cc: Walsh, Tom
Subject: BMT summary

Dear Jennifer

I have attached a document outlining the original specification and current problems with the BMT unit at QEUH. Gary Jenkins and the clinical team are happy with the contents.

Best wishes

Craig

From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)
To: Armstrong, Jennifer
Subject: [ExternaltoGGC]water IMT
Date: 04 September 2018 17:24:11

Just to make you aware I am reconvening the water IMT due to 3 patient bacteraemias and ongoing issues with the drains in ward 2A. The meeting will be tomorrow morning , I will update you after. None of the patients are giving cause for concern

Kind regards
Teresa

Dr Teresa Inkster
Lead Infection Control Doctor NHSGGC
Training Programme Director Medical Microbiology
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Walsh, Tom
To: Devine, Sandra
Cc: Mcguire, Margaret; Armstrong, Jennifer; Best, Jonathan; Kane, Mary Anne
Subject: RE: Triggers wards 2a 2b rhc
Date: 05 September 2018 10:09:09

Thanks Sandra

Can we also raise at the IMT this afternoon, and Teresa can raise with the Water Group on Friday.

Kr

Tom

From: Devine, Sandra
Sent: 05 September 2018 09:49
To: Walsh, Tom
Subject: FW: Triggers wards 2a 2b rhc

Hi Tom

We reverted to established triggers for ward 2a on the 6th of August having had no new cases since June, however, there were two gram negative bacteraemias in 2a within 11 days (our trigger is 2 cases in 14 days). They were different organisms but Teresa opinion is that they are associated with the water so the IMT process has commenced as normal. Annette's e mail required us from this point onward to revert back to all cases being reported to HPS via an SBAR prepared in consultation with the appropriate clinical team. This has been requested by the CNO. There is an IMT arranged for today but i wonder if we should make Jennifer and Mag's aware that this process has been triggered again.
Kind regards
Sandra

Sandra Devine
Associate Nurse Director
Infection Prevention & Control
[redacted]

-----Original Message-----
From: RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND)
[redacted]
Sent: 04 September 2018 17:52
To: Walsh, Tom; Devine, Sandra; Inkster, Teresa (NHSmail); Dodd, Susie
Subject: [ExternaltoGGC]Triggers wards 2a 2b rhc

Dear all,

SG have requested an extension to the increased alerts/triggers relating to cases within wards 2A/B They have requested that you revert to the process outlined by the CNO which includes the process of investigation of any single case (within the case definition) being considered by the IMT. This does not mean a full IMT to discuss every new possible/probable/confirmed cases but as a minimum a discussion by email and a resultant SBAR on the assessment of the case ensuring agreement by the IMT should be undertaken. Should there be any actions required as a result of a new case then the IMT would be reconvened.

I have been advised that the proposed timescale for this approach is for an indefinite period and would suggest this remains in place from now until we have been advised to revert to normal triggers by SG

Can you advise that you are content with this approach

Annette

Sent from my iPhone

From: Hill, Kevin
To: Grant, Jane [Chief Exec]; Archibald, Grant; Best, Jonathan; Armstrong, Jennifer; Kane, Mary Anne; Harkness, Anne; Jenkins, Gary
Subject: Fw: Options discussed at today"s ward 2A meeting following this morning"s IMT
Date: 13 September 2018 18:34:16
Attachments: image001.jpg

Dear colleagues,
Infection Control advice following the IMT meeting this morning is that it is "unsafe" to continue to treat BMT patients and haemato-oncology patients in their current ward environment (ward 2A) at RHC.
It was also stated that it was not appropriate to decant to any other ward within RHC due to the water drain issues within the building.
A process of drain cleaning is presently underway in ward 2A.
The options listed in the email below were discussed at the meeting this afternoon.
I have contacted Gary Jenkins regarding the use of empty rooms in Ward 4B QEUH and he has confirmed there are 3 bedrooms available and they are being cleaned tonight in anticipation of transfer of 3 of our 4 BMT paediatric patients. Upon transfer RHC will provide the nursing and medical teams to continue to care for these patients.

Other decant options for the non-BMT patients within QEUH are currently under review by Anne Harkness.
There is no option to decant into NICU at QEUH as their water supply is the same as RHC.

There is a clinical team meeting at 08.30 tomorrow to discuss the current situation and determine the most appropriate arrangements to continue their care.
I will update on the plans for decant following the meeting tomorrow.
Happy to discuss.
Kind regards

Sent from my BlackBerry 10 smartphone on the EE network.

From: Rodgers, Jennifer [redacted]
Sent: Thursday, 13 September 2018 17:36
To: Redfern, Jamie; Harkness, Anne; Inkster, Teresa; Kane, Mary Anne; Gibson, Brenda; Connelly, Karen; 'annette.rankin[redacted]; Kennedy, Iain
Cc: Jenkins, Gary; Hill, Kevin
Subject: Options discssed at todays 2A meet

Dear All,

Options as discussed at today's meeting were as follows:

<!--[if !supportLists]-->1. <!--[endif]-->Status Quo with control measures- Drain cleans. Verdict: option ruled out as per infection control guidance
<!--[if !supportLists]-->2. <!--[endif]-->Decant to other area in RHC. Verdict: Option ruled out as estates and infection control clear that drain issue is endemic across RHC site
<!--[if !supportLists]-->3. <!--[endif]-->Decant to Adult ward on QEUH site with BMT pts going to 4b. Verdict: BMT three patients can transfer to ward 4b, arrangements are

underway to prepare the area.
Non BMT pts: scoped a currently unused ward within maternity, ward in state of disrepair thus ruled out as an option. Scoped Gyn ward area is too small. AH will scope QE site options.

<!--[if !supportLists]-->4. <!--[endif]-->Decant to mobile ward with BMT pts to ward 4b. Verdict: Remains under discussion

<!--[if !supportLists]-->5. <!--[endif]-->Treat patients out with NHSGGC. Verdict: Only to be considered if none of the above options prove satisfactory.

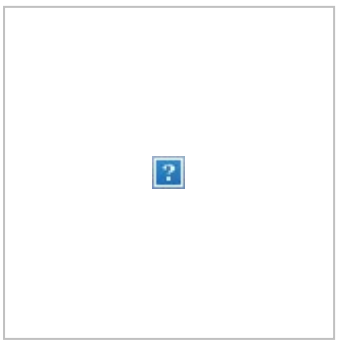
Many thanks

Jen

Jennifer Rodgers
Chief Nurse
Children, Neonates and Young People
Royal Hospital for Children
South Glasgow Hospitals
1345 Govan Road
Glasgow
G51 4TF

[redacted]

[redacted]



The best way to reduce harm ... is to embrace wholeheartedly a culture of learning

From: Walsh, Tom
To: Armstrong, Jennifer
Subject: RE:
Date: 18 September 2018 17:51:47
Attachments: Water Systems 14th Septemberv3.docx

Hi Jennifer

This is a short note of the meeting held on 14th September. This is based on my own notes on the agreed/ required actions as no minute or note of the meeting was taken at the time.

I have shared this note with Kevin, Jen, Mary Anne and Teresa and requested any addition or amendment. I have had no response as yet.

Kr

Tom

From: Armstrong, Jennifer
Sent: 17 September 2018 12:46
To: Walsh, Tom
Subject: Re:

Thanks Tom. That would be appreciated. J

Sent from my BlackBerry 10 smartphone on the EE network.

From: Walsh, Tom
Sent: Monday, 17 September 2018 11:43
To: Armstrong, Jennifer
Subject: RE:

Hi Jennifer

I'll do what I can, but I took limited notes beyond the actions for the IPCT.

I'll check with others present.

Kr

Tom

From: Armstrong, Jennifer
Sent: 17 September 2018 11:29
To: Walsh, Tom
Subject:

Tom
Can you do a note of the meeting on Friday please? Sorry Jane keen we document agreement etc j

Sent from my BlackBerry 10 smartphone on the EE network.

From: Armstrong, Jennifer
To: Armstrong, Jennifer
Subject: FW: Water incident RHC, NHSGGC
Date: 05 July 2024 21:03:10

From: Hill, Kevin
Sent: Thursday, September 20, 2018 9:35 PM
To: Grant, Jane [Chief Exec] [redacted]; Armstrong, Jennifer [redacted]; Archibald, Grant [redacted]; Best, Jonathan [redacted]
Subject: FW: Water incident RHC, NHSGGC

Dear colleagues,

FYI response sent to SG tonight.

Kind regards

From: Hill, Kevin
Sent: 20 September 2018 21:23
To: 'RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND)'; Walsh, Tom; Inkster, Teresa (NHSmail)
Cc: Kane, Mary Anne; Dodd, Susie
Subject: RE: Water incident RHC, NHSGGC

Dear Annette,

Please accept my apologies for the delay in replying to your and SG request for further information.

The NHSGGC response to SG questions is as follows:

1. Can you confirm if the postponement was due to a clinical decision or it was due to the contamination of the water?

The decision to postpone was taken on Friday morning when a series of meetings were underway with clinical teams to assess the current situation and to determine the safety of ongoing patient care in the existing ward. The postponement was not as a consequence of the patient's clinical condition it was however due to the developments /potential decisions under consideration throughout Friday regarding a potential decant therefore the child's clinical team postponed the treatment until Monday morning.

2. SG also wish details on all areas considered for decant and what the current position is?

A number of options were considered for decant of wards 2A and 2B including Bone Marrow patients. Following review against a set criteria it was concluded that the safest decant was to use the Queen Elizabeth University Hospital. At today's IMT Ward 6A was agreed as the location for the majority of ward 2A and 2B patients; this followed previous agreement for the Bone Marrow Transplant (BMT) patients to go to Ward 4B which is the existing adult BMT unit.

The criteria included close proximity to paediatric intensive care, theatres and radiology services. It also included the importance of

keeping services as closely located as possible to optimise staffing and relationships with other specialist paediatric clinical teams.

There is no other paediatric hospital in Scotland that is able to accommodate the Bone Marrow Transplant Service.

3. Does the IMT have a hypothesis on the route of transmission from the source to the

patients?

The hypotheses in relation to the drain issue are as follows:

i) filters reduce the space between the tap and the drain causing splashing. This splashing disrupts biofilm in the drain, (our drains have evidence of biofilm). Disruption of biofilm leads to transmission via the splashing itself directly on to a child, parent, or staff member or the surrounding environment. All of these are potential routes of transmission. In addition there is the possibility of aerosolisation of bacteria which represents a further route. There are particular issues in the paediatric setting with smaller hand hygiene sinks in the patient bathrooms and this exacerbates the splashing effect even more.

ii) Biofilm creep up the drain into the sink. This may result from structural drainage problems, pressure issues or the type of materials used. We have seen evidence of black sludge (biofilm) coming back up into sinks. This retrograde biofilm creep is described in the published literature in relation to outbreaks linked to sinks.

4. More specifically, what is their working assumption about where there has been a breakdown in control measures what will be happening differently going forward?

A raft of infection control measures were implemented targeting routes of transmission. However the challenge is that there is an uncontrolled source, there is clearly an issue with drainage that requires to be rectified. A crucial part of outbreak/incident management is not only implementation of control measures but identification and removal of the source.

5. Can we also have confirmation that the wards where patients are being decanted to are clear?

We have ongoing surveillance in place and we have not detected an increased incidence of bacteraemias in either the decant wards or the adult hospital as a whole. There have been no reports of drain issues in the adult hospital. In addition there are less sinks in the adult ward and the sinks in patient bathrooms will be larger so there will be less splashing. Prior to moving patients to the adult ward, cleaning will take place using HPV and filters will be fitted to all outlets. The level of infection control surveillance currently in place on ward 2A/2B will continue.

Happy to discuss.

Kind regards

From: RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND) [redacted]
Sent: 20 September 2018 11:34
To: Walsh, Tom; Inkster, Teresa (NHSmail); Hill, Kevin
Cc: Kane, Mary Anne; Dodd, Susie
Subject: [ExternaltoGGC]Re: Water incident RHC, NHSGGC

Dear all,
I have been contacted by SG this morning to request an urgent response to the 2 additional outstanding information requests.
Annette
Sent from my iPhone

On 19 Sep 2018, at 17:30, RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND) [redacted] wrote:

> Many thanks Teresa
> I will forward this to SG tonight.
> There are 2 additional requests from SG outstanding which include the decant assessment as discussed at the IMT and the question on patient treatment delay as per earlier email.
> Annette
> Sent from my iPhone
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> On 19 Sep 2018, at 17:14, INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted] wrote:
>
> > Hi Annette
> >
> > Please found response attached
> >
> > Kind regards
> >
> > Teresa
> >
> > Dr Teresa Inkster
> > Lead Infection Control Doctor NHSGGC
> > Training Programme Director Medical Microbiology
> > Dept of Microbiology
> > Queen Elizabeth University Hospital
> > Glasgow
> > [redacted]
> >
> > ---
> >
> > **From:** RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND)
> > **Sent:** 18 September 2018 11:27
> > **To:** INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); Kane Maryanne (NHS GREATER GLASGOW & CLYDE); Dodd Susan (NHS GREATER GLASGOW & CLYDE); Walsh Thomas (NHS GREATER GLASGOW & CLYDE)
> > **Subject:** FW: Water incident RHC, NHSGGC
> > Dear all
> > I have had an urgent request from SG for a stage by stage review of all routes of transmission/control measures applied since the start of the incident: including the environmental factors such as drains, ventilation as well as practice (central line care, sicps etc) and for this to be forwarded to them in a tabulated format.
> > I propose that a group of us meet directly after today's IMT to pull this together so that I can have something with SG tonight.
> > Can you let me know asap that this is okay and we are able to meet so that i can advise SG
> > SG also wish details on all areas considered for decant and what the current position is: are you able to provide this as soon as possible?
> > Annette
> >
> > <SG response Control measures 2A.docx>

From: Walsh, Tom
To: Armstrong, Jennifer
Subject: Update
Date: 21 September 2018 09:35:06

Hi Jennifer

I stop for leave today, and thought I'd provide a brief status update…

We have a team of ICNs reviewing Ward 6a QEUH this morning as discussed with Teresa last night. The Team will liaise with facilities on required actions.

Senior Infection Control input is being provided to the operational group planning the decant.

I have also arranged for ICN input/ advice for the clinical team over the holiday weekend.

All SG Questions are up to date, (one due for response today), and as per email below, I have arranged for Kevin et al to have access to all previous questions from SG,HPS and HFS if required.

Sandra and Teresa are both in next week. Sandra is also working the Monday Public Holiday.

Kr

Tom

From: Walsh, Tom
Sent: 21 September 2018 09:04
To: Hill, Kevin
Cc: Kane, Mary Anne; Dodd, Susie; Redfern, Jamie; Rodgers, Jennifer; Lang, Ann; Devine, Sandra; Inkster, Teresa (NHSmail)
Subject: RE: Water incident RHC, NHSGGC

Many thanks Kevin

I stop for leave today and I think there may still be one SG question outstanding from yesterday as below.

If access to any previous questions / responses is required, I have created a comms log in chronological order of all questions from SG, HPS and HFS together with our responses. (How sad does that make me sound !!!!)

My PA Ann Lang is familiar with the file and can assist, Sandra and Mary Anne also have access to the shared space.

Bw

Tom

Question from 20/09/18

We would also like to know, following a question at FMQs, how many cases of chemotherapy had been delayed or cancelled as a result of the water contamination since the original outbreak in January.

We would like the information as soon as possible.

From: Hill, Kevin
Sent: 20 September 2018 21:23
To: 'RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND)'; Walsh, Tom; Inkster, Teresa (NHSmail)
Cc: Kane, Mary Anne; Dodd, Susie
Subject: RE: Water incident RHC, NHSGGC

Dear Annette,
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The NHSGGC response to SG questions is as follows:

1. Can you confirm if the postponement was due to a clinical decision or it was due to the contamination of the water?

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3. Does the IMT have a hypothesis on the route of transmission from the source to the patients?

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4. More specifically, what is their working assumption about where there has been a breakdown in control measures what will be happening differently going forward?

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Happy to discuss.

Kind regards

From: RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND) [redacted]
Sent: 20 September 2018 11:34
To: Walsh, Tom; Inkster, Teresa (NHSmail); Hill, Kevin
Cc: Kane, Mary Anne; Dodd, Susie
Subject: [ExternaltoGGC]Re: Water incident RHC, NHSGGC

Dear all,

I have been contacted by SG this morning to request an urgent response to the 2 additional outstanding information requests.

Annette

Sent from my iPhone

On 19 Sep 2018, at 17:30, RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND) [redacted] wrote:

> Many thanks Teresa
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> I will forward this to SG tonight.
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> > Dr Teresa Inkster
> > Lead Infection Control Doctor NHSGGC
> > Training Programme Director Medical Microbiology
> > Dept of Microbiology
> > Queen Elizabeth University Hospital

Glasgow
[redacted]

From: RANKIN, Annette (NHS NATIONAL SERVICES SCOTLAND)
Sent: 18 September 2018 11:27
To: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); Kane Maryanne (NHS GREATER GLASGOW & CLYDE); Dodd Susan (NHS GREATER GLASGOW & CLYDE); Walsh Thomas (NHS GREATER GLASGOW & CLYDE)
Subject: FW: Water incident RHC, NHSGGC

Dear all

I have had an urgent request from SG for a stage by stage review of all routes of transmission/control measures applied since the start of the incident: including the environmental factors such as drains, ventilation as well as practice (central line care, sicps etc) and for this to be forwarded to them in a tabulated format.

I propose that a group of us meet directly after today's IMT to pull this together so that I can have something with SG tonight. Can you let me know asap that this is okay and we are able to meet so that i can advise SG

SG also wish details on all areas considered for decant and what the current position is: are you able to provide this as soon as possible?

Annette

<SG response Control measures 2A.docx>

From: Archibald, Grant
To: Grant, Jane [Chief Exec]
Cc: Armstrong, Jennifer; McLaws, Ally
Subject: Fwd: Ward 2A and 2B patient transfers update
Date: 26 September 2018 15:25:52

Jane. Process completed per schedule

Grant Archibald
Chief Officer
Acute Services

Begin forwarded message:

From: "Hill, Kevin" [redacted]
Date: 26 September 2018 at 15:22:06 BST
To: "Archibald, Grant" [redacted], "Best, Jonathan" [redacted]
Subject: Re: Ward 2A and 2B patient transfers update

All inpatient moves now complete. Tonight the day ward 2B will transfer once all day patients

Sent from my BlackBerry 10 smartphone on the EE network.

From: Hill, Kevin
Sent: 26 September 2018 11:19
To: Archibald, Grant [redacted]; Best, Jonathan [redacted]
Subject: Ward 2A and 2B patient transfers update

Grant,
I confirm that 2 out of 3 BMT patients have transferred successfully to ward 4B and that 7 non BMT patients from 2A have also now transferred to Ward 6A.
A further 8 patients transfers are now underway and I will update you once all transfers are complete.
Kind regards

Sent from my BlackBerry 10 smartphone on the EE network.

From: Armstrong, Jennifer
To: Armstrong, Jennifer
Subject: FW: Update from 6A IMT
Date: 03 July 2024 13:00:59

From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) <teresa.inkster@nhs.net>
Sent: Friday, June 28, 2019 5:53 PM
To: Armstrong, Jennifer [redacted]; Mcguire, Margaret [redacted]; Hill, Kevin [redacted]; Redfern, Jamie [redacted]; Rodgers, Jennifer [redacted]; Joannidis, Pamela [redacted]; Devine, Sandra [redacted]; Mathers, Alan [redacted]; Davidson, Scott [redacted]; Deighan, Chris [redacted]
Subject: [ExternaltoGGC]Re: Update from 6A IMT

Update from 6A

We have one further Gram negative bacteraemia confirmed this afternoon - Pseudomonas putida, this patients timeline will be reviewed. They are not giving cause for concern

I have initial typing results back (whole genome sequencing) for the M chelonae cases and water samples. The most recent patient is a very close match to a strain in the water and is considered hospital acquired. The patient from last year is very different from the current patient and the strains from our water that have been typed so far , therefore we do not have evidence of a link at this stage.

Kind regards

Teresa

Dr Teresa Inkster
Lead Infection Control Doctor NHSGGC
National Training Programme Director Medical Microbiology
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)
Sent: 19 June 2019 17:01
To: Armstrong Jennifer (NHS GREATER GLASGOW & CLYDE); margaret.mcguire[redacted] Hill Kevin (NHS GREATER GLASGOW & CLYDE); Redfern James (NHS GREATER GLASGOW & CLYDE); Rodgers Jennifer (NHS GREATER GLASGOW & CLYDE); Joannidis Pamela (NHS GREATER GLASGOW & CLYDE); Devine, Sandra; alan.mathers[redacted]
Subject: Update from 6A IMT

Dear all

An IMT was held in ward 6A today to discuss two issues;

Gram negative bacteraemias

Five Gram negative bacteraemias meeting previous case definition since 13/4/09. All patients currently stable. Typing for 3/5 shows unique strains.

Water testing from 6A , no evidence of organisms found in blood cultures, drains on 6A clean

Patients have been to interventional radiology and theatres. Drain swabs from these areas positive for the same bacteria, typing awaited. Drain cleaning ongoing.

May represent normal background rates. No evidence of patient to patient transmission as different strains. Drains outwith ward 6A may be a source

Mycobacterium chelonae

Cutaneous infection with M Chelonae confirmed in a 6A patient this morning. Patient is now at [redacted].

Previous 6A patient in May 2018 had blood stream infection with M chelonae.

Rare infection , two patients in 2 years would be considered unusual

Recent water samples in 6A with filters off have tested positive for M chelonae .

Presumed source is areas outwith ward 6A without filters on where patients may have been .

Water sampling to be undertaken in these areas and filters to be fitted. Water testing with filters on in 6A to be undertaken to demonstrate filter efficacy. Organism known to concentrate in showerheads so these will be sampled also

Whole genome sequencing (typing) to be undertaken by St Andrews research lab

Comms

HIIAT - Amber, HPS and SG to be informed via HIIORT

Draft press lines . [redacted] atypical mycobacteria due for clinical visit next week , discussion re comms to family to take place with Prof Gibson early next week.

A further IMT will be held next week

Please get in touch if you have any questions

Kind regards

Teresa

Dr Teresa Inkster
Lead Infection Control Doctor NHSGGC
National Training Programme Director Medical Microbiology

Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Armstrong, Jennifer
To: Armstrong, Jennifer
Subject: FW: IMT GNB & Mycobacteria chelonae
Date: 03 July 2024 13:02:24

From: Devine, Sandra
Sent: Wednesday, July 3, 2019 4:43 PM
To: Armstrong, Jennifer [redacted]; Mcguire, Margaret [redacted]>; Deighan, Chris [redacted]; Steele, Tom [redacted]; Hill, Kevin [redacted]; Davidson, Scott [redacted]
Cc: Inkster, Teresa (NHSmail) [redacted]; Dodd, Susie [redacted]; Joannidis, Pamela [redacted]; Rodgers, Jennifer [redacted]; Best, Jonathan [redacted]; Kennedy, Iain [redacted]; Hamilton, Kate [redacted]
Subject: RE: IMT GNB & Mycobacteria chelonae

Hi

Summary of today's IMT.

Gram Negative Bacteraemia (GNB)

- One new case identified since last IMT. 1 possible case remains under investigation. All GNB are unique strains.
- None of the current in-patients are giving cause for concern in relation to this incident.
- One post water sample has tested positive for mycobacterium ?? filter failure or proximity to unfiltered water form Arjo bath (bath will now be capped or removed) and this outlet will be resampled.

Mycobacteria chelonae

- Whole genome sequencing of M. chelonae shows that most recent case is closely related to a water strain. The case from last year is not closely related to any M. chelonae found in water samples, NB some results are still outstanding.

Actions

- Epidemiology for both GNB and Mycobacteria chelonae from HPS is still awaited but may be available next week.
- Air sampling still to be done.
- Water sampling of all outlets in 6a will be completed over the next four weeks.
- Cleaning of drains in nuclear medicine will be added to the drain cleaning programme.
- Plans will be put in place to shock dose system with chlorine. EFM agreed to discuss this with Acute Sector Director.
- SICPs audits done – score was 93%.
- Comms available for patients and parents.
- Taps changed in treatment room.

HIIAT Assessed as AMBER

Severity of Illness – Minor

Impact on Services – Minor

Risk of transmission – Moderate

Public Anxiety – Moderate.

HPS on teleconference.

Next IMT planned for Monday 22 July unless there is another case.

Kate Teresa can you correct any errors or omissions please?

Kind regards
Sandra
Sandra Devine
Acting Infection Control Manager
NHS Greater Glasgow & Clyde
[redacted]

From: Devine, Sandra
Sent: 25 June 2019 18:32
To: Armstrong, Jennifer [redacted] Mcguire, Margaret [redacted] Deighan, Chris [redacted]; Steele, Tom [redacted]; Hill, Kevin [redacted]; Davidson, Scott [redacted]
Cc: 'INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)' [redacted]; Dodd, Susie [redacted]; Joannidis, Pamela [redacted]; Rodgers, Jennifer [redacted]; Best, Jonathan [redacted]; Kennedy, Iain [redacted]
Subject: IMT GNB & Mycobacteria chelonae

Hi

Summary of today's IMT.

Gram negative blood cultures ward 6a

- Six possibly seven cases since 8 April. Four are healthcare associated, two are considered hospital acquired, although one of these is thought to be due to gut translocation. One of the healthcare associated cases had their line accessed in Ninewells and the BC was positive then. The seventh case is still being investigated.
- All patients are reported as giving no cause for concern today due to the infection.
- Of the 6 cases there are three different GNB and so far three samples have been sent for typing and all are unique strains.
- Water samples within acceptable levels for GNB post and pre filter.

Mycobacteria chelonae

- Two cases in 13 months but this is considered to be an unusual infection incident. Local epidemiology – four adult cases in 10 years, no paediatric cases until current two.
- Outlets in ward 6a and theatres positive (6a it was pre filter samples). Samples taken in response to increase in GNB but were subsequently tested for M. chelonae.
- HPS to find out if any other board are reporting either water samples or cases of M. chelonae.

Actions

GNB Specifically

- HPS asked for information regarding sampling in other boards and if they have a view on the epidemiology. It is possible that this could be our normal background levels.

M. chelonae

- Filters put on outlets in clinical areas that patients from haematology/oncology may attend.
- Lines for families being prepared
- Draft holding press statement being prepared
- Clinical team or W & C SMT will speak to the families of both cases tomorrow.
- Increase in the amount of chlorine in the system and consider shock dosing of system.
- Samples sent to St Andrews for typing.

Both

- SICPs audits will be done in some theatre areas and the ward.
- Samples sent to St Andrews for typing.
- Sample water from chilled beams.
- Check PPE are not located near sinks or outlets.
- Air sampling will be undertaken in ward 6a and theatres.
- AHG to be used in addition to normal HH.

HIIAT Assessed as AMBER

Severity of Illness – Minor
Impact on Services – Minor
Risk of transmission – Moderate
Public Anxiety – Moderate.
Next meeting W/B 1 July.
ICM agreed to contact HPS/HFS re sharing information with Lothian.
Kind regards
Sandra
Sandra Devine
Acting Infection Control Manager
NHS Greater Glasgow & Clyde
[redacted]

From: Armstrong, Jennifer
To: Armstrong, Jennifer
Subject: FW: Update IMT
Date: 03 July 2024 13:21:37

From: Devine, Sandra
Sent: Thursday, August 8, 2019 6:47 PM
To: Armstrong, Jennifer [redacted]; Mcguire, Margaret [redacted]; de Caestecker, Linda [redacted]; Inkster, Teresa (NHSmail) [redacted] Best, Jonathan [redacted]
Cc: Rodgers, Jennifer [redacted]; Joannidis, Pamela [redacted] Steele, Tom [redacted]; Hill, Kevin [redacted]; Davidson, Scott [redacted]; Bowskill, Gillian [redacted] Kennedy, Iain [redacted]
Subject: RE: Update IMT

Hi

Update from IMT – Teresa/Jen can you add or edit any omissions or errors.

Kind regards

Sandra

IMT

HIIAT RED

Severity of illness –Major

Impact on services – Moderate

Risk of Transmission – Moderate

Public Anxiety – Moderate

M. chelonae incident has been closed today by GGC and HPS.

Update

- 11 cases of GNB and one possible case.
- 4 HAI
- Date range 13/04/19 to 08/08/19
- Two unusual cases (Chryseomonas & Elizabethkingia species)
- Samples of fluid from within chilled beams, swabs from the surface of the chilled beams and air sampling were positive for various organisms but none of which are linked to the current group of patients although there may have been some issues with sampling technique – HFS to advise.
- HH audit results 85% combined (opportunity and technique)
- SICPs audt 97%
- Line audit – good results, one area for improvement and this was an additional step in established process.
- Enhanced supervision in place and this will continue weekly.

Actions Planned

- Repeat sampling
- Review options paper produced last year
- Communication with parents – group to look at how best to keep them informed.

Next IMT Wednesday 14 August.

Sandra

Sandra Devine

Acting Infection Control Manager

NHS Greater Glasgow & Clyde

[redacted]

From: Devine, Sandra
Sent: 01 August 2019 17:46
To: Armstrong, Jennifer ; Mcguire, Margaret ; de Caestecker, Linda ; 'INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)' ; Best, Jonathan
Cc: Rodgers, Jennifer ; Joannidis, Pamela ; Steele, Tom ; Hill, Kevin ; Davidson, Scott ; Bowskill, Gillian ; Kennedy, Iain
Subject: Update IMT

Hi
Update from IMT – Teresa/Jen can you add or edit any omissions or errors.
Kind regards
Sandra
IMT
HIIAT RED
Severity of illness –Major
Impact on services – Moderate
Risk of Transmission – Moderate
Public Anxiety – Moderate
Update

- 10 cases of GNB – 3 HAI using 48hr rule all unique types so far. Two cases M. chelonae in 12 months.
- Patient from 14/9 reported today as very unwell.
- Air sampling in the unit last week reported low levels of pathogenic fungi in four shower areas. All of the rooms were negative. Rooms inspected by ICD no issues identified.
- Chilled beam samples negative for M. chelonae but not tested for GNO. Water samples pre filter 10/100 grew M. chelonae.
- Two new patients diverted to Edinburgh today by clinical team.
- HPS to submit epi review tomorrow for IMT info.
- Filters and drain cleaning in place throughout patient pathway (some of these patients visit atrium noted by clinical team to be difficult to control).

Actions Planned

- Repeat air sampling
- Sample water from chilled beams for gram negative organisms.
- Clean all chilled beams.
- Explore possibility of replacing chilled beams with something else.
- Consider ciprofloxacin prophylaxis.
- Review line care – peer audit with practice educators.
- Hand Hygiene audit.
- SICPs audit.
- Enhanced supervision of the ward.
- Estates to review shower rooms
- Estates to investigate odour in some areas of the ward (not patient rooms)
- Drain cleaning is ongoing in all areas.
- Pall confirmed that after review of their filters that all were working as per specification.
- Toilet seats to be installed ?? re plume when flushing.
- Lines to be agreed for staff and parents/patients tomorrow 2/8.

Next meeting with clinical team tomorrow 2/8/19
Next IMT 8/8/19

From: Armstrong, Jennifer
To: Armstrong, Jennifer
Subject: FW: Update IMT
Date: 03 July 2024 13:33:03

From: Devine, Sandra
Sent: Friday, August 23, 2019 4:34 PM
To: Armstrong, Jennifer [redacted]; Mcguire, Margaret [redacted]; de Caestecker, Linda [redacted]; Inkster, Teresa (NHSmail) [redacted]; Best, Jonathan [redacted]; Crighton, Emilia [redacted]>
Cc: Rodgers, Jennifer [redacted]; Joannidis, Pamela [redacted]; Steele, Tom [redacted]; Hill, Kevin [redacted]; Davidson, Scott [redacted]; Bowskill, Gillian [redacted]; Kennedy, Iain [redacted]; Bowskill, Gillian [redacted] Deighan, Chris [redacted]
Subject: RE: Update IMT

Hi
Update from IMT
HIIAT RED
Severity of illness –Minor
Impact on services – Major
Risk of Transmission – Moderate
Public Anxiety – Moderate
Update

- 11 cases of GNB – 4 HAI using 48hr rule all unique types so far.
- Previously 2 possible cases were reported. 1 of these cases has now been discounted following further investigation. The remaining possible case is still being investigated.
- No GNB or fungi isolated from chilled beam samples.
- Last new case reported on the 2 August 2019.
- Patient divert continues meantime.

Action Planned

- Biocide dosing of chilled beams will commence next week.
- Air sampling will be carried out before and after additional HEPA unit installation in patient bathrooms.
- Water sources in DSR's without point of use filters will be sampled.
- DSR sink to be replaced with one that can have a filter attached.
- Chilled beams will be exchanged for cleaning and connector fitting.
- Facilities will source a filtered water source for the floor scrubber.
- External review to be sought from colleagues in GOSH.
- Review of the unit to be carried by HPS Friday 30th August.
- DB caps have replaced curos caps on central lines.
- Feasibility of HPV discharge clean to be assessed.
- Briefing for families will be updated and issued.
- Hand Hygiene training scheduled for next week.

Holding press statement to be prepared.
Next IMT scheduled for 02.09.19

Kind regards
Sandra
Sandra Devine
Acting Infection Control Manager
NHS Greater Glasgow & Clyde
[redacted]

From: Devine, Sandra
Sent: 08 August 2019 18:47
To: Armstrong, Jennifer [redacted]; Mcguire, Margaret [redacted] de Caestecker, Linda [redacted]; 'INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)' [redacted]; Best, Jonathan [redacted]
Cc: Rodgers, Jennifer [redacted]; Joannidis, Pamela [redacted] Steele, Tom [redacted]; Hill, Kevin [redacted]; Davidson, Scott [redacted]; Bowskill, Gillian [redacted]; Kennedy, Iain [redacted]
Subject: RE: Update IMT

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Kind regards
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HIIAT RED
Severity of illness –Major
Impact on services – Moderate
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M. chelonae incident has been closed today by GGC and HPS.
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- HH audit results 85% combined (opportunity and technique)
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- Line audit – good results, one area for improvement and this was an additional step in established process.
- Enhanced supervision in place and this will continue weekly.

Actions Planned

- Repeat sampling
- Review options paper produced last year
- Communication with parents – group to look at how best to keep them informed.

Next IMT Wednesday 14 August.

Sandra
Sandra Devine
Acting Infection Control Manager
NHS Greater Glasgow & Clyde
[redacted]

From: Devine, Sandra
Sent: 01 August 2019 17:46
To: Armstrong, Jennifer [redacted]; Mcguire, Margaret [redacted] de Caestecker, Linda [redacted]; 'INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)' [redacted]; Best, Jonathan [redacted]
Cc: Rodgers, Jennifer [redacted]; Joannidis, Pamela [redacted]; Steele, Tom [redacted]>; Hill, Kevin [redacted]; Davidson, Scott [redacted]; Bowskill, Gillian [redacted] Kennedy, Iain [redacted]
Subject: Update IMT

Hi
Update from IMT – Teresa/Jen can you add or edit any omissions or errors.
Kind regards
Sandra
IMT
HIIAT RED
Severity of illness –Major
Impact on services – Moderate
Risk of Transmission – Moderate
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- Repeat air sampling
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- Review line care – peer audit with practice educators.
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- Lines to be agreed for staff and parents/patients tomorrow 2/8.

Next meeting with clinical team tomorrow 2/8/19
Next IMT 8/8/19

From: Armstrong, Jennifer
To: Armstrong, Jennifer
Subject: FW: 6a IMT Friday 23 August
Date: 03 July 2024 13:50:40

From: Armstrong, Jennifer
Sent: Friday, August 23, 2019 7:05 PM
To: Best, Jonathan [redacted]
Subject: Fw: 6a IMT Friday 23 August

J

Can you help re transplant beds. I recall you had a plan?

Sent from my BlackBerry 10 smartphone on the EE network.

From: Crighton, Emilia [redacted]
Sent: Friday, August 23, 2019 6:53 PM
To: Armstrong, Jennifer
Cc: Steele, Tom
Subject: Re: 6a IMT Friday 23 August

Hi Jennifer, Meeting went well and hope to reopen to admissions from 2nd September provided facilities carry out work we agreed today and no new cases.
Question was asked about access to another 2 beds on transplant ward and I promised to escalate it to you.

Emilia
Sent from my iPad

On 22 Aug 2019, at 15:15, Armstrong, Jennifer [redacted]> wrote:

> Thanks Linda and to Emilia. Appreciated j
>
> Sent from my BlackBerry 10 smartphone on the EE network.
>
> ---
>
> **From:** de Caestecker, Linda
> **Sent:** Thursday, August 22, 2019 1:08 PM
> **To:** Devine, Sandra
> **Cc:** Crighton, Emilia; Armstrong, Jennifer
> **Subject:** Re: 6a IMT Friday 23 August
>
> Sandra
>
> Emilia is able to chair the meeting and attend the pre-meeting.
>
> Sent from my BlackBerry 10 smartphone on the EE network.
>
> ---
>
> **From:** Devine, Sandra
> **Sent:** Thursday, August 22, 2019 9:57 AM
> **To:** de Caestecker, Linda; Kennedy, Iain
> **Subject:** 6a IMT Friday 23 August
>
> Hi
>
> Jennifer asked me to e mail you with details the meetings tomorrow.
>
> IMT pre meet
>
> When: 23 August 2019 09:15-10:00 (UTC+00:00) Dublin, Edinburgh, Lisbon, London.
>
> Where: Room L2005, Level 2 Teaching & Learning Building, QEUH
>
> IMT
>
> When: 23 August 2019 10:00-12:00 (UTC+00:00) Dublin, Edinburgh, Lisbon, London.
>
> Where: Room L2005, Level 2, Teaching & Learning Building, QEUH

Kind regards
Sandra
Sandra Devine
Acting Infection Control Manager
NHS Greater Glasgow & Clyde
[redacted]

From: Armstrong, Jennifer
Sent: 03 July 2024 15:32
To: Armstrong, Jennifer
Subject: FW: Appraisal of options regarding Paediatric Haemato-oncology ward - important evidence from IMT and HPS

Categories: PI

From: Crighton, Emilia
Sent: Saturday, September 14, 2019 1:08 PM
To: Grant, Jane [Chief Exec] [redacted]; Armstrong, Jennifer [redacted]
Cc: Davidson, Scott [redacted]uk>; Hill, Kevin [redacted]
Subject: Re: Appraisal of options regarding Paediatric Haemato-oncology ward - important evidence from IMT and HPS

Dear Jane and Jennifer

I would like to add that the in-depth review of the microbiology and epidemiology data at the IMT on 13 September 2019 arrived to the conclusion that ward 6A is microbiologically safe for haemo-oncology patients and made the recommendation that ward 6A be reopened to new admissions.

Furthermore, epidemiological and microbiology data did not support the previous decision to close ward 6A to new admissions from 2nd August 2019.

The IMT also heard the risks associated with current practice of sending away patients to other Units in Scotland, provided by Jamie.

The analysis report carried out by HPS at the request of IMT and received late Friday 13/09/19 concluded that following the move in September 2018 the rates of positive blood cultures for both gram negative and environmental bacteria in Glasgow Unit we no different compared to the rates of the combined Lothian & Aberdeen Units. This provides additional independent evidence that confirms and strengthens the recommendation of the IMT.

A meeting is planned for Monday 16 September 2019 with all Haematology consultants to take them through the epidemiological and microbiology data and answer any queries they might have.

The next IMT meeting is planned for Wednesday 18 September 2019.

I hope this helps and would appreciate any advice you have, mindful of other consequences the review of the evidence has - beyond the business of the IMT.

With kind regards,

Emilia
Sent from my iPad

On 13 Sep 2019, at 19:37, Hill, Kevin [redacted] wrote:
Dear Jane,
Please find attached a first draft of an appraisal of options regarding the decant of the paediatric haemato-oncology service for your consideration. I referred to the

preparation of a draft paper at today's IMT.
I would appreciate your comments and advice on the approach to progress this as appropriate.
Happy to discuss.
Kind regards
<Appraisal of options regarding Ward 6A draft version 1 130919.docx>

From: Armstrong, Jennifer
Sent: 03 July 2024 13:46
To: Armstrong, Jennifer
Subject: FW: 20190925 Haemato oncology - data, hypothesis and control measures.pptx
Attachments: 20190925 Haemato oncology - data, hypothesis and control measures.pptx; ATT00001.txt

Categories: PI

-----Original Message-----
From: Crighton, Emilia
Sent: Friday, September 27, 2019 2:03 PM
To: Davidson, Scott [redacted]; Armstrong, Jennifer [redacted]
Subject: 20190925 Haemato oncology - data, hypothesis and control measures.pptx

From: Armstrong, Jennifer
Sent: 17 July 2024 14:58
To: Shariff, Imran
Subject: FW: IMT - Cryptococcus
Attachments: Cryptococcus minutes IMT 7.1.19 SD draft.doc

Categories: Public Inquiry

From: Armstrong, Jennifer
Sent: Tuesday, January 8, 2019 9:27 PM
To: Grant, Jane [Chief Exec] [redacted]; Best, Jonathan [redacted]; Mcguire, Margaret [redacted]; Steele, Tom [redacted]
Cc: Law, Leanne [redacted]; O'Brien, Bernadette [redacted]
Subject: FW: IMT - Cryptococcus

Please note the IMT minutes: I note there seems to be debate concerning the issues of prophylaxis, communication and ward 6a. I think it would be helpful to discuss progress.
j

From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]
Sent: 08 January 2019 17:35
To: Dodd, Susie; Devine, Sandra; Walsh, Tom; Steele, Tom; Cook, Claire; Purdon, Colin; Pritchard, Lynn; Gibson, Brenda; Kennedy, Iain; Macdonald, Ian; Crookshanks, Hilda; Redfern, Jamie; Campbell, Myra; Hill, Kevin; Kane, Mary Anne; Connelly, Karen; Wall, Rona; Armstrong, Jennifer; Rodgers, Jennifer; McArdle, Alyson; McColgan, Melanie; Johnson, Angela; McColgan, Melanie; Jenkins, Gary
Subject: [BlockedURL][ExternaltoGGC]Re: IMT - Cryptococcus

Please find attached minutes of yesterdays IMT.

I have a number of enquiries with regards the epidemiology and hypothesis therefore I thought it would be useful to clarify a few points;

Epidemiology

Both cases are hospital acquired and we meet the following National Manual (HPS) incident definitions;

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

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

A healthcare infection data exceedance
• A greater than expected rate of infection compared with the usual background rate for that healthcare location.

Hypothesis generation

Part of incident investigation is hypothesis generation and there are often several. For this incident they are the following;

1) Aerosolisation from contamination in the plant room when maintenance taking place
2) Ingress via unsealed windows
3) Contaminated supply boxes

With regards to 'proof' ,in IC we rarely get a definitive answer. Infection control incidents are usually multifactorial and resolution requires a range of measures to be put in place , often we never know which one has had the most impact

Community cases

There are always community onset cases of infections. e.g. MRSA, Group A strep. Whilst the community cases of Cryptococcus are interesting these should not detract from 2 cases of HAI. An increase in the community may reflect a changing patient population or a change in the bird population and carriage of Cryptococcus. However our role is to prevent hospital acquired cases and ensure control measures are in place on this site

Whilst the pathogen is rare, in infection control terms this incident is straightforward. Epidemiological links, source found based on our knowledge of the organism and control measures applied.

Issues with bird control in hospital settings is not new and guidelines recommend birds should not be nesting in proximity to transplant units. See below for info from elsewhere regarding control measures;

BLOCKEDcddft[.]nhs[.]uk/news-and-media/latest-news/patient-safety-and-removal-of-pigeons-from-darlington-memorial-hospital[.]aspxBLOCKED

https://www.irishtimes.com/news/health/galway-hospital-patients-at-risk-from-bird-droppings-1.2299689

BLOCKEDnbcenvironment[.]co[.]uk/project/peterborough-city-hospital/BLOCKED

https://www.scotsman.com/news/uk/dead-pigeons-in-walls-close-ward-as-hospital-patients-evacuated-1-4567749

There is an action plan at the end of the minute with allocated timescales. Can you send updates back to me
Thanks

Kind regards
Teresa

Dr Teresa Inkster
Lead Infection Control Doctor NHSGGC
Training Programme Director Medical Microbiology

Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Dodd, Susie [redacted]
Sent: 07 January 2019 12:42
To: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); Lang Ann (NHS GREATER GLASGOW & CLYDE);
Devine, Sandra; Walsh Thomas (NHS GREATER GLASGOW & CLYDE); Steele, Tom; Cook, Claire; Purdon Colin (NHS GREATER GLASGOW & CLYDE); Pritchard Lynn (NHS GREATER GLASGOW & CLYDE); Gibson, Brenda; Kennedy Iain (NHS GREATER GLASGOW & CLYDE); Macdonald, Ian; CROOKSHANKS, Hilda (NHS NATIONAL SERVICES SCOTLAND); Redfern James (NHS GREATER GLASGOW & CLYDE); Campbell Myra (NHS GREATER GLASGOW & CLYDE); Hill Kevin (NHS GREATER GLASGOW & CLYDE); Kane Maryanne (NHS GREATER GLASGOW & CLYDE); Connelly Karen (NHS GREATER GLASGOW & CLYDE);
rona.wall[redacted] Armstrong Jennifer (NHS GREATER GLASGOW & CLYDE); Rodgers Jennifer (NHS GREATER GLASGOW & CLYDE); McArdle, Alyson; Mccolgan Melanie (NHS GREATER GLASGOW & CLYDE); angela.johnson[redacted]
Cc: MacLeod, Calum; Hamilton Pauline (NHS GREATER GLASGOW & CLYDE)
Subject: IMT - Cryptococcus

Dear all,

Some clinicians have expressed concern around patient safety following the results below. A meeting will be held at the time and location below to discuss the results and their significance. Apologies for the short notice.

Date: Today, 7th January 2019
Time: 2.30pm
Venue: Level 1 Stroke ward Seminar Room, QEUH, STW-011

Please notify myself of any apologies.
Kind regards,
Susie

Susie Dodd
Lead Infection Prevention and Control Nurse
Royal Hopsital for Children
[redacted]

From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]
Sent: 04 January 2019 16:40
To: Lang, Ann; Devine, Sandra; Walsh, Tom; Steele, Tom; Cook, Claire; Purdon, Colin; Pritchard, Lynn; Gibson, Brenda; Kennedy, Iain; Macdonald, Ian; Crookshanks, Hilda; Redfern, Jamie; Campbell, Myra; Dodd, Susie; Hill, Kevin; Kane, Mary Anne; Connelly, Karen; Meechan, Mandy; Wall, Rona; Armstrong, Jennifer
Cc: MacLeod, Calum; Hamilton, Pauline
Subject: [ExternaltoGGC]Update - Cases of Cryptococcus

Dear all,

Provisional air sampling results from the plant room on level 12 have shown the presence of Cryptococcus species. These samples will be sent to the Bristol mycology lab for further identification and comparison with patient isolates.

Ward air sampling results remain outstanding and should be available early next week.

Patients should remain on prophylaxis in the meantime

Kind regards
Teresa

Dr Teresa Inkster
Lead Infection Control Doctor NHSGGC
Training Programme Director Medical Microbiology
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)
Sent: 27 December 2018 17:22
To: Lang Ann (NHS GREATER GLASGOW & CLYDE); Devine, Sandra; Walsh Thomas (NHS GREATER GLASGOW & CLYDE); Steele, Tom; Cook, Claire; Purdon Colin (NHS GREATER GLASGOW & CLYDE); Pritchard Lynn (NHS GREATER GLASGOW & CLYDE); Gibson, Brenda; Kennedy Iain (NHS GREATER GLASGOW & CLYDE); Macdonald, Ian; CROOKSHANKS, Hilda (NHS NATIONAL SERVICES SCOTLAND); Redfern James (NHS GREATER GLASGOW & CLYDE); Campbell Myra (NHS GREATER GLASGOW & CLYDE); Dodd Susan (NHS GREATER GLASGOW & CLYDE); Hill Kevin (NHS GREATER GLASGOW & CLYDE); Kane Maryanne (NHS GREATER GLASGOW & CLYDE); Connelly Karen (NHS GREATER GLASGOW & CLYDE); Meechan Mandy (NHS GREATER GLASGOW & CLYDE); rona.wall[redacted]; Armstrong Jennifer (NHS GREATER GLASGOW & CLYDE)
Cc: MacLeod, Calum; Hamilton Pauline (NHS GREATER GLASGOW & CLYDE)
Subject: Re: IMT - Cases of Cryptococcus

Dear all

Please find attached minutes from todays IMT.

I will be in touch regarding the need for any further meetings once I have reviewed air sampling results next week

Thanks to you all for your input over the festive period

Kind regards
Teresa

Dr Teresa Inkster
Lead Infection Control Doctor NHSGGC
Training Programme Director Medical Microbiology
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)

Sent: 27 December 2018 11:11
To: Lang Ann (NHS GREATER GLASGOW & CLYDE); Devine, Sandra; Walsh Thomas (NHS GREATER GLASGOW & CLYDE); Steele, Tom; Cook, Claire; Purdon Colin (NHS GREATER GLASGOW & CLYDE); Pritchard Lynn (NHS GREATER GLASGOW & CLYDE); Gibson, Brenda; Kennedy Iain (NHS GREATER GLASGOW & CLYDE); Macdonald, Ian; CROOKSHANKS, Hilda (NHS NATIONAL SERVICES SCOTLAND); Redfern James (NHS GREATER GLASGOW & CLYDE); Campbell Myra (NHS GREATER GLASGOW & CLYDE); Dodd Susan (NHS GREATER GLASGOW & CLYDE)
Cc: MacLeod, Calum; Hamilton Pauline (NHS GREATER GLASGOW & CLYDE)
Subject: Re: IMT - Cases of Cryptococcus

Documents for discussion at IMT attached;

1) Plant room survey from 19th Dec
2) Pest control report from 24th Dec
3) Pictures of level 12 plantroom

Kind regards
Teresa

Dr Teresa Inkster
Lead Infection Control Doctor NHSGGC
Training Programme Director Medical Microbiology
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Lang, Ann <[redacted]
Sent: 24 December 2018 13:55
To: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE); Devine, Sandra; Walsh Thomas (NHS GREATER GLASGOW & CLYDE); Steele, Tom; Cook, Claire; Purdon Colin (NHS GREATER GLASGOW & CLYDE); Pritchard Lynn (NHS GREATER GLASGOW & CLYDE); Gibson, Brenda; Kennedy Iain (NHS GREATER GLASGOW & CLYDE); Macdonald, Ian; CROOKSHANKS, Hilda (NHS NATIONAL SERVICES SCOTLAND); Redfern James (NHS GREATER GLASGOW & CLYDE); Campbell Myra (NHS GREATER GLASGOW & CLYDE); Dodd Susan (NHS GREATER GLASGOW & CLYDE)
Cc: MacLeod, Calum; Hamilton Pauline (NHS GREATER GLASGOW & CLYDE)
Subject: IMT - Cases of Cryptococcus

Good afternoon

Please find attached the minutes from Thursday's IMT regarding cases of Cryptococcus.

Also attached is an agenda for the next IMT which is being held on:-

Date: Thursday 27th December
Time: 2:00pm
Venue: Seminar Room, Level 5, QEUH

Regards

Ann

Ann Lang
PA/Data Manager to Infection Control Manager
West Glasgow Ambulatory Care
Dalnair Street
Glasgow
G3 8SJ

[redacted]

Incident Management meeting

Monday 7th January 2019

Present: Dr Teresa Inkster (chair), Colin Purdon (CP), Lynn Pritchard (LP), Prof Brenda Gibson (BG), Karen Connelly (KC), Alan Gallacher (AG) Lorraine Dick (LD), Jamie Redfern (JRe), Iain Kennedy (IK), Myra Campbell (MC), Alison McArdle (AM), Hilda Crookshanks (HC), Susie Dodd ((Minutes (SDo)).

Apologies: Tom Steele (TS), Mary Anne Kane (MAK), Tom Walsh (TW), Ian McDonald (IM)

Actions

Welcome, Apologies, Introductions

Dr Inkster welcomed everyone to the meeting, introductions were made and everyone was reminded of the confidentiality surrounding IMTs.

Minutes of Previous meeting

No changes were requested.

Incident update – 1. General situation statement

2 HAI patient cases of a very rare fungus, *Cryptococcus neoformans*, with a time and place link, both identified within a 17 day period. Air sampling carried out on 21st December. Some results now available which have generated concerns amongst clinicians leading to the IMT being reconvened today. Additional results made available to TI immediately prior to the meeting.

Incident update – 2. Patient Report

No new cases. Adult patient due to go home for palliative care.

Families of both patients spoken to last week – see comms section below.

No other patients giving cause for concern and who are suspected as being a possible case.

Haem-onc patients are receiving prophylaxis as agreed at previous meeting. The provision of prophylaxis in the paediatric population is problematic and further described below.

Incident update – 3. other relevant reports

Air sampling carried out on Friday 21st December.

32 samples taken in level 12 plant room. Heavy growth of fungi on plates including Cryptococcus. Isolates now sent to labs in Bristol to confirm the species and compare with patients isolates. This is expected to take several weeks as the typing process is unusual.

6 air samples taken on the external roof (outside air) – fungi growth identified but no Cryptococcus identified.

Air samples taken on 6A – 4 rooms . Rm 3 and 18 have heavy growth of fungus, but no Cryptococcus identified.

Air samples taken on 4C – 5 rooms sampled, 2 outstanding, 1 clear, Rm 66 has fungus but lower growth than 6A – 4 colonies only

Air sampling on PICU – Low growth of fungus in the corridor. Air samples from rooms outstanding.

Quite a few air sample results across these areas still outstanding. TI also stressed that air sampling is taken during a snap shot in time (2 minutes) and therefore cannot 100% reliably provide evidence that growth of particular fungus doesn't exist. It is reliant on capturing fungal spore bursts at the time of sampling. Heavy fungal overgrowth on plates so not possible to say whether Cryptococcus there or not. **TI**

AC requested that the air sampling results be provided to facilities to allow them to be plotted on a map of the hospital site. TI agreed to forward these on.

Discussion took place around the fungal growth in the various areas described above. Cryptococcus not generally found in the environment but ubiquitous in pigeon population so in keeping with pigeon infestation which would explain the growth within the plant room.
LD asked how it might get to the patients rooms from the plant room. TI recapped the hypothesis.

- Cryptococcus is airborne and can get in to the hospital via ventiltation system especially when accessed for maintenance . This has been described elsewhere,
- Windows may not be adequately sealed, staff in 4C report drafts from windows,
- Droppings found on equipment boxes coming from stores. **TI**

In 6A and 4C we would expect to see fungus on plates as they are not hepa filtered wards however 6A seems significantly heavier fungal growth than 4C, the reason for which is unclear. Plates may have been incubated in laboratory longer than necessary over Christmas period which may account for some overgrowth. TI will take this up with labs.

JRe asked about significance of fungus in corridors. TI informed group that fungus can be found anywhere that is not a specialised ventilated area

Hypothesis

- Cryptococcus is airborne and can get in to the hospital via ventilation system,
- Windows may not be adequately sealed, staff in 4C report drafts from windows.
- Droppings found on equipment boxes coming from stores, reported by ICN

Risk Management/Control Measures

Plant rooms and pigeon Infestation: CP reported that plant rooms have been cleaned. They will now be vacuumed and flooring washed to remove any visible contamination that remains. KC added that GP environmental are visiting on a daily basis to look for any signs of pigeons accessing the internal building.
BG asked about using birds of prey to get rid of pigeons. KC stated that this is not used here at present but they are speaking to GP environmental about different options for reducing the pigeon problem on site details of which will be reported back in writing. TI asked how this will be fed back to the IMT. KC stated she would pass the report onto TS and MAK for wider sharing. Ti has forwarded case studies from other hospitals and control measures **KC/TS/MAK**

Patient prophylaxis: BG reported that Ambisome not tolerated well by paediatric patients unlike in adults where it can be administered with few side effects. In the paediatric population there have been a number of challenges; 2 patients have now experienced anaphylactic shock requiring adrenaline. Staff are having difficulty managing the numbers of patients requiring Ambisome. It is not limited to inpatients. Some outpatients are attending to receive the prophylaxis on a weekly basis also and this creates challenges around bed availability. BG expressed concern that should bed pressures continue as they are they may need to consider opening OPD beds at the weekend to manage these patients. Clinicians are therefore concerned that long term prophylaxis is not a safe option. Parents continue to ask questions about why their children are receiving prophylaxis and BG concerned that there has been no formal statement from the board. She added that staff locally have provided a statement to the parents which was generated in conjunction with TI.

IK queried if the prophylaxis being given was the only option and where advice should be sought on this. TI advised that we are following EORTC criteria for prophylaxis and that the prophylaxis options are very limited. This has been discussed with the AMT in the past also.

TI concerned that the patients will now be on 6A for a significantly longer period that first envisaged when the prophylaxis regime was agreed and that there are concerns re safety of prophylaxis. In addition, air sampling has shown heavy growth of fungus and 6A is not a hepa filtered ward giving rise to concerns that there is a fungal risk associated with the environment in its current state. TI suggested that portable filter units can be used similar to those already in use on 4B. MC informed the group that the units are very noisy and staff and patients complain about the noise. TI queried whether newer, less noisy, versions of the portable filters may be available. KC and CP agreed to look at portable filter options. **KC/CP**

JRe queried that if measures to control Cryptococcus are controlled, do we need to continue to prophylax the patients. TI advised that the fungal growth in the wards remains a risk regardless of the absence of Cryptococcus. BG is representing clinicians in her area who wish to know if the ward is safe to continue to accept patients.

The options were discussed and summarised as

1. Install portable hepa filters throughout ward 6A
2. Continue to prophylax patients
3. Move patients out of ward 6A to an area where ventilation is safer such as WoSCC

BG queried progress of the 2 rooms which remain out of use on 6A due to a leak prior to Christmas. She added that having these rooms out of use is adding to the bed pressures on the unit. CP reported that there are difficulties getting contractors over the Christmas/New Year period. KC and CP will take forward repairs in these rooms as soon as possible. TI advised that the mould in these rooms may be contributing to wards high fungal counts. **KC/CP**

JRe summarised that the content of today's meeting has highlighted a risk for patients on ward 6A. This, and the options described above will be reported urgently to directors following the meeting. Running alongside this a SCI has been triggered for the [redacted] case who [redacted] on [redacted] December. **JRe**

HIIAT

Severity of illness - Minor
Services – Minor
Risk of transmission – Moderate
Public anxiety – Minor

Communications

Patients

TI, BG, JRe and Jen Rodgers spoke to the parents of the paediatric patient on Friday who are understandably extremely distressed following the [redacted]. It is expected that there will be questions to follow from [redacted]. TI reported that the [redacted] takes 3-6 months to complete. JRe added that a SCI has now been commenced. W&C will take the lead on the SCI. A named person is still being decided but is expected to be agreed very soon. TI, IM and SCN 4C also spoke with [redacted] of the [redacted] case who had several questions. [redacted] seemed satisfied with the answers provided during the meeting.

JRe advised LD that he will brief [redacted] on the comms with the [redacted] outside of the meeting.

Press

LD will speak to her directors about what info should be available should we have any queries around this incident and recent concerns raised. **LD**
JRe queried whether we were robust enough in our decision to move patients to 6A in Sept 2018. TI responded that WoSCC was the preferred option from an IPC perspective however the clinical risk having no paediatric services on site was a huge risk and justified 6A. JRe added that an extensive risk assessment was undertaken before agreeing 6A as the chosen location. However at that time, the plan was for a short decant period and we now know that the patients will not be able to return to ward 2A/B in the next 12 months.

Staff

BG will feed back to clinicians at a ward meeting this afternoon. She will inform them that the air sampling results are abnormal and there is a wider fungal problem. **BG**

External

HPS will be informed of the Green HIIAT.

AOCB
None

Outstanding actions
IK has spoken to vetinary service who were unable to determine the prevalence of Cryptococcus amongst the pigeon population as this is not something they regularly or routinely look for. IK has also asked HPS to look at the national picture for Cryptococcus neoformans amongst patients. **IK**

Cleaning of window ledges outside PICU – CP reported that nets have been installed to prevent pigeons resting on the sills however the clean is still to take place. **CP**

Date and time of next meeting

TBC

Action list with responsible person and agreed timescales

Action No	Action	Responsible Person	Timescale
1	Report outstanding air sampling results. Air sampling results.	Teresa Inkster	As soon as available
2	Plant rooms will be inspected every two weeks for evidence of pest infestations	Karen Connelly	Ongoing
3	Review of roof top garden visible from 4th floor, QEUH wards with a view to removing vegetation	Karen Connelly, Mary Anne Kane	Ongoing
4	Cleaning of window ledges visible from PICU	Colin Purdon	7 days
5	Review of PPE for facilities staff working in areas where they are exposed to birds/bird droppings	Mary Anne Kane	
6	Speak to lab re. incubation time for plates	Teresa Inkster	2 days
7	Share report from GP environmental detailing options for reducing pigeon infestations in and around the QEUH site	Karen Connelly, Mary Anne Kane and Tom Steele	As soon as available
8	Review of portable filter options	Karen Connelly, Colin Purdon	7 days
9	Room (10 and 11) repairs on ward 6A	Karen Connelly, Colin Purdon	2 days
10	Report concerns raised at today's meeting to directors	Jamie Redfern	Immediate
11	Take forward discussions with directors regarding comms around this incident	Lorraine Dick	Immediate
12	Feedback summary of today's meeting to clinicians	Brenda Gibson	Immediate
13	Feedback from HPS re. national picture relating to Cryptococcus cases amongst humans	Iain Kennedy	As soon as available

From: Armstrong, Jennifer
Sent: 17 July 2024 14:57
To: Shariff, Imran
Subject: FW:

Categories: Public Inquiry

From: Armstrong, Jennifer
Sent: Tuesday, January 8, 2019 10:28 PM
To: Law, Leanne [redacted] O'Brien, Bernadette
[redacted]>
Subject: Fw:

Both
This meeting is urgent. Can you look for a time please j

Sent from my BlackBerry 10 smartphone on the EE network.
From: Armstrong, Jennifer [redacted]
Sent: Tuesday, 8 January 2019 22:23
To: Best, Jonathan; Grant, Jane [Chief Exec]; Mcguire, Margaret; Steele, Tom
Subject: Fw:

All
Here is an email from Brenda Gibson setting out concerns from the consultants. I think it would be helpful to review where we are with this issue before I respond. Perhaps we can meet tomorrow. J

Sent from my BlackBerry 10 smartphone on the EE network.
From: Gibson, Brenda [redacted]
Sent: Tuesday, 8 January 2019 22:15
To: Armstrong, Jennifer; Inkster, Teresa (NHSmail); Redfern, Jamie
Subject:

Dear Jennifer,

You will be aware that we recently lost a [redacted] where Cryptococcus was at least a contributory factor to the death and that this infection was hospital acquired. Cryptococcus was grown from blood cultures taken prior to death and by the time that fungus is grown from blood cultures the infection is usually terminal. I met with the [redacted] last week to inform them of the Cryptococcus and that it was hospital acquired.

As a consultant body we are now very concerned about the safety of our environment. We have not experienced water associated environmental organisms in blood cultures since our decant , but never had a death associated with these infections that we are aware of . We are concerned that we may have moved to an even less safe environment . We are being asked to nurse patients in rooms with portable HEPA filters and to prophylax vulnerable patients . The latter is not without risk . Only AmBisome and Posaconazole can be used . We have already experienced two serious anaphylactic reactions in patients receiving AmBisome requiring adrenaline . We are being told that prophylaxis will have to last for a year. The prolonged use of Posaconazole is not without the risk of hepatotoxicity. Are all new patients to be told that the environment carries a risk to their child which will require prophylaxis , and that in itself may carry a risk? Is that a true statement?

Securing the safety of our current environment requires action across the Directorates. In sending this

e mail I am not bypassing Jamie or Kevin , but they can only control Women and Childrens Directorate. We are disappointed that air sampling in the ward is having to be repeated because that sampled before Christmas was not treated as a priority and the results may not be meaningful. This is the remit of the Diagnostics Directorate. We have two rooms on the ward out of action because of water damage with mould on the wall , which have not been dealt with because of reported difficulties in identifying a contractor over the holiday period. This responsibility lies with Estates and Facilities Directorate. Promised statements from the Press Office have not materialised and we are prophylaxing children without any agreement on what information should be given to the parents. It is hard to believe that the gravity of this situation is really appreciated by those charged with resolving it.

We need to be assured that someone to whom all Directors are answerable is managing this situation , co ordinating the necessary work and guaranteeing that timelines are met. We also need to be assured of the safety of the environment for our children and the safety of long term prophylaxis.

We have a Unit meeting at 8.30 am this Friday on ward 6A QEUH and we ask if you would be willing to use this opportunity to meet with us. If you are not the appropriate person at the Board , please let me know who is.

B.W.

Brenda

From: Armstrong, Jennifer
Sent: 17 July 2024 15:03
To: Shariff, Imran
Subject: FW: HEPA filters

Categories: Public Inquiry

From: Armstrong, Jennifer
Sent: Wednesday, January 9, 2019 6:57 AM
To: Steele, Tom [redacted]
Subject: HEPA filters

Tom
We need an urgent response to potable HEPA filters as set out in the IMT minutes. Can the team do this today please as we may need to urgently deploy these given IMT issues. J
Sent from my BlackBerry 10 smartphone on the EE network.

From: Shariff, Imran
Sent: 21 September 2021 15:09
To: Duncan, Gillian
Subject: FW: Action from Clinical and Care Governance Committee on 8th June- Update of Actions SBAR 2017
Attachments: FINAL- SBAR Action Plan 20 09 2021.docx

Hi Gillian,

Following on from the email trail below, can you note the final version of the SBAR and share with Jane.

It was agreed that following approval by the Chair and Vice Chair, Jane would discuss the SBAR with Ms Amanda Croft, Chief Nursing Officer, at the Scottish Government to ensure that the Scottish Government have oversight of this.

From: RITCHIE, Ian (NHS GREATER GLASGOW & CLYDE) [redacted]
Sent: 01 September 2021 16:09
To: Susan Brimelow [Board] [redacted]
Cc: Jordan, Geraldine [redacted] Steele, Tom [redacted] White, Amy [redacted]; Shariff, Imran [redacted]
Subject: Re: Action from Clinical and Care Governance Committee on 8th June- Update of Actions SBAR 2017

Geraldine,
Thank you. I think this is ok.
Regards
Ian

On 1 Sep 2021, at 11:58, BRIMELOW, Susan (NHS GREATER GLASGOW & CLYDE) [redacted] wrote:

Thanks Geraldine
I'm content with this
Regards
Susan

Get Outlook for iOS

From: Jordan, Geraldine [redacted]
Sent: Wednesday, September 1, 2021 8:45:59 AM
To: BRIMELOW, Susan (NHS GREATER GLASGOW & CLYDE) [redacted]; RITCHIE, Ian (NHS GREATER GLASGOW & CLYDE) [redacted]
Cc: Steele, Tom [redacted] White, Amy [redacted]; Shariff, Imran [redacted]
Subject: FW: Action from Clinical and Care Governance Committee on 8th June- Update of Actions SBAR 2017

Dear Susan and Iain

Further to your email on the 21st August, we can now provide the update to action 24 which Tom Steele has provided regarding assurance around the maintenance of plumbing. If you are content with this, we can close the SBAR and send this to Jane for further discussion with SG.

Item	Issue	Current Position as of 5th December 2017	Future Actions	Final Position as of May 2021
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.	Planned replacement of the INS announced in May 2021	Planned replacement of the INS announced in May 2021. Four new operating theatres were commissioned and are now in place in the ICE Building.

Drainage upgrades are included in the Neurosurgery/Neurology rolling programme of ward HEI upgrade works. Regular maintenance is ongoing within Neurosurgery to ensure minimal disruption to services.

With best wishes

Geraldine Jordan
Director of Clinical and Care Governance
Clinical Governance Support Unit

[redacted]

From: BRIMELOW, Susan (NHS GREATER GLASGOW & CLYDE) [redacted]
Sent: 21 August 2021 10:34
To: Armstrong, Jennifer [redacted]; Jordan, Geraldine [redacted]
Cc: White, Amy [redacted]; Ritchie, Ian [Board]

[redacted]
Subject: Fw: Action from Clinical and Care Governance Committee on 8th June- Update of Actions SBAR 2017

Dear Jennifer and Geraldine
Please accept my apologies for overlooking this request to review the 3 updated actions from the SBAR and provide assurance on behalf of the C&CGC

Im content with the additional text for actions 3 and 17 and agree with Ian in respect of action 24 which just needs clarity on the impact of the 4 new theatres and regular maintenance on the plumbing in INS
With this minor amendment happy for this to go to SGov as complete

Kind Regards

Susan

From: RITCHIE, Ian (NHS GREATER GLASGOW & CLYDE) [redacted]
Sent: 09 August 2021 13:00
To: Duncan, Gillian [redacted]
Cc: BRIMELOW, Susan (NHS GREATER GLASGOW & CLYDE) [redacted];
White, Amy [redacted]
Subject: Re: Action from Clinical and Care Governance Committee on 8th June- Update of Actions SBAR 2017

Dear Gillian,
Thanks for this. I have no particular concerns with items one and two but the third item relating to plumbing in the Institute of neurological sciences is not clear. By that I mean the title talks about plumbing but the content says that there are three new theatres. It is entirely possible that three new theatres are in place but the plumbing remains an issue. I think we will need to have assurance that the plumbing has been dealt with as well.

I hope I'm not misinterpreting things? I'm sure Susan will be able to guide us.
Best wishes,

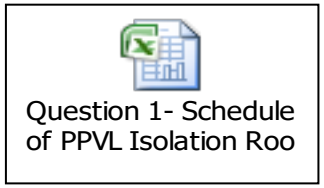
Ian

> On 9 Aug 2021, at 12:52, Duncan, Gillian [redacted] wrote:
>
> Dear Susan and Ian
>
> The SBAR (27 Point) Action plan (paper 21/06) was formally presented to the Clinical and Care Governance Committee on 8th June 2021 and discussed under Item 9(b). The Committee reviewed the paper and requested an update on three actions, namely Actions 3, 17 and 24.
>
> Dr Armstrong, Sandra Devine and Tom Steele have now reviewed the SBAR and provided an update on the three actions and have updated the original SBAR with this information. We have also highlighted the changes below.
>

> From the draft minute attached, it was agreed that :
>
>
> * the revised paper would be sent back to the Chair and Vice Chair who would review and provide assurance on behalf of the Committee.
>
> * following approval by the Chair and Vice Chair, Mrs Grant would discuss the SBAR with Ms Amanda Croft, Chief Nursing Officer, at the Scottish Government to ensure that the Scottish Government have oversight of this
>
> I would be grateful if you can review the changes to the SBAR.
>
> SBAR changes
>
> Item 3- Lack of isolation rooms in the emergency department.
>
> "The introduction of isolation rooms in ED is technically impossible, however alternative patient pathways have been developed"
>
> Item 17- Air changes and Chilled Beam
>
> "Where possible areas within the QEUH/RHC have been modified to enhance ventilation. Specialist ventilation is in place in critical care areas in both hospitals and in the bone marrow transplant unit in QEUH.
> PPVL rooms have been changed to negative pressure isolation rooms in both QEUH/RHC and areas such as 6A and 4C have been modified to increase positive pressure to these areas as far as possible. BMT in RHC is in the process of being upgraded.
>
> The general air systems within the QEUH/RHC are nominally achieving 3AC/Hr and the pressure cascade within wards can be altered to achieve nominally positive, or negative pressure flow depending on the client use. The general AHU's have 2 stage filtration sets which provide "theatre" quality filtered air to all spaces. Critical air systems have HEPA grade filtration as well as increased AC rate and pressure cascade. Chilled beam heating and cooling technologies are a recognised and allowable means of managing environmental temperature with the exception of areas that have HEPA in place"
>
> Item 24- Plumbing in the Institute
>
> "Four new operating theatres were commissioned and are now in place in the ICE Building. Regular maintenance is ongoing within this Unit to ensure minimal disruption to services"
>
> Kind regards.
>
> Gillian
>
> _____
> Gillian Duncan | Secretariat
> NHS Greater Glasgow and Clyde | JB Russell House | Gartnavel Royal Hospital | 1055 Great Western Road | Glasgow | G12 0XH
[redacted]

>
>
>
>
>
> <SBAR Action Plan 21 June 2021.docx>

SBAR Action Plan submitted to Care and Clinical Governance Committee with final updated position as of June 2021

<table>
<tr><th>Item</th><th>Issue</th><th>Current Position as of 5th December 2017</th><th>Future Actions</th><th>Final Position as of May 2021</th></tr>
<tr><td>1</td><td>PPVL rooms not compliant with SHTM standards
Critical Care</td><td>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.</td><td>Included in item 2</td><td rowspan="2">PPVL Schedule attached 34 rooms on schedule across RHC/QUEH.
 
Question 1- Schedule of PPVL Isolation Roo

7 rooms have been converted to Negative pressure rooms to differentiate between two types. See Table 1.

Table 1

<table><tr><td>RHC</td><td>Ward 2C</td><td>Room 6</td></tr><tr><td>RHC</td><td>CDU</td><td>Room 18</td></tr><tr><td>RHC</td><td>PICU</td><td>Room 5</td></tr><tr><td>QEUH</td><td>Medical HDU</td><td>Room 43</td></tr><tr><td>QEUH</td><td>Medical HDU</td><td>Room 44</td></tr><tr><td>QEUH</td><td>ITU 1</td><td>Room 24</td></tr><tr><td>QEUH</td><td>Surgical ITU Unit 1</td><td>Room 4</td></tr></table>
Ward 2A has had 4 rooms converted to Positive pressure at a cost of £206,000. Now undergoing complete refurbishment .

Lead ICD confirmed with Chief Nurse (CN) that three rooms within RHC would be suitable for IDHC if needed.</td></tr>
<tr><td>2</td><td>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</td><td>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.</td><td></td></tr>
</table>

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	Options were considered to convert existing PPVL to negative pressure facilities suitable for infectious patients. However there are currently no specific plans to develop isolation rooms within Emergency Department as this has been deemed to be technically impossible and alternative patient pathways have been developed.
Item	**Issue**	**Current Position as of 5th December 2017**	**Future Actions**	**Final Position as of May 2021**
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.	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 Lead ICD.	**Health Board Process**  HAI Scribe 1 - PPVL and PPIR.docx The process is that any refurbishments are signed off by ICD/ IPCT in conjunction with the estates department. These are signed off at various stages through design to completion and handover. Final sign off is undertaken with reference to relevant SHTM's design criteria and commissioning/ validation data provided by an external contractor. A project manager or lead (usually Estates) will use Part B to identify, manage and record built environment infection control risks of a project within health care premises. The assessment will take into account the nature of the work to be undertaken and the adjacency to patient areas. The SHFN 30 HAI Scribe document will be put in place before work commences. This comprises sets and check lists. Both the Infection Prevention and Control Team and the lead clinical staff will be asked to review and approve the assessment before work commences. The size of the project will determine the amount of involvement by the IPCT, which may include regular review during the project and inspection at the end. The ICD would provide advice on any

				environmental sampling to be undertaken prior to areas handover to users.
Item	**Issue**	**Current Position as of 5th December 2017**	**Future Actions**	**Final Position as of May 2021**
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.		PICU Room 5: Installation of HEPA filter is no longer required as the room has been converted to negative pressure accommodation for infectious patients. (as described in item 1 & 2) Planned work: £8 million spend for the upgrade of ward 2A (Haemato–oncology\TCT) ventilation system & internal building elements to provide HEPA filtered environmental conditions suitable for use by Immuno-compromised patients with Enhanced (Positive Pressure) Single Bedrooms with En-Suite facilities, providing 10ac/hr positive pressure within each Bedroom space, and ensuring the Bedrooms are at +10Pa pressure gradient relative to the adjacent Corridors. All in accordance with design principles embodied within SHTM 03-01 guidance documentation.
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.		The plan will take into account full HEPA filtration of all aspects of Ward 2A (including 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.	IVs are prepared in the preparation room; however chemotherapy is prepared in a specialist unit.
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		ICD has confirmed with HPS that there is no guidance on air sampling non specially ventilated areas.

		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.		
Item	**Issue**	**Current Position as of 5th December 2017**	**Future Actions**	**Final Position as of May 2021**
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.	Clarification issued to the meeting attendees. No further action required. This perhaps appears to be misinterpretation of the media communication.	**Clarification from the NHSGGC Communications Team**  070715 BMT News Release.doc 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. "
11	HEPA filters not in place in PICU	Action complete as previously agreed and noted within point 6.		Point 6 covers the action

Item	Issue	Current Position as of 5th December 2017	Future Actions	Final Position as of May 2021
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.		All line infections with gram negative organisms are subject to a RCA review. This process is completed with clinical staff and IPCT staff. Report is sent monthly to the Director of W & C for onward distribution to clinical staff within the unit. SPC which are based on methodology provided by ARHAI Scotland is used to assess trends in this area.  2021-05-06 Paed Haem-onc SPCs.pdf  clabsi chart.doc
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.	

Item	Issue	Current Position as of 5th December 2017	Future Actions	Final Position as of May 2021
14	Concerns 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.	HPS have published a nationally agreed list of alert micro-organisms which should be notified to IPCTs which may require further investigation. Hospital level analysis has been carried out by HPS using the national HAI surveillance data. Hospital attributed cases of *Clostridioides difficile* infection (CDI), *Escherichia coli* bacteraemia (ECB) and *Staphylococcus aureus* bacteraemia (SAB) for 2016, 2017 and 2018 (Q1 to Q3) were compared to peer hospitals with similar patient population using funnel plot analysis. The Queen Elizabeth University Hospital (QEUH) and the Royal Hospital for Children (RHC) were not highlighted as an exception (rate above the 95% confidence limit) in any of the plots for 2016, 2017 and 2018 (Q1 to Q3). • The peer hospitals for QEUH were Aberdeen Royal Infirmary (ARI), Forth Valley Hospital (FVH), Glasgow Royal Infirmary (GRI), Ninewells Hospital (NWH), Royal Alexandra Hospital (RAH), Royal Infirmary of Edinburgh (RIE), University Hospital Crosshouse (UHC) and Western General Hospital (WGH) • The peer hospital for RHC were Royal Aberdeen Children's Hospital and Royal Hospital for Sick Children (Edinburgh) • ECB and SAB cases were hospital attributed assigned through enhanced surveillance ECOSS webtool. For CDI cases were categorised through linkage with Scottish Morbidity records (SMR01) for a patient with CDI onset on day 3 or later following a hospital admission on day one. • The denominator was hospital level 'total occupied bed days (TOBDs)' using ISD1 data. • Funnel plot analysis was based on an over-dispersed Poisson regression model. • See Q13 in response to Line Infections

Item	Issue	Current Position as of 5th December 2017	Future Actions	Final Position as of May 2021
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.	The attached document in the next section will continue to be reviewed and updated.	 patient-placement-s op-v1-amended-18-
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.	In April 2021 the IPCT approached ARHAI to develop early warning systems for high risk units and we hope to pilot this in the coming months	**Surveillance Undertaken by the GGC Infection Prevention and Control Team (IPCT)** In 6a and PICU a novel surveillance technique advised by ARHAI was implemented (see item 12). All other mandatory systems are in place.

Item	Issue	Current Position as of 5th December 2017	Future Actions	Final Position as of May 2021
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.		Where possible areas within the QEUH/RHC have been modified to enhance ventilation. Specialist ventilation is in place in critical care areas in both hospitals and in the bone marrow transplant unit in QEUH. PPVL rooms have been changed to negative pressure isolation rooms in both QEUH/RHC and areas such as 6a and 4c have been modified to increase positive pressure to these areas as far as possible. BMT in RHC is in the process of being upgraded. The general air systems within the QEUH/RHC are nominally achieving 3AC/Hr and the pressure cascade within wards can be altered to achieve nominally positive, or negative pressure flow depending on the client use. The general AHU's have 2 stage filtration sets which provide "theatre" quality filtered air to all spaces. Critical air systems have HEPA grade filtration as well as increased AC rate and pressure cascade. Chilled beam heating and cooling technologies are a recognised and allowable means of managing environmental temperature with the exception of areas that have HEPA in place.
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	Every winter Health Protection Scotland alert boards when the norovirus season commences. Each year in response to this, the IPCT ask facilities to change all cleaning products to one that includes chlorine. Chlorine based detergents are recommended to be used during outbreaks of norovirus (HPS National Guidance). NHSGGC use them as recommended during outbreaks but also to potentially prevent outbreaks when patients with norovirus are admitted to wards and departments. This policy continues to be implemented and reviewed and was extended to include all areas during 2020 & 2021 in response to the COVID 19 pandemic. We note any emerging evidence and update practice as required.
19	Roles and responsibilities with regards to cleaning of the dishwashers in the	IPCT held an Incident Management team Meeting (IMT) on 22nd of September. Dishwashers were	Catering staff agreed to assume the responsibility for cleaning of the dishwashers going forward.	NHSGG&C is fully compliant with the National Monitoring of Domestic Services.

	ward pantries was not clear.	removed from use until they could be serviced and re-sampled.		Point of use water filters have been installed in Dishwashers in use in the QEUH and no issues have been identified since these have been in place. As an extra precaution dishwashers have been removed from the adult Cystic Fibrosis wards and are not used and the clinical areas in the Royal Hospital for Children.
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.	

Item	Issue	Current Position as of 5th December 2017	Future Actions	Final Position as of May 2021
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.	Continued to be reviewed by the board water safety group and the water technical group.	Board recognises paramount importance of patient safety and the need to ensure the water systems and controls are consistently compliant with all relevant safety standards. Board water safety is in place and water systems and processes are monitored as per national guidance
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	NHS GGC is compliant with SHTM 04-01 Part B – Operational Management (Page 72) testing for Legionella guidelines and with the HSE Legionnaires disease "Microbiological Monitoring". HSG 274 The local water safety groups review testing results to discuss anything any exception reports. This includes all counts of Legionella serogroup 1. Pseudomonas testing has been implemented in high risk areas where flow straighteners are present in taps. Authorising Engineer for the Board has reviewed this on our sites as part of the Authorising Engineers role and responsibilities and has provided a statement to Estates and Facilities.

Item	Issue	Current Position as of 5th December 2017	Future Actions	Final Position as of May 2021
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.	Planned replacement of the INS announced in May 2021	Planned replacement of the INS announced in May 2021. Four new operating theatres were commissioned and are now in place in the ICE Building. Drainage upgrades are included in the Neurosurgery/Neurology rolling programme of ward HEI upgrade works. Regular maintenance is ongoing within Neurosurgery to ensure minimal disruption to services.
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.	• Surveillance commenced in July 2016 for cranial and spinal surgery in INS and in November 2016 for major free flap surgery in OMFS. • A substantive 1.0 WTE surveillance nurse has been in post since September 2018. • Surveillance comprises in-patient and 30 day readmission to GGC hospitals. • SSI rates are reported in monthly surveillance reports. Statistical Process Control(SPC) charts are used to monitor trends. • The RS Surgical Site Infection Group continues to meet every quarter to discuss reports and review progress. • Surveillance was undertaken for External ventricular devices in neurosurgery and quality improvement work was undertaken. This resulted in the development of an EVD insertion care bundle and an EVD output record

Item	Issue	Current Position as of 5th December 2017	Future Actions	Final Position as of May 2021
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.		At this point in time the Decontamination group (which is a sub group of the Board Infection Control Committee) has given advice on many items of equipment and had obtained room designs which could be used if space was identified in QEUH and RHC. An area for respiratory decontamination has been allocated on the QEUH and RHC site.

Item	Issue	Current Position as of 5th December 2017	Future Actions	Final Position as of May 2021
27	Roles of IPCT have changed	The current IPCT all have Job Descriptions which have been in place for ten 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	Review of structure being undertaken by NHS Board in response to the recommendations contained in the SG Oversight Board Report.	Lead ICD to be appointed in June 2021 when current post holder takes up a promoted post. All ICD's have Job Plans and organisation development events have taken place and continue to take place on a regular basis. SBAR re further resources are currently being identified by NHSGG&C to strengthen the Infection Control team including provision of senior project management support to ensure that all of the strands of work at the QUEH including water, IC, ventilation etc is effectively coordinated and the requirements to NHS Assure going forward are met. Designated business manager to support the work of the IPCT has been appointed and is now in place.

From: Armstrong, Jennifer
Sent: 18 July 2024 11:21
To: Shariff, Imran
Subject: FW: Sick leave

From: Devine, Sandra [redacted]
Sent: Tuesday, August 20, 2019 9:32 AM
To: de Caestecker, Linda; Kennedy, Iain; Armstrong, Jennifer
Subject: Fw: Sick leave

Hi
please see below?.
Kind regards
Sandra
Sent from my BlackBerry 10 smartphone on the EE network.
From: Peters, Christine [redacted]
Sent: Tuesday, 20 August 2019 09:27
To: Jones, Brian; Devine, Sandra
Cc: Findlay, Bernadette
Subject: Sick leave

Hi Brian and Sandra,

Teresa has informed me that she will be off due to illness for at least the next three days .

Pepi and Alison are on the ICD rota this week and so this will not have an impact on the routine QEUH ICD cover unless the illness continues.

I have let Pepi know as she is on today.

Teresa would appreciate it if she is not contacted while she is off sick.

I will let you know on Friday if there is any update.

Kr

Christine
Dr Christine Peters
Consultant Microbiologist
Queen Elizabeth University Hospital,
GGC
[redacted]

From: de Caestecker, Linda
Sent: 27 August 2019 13:53
To: Armstrong, Jennifer; Edwards, William
Subject: RE: IN CONFIDENCE: awareness of whistleblowing concerns shared with NSS

Sensitivity: Confidential

Categories: File

I would have thought so. I have asked to meet with Teresa.

Dr Linda de Caestecker
Director of Public Health
NHS Greater Glasgow and Clyde

From: Armstrong, Jennifer
Sent: 27 August 2019 12:58
To: de Caestecker, Linda; Edwards, William
Subject: FW: IN CONFIDENCE: awareness of whistleblowing concerns shared with NSS
Sensitivity: Confidential

Both
See response from HPS; I wonder if this still enables some investigation into the concerns raised ?
j

From: RAMSAY, Lorna (NHS NATIONAL SERVICES SCOTLAND) [redacted]
Sent: 27 August 2019 12:56
To: Armstrong, Jennifer
Subject: [ExternaltoGGC]Re: IN CONFIDENCE: awareness of whistleblowing concerns shared with NSS
Sensitivity: Confidential

Jennifer
My colleague has contacted the whistleblower with the offer for their details to be passed to one of the GGC whistleblowing champions to enable local investigation. The individual has declined.
Thanks
Lorna
Dr Lorna J Ramsay
Medical Director NSS
Sent from my iPhone

On 26 Aug 2019, at 12:54, Armstrong, Jennifer [redacted] wrote:

Dear Lorna

Thank you for informing me of this issue below and I acknowledge the concerns raised in your email regarding infection control issues at the Royal Hospital for Children. I appreciate that you have re-directed the individual to the various Whistleblowing channels that have been created including our own Board Whistleblowing policy. Within the policy, there is a clear process of escalation to address such issues through direct line and senior management structures.

The Board's designated Directors for whistleblowing are Dr Linda de Caestecker, DPH and Mr William Edwards, e-health Director. Dr de Caestecker in the first

instance has offered to meet with the Chair of the IMT (referred in bullet point 1) to assess the nature and validity of the concerns below.

A clear function of our IMT is to ensure the delivery of safe, effective care to our patients and infection control issues are central to the delivery of high quality clinical care to our patients and wider views from IMT members may be required provide re-assurance and understand the factual accuracy of these claims.

Whilst I acknowledge the confidentiality of the concerns that have been raised to you through a colleague, it would be helpful if you can seek permission of the whistleblower details to be shared with Dr de Caestecker or Mr Edwards in order that the concern can be investigated appropriately in line with our policy.

I also appreciate the support from NSS around water and ventilation issues

Kind regards
Jennifer

From: RAMSAY, Lorna (NHS NATIONAL SERVICES SCOTLAND)
[redacted]
Sent: 21 August 2019 15:01
To: Armstrong, Jennifer
Subject: [BlockedURL][ExternaltoGGC]IN CONFIDENCE: awareness of whistleblowing concerns shared with NSS
Sensitivity: Confidential

Jennifer

Just to follow up on our phone call this afternoon.

I let you know that a whistleblower from NHS GG&C contacted a colleague in HPS raising a number of concerns in relation to infection control issues and ongoing activities in the Sick Children's Hospital. The content of their call and follow on email stated:

* "The chair is unable to do her job in protecting patients from infections due to the culture and organisational failings, citing lack of support from management
* Critical information has been denied to the chair, or false accounts given by high level managers
* Microbiology/Clinical judgement regarding the fact that there is a real issue with unusual environmental pathogens in Haematology paediatric patients is being continuously questioned
* Lack of transparency re communication"

In response to the individual, NSS has advised them on the appropriate policy and routes for employees to raise concerns, that is to use their local NHS GG&C routes/ Whistleblowing Champion or, if they consider necessary, the National confidential Whistleblowing Helpline.

As I indicated, given the patient safety implications of what was raised, I felt it approrpiate to make you aware that these concerns have been expressed to us. My colleague is informing the whistleblower that I will be doing so. You indicated that there is another side to this and shared some context, including that a broader meeting was held last night with staff involved in the investigation and management with plans to ensure a systematic approach is being taken in the ongoing investigation. In terms of my offer around what support NSS may be able to provide through HPS in the management

of this complex infection control work, you indicated support around ventilation and water would be particular areas where external expert help would be useful. I will follow up with colleagues in this regard. You confirmed that the GG&C Whistleblowing champion, Linda deCaestaker is engaged with the wider staff group involved in this work and that GG&C also has a Non-Executive Director with whistleblowing remit with whom there could be further discussion on the issues raised.

Finally, I mentioned that, given NSSs national role in relation to infection control we intend to make the Scottish Government aware that concerns have been raised with us by a whistleblower. You were comfortable with me doing so.

I hope this summarises our discussion. I will follow up in relation to further NSS help.

Many thanks
Lorna

Dr Lorna Ramsay
Medical Director NSS

NHS National Services Scotland
Room 031, Ground Floor
Gyle Square
1 South Gyle Crescent
Edinburgh, EH12 9EB

[redacted]

[redacted]

From: Armstrong, Jennifer
Sent: 08 March 2020 13:18
To: Shariff, Imran
Subject: FW: ICD sessions for Built Environment.
Attachments: SBAR ICD sessions.docx

From: Walsh, Tom
Sent: 20 December 2018 09:12
To: Steele, Tom [redacted]
Cc: Armstrong, Jennifer [redacted]; Best, Jonathan [redacted]
Subject: ICD sessions for Built Environment.

Dear Tom

Following our discussion with Jennifer yesterday I am writing to seek funding for an additional two Infection Control Doctor sessions to support the significant on-going agenda on the Built Environment within GGC. The workload arising from the projects at QEUH and the recent inspection report at Cowlairs cannot be sustained alongside the existing work pressures. The attached SBAR sets this out in more detail.

I would be grateful if this could be given consideration, even in terms of short term funding linked to capital projects. We could perhaps review after a 6 month period?

The cost of two additional ICD sessions is £30K per annum.

Kr

Tom

NHS Greater Glasgow and Clyde	**NHS Greater Glasgow & Clyde** **Infection Prevention and Control Team**
Purpose:	Proposal for Enhanced/ Increased Infection Control Doctor (ICD) input to the Built Environment and CDU.
From:	Tom Walsh, Board Infection Control Manager
To:	Dr Jennifer Armstrong. Board Medical Director.
Date:	6th December 2018
Subject / Situation:	Recent incidents in both QUEH/RHC and the Cowlairs CDU require significant ICD input, both in terms of the current situation and the ongoing monitoring and assurance processes for the built environment from and Infection Prevention and Control perspective.
Background:	The ongoing Water Incident at RHC has required significant input from the Lead Infection Control Doctor, both as Chair of the Incident Management Team and as an expert advisor on Water and Ventilation Systems in the clinical environment. The incident has demonstrated the ongoing need for significant involvement of an ICD in the design and maintenance of all aspects of the built environment within GGC going forward. The CDU at Cowlairs recently had the relevant operating license temporarily revoked following an unannounced inspection by the external accrediting authority. Part of their findings was a perceived failure to act on increased particulate counts in the clean preparation room. Further investigation identified this as a likely result of water ingress to the ceiling and the growth and potential dispersion of mould. It is anticipated that the review of this incident will result in a recommendation for more direct involvement of an ICD in the testing and reviewing of microbiological results for both CDUs at Cowlairs and Inverclyde.
Action	These recent events have been fully support by the Lead ICD for GGC and have required considerable input over a prolonged period of time. The total available ICD sessions for all of the Board Area currently sits at 1.9 WTE and is covered on a sessional basis by 6 Consultant Microbiologists. The current enhanced support and the ongoing requirements for input to the built environment cannot be sustained within the available sessions without impact on other key areas of the Infection Prevention and Control workload.
Recommendation	To provide optimum support to Facilities Colleagues on the Built Environment and environmental QA processes within the CDUs it is requested that funding for two additional ICD sessions is provided to support the current and ongoing requirement for expert input and advice.

	The approximate cost of the two additional sessions is circa [redacted] per annum.

From: Shariff, Imran
Sent: 20 March 2020 10:22
To: Shariff, Imran
Subject: FW: [ExternaltoGGC]Meeting tomorrow

From: Armstrong, Jennifer
Sent: 07 August 2019 06:55
To: Inkster, Teresa (NHSmail); Devine, Sandra
Cc: O'Brien, Bernadette
Subject: Re: [ExternaltoGGC]Meeting tomorrow

Sorry Teresa saw this last night and thought I had responded. That would be absolutely fine. We need to watch that there is enough support as I do recall the last time when you were working very long hours to support clinical team and routine work. But we can discuss
I will ask Bernadette to provide a number for you.
J

Sent from my BlackBerry 10 smartphone on the EE network.
From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)
Sent: Tuesday, August 6, 2019 5:52 PM
To: Armstrong, Jennifer; Devine, Sandra
Subject: [ExternaltoGGC]Meeting tomorrow

Hi, we have a meeting scheduled for tomorrow afternoon. Would it be possible for me to dial in ,as Brenda Gibson has requested I attend a meeting with parents at 3pm in QEUH

Kind regards
Teresa

Sent from my BlackBerry 10 smartphone on the EE network.

From: Armstrong, Jennifer
Sent: 23 September 2019 17:44
To: Inkster, Teresa (NHSmail)
Subject: RE: *contains confidential information*

Hi Teresa
I am glad your clinical care has been excellent: both from the haematology team and from Noelle O Rourke at the Beatson. I hope you are now feeling better and your treatment is progressing.

I will forward your email to Linda and the team below minus the sentence regarding your care so they are appraised of the issues you wish to add in.
Kind regards
Jennifer

From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]
Sent: 23 September 2019 16:42
To: Armstrong, Jennifer
Subject: [ExternaltoGGC]Re: *contains confidential information*

Confidential

Hi Jennifer

I am back from annual leave today

Regarding the synopsis of key issues I would like to add the following;

- SCI process
- Duty of candour regarding infection control incidents
-Governance relating to specialist groups reporting to IMTs

I have received a separate email from Linda regarding the investigation into the IMT following a whistleblow to HPS. As the ex -chair of the current incident I have myself received feedback from attendees regarding these meetings. I would like to request that as many attendees as possible are spoken to , including clinicians, nursing and laboratory colleagues and HPS representatives.

On a separate note, the clinical care I have received has been excellent both from the haematology team at QEUH and now Noelle O Rourke and her team at the Beatson

Kind regards
Teresa

Dr Teresa Inkster
Consultant Microbiologist, QEUH
National Training Programme Director Medical Microbiology
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Armstrong, Jennifer [redacted]
Sent: 05 September 2019 22:52
To: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)
Subject: RE: *contains confidential information*

Thanks Teresa; I really hope you have a good holiday and wish you all the very best over the coming weeks with you clinical care.
Kind regards
Jennifer

From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]
Sent: 05 September 2019 21:22
To: Armstrong, Jennifer
Subject: [ExternaltoGGC]Re: *contains confidential information*

Dear Jennifer,

Thank you for your letter. I finished up for annual leave today . I went for an occupational health appointment and have written an extensive handover for colleagues for the next two weeks. I have therefore not had a lot of time to consider the synopsis of key issues. I am leaving for holiday tomorrow but will respond when I return to Glasgow in just over a weeks time.

Kind regards
Teresa

Dr Teresa Inkster
Consultant Microbiologist, QEUH
National Training Programme Director Medical Microbiology
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Armstrong, Jennifer [redacted]
Sent: 05 September 2019 11:35
To: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)
Subject: RE: *contains confidential information*

STRICTLY CONFIDENTIAL- DR TERESA INKSTER

Dear Teresa,

Please see attached a response to your letter

Kind Regards,

Jennifer

From: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE) [redacted]
Sent: 02 September 2019 08:45

To: Armstrong, Jennifer; de Caestecker, Linda; Peters, Christine
Subject: [ExternaltoGGC]*contains confidential information*

Dear all,

Please see attached letter

Kind regards
Teresa

Dr Teresa Inkster
Lead Infection Control Doctor NHSGGC
National Training Programme Director Medical Microbiology
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Armstrong, Jennifer
Sent: 01 October 2019 15:11
To: Deighan, Chris
Cc: Davidson, Scott; Crawford, Andy
Subject: FW: Whistleblowing concerns

Chris
Can you discuss with Scott and Andy the best way for us to investigate these issues which have been raised by Dr Inkster?
j

From: de Caestecker, Linda
Sent: 26 September 2019 17:47
To: Armstrong, Jennifer
Subject: Fw: Whistleblowing concerns

Let's discuss

Sent from my BlackBerry 10 smartphone on the EE network.
From: Inkster, Teresa [redacted]
Sent: Thursday, September 26, 2019 4:30 PM
To: de Caestecker, Linda
Subject: RE: Whistleblowing concerns

Hi Linda

I agree that they would be best dealt with through normal processes as I have not initiated a whisteblow concern myself . Christine Peters and Al Leanord are my line manager and CD but these issues relate to infection control so Im not sure how appropriate that route would be . They are of a medical nature so perhaps Dr Armstrong herself is the best person to take these forward with. Happy to discuss further when we meet

Kind regards
Teresa

From: de Caestecker, Linda
Sent: 24 September 2019 16:17
To: Inkster, Teresa
Subject: Whistleblowing concerns

Teresa
I hope you had a good break.

Jennifer let me know that you added some key issues to the synopsis she had put together from the whistleblowing communication to HPS and also from your own resignation letter. They are:
* SCI process
* Duty of candour regarding infection control incidents
* Governance relating to specialist groups reporting to IMTs

I am happy to discuss these when we meet about the whistleblowing concerns. However they may be better dealt with through normal processes through your line manager, clinical director or governance structures rather than as a whistleblowing concern. Are you happy that we explore the appropriate processes to resolve these issues when we meet? Happy to discuss in advance if helpful.

Kind regards
Linda

Prof Linda de Caestecker
Director of Public Health
NHS Greater Glasgow and Clyde
Gartnavel Royal Hospital Campus |
1055 Great Western Road | GLASGOW G12 OXH
[redacted]
web: http://www.nhsggc.org.uk/publichealth

Dear Medical Directors,

We would like to make you aware of some operational concerns that have been highlighted to the Chief Nursing Officer Directorate (CNOD) within Scottish Government by Infection Control Doctors (ICDs).

We ask that you engage with the HAI Exec Lead within your Board, who has already been informed of these concerns, to identify and address as appropriate.

The following SBAR provides detail of the concerns raised to date.

Situation:

The Infection Prevention Workforce: Strategic Plan 2022 – 2024 was published in December 2022. As a result, there are currently five national core role descriptors in development, including a descriptor for ICDs.

The role descriptors should provide a summation of each role within an IPC team incorporating common areas of responsibility for the provision of IPC advice/guidance/input across Scotland and provide support in career development work being conducted by NHS Education Scotland.

During the development process ICDs have raised concerns regarding the scope, capacity and structure of the ICD role.

Background:

The policy unit has engaged with current ICDs at multiple stages, including attending their forum's quarterly meeting and providing an online platform to collate feedback.

The policy unit received extensive feedback from ICDs relating to their role and this feedback included various concerns. Please see a summary below:

- Workload is unmanageable on top of other Microbiology/Virology/ID physician/Clinical Scientist responsibilities
- Realistic job plans are required as there are currently not enough ICD sessions to cover both routine and emergency ICD work without putting non-ICD responsibilities at risk
- Lack of training and support prior to starting the role and once in the role
- There are perceived to be Medico-legal implications relating to the current operation of the role
- The role is unattractive in its current form making vacant post hard to fill
- Due to recruitment challenges job descriptions are being altered in attempt to remove the need for applicants to be an ICD, although this is filling empty posts it is not resolving the issues relating to ICD provision
- Having only one designated ICD creates potential point failure and increases risk

Action:

The Chief Nursing Officer and Chief Medical Officer Directorates have met to discuss these operational concerns, and although the concerns are operational issues that require Board level resolution it is clear from the feedback received that similar

issues relating to ICDs are being experienced across Scotland. The Chief Nursing Officer has communicated with the HAI Exec Leads in Boards (25th October 2023) highlighting the need for Infection Prevention and Control workforce planning to be undertaken. This would require collaboration with Medical Directors to support the identification and management of local operational concerns regarding the ICD role.

Recommendation:

Medical Directors are asked to note the contents of this SBAR and action as appropriate.

NHS
Greater Glasgow and Clyde

12 November, 2015

Dear Colleagues,

Medical Leadership Arrangement for Infection Control

Following the recent informal review of the structure of the medical and management teams in Infection Control and Microbiology and how effectively these function and interlink, there is a need to put in place some interim professional leadership arrangements whilst further development work is progressed.

It has been agreed that Dr Anne Cruickshank will take on the role of Clinical Director for Infection Control Doctors alongside her existing role as Clinical Director for Laboratory Medicine. This arrangement will be for a period of 6 months – commencing immediately. Professor Craig Williams will continue in his role as Lead Infection Control Doctor and Professor Brian Jones will continue as Head of Service for Microbiology (Figure 1 below).

Dr Cruickshank is taking on the additional role as Clinical Director for Infection Control Doctors and will work alongside the general management teams for Infection Control and Laboratory Medicine on a range of issues, but with particular focus on improving the interface between these two areas.

This interim arrangement will ensure that professional clinical leadership is provided both for laboratories and for infection control doctors and associated clinical matters.

If you have any questions about these arrangements, please do not hesitate to get in touch with either of us in the first instance.

Yours Sincerely,

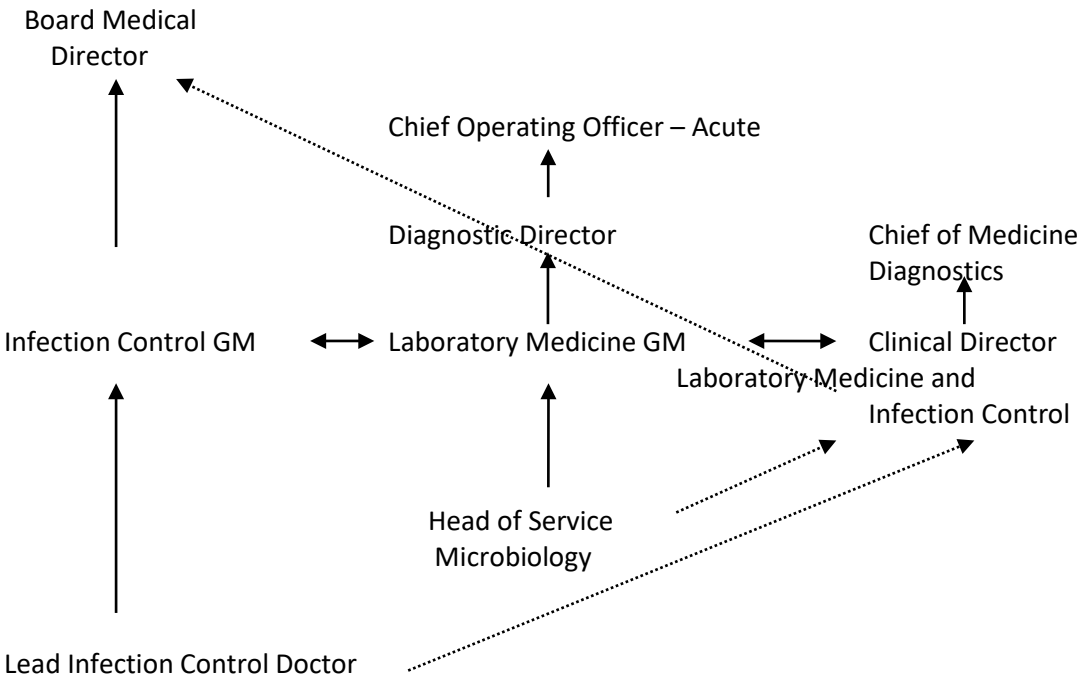
[redacted]

Tom Walsh
Infection Control GM
[redacted]

Isobel Neil
Laboratory Medicine GM
[redacted]

FIGURE 1

Interim Medical Management Arrangements for Infection Prevention & Control Team



_____Management Accountability

---------- Professional Accountability

From: Armstrong, Jennifer
Sent: 08 August 2021 19:11
To: Shariff, Imran
Subject: FW: interim CD for Infection Control

From: Walsh, Tom
Sent: 05 May 2016 08:46
To: Armstrong, Jennifer [redacted]
Subject: RE: interim CD for Infection Control

Hi Jennifer

I think that would be fine. Teresa is fitting in really well and the link established with Anne will remain helpful going forward.

KR

Tom

From: Armstrong, Jennifer
Sent: 25 April 2016 18:11
To: Walsh, Tom
Subject: FW: interim CD for Infection Control

Tom
Have you an opinion?
j

From: Cruickshank, Anne
Sent: 25 April 2016 13:21
To: Armstrong, Jennifer
Cc: Stewart, David
Subject: interim CD for Infection Control

Dear Jennifer

Having discussed this with Teresa Inkster and Isobel Neil, I propose that I continue in the above role until 1st August 2016, by which time I would hope that the role would have become largely redundant.

Would this be acceptable to you?

Kind regards

Anne

From: Gibson, Brenda
Sent: 15 November 2019 18:06
To: Redfern, Jamie; Hill, Kevin; Grant, Jane [Chief Exec]; Armstrong, Jennifer; Mathers, Alan; Inkster, Teresa

Categories: File

Good Evening ,

I have just returned from holiday to read in the press about a [redacted] who [redacted] of stenotrophomonas in 2017 . I ask if this [redacted] is [redacted] who was my patient.

The press statement reads – " The cases (two cases of stenotrophomonas) were reviewed again in July 2019 when the clinical view was taken that no further action was required". This statement appears to have come from a Board representative.

I am not sure who took this clinical view , but it was not me. I forwarded a summary of the case to management at that time (July 2019) and asked whether an external review of this case should take place . I never had a reply or in deed an acknowledgement of receipt of the email , which was sent twice.

However , my concern is for this [redacted], who is an extremely nice person , who must be becoming increasingly convinced that [redacted] unnecessarily and who must be struggling with this degree of media exposure. Has [redacted] been contacted and offered the opportunity to meet and discuss the situation? Don't we owe [redacted] this?

There are very few people who could be the whistle blower and who could have known the level of detail provided. My understanding is that the [redacted] had already contacted Jean Freeman so the only people who gained from this was the opposition MP and the whistle blower whose motive is difficult to understand . This action was vindictive and cruel and the [redacted] the main victim.

Can you please tell me what help [redacted] is receiving?

Brenda

From: HOOD, John (NHS GREATER GLASGOW & CLYDE) [redacted]
Sent: 03 July 2020 17:14
To: Devine, Sandra [redacted]
Cc: Hood, John [redacted]
Subject: [ExternaltoGGC]Inspection of Level 12 plant rooms 3 July 2020

Dear Sandra,

Darryl Conor and myself this morning walked round Level 12 Plant Rooms (PR) ie 121 (B), 122 (A), 123 (D) and 124 (C). Air handling units (AHU) 4,5 & 6 in PR 122 serve ward 6A where the [redacted] is presently and [redacted] has spent around 83 days since [redacted] admission to the hospital on 22 January 2020. [redacted] has also been in PICU for 13days, 3A for 15 days, 3C for 6 days & 2C for 3 days (all so far).
Firstly, we found that all Level 12 Plant rooms were clean with absolutely no evidence of any pigeon ingress or pigeon fouling in any of them at all.
We also checked to see if any of the AHU's In PR 122, serving 6A (specifically AHUs 4,5&6), had been opened for a filter change since Jan 2020. We can confirm that none of the three have been opened, so far, this year.
We have both photographs of the Plant rooms and of the maintenance records, if required.
I (JH) intend on Monday 6 July to visit the Plant rooms and AHU, that serve the other wards that the patient has been in ie PICU, 3A, 3C & 2C.
I hope that this information helps.

Kindest regards

Dr John Hood

Clinical Infectious Diseases

REVIEW ARTICLE

Cryptococcal Antigenemia in Advanced Human Immunodeficiency Virus Disease: Pathophysiology, Epidemiology, and Clinical Implications

Rachel M. Wake,[1,2] Síle F. Molloy,[1,3] Joseph N. Jarvis,[4,5] Thomas S. Harrison,[1,2,6] and Nelesh P. Govender[1,3,6,7,8]

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Cryptococcal antigen (CrAg) is detectable in blood prior to the onset of symptomatic cryptococcal meningitis (CM), a leading cause of death among people with advanced human immunodeficiency virus (HIV) disease globally. Highly sensitive assays can detect CrAg in blood, and screening people with HIV with low CD4 counts, followed by preemptive antifungal treatment, is recommended and widely implemented as part of a global strategy to prevent CM and end cryptococcal-related deaths. Cryptococcal antigenemia encompasses a spectrum of conditions from preclinical asymptomatic infection (cerebrospinal fluid [CSF] CrAg-negative) through subclinical (CSF CrAg-positive without overt meningism) to clinical symptomatic cryptococcal disease, usually manifesting as CM. In this review, we summarize current understanding of the pathophysiology, risk factors for, and clinical implications of cryptococcal antigenemia within this spectrum. We also provide an update on global prevalence, recommended screening and treatment strategies, and future considerations for improving outcomes among patients with cryptococcal antigenemia.

Keywords. cryptococcal meningitis; cryptococcosis; diagnostic screening programs; acquired immunodeficiency syndrome; HIV.

Human immunodeficiency virus (HIV)–associated cryptococcal meningitis (CM) is responsible for more than 180 000 deaths per year, with 75% occurring in African countries [1]. Cryptococcal antigen (CrAg) is detectable in blood prior to the onset of symptoms [2]. Screening blood for CrAg and preemptive treatment of those who test CrAg-positive with fluconazole is now recommended and widely implemented to prevent cryptococcal-related deaths among adults and adolescents with HIV who have CD4 T-lymphocyte (CD4) counts of <200 cells/μL [3]. This strategy was first recommended by World Health Organization (WHO) Rapid Advice in 2011 [4] and has since been implemented in many high-burden countries.

Prospective data now indicate that targeted CrAg screening and preemptive fluconazole treatment reduces the incidence of CM and death [5]. However, individuals with cryptococcal antigenemia still have a higher mortality risk than comparable individuals without antigenemia, despite antifungal treatment [5–7]. The pathophysiological mechanism that underlies this increased risk of death is not fully understood. However, a recent prospective study found that >70% of deaths were cryptococcal-related, suggesting that fluconazole monotherapy is inadequate treatment [7]. In this review, we summarize our current understanding of cryptococcal antigenemia, including susceptibility and pathophysiology of associated clinical conditions. We also provide an update on global prevalence, recommended screening approaches and treatment regimens, and future considerations for improving outcomes among patients with cryptococcal antigenemia. Although cryptococcosis occurs in the context of other immune defects, and less commonly in apparently immunocompetent individuals, this review focuses on cryptococcal antigenemia among people living with advanced HIV disease, the main population affected by cryptococcosis.

PATHOPHYSIOLOGY

Cryptococcus and Cryptococcal Antigen

Cryptococcus neoformans and *Cryptococcus gattii* are species complexes of pathogenic yeasts that are ubiquitous in the environment and responsible for invasive cryptococcal disease, or cryptococcosis. These fungi are commonly found in the

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decaying matter of soil, certain tree species, and avian excreta. Their survival in the environment is facilitated by a large gelatinous polysaccharide capsule made up of glucuronoxylomannan (90%–95%), galactoxylomannan (5%), and mannoproteins (<1%) [8].

CrAg is the term used for the predominant component of the cryptococcal capsule, glucuronoxylomannan. Biological fluid samples (blood, cerebrospinal fluid [CSF], pretreated urine) can be tested for CrAg using a latex agglutination (LA) test, enzyme-linked immunosorbent assay (ELISA), and lateral flow assay (LFA). The detection of CrAg in CSF samples is an accurate tool for diagnosing a first episode of CM, particularly in settings where laboratory facilities are limited [9]. The Immuno-Mycologics (IMMY, Norman, OK) LFA is currently the most widely used for CrAg screening. It uses 2 monoclonal antibodies, making it broadly reactive with all cryptococcal serotypes, encompassing both *C. neoformans* and *C. gattii* species complexes, and is more sensitive than LA tests or ELISA [9]. Validation studies have found excellent concordance when the LFA is used on serum or plasma compared with CSF culture in patients with culture-confirmed CM [9]. The IMMY CrAg LFA is also low-cost, rapid, and simple to use, enabling testing at the point of care rather than in the laboratory [10].

Etiology of Cryptococcal Antigenemia

Pathogenic cryptococci are ubiquitous; therefore, exposure is common, probably near universal [11], through inhalation of desiccated yeast cells or basidiospores. Following inhalation, cryptococcal cell wall components are recognized by pattern recognition receptors on immune cells that trigger an innate immune response, including phagocytosis by alveolar macrophages, and granuloma formation. Since cryptococci are able to survive intracellularly following phagocytosis, they can evade effective immune responses and reside latently in immunocompetent hosts [12].

In the context of immunosuppression, cryptococcal antigenemia likely occurs as a result of reactivation, rather than new infection through exposure to the fungus in the environment. When host immunity fails to suppress intracellular proliferation, fungal cells are released by cell lysis or vomocytosis (a nonlytic mechanism that avoids triggering a significant immune response) and disseminated hematogenously [13]. It may be at this stage that antigen becomes detectable in blood. The initial lack of symptoms among patients with antigenemia might be due to low fungal burden and/or minimal inflammatory responses, particularly in the context of profound immune suppression.

EPIDEMIOLOGY IN ADVANCED HIV

The global prevalence of cryptococcal antigenemia is estimated to be around 6% among adults with CD4 counts ≤100 [1] cells/μL and 2% among adults with CD4 counts of 101–200 cells/μL [14]. Although cryptococcal antigenemia is associated with lower CD4 counts [2] and prevalence varies geographically [1], no other demographic or environmental risk factors have been identified. Prior tuberculosis (TB) has been identified as a possible clinical risk factor for cryptococcal antigenemia [15], suggesting that a shared immunological defect or prolonged duration of immune suppression may play a role in susceptibility to cryptococcal antigenemia.

Genetic Susceptibility to Cryptococcal Antigenemia

The occurrence of cryptococcal antigenemia in a relatively small subset of those at risk with advanced HIV disease, despite likely universal exposure, suggests a genetic predisposition to cryptococcosis. In people who are HIV-seronegative, FcγR and mannose-binding lectin polymorphisms may be important in cryptococcosis susceptibility [16, 17]. Among people with HIV (mostly White males), targeted polymerase chain reaction–based genotyping identified the FcγR3A 158 V allele as a risk factor, with homozygous expression conferring 21 times the risk of cryptococcal disease ($P = .005$) [18]. In individuals of African descent, a genome-wide association study identified 6 loci upstream of the colony-stimulating factor 1 (*CSF1*) gene to be associated with cryptococcosis, including in those with asymptomatic cryptococcal antigenemia [19].

CLINICAL IMPLICATIONS OF CRYPTOCOCCAL ANTIGENEMIA

Cryptococcal antigenemia constitutes a spectrum of clinical conditions, from preclinical asymptomatic infection (CSF CrAg-negative) through subclinical infection (CSF CrAg-positive, India ink microscopy, or culture positive for *Cryptococcus* spp. but without overt meningism) to clinical symptomatic infection, usually presenting as fulminant meningitis. Around one-third of individuals with asymptomatic cryptococcal antigenemia have subclinical CM [19]. Additionally, comprehensive screening of 67 asymptomatic CrAg-positive patients in South Africa revealed subclinical cryptococcal infection elsewhere (blood culture growth of *C. neoformans* in 11 of 67 (16%) and pulmonary cryptococcosis in 2 of 32 (7%) who had samples cultured [7]).

Without treatment, the detection of CrAg in the blood heralds the onset of clinical symptomatic CM, although individuals with antigenemia can remain asymptomatic for weeks to months before clinical meningitis occurs [2, 20–22]. In South Africa, a cohort study of 707 patients initiating antiretroviral treatment (ART) demonstrated that retrospectively determined and thus untreated baseline cryptococcal antigenemia predicted the development of subsequent CM within 1 year with 100% sensitivity and 96% specificity. No cases of meningitis occurred in 294 CrAg-negative patients with CD4 counts ≤100 cells/μL

within 1 year of testing [2]. Retrospective testing of blood samples taken from patients with HIV-associated CM in Uganda found that cryptococcal antigenemia preceded clinical symptoms by a median of 22 days (range, 5–234) [20]. Cryptococcal infection rarely develops in patients who initially test CrAg-negative, occurring in 19 (1.3%) of 1519 CrAg-negative participants of a primary prophylaxis trial in Uganda [23], mostly prior to ART commencement. Immune reconstitution may be sufficient to clear asymptomatic cryptococcal infection in some CrAg-positive individuals, as observed in 11 of 21 (52%) patients who started ART but not antifungal therapy and remained disease-free, most with decreasing antigen titers during the following year [2].

Management of Cryptococcal Antigenemia

In view of the predictive power of antigenemia for CM among people with advanced HIV disease and recognition of a presymptomatic window, a strategy of screening and "preemptive" treatment with fluconazole has been incorporated into national and international guidelines and implemented in more than 20 high-burden countries. In 2011, WHO Rapid Advice recommended CrAg screening in high-prevalence areas among ART-naive adults with CD4 counts <100 cells/μL and fluconazole treatment of CrAg-positive patients with no signs or symptoms of meningitis at a dose of 800 mg daily for 2 weeks, followed by 400 mg for 2 months and then 200 mg for at least 1 year pending immune reconstitution [4]. This treatment approach was based on retrospective subgroup analyses that found no cases of CM in CrAg-positive patients who received even low doses of fluconazole (100 mg or 200 mg) for other reasons [22] and evidence that higher doses are well tolerated and more effective in CM [24]. In addition, modeling identified a "screen-and-treat" approach as the dominant strategy in health economic terms (it saved lives and money) over the standard of no screening in areas with higher CrAg prevalence [25, 26].

Since the introduction of this strategy, recommendations have adapted in response to prospective screening data [14, 27, 28]. The criteria for considering screening is now adults and adolescents with CD4 counts <200 cells/μL, and lumbar puncture (LP) is advised to exclude subclinical CM in all CrAg-positive patients irrespective of symptoms [3]. Southern African guidelines recommend an increased induction fluconazole dose of 1200 mg and immediate ART initiation for those with CrAg-negative CSF (Figure 1) [29]. In ART-experienced individuals in Uganda, cryptococcal antigenemia was detected in 4.2% of those with viral loads ≥5000 copies/mL. CrAg screening was therefore also suggested in the context of virological failure where CD4 counts are not performed [30].

Several prospective studies have shown the CrAg screen-and-treat approach to be effective at reducing the incidence of CM [5–7, 30]. In a multisite trial in Tanzania and Zambia, adults with HIV with CD4 counts <100 cells/μL were randomized to a strategy that included community support and CrAg screening with preemptive fluconazole for CrAg-positive patients. The intervention reduced mortality risk by nearly one-third, and the authors attributed half of this risk reduction to CM prevention due to CrAg screening [5]. A systematic review and meta-analysis found that preemptive fluconazole initiated at 800 mg in patients with asymptomatic cryptococcal antigenemia reduced the incidence of CM from 20% to 5% [31]. The importance of setting national targets to achieve CrAg screening of 95% of eligible adults is emphasized in the Strategic Framework for Ending Cryptococcal Meningitis Deaths by 2030 [32].

Cryptococcal Antigenemia Is Associated With an Increased Risk of Mortality

Despite prevention of clinical CM using CrAg screen-and-treat strategies, cryptococcal antigenemia remains a risk factor for death among people with advanced HIV (Figure 2). This was observed in retrospective studies prior to the introduction of CrAg screening and preemptive treatment (in South Africa, adjusted hazard ratio [HR], 3.2; 95% confidence interval [CI], 1.5–6.6 [2]; in Uganda, relative risk, 6.6; 95% CI, 1.86–23.61) [20]; deaths following CM were not sufficient to account for excess mortality in either study [2, 20]. In prospective studies that use fluconazole preemptive treatment, subsequent diagnoses of clinical CM are rare. However, cryptococcal antigenemia was associated with a 2- to 3-fold increased risk of death within 6 months compared with CrAg-negative patients with similar CD4 counts [5–7].

The excess mortality risk associated with cryptococcal antigenemia despite fluconazole treatment is not well understood, but a combination of suboptimal treatment and additional disease susceptibility is likely. Fluconazole monotherapy, known to be an inferior induction-phase treatment of CM, may be undertreating CrAg-positive patients with undiagnosed subclinical CM or cryptococcemia (blood culture growth of *Cryptococcus* spp.). Subclinical CM has an estimated prevalence of 33% (95% CI, 21%–45%) among asymptomatic CrAg-positive patients by meta-analysis of 10 studies [31]. However, due to limited access and poor uptake of LPs in this population [5, 6, 31], subclinical meningitis is likely to remain undiagnosed in the majority of cases. Even when LPs are used to screen for subclinical CM and appropriate combination antifungals are used for those with CrAg-positive CSF, fluconazole monotherapy fails to prevent some cryptococcal-related deaths in those who do not have subclinical CM at the time of screening. An investigation of the causes of death following CrAg screening and treatment in South Africa, including use of minimally invasive autopsies, attributed 71% (12 of 17) of deaths to cryptococcal disease as an immediate or contributing cause, including 8 patients who were known to die with CM [7]. All 4 CrAg-positive patients with post-mortem samples were CSF

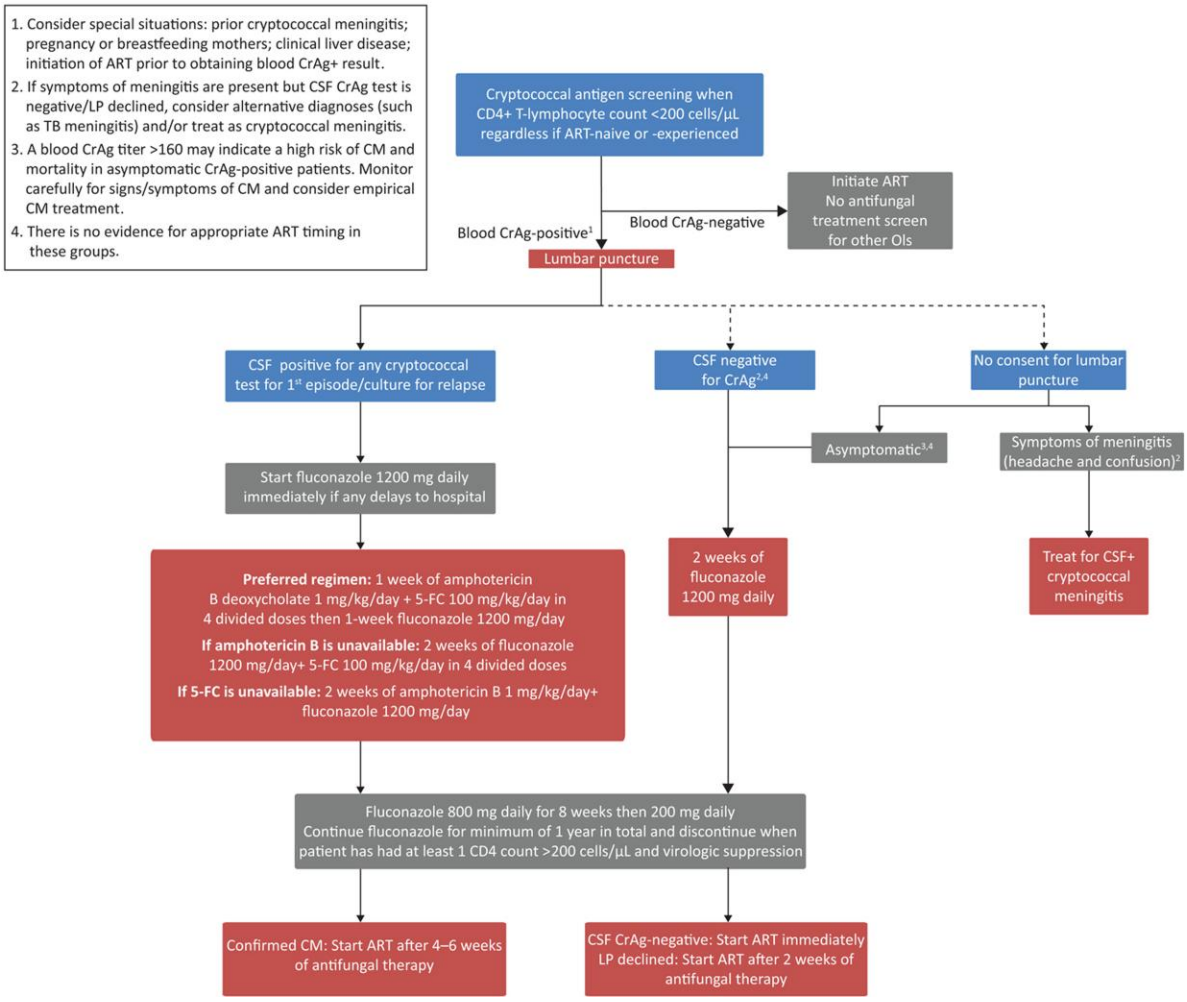

Figure 1. Cryptococcal antigen screening and treatment algorithm from the Southern African HIV Clinicians Society 2019 guideline for the prevention, diagnosis, and management of cryptococcal disease among HIV-infected persons [29]. Abbreviations: ART, antiretroviral therapy; CM, cryptococcal meningitis; CrAg+, cryptococcal antigen-positive in blood; CSF, cerebrospinal fluid; LP, lumbar puncture; pOI, opportunistic infection; pTB, tuberculosis; 5-FC, flucytosine.

CrAg-positive at the time of death. All had been asymptomatic and received fluconazole, and 2, who had agreed to LP, were CSF CrAg-negative at the time of screening [7]. Furthermore, fluconazole monotherapy was associated with in-hospital mortality of 32% in CrAg-positive patients who presented to the hospital in Uganda with meningism and had CrAg-negative CSF (likely early CM) [33].

Patients with cryptococcal antigenemia may be more susceptible to other pathologies due to an underlying immune defect beyond CD4 depletion, possibly related to genetic predisposition. Animal and human studies have demonstrated a requirement for Th1-type T cell-mediated immunity with proinflammatory cytokine production for successful cryptococcal clearance and improved chances of survival [34, 35]. Pathogen-specific immune responses in CrAg-positive and CrAg-negative patients with similar CD4 counts have not yet been characterized and compared.

In addition to the possibility of an underlying immune defect, *Cryptococcus* itself may lead to secondary immune perturbations. Capsular and call wall components have multiple immunosuppressive effects, including suppression of proinflammatory responses (reviewed in [8]).

Aberrant host immune responses predisposing to or induced by cryptococcal antigenemia may confer susceptibility to other opportunistic infections. Retrospective studies have found associations between prior TB and cryptococcosis [15, 36], suggesting a shared immune defect. A prospective cohort study found CrAg-positive patients were more likely to develop other AIDS-defining illnesses than CrAg-negative patients (HR, 2.69; 95% CI, .98– 7.42; $P = .05$), and autopsies revealed multiple copathologies with cryptococcosis [7].

In addition to biological causes of excess mortality risk, screening does not work as seamlessly in the real world as it does in clinical trials. A prospective cohort study of

	HIV+ CD4 <100 CrAg-negative	Asymptomatic Cryptococcal Antigenemia	Subclinical Cryptococcal Meningitis	Overt/Clinical Cryptococcal Meningitis
Blood CrAg titer	N/A	Median 40 (IQR 10–160) (28)	Median 1440 (IQR 320–10240) (43)	Median 2560 (IQR 160–20480) (49)
Risk of subsequent CM	No ART, 0%–2% (22,34) ART initiated, 0% (2,5)	No ART or preemptive treatment, 84% (22) ART initiated, no fluconazole, 14%–28% (2,21) ART initiated, fluconazole 800 mg daily, 0%–6% (5,27) ART initiated, fluconazole 800 mg daily, screening LP, 0%–4% (6,7)	Unknown	No maintenance therapy, 15% (36) Fluconazole maintenance therapy, 0% (36)
Mortality (at 6 months–1 year) ***at 10 weeks**	ART initiated, 9%–15% (2,6,7,33)	No ART initiated or preemptive treatment, 100% (22) ART initiated, no preemptive treatment, 19%–34% (2,21) ART initiated, fluconazole 800 mg daily, 23%–30% (5,33,35) ART initiated, fluconazole 800 mg daily, screening LP, 18%–24% (7,28)	Induction treatment with AMB and fluconazole 800 mg (2 weeks), 22%–46% (28,33)	Induction treatment with fluconazole 800 mg daily, 77% (37) Induction treatment with AMB and fluconazole 800 mg (2 weeks), 50% (38) Induction treatment with AMB and flucytosine (1 week), 28% (38) Induction treatment with single-dose L-AmB and flucytosine and fluconazole 1200 mg (2 weeks), 25% (49)*

Figure 2. Cryptococcal antigen titers, risk of subsequent CM and mortality among people living with advanced HIV disease without cryptococcal antigenemia, and with cryptococcal antigenemia at different stages of the clinical spectrum: asymptomatic, subclinical CM and overt/clinical CM. Abbreviations: AMB; amphotericin B deoxycholate, ART; antiretroviral therapy, CD4; CD4 T-lymphocyte cell count, CM; cryptococcal meningitis, CrAg; cryptococcal antigen, HIV; human immunodeficiency virus, IQR; interquartile range, LP; lumbar puncture, L-AmB; liposomal amphotericin B, N/A; not applicable.

approximately 2000 individuals reflexively screened as CrAg-positive in South Africa found that only around 50% who returned for care were started on fluconazole at a median time to treatment of 8 days. Around 20% of those assessed already had clinical symptoms of CM by the time they were assessed (unpublished, N.P. Govender, D.R. Boulware).

Clinical Significance of Cryptococcal Antigen Titers

CrAg titers are an approximate measure of fungal burden and can be measured in blood as well as in CSF. Higher blood CrAg titers at the time of screening are associated with subsequent CM and death [2, 22] and with concurrent CM in symptomatic and asymptomatic patients [6, 27, 37, 38]. Although no blood CrAg titer can accurately predict meningitis and LPs are recommended, a CrAg titer of >80–160 indicates increased risk and is suggested as a proxy for identifying those who urgently require an LP or who could be considered for empirical CM treatment in settings where LP is not possible. This will be investigated in future trials of enhanced antifungal treatments for cryptococcal antigenemia.

CrAg titers can be determined by performing IMMY CrAg LFAs on serially diluted blood samples, although this is labor-intensive and expensive. Novel quantitative assays have been developed, though variable diagnostic accuracy has been observed with the CryptoPS (Biosynex, Strasbourg, France; sensitivity 61%–90%, specificity 94%–97% [39–41]) and CrAgSQ (IMMY; sensitivity 93%–98%, specificity 94%–100% [41, 42]). Quantification scores correlated with IMMY LFA dilutional titers, CM, and mortality [39–42], although LPs remain important to accurately determine CSF CrAg status.

Enhanced Antifungal Treatment Regimens for Cryptococcal Antigenemia

Although fluconazole monotherapy appears to reduce the incidence of clinically apparent CM, it is not sufficient to prevent cryptococcal-related deaths among all patients with cryptococcal antigenemia, even when screening LPs are performed [5, 7]. An ongoing trial in Uganda is testing the efficacy of single-dose liposomal amphotericin B (L-AmB) 10 mg/kg plus fluconazole for preemptive treatment of patients with cryptococcal antigenemia (ClinicalTrials.gov: NCT03945448). Amphotericin (AmB) is superior to fluconazole in cryptococcal clearance from CSF [43] and expected to be effective in asymptomatic cryptococcal antigenemia due to lower fungal burdens. A single dose of L-AmB has recently been shown to be as effective as 7 days of AmB deoxycholate in combination treatment of CM, with the benefit of reduced requirements for intravenous access and fewer adverse events [44]. However, even a single intravenous treatment may be costly and challenging to implement,

especially in primary care settings. Another clinical trial is comparing combination fluconazole and flucytosine to the current standard of fluconazole monotherapy [45]. Robust evidence from the ACTA trial has shown that combining fluconazole with flucytosine for 2 weeks was as safe and as effective as 2 weeks of intravenous AmB plus flucytosine for patients who present with symptomatic CM, with mortality halved compared with historic cohorts treated with fluconazole monotherapy [46]. In South Africa, recent programmatic data have shown that flucytosine-containing induction regimens were associated with a 53% reduced in-hospital CM mortality compared with regimens without flucytosine in a real-world setting [47]. Flucytosine was historically expensive and inaccessible across most of Africa. However, following release of the ACTA trial results and subsequent inclusion of flucytosine in WHO-preferred induction regimens for meningitis, costs declined with the introduction of new generic flucytosine products.

Although both combination treatments are known to be superior to fluconazole monotherapy in CM, prior trial findings cannot be generalized to ambulatory patients with asymptomatic antigenemia with likely lower fungal burdens. Furthermore, despite the risk of cryptococcal disease progression in a proportion of CrAg-positive patients, some clear their antigenemia with prompt initiation of ART alone [2]. In the Reduction of early mortality in HIV-infected African adults and children starting antiretroviral therapy trial, a package of enhanced prophylaxis including relatively low doses of fluconazole for all those with a CD4 count <100 cells/μL was associated with a reduction in cryptococcal-related mortality [48]. These trials will also ascertain if there is any difference in the effect of combination antifungal treatment in individuals with higher CrAg titers. The balance of risks and benefits of more intensive antifungal therapy in the CrAg-positive population is not known, and robust data on the impacts of combined treatment are urgently required.

Summary

Cryptococcal antigenemia is an intermediate disease stage in which host immunity prevents progression to clinically overt disease in some patients and fails to do so in others. Individuals with cryptococcal antigenemia are within a spectrum of preclinical and asymptomatic (CSF CrAg-negative), subclinical (CSF CrAg-positive, no overt meningism), or clinical cryptococcal infection, usually fulminant CM. Blood CrAg titer and mortality risk correlate with these clinically recognized conditions (Figure 2). While large-scale CrAg screening programs have been initiated in high-burden countries, implementation is variable, and the effectiveness of reducing mortality at a population level has yet to be demonstrated. A more nuanced approach to identifying and treating patients with antigenemia at higher risk of disease progression needs to be tested. Clinical trials are underway to test enhanced preemptive treatment approaches given that fluconazole monotherapy may not be adequate to prevent progressive cryptococcosis and cryptococcal-related deaths [49–53].

Notes

Acknowledgments. The authors thank Andrea Mazella for assistance with Figure 2.

Disclaimer. The views expressed here are those of the authors and not necessarily those of the National Institute for Health Research (NIHR), National Health Service (NHS), or the UK Department of Health and Social Care.

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Dovato
dolutegravir/lamivudine

EVIDENCE SUPPORTS THE HIGH BARRIER TO RESISTANCE OF DOVATO UP TO 5 YEARS[1-3]

CONFIDENCE IN DOVATO ACROSS TREATMENT SETTINGS[4-9]

Treatment-naïve resistance rates, with up to **3 years of evidence**[5-7]

0%	0.1%
(n=0/1,885)*,[4]	(n=1/953)**,†,‡,§,5-7
REAL-WORLD EVIDENCE	RANDOMISED CONTROLLED TRIALS

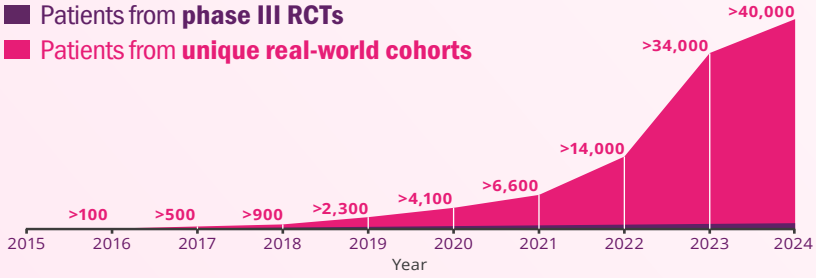
Treatment-experienced resistance rates, with up to **5 years of evidence**[1-3]

0.03%	0%
(n=10/35,888)*,[4]	(n=0/615)‖,¶,#,8,9
REAL-WORLD EVIDENCE	RANDOMISED CONTROLLED TRIALS

>300,000 PEOPLE LIVING WITH HIV HAVE BEEN TREATED WITH DOVATO GLOBALLY[10]

DOVATO is supported by a wealth of evidence, with the outcomes of **>40,000** people living with HIV captured within clinical trials and real-world evidence, including those with:[4-9,11,12]

- **NO PRIOR TREATMENT EXPERIENCE**[13]
- **NO BASELINE RESISTANCE TESTING**[13]
- **HIGH BASELINE VIRAL LOAD** (>100,000 copies/mL and even >1M copies/mL)[6,13]
- **LOW CD4 + COUNT** (≤200 cells/mm³)[13]



IS IT TIME TO RECONSIDER THE VALUE OF THE 2ND NRTI?

LEARN MORE

DOVATO is indicated for the treatment of Human Immunodeficiency Virus type 1 (HIV-1) infection in adults and adolescents above 12 years of age weighing at least 40 kg, with no known or suspected resistance to the integrase inhibitor class, or lamivudine.[13]

Adverse events should be reported. Reporting forms and information can be found at **https://yellowcard.mhra.gov.uk/** or search for MHRA Yellowcard in the Google Play or Apple App store. Adverse events should also be reported to GSK on 0800 221441

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ABBREVIATIONS

3TC, lamivudine; **CD4,** cluster of differentiation 4; **DTG,** dolutegravir; **FDA,** United States Food and Drug Administration; **FTC,** emtricitabine; **HIV,** human immunodeficiency virus; **ITT-E,** intention-to-treat exposed; **NRTI,** nucleoside/nucleotide reverse transcriptase inhibitor; **RCT,** randomised controlled trial; **RNA,** ribonucleic acid; **TAF,** tenofovir alafenamide fumarate; **TDF,** tenofovir disoproxil fumarate; **XTC,** emtricitabine.

FOOTNOTES

*Data extracted from a systematic literature review of DTG+3TC real-world evidence. Overlap between cohorts cannot be fully excluded.

**The reported rate reflects the sum-total of resistance cases calculated from GEMINI I and II (n=1/716, through 144 weeks), STAT (n=0/131, through 52 weeks), and D2ARLING (n=0/106, through 24 weeks).[5-7]

†GEMINI I and II are two identical 148-week, phase III, randomised, double-blind, multicentre, parallel-group, non-inferiority, controlled clinical trials testing the efficacy of DTG/3TC in treatment-naïve patients. Participants with screening HIV-1 RNA ≤500,000 copies/mL were randomised 1:1 to once-daily DTG/3TC (n=716, pooled) or DTG + TDF/FTC (n=717, pooled). The primary endpoint of each GEMINI study was the proportion of participants with plasma HIV-1 RNA <50 copies/mL at Week 48 (ITT-E population, snapshot algorithm).[13]

‡STAT is a phase IIIb, open-label, 48-week, single-arm pilot study evaluating the feasibility, efficacy, and safety of DTG/3TC in 131 newly diagnosed HIV-1 infected adults as a first line regimen. The primary endpoint was the proportion of participants with plasma HIV-1 RNA <50 copies/mL at Week 24.[6]

§D2ARLING is a randomised, open-label, phase IV study designed to assess the efficacy and safety of DTG/3TC in treatment-naïve people with HIV with no available baseline HIV-1 resistance testing. Participants were randomised in a 1:1 ratio to receive DTG/3TC (n=106) or DTG + TDF/XTC (n=108). The primary endpoint was the proportion of participants with plasma HIV-1 RNA <50 copies/mL at Week 48.[7] Results at week 24 of the study.

‖The reported rate reflects the sum-total of resistance cases calculated from TANGO (n=0/369, through 196 weeks) and SALSA (n=0/246, through 48 weeks).[8,9]

¶TANGO is a randomised, open-label, trial testing the efficacy of DOVATO in virologically suppressed patients. Participants were randomised in a 1:1 ratio to receive DOVATO (n=369) or continue with TAF-containing regimens (n=372) for up to 200 weeks. At Week 148, 298 of those on TAF-based regimens switched to DOVATO. The primary efficacy endpoint was the proportion of subjects with plasma HIV-1 RNA ≥50 copies/mL (virologic non-response) as per the FDA Snapshot category at Week 48 (adjusted for randomisation stratification factor).[8,13]

#SALSA is a phase III, randomised, open-label, non-inferiority clinical trial evaluating the efficacy and safety of switching to DTG/3TC compared with continuing current antiretroviral regimens in virologically suppressed adults with HIV. Eligible participants were randomised 1:1 to switch to once-daily DTG/3TC (n=246) or continue current antiretroviral regimens (n=247). The primary endpoint was the proportion of subjects with plasma HIV-1 RNA ≥50 copies/mL at Week 48 (ITT-E population, snapshot algorithm).[9]

ViiV Healthcare

A50039563

PM-GBL-DLL-BNNR-240004 May 2024

RHSC BMT Meeting Monday 10th August 2015
In attendance:

G Archibald (Chair)
J Armstrong
B Gibson
J Hood
B Jones
D Louden
A Mathers
S McNamee
P Moir
J Redfern
D Stewart
T Walsh

	Action
RHSC BMT ACTION PLAN The meeting was held to discuss concerns regarding the BMT formerly at the RHSC. The following actions were agreed:	
1. Provide confirmation of the Specification document used for the design and build (Scottish Building Notes 2008)	D Louden
2. Provide confirmation the facility has been built in accordance with that specification.	D Louden
3. Provide confirmation of commissioning of the facility.	D Louden/ ICT
4. Identification of alternate English building note 2013. Website link/copied to be e-mailed to those attending.	J Hood
5. Call round of similar units elsewhere in the UK to identify their facilities configuration (lobbied rooms, positive pressure etc) based on an agreed questionnaire template.	S McNamee/ B Gibson
6. Identification of further actions which could improve performance of existing facility: - testing of seals - adjustment of pressure - relocation of any external environmental factors - further deep cleaning of rooms	D Louden/ ICT
7. Review of gathered microbiological data: Is performance improving in the facility.	T Walsh
8. Caring for patients (i) Decision not to admit Patient ZZ – discussion to be	J Redfern/

		held with family to advise care will be delayed.	B Gibson
	(ii)	Patient JY – decision to continue treatment with augmented monitoring and revised antimicrobial regimen.	B Gibson
	(iii)	3rd patient from [redacted] will require treatment within one month. Review options for this patient by Friday 14th August.	J Redfern/ B Gibson
9.	**Future Action**		
	•	All actions to be undertaken as soon as possible. Relevant documents, data and outcomes of calls to other units to be forwarded to the Chief Officer Acute.	All
	•	A briefing will be prepared based upon the data and information gathered.	Tbc
	•	The need for a follow-up meeting will be reviewed and communicated to all attendees.	G Archibald

From: Armstrong, Jennifer
Sent: 02 August 2024 12:44
To: Armstrong, Jennifer
Subject: FW: FW: Pediatric BMT Ward 2A Neutorpenic ventilation
Attachments: Wd 2A Ventilation spec 17032016.docx; 41 - AHU 23 SUPPLY (2ND FLOOR ISOLATION) REPORT (update).pdf - Adobe Acr....pdf

Importance: High

From: Armstrong, Jennifer
Sent: 06 May 2016 13:59
To: Loudon, David [redacted]
Cc: Inkster, Teresa (NHSmail) [redacted] Mathers, Alan [redacted]; Redfern, Jamie [redacted]; Hill, Kevin [redacted]
Subject: FW: FW: Pediatric BMT Ward 2A Neutorpenic ventilation
Importance: High

David
Many thanks for your email. I wonder if we can ensure that Dr Gibson along with Dr Inkster and the directorate team, can review the specification and provide advice so we can request the process from Brookfield.
Jamie/Alan: can you perhaps take this forward with Dr Gibson/ Dr Inkster and provide advice to David L/me so we can proceed
j

From: Loudon, David
Sent: 03 May 2016 09:09
To: Armstrong, Jennifer
Subject: FW: FW: Pediatric BMT Ward 2A Neutorpenic ventilation
Importance: High

Jennifer,

This is the specification that was drawn up with Craig Williams and now approved by Teresa Inkster. Can you confirm that you are content for me to now request process form Brookfield Multiplex?

D

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartnavel Royal Hospital
Glasgow
G12 0XH

[redacted]

[redacted]

From: Powrie, Ian
Sent: 29 April 2016 07:24
To: Loudon, David
Subject: FW: Pediatric BMT Ward 2A Neutorpenic ventilation

David,

Please see e-mail below, after discussions with Teresa and providing her with a copy of the pilot study commissioning report along with the proposed revised specification Teresa has advised that her preference is option 2 i.e.:

"Provide a design option based and upon “Scottish Health Technical Memorandum (SHTM) 03-01 Ventilation for healthcare premises Part A – Design and validation” for Neutropenic Patients.

With aim of providing a +ve isolation room envelope and pressure cascade principles detailed in the above SHTM 03-01 design guidance.

This design option should also include the requirement for local and remote alarm condition reporting and monitoring as detailed in option 1" including

• A direct reading electronic digital gauge showing the pressure in the lobby with respect to the corridor, mounted at eye level on the corridor wall adjacent to the lobby entry door.
• The gauge and lobby entry door must be clearly marked to identify the isolation suite to which they refer,
• Audio and visual alarms must be located at the entrance to the lobby and bedroom to warn nursing and maintenance staff of potential unsafe conditions.
• Continuous monitoring should be provided with remote indication at nurses stations, interlinked to the Building Management System with time delay (adjustable by Estates personnel) to take account of running-up of standby motors or damper operations or other plant items that may take time to open or close.
• Alarms based on sensing airflow failure should be provided rather than electrical failures.
• Alarm sound levels should be sufficient to attract attention without distress or annoyance and, if muted, should re-activate at 5-10 minute intervals

Regards

Ian

I. Powrie
Sector Estates Manager (South & Clyde)
Queen Elizabeth University Hospital Campus,
1345 Govan Rd,
Glasgow,
G51 4TF,
[redacted]

Royal Hospital for Children

Ward 2A Isolation Room Facilities

Proposed Revised Specification

16th March 2016

This specification has been developed with an aim of addressing concerns raised by infection control colleagues and the clinical team over the ongoing reliability of the of the existing isolation arrangements for clinical care of Paediatric Bone Marrow Transplant (BMT) patients who are Neutropenic. While these suites have been designed and validated to SHPN 04:01 they currently seems overly reliant on the room seal remaining intact. Rebalancing the ventilation so that the patient bedroom and en-suite are at positive pressure to the void is required to provide additional assurance during the operation of these rooms.

NHS Greater Glasgow & Clyde (The Board), seek a redesign submission and preparation of quotes to deliver the following two options to address the above concerns:

Option 1:

This specification is based on the requirements of the extant NHS design guidance "Scottish Health Planning Note SHPN 04: Supplement 1: Isolation Facilities in Acute Settings" utilised the under the construction contract.

The Basic Design Requirement is that the ventilation system should be designed on the basis that its entire constituent parts, as described in Table 1 (below), work together to form an integrated system. Where; air to the suite is supplied at high level in the lobby, with the full extract in the en-suite bathroom. This ensures good airflow through the entire isolation suite. Similarly, the volumetric airflow rate in the lobby is determined by the number of air changes required in the patient's bedroom. **Modifying or failing to provide one element of the system as detailed in the above guidance will jeopardise the performance of the system as a whole.**

The redesign should therefore follow the ventilation parameters laid out in table 1 below with the exception of the following caveat: (If extract is fitted in the isolation room this reduces to 45 l/s in the en-suite with 113 l/s extract in the isolation room) which does not meet the design intent for this patient group.

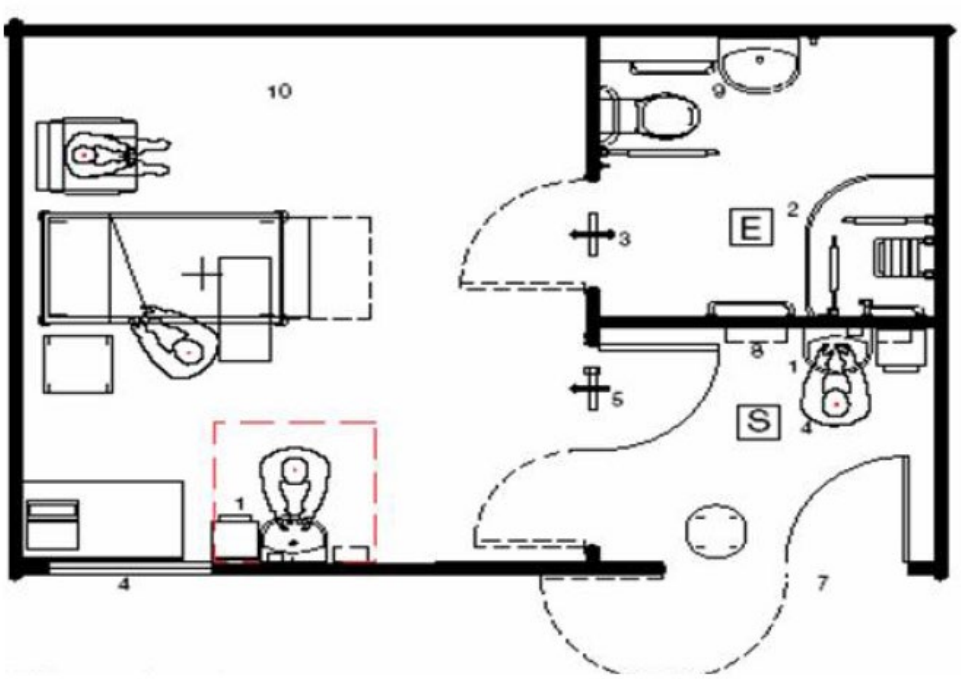
Scotland

Room	Parameter	Nominal Design Values
Lobby	Room volumes Bed access lobby (5m2 x 2·7m) Personnel access lobby (4m2 x 2·7m)	 13·5 m^3 10·8 m^3
	Pressure differential to corridor	Nominally 10 Pascals
	Supply air flow (for a room of this size)	Bed access lobby - 238 l/s Personnel access lobby - 208 l/s
	Air change rate	Bed access lobby – 63 per hour Personnel access lobby – 69 per hour
Isolation Room	Room volume (19m2 x 2.7m)	51.3m^3
	Pressure differential to corridor	Nominally zero
	Room air flow (for a room of this size)	158 l/s
	Air changes rate	10 per hour
En-suite	Room volume (6m2 x 2·7m)	16·2m^3
	Pressure differential to isolation room	Negative
	Extract air flow (for a room of this size)	158 l/s (If extract is fitted in the isolation room this reduces to 45 l/s in the en-suite with 113 l/s extract in the isolation room)
	Air change rate	At least 10 per hour

Table 1: Isolation Suite – Ventilation Parameters

Sheet 2 below is an extract from the above guidance for a new-build enhanced single room with en-suite facilities and ventilated lobby, with bed access through the lobby including clarification in italics on the Boards requirements.

Sheet 2: New build single room with en-suite facilities and bed-access lobby (isolation suite)



Minimum requirements:

The Bulleted numbers reference the elements detailed in the above suite layout:

2. Provide suitable extract (***an extract terminal should be fitted at high level within the en-suite room en-suite****)*
3. Install transfer grille (***at low level in the door between the bedroom and en-suite room to, aim is for the en-suite to be –ve to the isolation room to achieve stated ACR while ensuring that the en-suite is +ve to external of the en-suite envelope conditions i.e. IPS/ceiling voids this is required to ensure no external air ingress which could compromise Neutropenic patients safe environment)***.
4. Supply air (***via access lobby****)*
5. Pressure stabiliser *(**balanced blade type, set to operate at 10 Pascals, should be fitted above the door between the lobby and the bedroom. The stabiliser should be visible so that its correct operation can be seen. It should be of a style that will operate silently, and be correctly sized and positioned so that it does not cause a draught that would be uncomfortable for patients.**)*

Replace the existing Magna-helix differential pressure gauge with:

- A direct reading electronic digital gauge showing the pressure in the lobby with respect to the corridor, mounted at eye level on the corridor wall adjacent to the lobby entry door.
- The gauge and lobby entry door must be clearly marked to identify the isolation suite to which they refer,
- Audio and visual alarms must be located at the entrance to the lobby and bedroom to warn nursing and maintenance staff of potential unsafe conditions.
- Continuous monitoring should be provided with remote indication at nurses stations, interlinked to the Building Management System with time delay (adjustable by Estates

personnel) to take account of running-up of standby motors or damper operations or other plant items that may take time to open or close.
- Alarms based on sensing airflow failure should be provided rather than electrical failures.
- Alarm sound levels should be sufficient to attract attention without distress or annoyance and, if muted, should re-activate at 5-10 minute intervals

The full suite will require to be revalidated after implementation of design changes.

All works will require to be conducted within the existing conditions of contract under the Employers Requirements.

Enhanced HAI SCRIBE risk assessments will be required due to the nature of clinical services provided within this unit?

Option 2:

Provide a design option based and upon “Scottish Health Technical Memorandum (SHTM) 03-01 Ventilation for healthcare premises Part A – Design and validation” for Neutropenic Patients.

With aim of providing a +ve isolation room envelope and pressure cascade principles detailed in the above SHTM 03-01 design guidance.

This design option should also include the requirement for local and remote alarm condition reporting and monitoring as detailed in option 1.

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CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 41

SYSTEM: 41 – AHU 23 SUPPLY (2ND FLOOR ISOLATION)

WITNESSING OF TESTING AND BALANCING

	Client Representative / Commissioning Manager	Client
Witnessed By:	David Wilson	
Representing:	Brookfield Multiplex	
Signature:	[redacted]	
Date:	17/12/14	
Witnessed By:		
Representing:		
Signature:		
Date:		

Remarks:

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SYSTEM: 41 – AHU 23 SUPPLY (2ND FLOOR ISOLATION)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check AHU for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable			✓
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS:

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DUCT VOLUME TEST SHEET

SYSTEM: 41 – AHU 23 SUPPLY (2ND FLOOR ISOLATION)

AHU									
AHU Manufacturer		Barkell		Fan Size			Not Stated		
Fan Manufacturer		Flakt Woods		AHU Serial No			0200330573		
Fan Type		Plug In		AHU Model Nº.			GPEB-1-00-022-08-0		
		Design		**Test**				**% Design**	
Air Volume (L/S)		300		325				108	
External Static Pressure (Pa)		805		Inlet	116	Outlet	151	Total	267
Filter Test Data	Pre Filter (Pa)	Inlet	*	Outlet	*			ΔP	*35
	Sec Filter (Pa)	Inlet	*	Outlet	*			ΔP	*65
MOTOR									
Manufacturer		Flakt Woods		Output kW			0.75		
Serial Nº		12111655578		Motor Full Load Current			1.73		Amps
Voltage		400		Motor Running Current			0.93		Amps
		Design		**Test**					
Rotational Speed R.P.M		5000		3678					
DRIVE DETAILS									
Variable Speed Drive			Yes	Set Point			59 Hz		

Comments. N/A – Not Applicable

*Filter static pressures taken from magnehelic gauges

Controls Static Pressure 151 Pa.

Instrument Used (Ref Nº.) HV04/1, HV01/4 & HV01/5

Date: 15/11/14	Engineer: Ian McKenzie	Sheet 3 of 6

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CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 41

DUCT VOLUME TEST SHEET

SYSTEM: 41 – AHU 23 SUPPLY (2ND FLOOR ISOLATION)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: LEVEL 4 RISER**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH1		315				0.0779		300		3.85	
3.90	4.10										
4.10	4.20										
4.40	4.40										
4.50	4.10										
4.40	4.00										
4.10	3.90										
Velocity Sub Totals											
25.40	24.70										

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
50.1	12	4.18	325	108	

Remarks: Test Hole Volume 325 l/s ÷ Balometer Volume 291 l/s = 1.12

Instrument Used: HV04/1

Date: 15/11/14 | Engineer: Ian McKenzie | Sheet 4 of 6

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GRILLE TEST SHEET

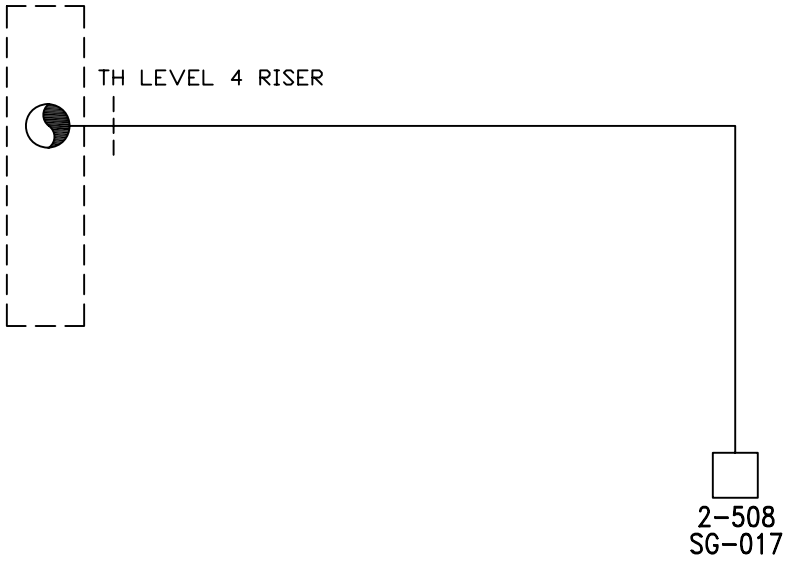
SYSTEM: AHU 23 SUPPLY (2ND FLOOR ISOLATION)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
2-508-SG-017	300	374	291	1.12	326	109

Remarks:

Instrument Used: HV01/15

Date: 15/11/14	Engineer: Ian McKenzie	Sheet 5 of 6



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CONTRACT:
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CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

41-AHU 23 SUPPLY

DRAWN: LH/RP
DATE: 06/01/15
DRG No.: 5902/V101
SHEET: 6 OF 6

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GRILLE TEST SHEET

SYSTEM: AHU 23 SUPPLY (2ND FLOOR ISOLATION)

Detail of System Changes from Original Commissioning Report

HEPA Filter installed and tested in lobby of room 23

AHU Ref.:	Room Ref.:	Fan Set Point Hz	Lobby to Corridor Pressure Set Pa	HEPA Filter Serial Number	HEPA Filter Size	HEPA Filter Type	Final Balometer Volume l/s	Pass/Fail
41AHU23	SCH-013	65	10	030192-14152	610x610x110 DAS Gasket	H14	252	Pass

AHU Ref.:	Room Ref.:	Fan Set Point Hz	Lobby to Corridor Pressure Set Pa	Upstream Aerosol Concentration Pre Scan	Maximum Ratio % Penetration	Recorded Downstream Concentration Ratio %	% Upstream Aerosol Concentration Post Scan	Pass/Fail
41AHU23	SCH-013	65	10	25 mg/m³	≤0.01%	0.0009%	101%	Pass

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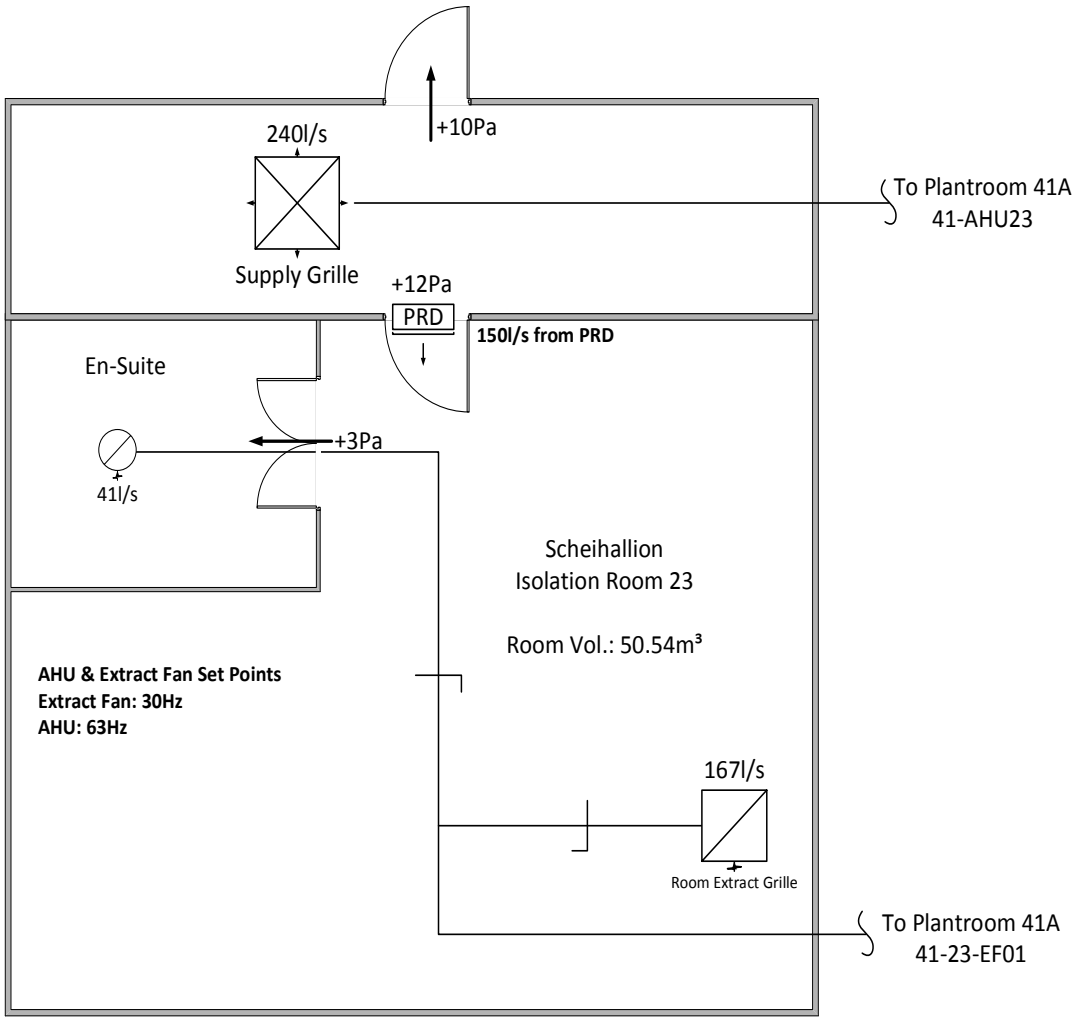
GRILLE TEST SHEET

SYSTEM: AHU 23 SUPPLY (2ND FLOOR ISOLATION)

Requested site visit by Ian Powrie to explore the possibilities of changing the design installation – initial task was to close the bedroom extract air completely and extract only from the toilet extract grille. The below schematic details the as found/commissioned conditions, with regards to air volumes and room pressure cascades.

Fan Set Points, Air Volumes & Room Pressures 'As Found' 29th February 2016



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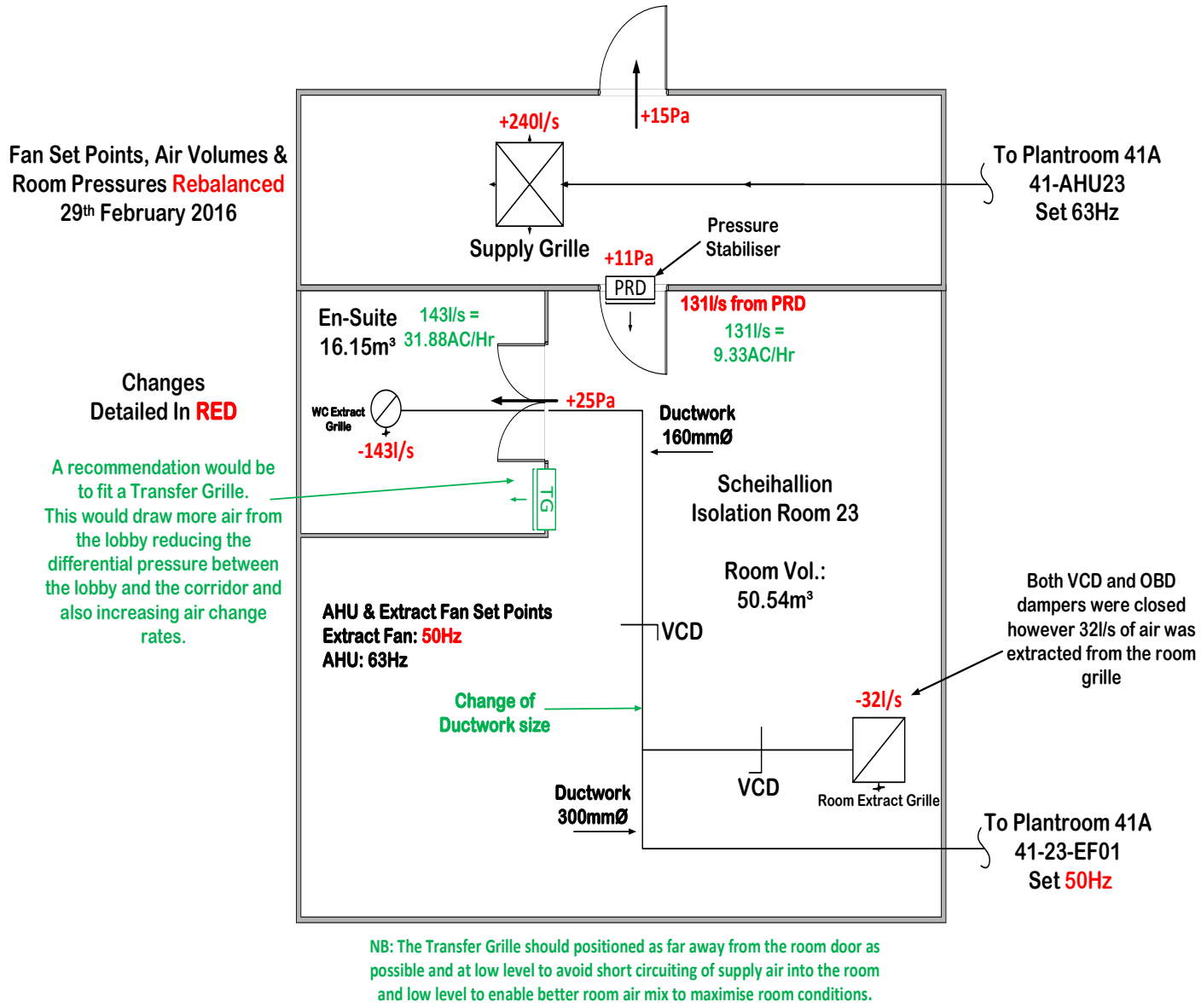
CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 41

GRILLE TEST SHEET

SYSTEM: AHU 23 SUPPLY (2ND FLOOR ISOLATION)



NB: The Transfer Grille should positioned as far away from the room door as possible and at low level to avoid short circuiting of supply air into the room and low level to enable better room air mix to maximise room conditions.

Please Note that on completion of tests – the system was set to run in the 'As Found' original commissioned set points.

Royal Hospital for Children

Ward 2A Isolation Room Facilities

Proposed Revised Specification

16th March 2016

This specification has been developed with an aim of addressing concerns raised by infection control colleagues and the clinical team over the ongoing reliability of the of the existing isolation arrangements for clinical care of Paediatric Bone Marrow Transplant (BMT) patients who are Neutropenic. While these suites have been designed and validated to SHPN 04:01 they currently seems overly reliant on the room seal remaining intact. Rebalancing the ventilation so that the patient bedroom and en-suite are at positive pressure to the void is required to provide additional assurance during the operation of these rooms.

NHS Greater Glasgow & Clyde (The Board), seek a redesign submission and preparation of quotes to deliver the following two options to address the above concerns:

Option 1:

This specification is based on the requirements of the extant NHS design guidance "Scottish Health Planning Note SHPN 04: Supplement 1: Isolation Facilities in Acute Settings" utilised the under the construction contract.

The Basic Design Requirement is that the ventilation system should be designed on the basis that its entire constituent parts, as described in Table 1 (below), work together to form an integrated system. Where; air to the suite is supplied at high level in the lobby, with the full extract in the en-suite bathroom. This ensures good airflow through the entire isolation suite. Similarly, the volumetric airflow rate in the lobby is determined by the number of air changes required in the patient's bedroom. **Modifying or failing to provide one element of the system as detailed in the above guidance will jeopardise the performance of the system as a whole.**

The redesign should therefore follow the ventilation parameters laid out in table 1 below with the exception of the following caveat: (If extract is fitted in the isolation room this reduces to 45 l/s in the en-suite with 113 l/s extract in the isolation room) which does not meet the design intent for this patient group.

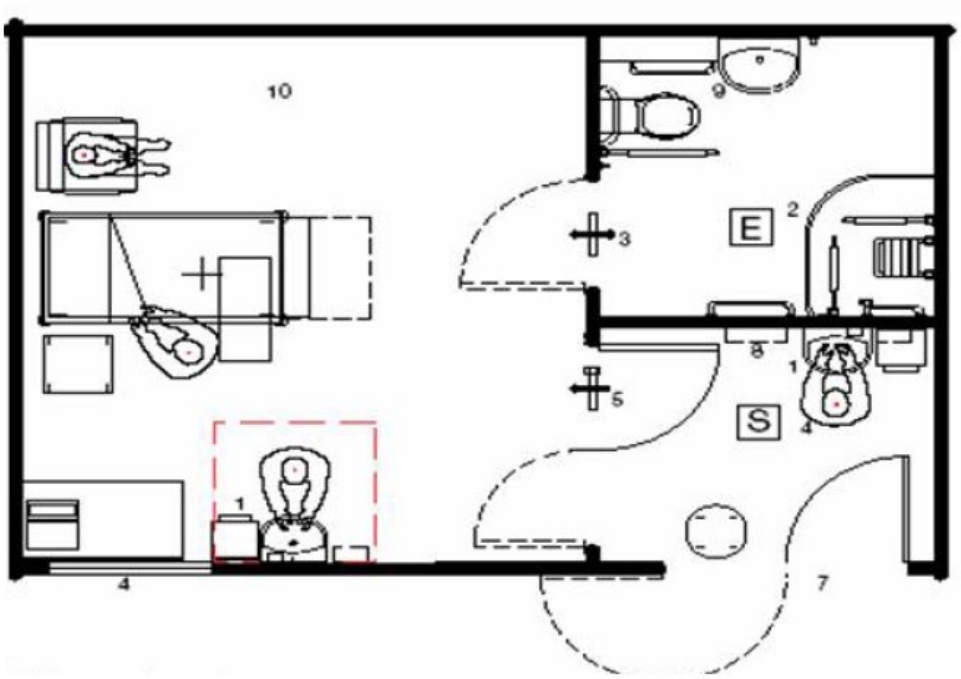
Scotland

Room	Parameter	Nominal Design Values
Lobby	Room volumes Bed access lobby (5m2 x 2·7m) Personnel access lobby (4m2 x 2·7m)	 13·5 m^3 10·8 m^3
	Pressure differential to corridor	Nominally 10 Pascals
	Supply air flow (for a room of this size)	Bed access lobby - 238 l/s Personnel access lobby - 208 l/s
	Air change rate	Bed access lobby – 63 per hour Personnel access lobby – 69 per hour
Isolation Room	Room volume (19m2 x 2.7m)	51.3m^3
	Pressure differential to corridor	Nominally zero
	Room air flow (for a room of this size)	158 l/s
	Air changes rate	10 per hour
En-suite	Room volume (6m2 x 2·7m)	16·2m^3
	Pressure differential to isolation room	Negative
	Extract air flow (for a room of this size)	158 l/s (If extract is fitted in the isolation room this reduces to 45 l/s in the en-suite with 113 l/s extract in the isolation room)
	Air change rate	At least 10 per hour

Table 1: Isolation Suite – Ventilation Parameters

Sheet 2 below is an extract from the above guidance for a new-build enhanced single room with en-suite facilities and ventilated lobby, with bed access through the lobby including clarification in italics on the Boards requirements.

Sheet 2: New build single room with en-suite facilities and bed-access lobby (isolation suite)



Minimum requirements:

The Bulleted numbers reference the elements detailed in the above suite layout:

2. Provide suitable extract (***an extract terminal should be fitted at high level within the en-suite room en-suite****)*
3. Install transfer grille (***at low level in the door between the bedroom and en-suite room to, aim is for the en-suite to be –ve to the isolation room to achieve stated ACR while ensuring that the en-suite is +ve to external of the en-suite envelope conditions i.e. IPS/ceiling voids this is required to ensure no external air ingress which could compromise Neutropenic patients safe environment)***.
4. Supply air (***via access lobby****)*
5. Pressure stabiliser *(**balanced blade type, set to operate at 10 Pascals, should be fitted above the door between the lobby and the bedroom. The stabiliser should be visible so that its correct operation can be seen. It should be of a style that will operate silently, and be correctly sized and positioned so that it does not cause a draught that would be uncomfortable for patients.**)*

Replace the existing Magna-helix differential pressure gauge with:

- A direct reading electronic digital gauge showing the pressure in the lobby with respect to the corridor, mounted at eye level on the corridor wall adjacent to the lobby entry door.
- The gauge and lobby entry door must be clearly marked to identify the isolation suite to which they refer,
- Audio and visual alarms must be located at the entrance to the lobby and bedroom to warn nursing and maintenance staff of potential unsafe conditions.
- Continuous monitoring should be provided with remote indication at nurses stations, interlinked to the Building Management System with time delay (adjustable by Estates

personnel) to take account of running-up of standby motors or damper operations or other plant items that may take time to open or close.
- Alarms based on sensing airflow failure should be provided rather than electrical failures.
- Alarm sound levels should be sufficient to attract attention without distress or annoyance and, if muted, should re-activate at 5-10 minute intervals

The full suite will require to be revalidated after implementation of design changes.

All works will require to be conducted within the existing conditions of contract under the Employers Requirements.

Enhanced HAI SCRIBE risk assessments will be required due to the nature of clinical services provided within this unit?

Option 2:

Provide a design option based and upon “Scottish Health Technical Memorandum (SHTM) 03-01 Ventilation for healthcare premises Part A – Design and validation” for Neutropenic Patients.

With aim of providing a +ve isolation room envelope and pressure cascade principles detailed in the above SHTM 03-01 design guidance.

This design option should also include the requirement for local and remote alarm condition reporting and monitoring as detailed in option 1.

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SYSTEM: 41 – AHU 23 SUPPLY (2ND FLOOR ISOLATION)

WITNESSING OF TESTING AND BALANCING

	Client Representative / Commissioning Manager	Client
Witnessed By:	David Wilson	
Representing:	Brookfield Multiplex	
Signature:	[redacted]	
Date:	17/12/14	
Witnessed By:		
Representing:		
Signature:		
Date:		

Remarks:

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SYSTEM: 41 – AHU 23 SUPPLY (2ND FLOOR ISOLATION)

	AIR SYSTEMS PRE COMMISSIONING SHEET	✓	X	N/A
1.	Check AHU for damage and that all the components are secure	✓		
2.	Check the transit straps have been removed, if applicable	✓		
3.	Check pulleys are secure, tight, aligned and belts are correctly tensioned, if applicable			✓
4.	Check with the controls engineer that the system is available to run and that plant rotation is correct	✓		
5.	Check all ductwork/air terminals are fitted and that air regulating dampers are open	✓		
6.	Check louvres are fitted and clear from obstructions, if applicable	✓		
7.	Check fire dampers are open, if applicable	✓		
8.	Check the motor overloads are suitable and set			✓
9.	Check VAV or CAV boxes are installed correctly and ready for use.			✓
10.	Check the floor plenums are complete, if applicable			✓
11.	Complete commissioning test sheets.	✓		

COMMENTS:

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DUCT VOLUME TEST SHEET

SYSTEM: 41 – AHU 23 SUPPLY (2ND FLOOR ISOLATION)

AHU									
AHU Manufacturer		Barkell		Fan Size			Not Stated		
Fan Manufacturer		Flakt Woods		AHU Serial No			0200330573		
Fan Type		Plug In		AHU Model Nº.			GPEB-1-00-022-08-0		
		Design		**Test**				**% Design**	
Air Volume (L/S)		300		325				108	
External Static Pressure (Pa)		805		Inlet	116	Outlet	151	Total	267
Filter Test Data	Pre Filter (Pa)	Inlet	*	Outlet	*			ΔP	*35
	Sec Filter (Pa)	Inlet	*	Outlet	*			ΔP	*65
MOTOR									
Manufacturer		Flakt Woods		Output kW			0.75		
Serial Nº		12111655578		Motor Full Load Current			1.73		Amps
Voltage		400		Motor Running Current			0.93		Amps
		Design		**Test**					
Rotational Speed R.P.M		5000		3678					
DRIVE DETAILS									
Variable Speed Drive			Yes	Set Point			59 Hz		

Comments. N/A – Not Applicable

*Filter static pressures taken from magnehelic gauges

Controls Static Pressure 151 Pa.

Instrument Used (Ref Nº.) HV04/1, HV01/4 & HV01/5

Date: 15/11/14	Engineer: Ian McKenzie	Sheet 3 of 6

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DUCT VOLUME TEST SHEET

SYSTEM: 41 – AHU 23 SUPPLY (2ND FLOOR ISOLATION)

VELOCITY PROFILE (taken facing air flow) **TEST HOLE LOCATION: LEVEL 4 RISER**

Test Hole Ref		Duct Dia (mm)		Duct Size (mm)		Duct Area		Design Air Volume		Design Air Velocity	
				Width x Height		M2		L/S		M/S	
TH1		315				0.0779		300		3.85	
3.90	4.10										
4.10	4.20										
4.40	4.40										
4.50	4.10										
4.40	4.00										
4.10	3.90										

Velocity Sub Totals

25.40	24.70										

Total Velocity	Number of Readings	Average Velocity	Measured Air Volume	% Design	Static Pressure
M/S		M/S	L/S		Pa
50.1	12	4.18	325	108	

Remarks: Test Hole Volume 325 l/s ÷ Balometer Volume 291 l/s = 1.12

Instrument Used: HV04/1

Date: 15/11/14 | Engineer: Ian McKenzie | Sheet 4 of 6

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GRILLE TEST SHEET

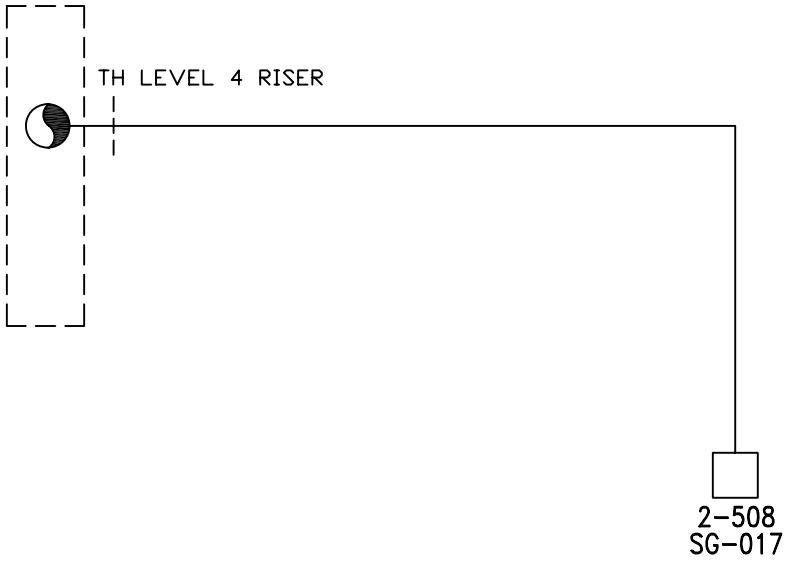
SYSTEM: AHU 23 SUPPLY (2ND FLOOR ISOLATION)

Design Data		Initial Test Data		Final Test & Regulation Data		
Terminal or Ref No	Design Air Volume l/s	Balometer Initial Air Volume l/s	Balometer Final Air Volume l/s	Balometer Factor	Balometer Final Air Volume l/s	% Design
2-508-SG-017	300	374	291	1.12	326	109

Remarks:

Instrument Used: HV01/15

Date: 15/11/14	Engineer: Ian McKenzie	Sheet 5 of 6



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CLIENT:
MERCURY ENGINEERING UK

TITLE:
SCHEMATIC LAYOUT OF

41-AHU 23 SUPPLY

DRAWN: LH/RP
DATE: 06/01/15
DRG No.: 5902/V101
SHEET: 6 OF 6

H & V
H & V
H & V

Commissioning Services Ltd
EST: 1975

Kilknowe Office,
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 41

GRILLE TEST SHEET

SYSTEM: AHU 23 SUPPLY (2ND FLOOR ISOLATION)

Detail of System Changes from Original Commissioning Report

HEPA Filter installed and tested in lobby of room 23

AHU Ref.:	Room Ref.:	Fan Set Point Hz	Lobby to Corridor Pressure Set Pa	HEPA Filter Serial Number	HEPA Filter Size	HEPA Filter Type	Final Balometer Volume l/s	Pass/Fail
41AHU23	SCH-013	65	10	030192-14152	610x610x110 DAS Gasket	H14	252	Pass

AHU Ref.:	Room Ref.:	Fan Set Point Hz	Lobby to Corridor Pressure Set Pa	Upstream Aerosol Concentration Pre Scan	Maximum Ratio % Penetration	Recorded Downstream Concentration Ratio %	% Upstream Aerosol Concentration Post Scan	Pass/Fail
41AHU23	SCH-013	65	10	25 mg/m³	≤0.01%	0.0009%	101%	Pass

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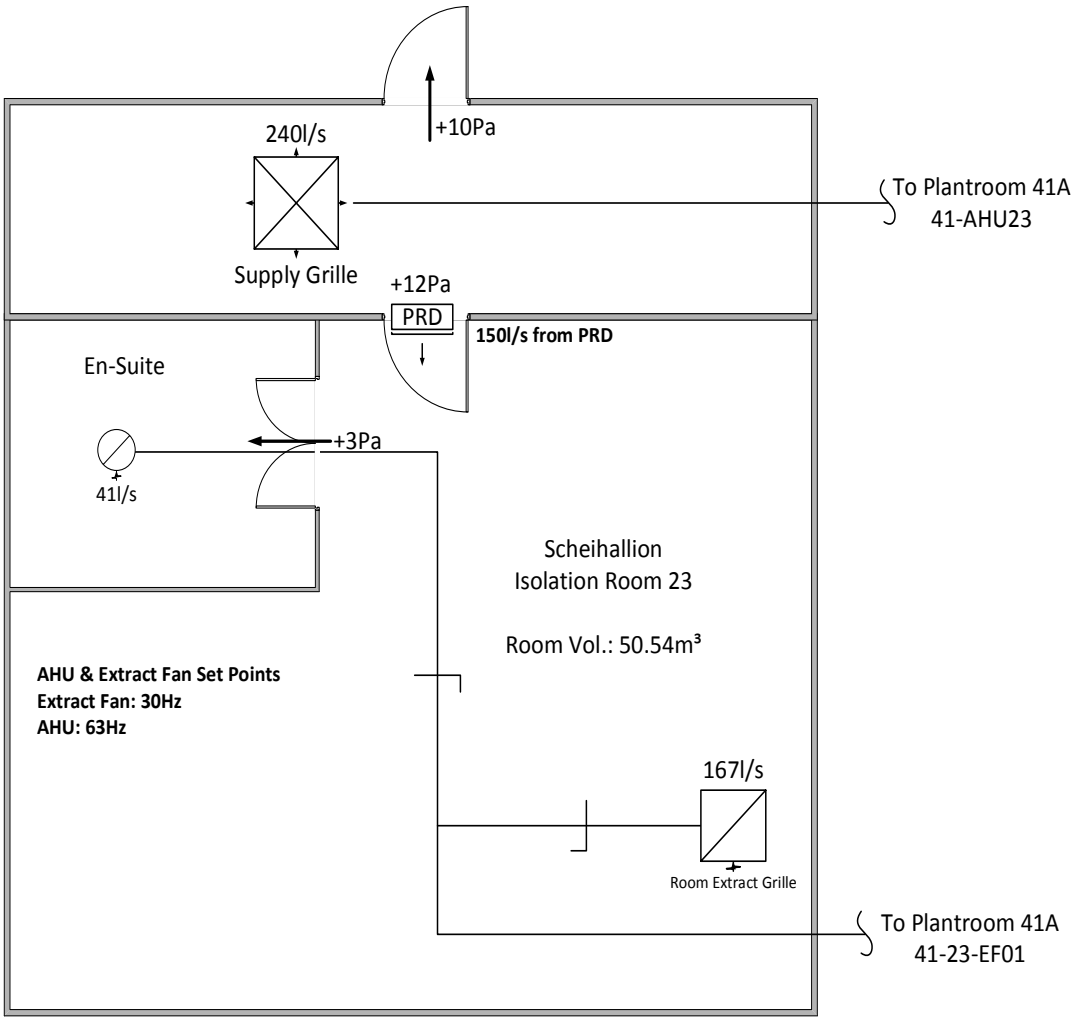
GRILLE TEST SHEET

SYSTEM: AHU 23 SUPPLY (2ND FLOOR ISOLATION)

Requested site visit by Ian Powrie to explore the possibilities of changing the design installation – initial task was to close the bedroom extract air completely and extract only from the toilet extract grille. The below schematic details the as found/commissioned conditions, with regards to air volumes and room pressure cascades.

Fan Set Points, Air Volumes & Room Pressures 'As Found' 29th February 2016



H & V
H & V
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Commissioning Services Ltd

EST: 1975

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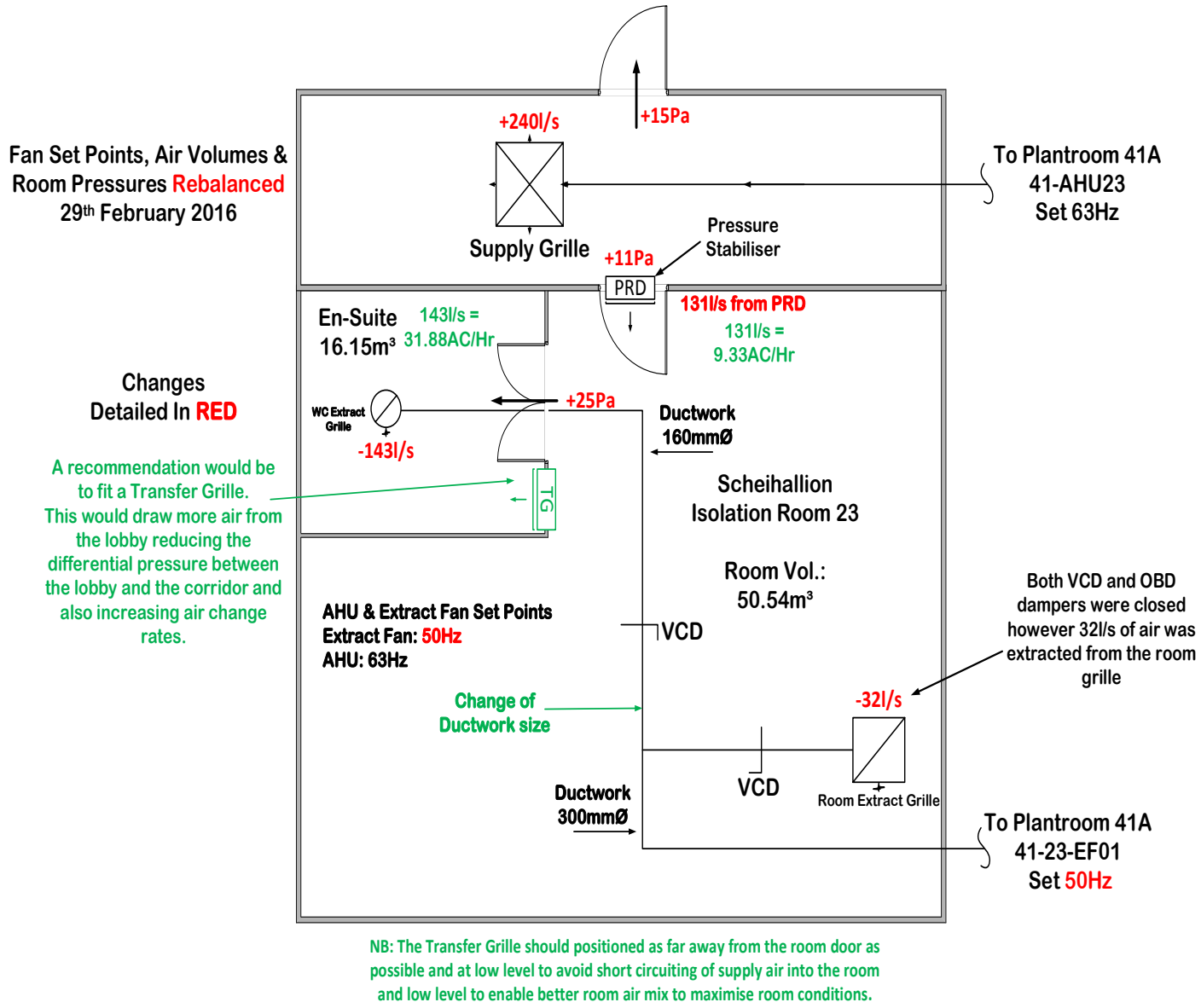
16 Barrmill Road,
Galston,
Ayrshire, KA48HH.
TEL Nº. 01563 821991
FAX Nº. 01563 822220
E-Mail: talk2us@handv.co.uk

CONTRACT: NSGH, ADULT & CHILDRENS HOSPITAL – PLANTROOM 41

GRILLE TEST SHEET

SYSTEM: AHU 23 SUPPLY (2ND FLOOR ISOLATION)



NB: The Transfer Grille should positioned as far away from the room door as possible and at low level to avoid short circuiting of supply air into the room and low level to enable better room air mix to maximise room conditions.

Please Note that on completion of tests – the system was set to run in the 'As Found' original commissioned set points.

From: Armstrong, Jennifer
Sent: 02 August 2024 14:51
To: Armstrong, Jennifer
Subject: FW: Ward 2A isolation room Tender approvals
Attachments: Fw: RHC Ward 2a Draft Tender Document; RE: Ward 2A isolation room modification meeting; Ward2a Tender

From: Loudon, David
Sent: Wednesday, May 17, 2017 10:01 AM
To: Grant, Jane [redacted] Armstrong, Jennifer
[redacted]
Subject: FW: Ward 2A isolation room Tender approvals

Jane / Jennifer

A progress update for your information. The service has indicated that it is unlikely access will be available to all rooms at the same time.

David

David W Loudon
Director of Property, Procurement & Facilities Management
NHS Greater Glasgow & Clyde
Corporate Headquarters
Gartnavel Royal Hospital
Glasgow
G12 OXH

[redacted]

From: Powrie, Ian
Sent: 17 May 2017 09:45
To: Loudon, David; Hunter, William
Subject: Ward 2A isolation room Tender approvals

David,

Please see attached draft tender specification approvals from:

Teresa Inkster (ICD)
Prof Gibson (Consultant Haematologist ward 2A)
Jamie Redfern (GM RHC acute)

The tender documents are now sitting with Ewen Forsyth for issue to the 6 contractors who responded to our pre tender notification.
Tenders are expected to be issued next week, with a 2 week return date.

Start date yet to be agreed, access is expected to be confirmed by the clinical team by the 1st July 2017.

Regards

Ian

I. Powrie
Deputy General Manager (Estates)

Queen Elizabeth University Hospital Campus
Property, Procurement & Facilities Management Directorate
Facilities Corporate Services Dept
CMB Building
Glasgow
G51 4TF

From: Inkster, Teresa (NHSmail)
Sent: 16 May 2017 17:37
To: Powrie, Ian
Subject: Fw: RHC Ward 2a Draft Tender Document
Attachments: RHC Ward 2a Isolation Rooms Tender.doc

Hi Ian - happy to approve this document

KR
Teresa

Dr Teresa Inkster
Lead Infection Control Doctor NHSGGC
Training Programme Director Medical Microbiology
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Inkster, Teresa [redacted]
Sent: 05 May 2017 15:35
To: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)
Subject: FW: RHC Ward 2a Draft Tender Document

From: Powrie, Ian
Sent: 05 May 2017 14:27
To: Inkster, Teresa; Redfern, Jamie; Dawes, Heather; Gibson, Brenda; Hunter, William
Cc: 'John.McEwan[redacted]
Subject: FW: RHC Ward 2a Draft Tender Document

Dear all,

I would be grateful if you could review the attached tender specification for the conversion of 4 isolation rooms within ward 2A to positive pressure rooms from the current PPVL.
In order to allow me to progress to tender stage next week I would be grateful if you would formally sign of on this tender specification confirming that it meets with you clinical and HAI requirements?
The tenders are scheduled for issue to the market next week, i would therefore be grateful if you could copy your acceptance of this specification to John McEwan of Hulley & Kirkwood to allow him to progress the tender in my absence next week(as I am on A\L) .

Please advise if there are any relevant amendments or changes that you feel should be incorporated in this specification?

Regards

ian
.

I. Powrie
Deputy General Manager (Estates)

Queen Elizabeth University Hospital Campus
Property, Procurement & Facilities Management Directorate
Facilities Corporate Services Dept
CMB Building
Glasgow
G51 4TF

[redacted]

hulley & kirkwood
consulting engineers

Royal Hospital for Children

Ward 2a Isolation Rooms

Tender

Draft for Comment

May 2017

Hulley & Kirkwood Consulting Engineers Ltd
Head Office
Watermark Business Park
305 Govan Road
Glasgow
G51 2SE

(t): 0141 332 5466
(f): 0870 928 1028
(e): hk.glasgow@hulley.co.uk
(w): www.hulley.co.uk

Prepared By:	Colin Peacock
Authorised By:	John McEwan
Revision:	Draft
Date:	May 2017
File Location:	K:\70520

Royal Hospital for Children

Ward 2a Isolation Rooms

Tender

Draft for Comment

April 2017

REV	DESCRIPTION	PREPARED BY	DATE
Issue No. 1	First issue - Draft	C.Peacock	May 2017

Index:

1.0 Introduction

Patient isolation facilities are required in healthcare premises to prevent Healthcare Associated Infection (HAI). There are two main types of patient isolation:

(a) Isolation to protect other patients and staff from a patient with an infection.

(b) Isolation to protect patients from exposure to infection.

Ward 2a of the children's hospital has currently isolation rooms constructed as Positive Pressure Ventilated Lobby.

Hulley & Kirkwood have been asked by Greater Glasgow & Clyde NHS Estates to review the requirements for changing of 4No. PPVL isolation rooms (17,18,19 & 20) within Ward 2A to positive pressure isolation rooms for the continued use for transplant and severely immune-compromised patients. This tender details the requirement to carry out this works.

It is important to note that the works will be carried out in a live ward environment and management of cleanliness is a critical factor to ensure no cross contamination within the live ward environment. Contractor will be required to demonstrate experience within similar environments using previous project references.

The project is to be priced based on the following 2no potential scenarios:

(a) All 4no rooms are available to work in (17,18,19 & 20)
(b) 2no rooms are available (17 & 18) and on successful validation and acceptance by clinical team rooms (19 & 20) will be made available.

2.0 Existing Systems Overview

The existing 4no isolation rooms are single bed rooms with PPVL and en-suite. These are located within Ward 2a (Schiehallion). Refer to drawing 70520(57)01 Proposed Isolation Rooms Ventilation Modifications within appendix A.

Each room has its own dedicated supply & extract systems:

Room 17 – Supply AHU 41/33 & Extract 41-33-EF01

Room 18 – Supply AHU 41/32 & Extract 41-32-EF01

Room 19 – Supply AHU 41/31 & Extract 41-31-EF01

Room 120 – Supply AHU 41/30 & Extract 41-30-EF01

ME-ZC-02-PL-524-508_Z1.pdf

The as-built ductwork layout ME-ZC-02-PL-524-508 Rev Z1
Identifies the current ventilation distribution within the 4no isolation rooms. Contractor will be responsible for verifying arrangements prior to going into manufacture for new ventilation installations.

3.0 Modification from PPVL to Positive Pressure Isolation within Ward 2A

As noted in the introduction there would not appear to be any published UK NHS guidance on the design of Positive Pressure (PP) Isolation rooms. However it is reasonable to take guidance from SHTM 03-01 and in particular the guidance pertaining to operating theatre ventilation system design.

SHTM 03-01 Part A Table A4 offers advice on air volume flows through doorways between rooms of different cleanliness in order to control cross-contamination. The table advises that an air flow of 0.28m3/s is adequate to offer protection to a single doorway between a room and another one level lower in the hierarchy of cleanliness. With reference to SHTM 03-01 Part A Table A2, if one assumes the patient bedroom to be 'Sterile', the lobby as 'Clean' and the ward corridor as 'Transitional' then it can be concluded that a cascading air flow from the isolation room to the ward corridor at a rate of 0.28m3/s is adequate to prevent cross-contamination. This is based on the premise that when the rooms are in use there will be a management procedure in place such that the 'corridor to lobby' and the 'lobby to bedroom' doors are not opened coincidentally. Furthermore it is assumed that the half door of the 'pair and a half' door sets is only used for bed transport and when the room is in use only the single door is opened.

Since the supply air plants appear to be capable of delivering at least 0.3m3/s to the rooms it is reasonable to allocate 0.28m3/s of this volume to the door protection leaving 0.02m3/s to the en-suite extract. While the 'en-suite' may be classed as 'dirty' in the hierarchy of cleanliness and hence requiring an air flow of 0.47m3/s for 'sterile' to 'dirty' protection, according to SHTM 03-01 Part A Table A4, it is assumed that because the en-suite is only used by the patient it does not present a risk to the patient. The extract rate of 0.02m3/s from the en-suite will maintain the room at a negative pressure with respect to the bedroom and will significantly exceed the air change rate stated in SHTM 03-01 Part A Table A1 for a single room en-suite.

As the rooms have been identified as accommodating severely immune-compromised patients and in order to create the cascade of door protection it is proposed that the existing supply system be modified to re-locate the HEPA filtered supply terminal to the bedroom. (Refer to Drg:70520(57)01 within Appendix A).The existing pressure stabiliser damper installed over the 'lobby to bedroom' door shall be reversed to allow air flow from the room to the lobby at a 10Pa pressure differential. A new pressure stabiliser damper sized for 10Pa differential pressure shall be installed in the wall between the lobby and corridor. The lobby will have a positive pressure differential from lobby to corridor. This provision will create a continuous air flow from the bedroom to the corridor with a target 20Pa positive pressure differential between the bedroom and the ward corridor.

The extract system shall be altered to divert the extract duct currently extracting air from the bedroom to instead extract from the corridor. This will balance the supply air flow and ensure that the other ventilation systems serving the ward are not adversely affected. The extract terminals shall be replaced with terminals with integrated volume control dampers that can be accessed from below through the grilles such that the existing duct mounted volume control dampers can be removed along with any associated ceiling access hatches.

The existing dial pressure gages shall be replaced with gauges with a - 30/0/30Pa scale and shall have the room side impulse tube replaced from the lobby to the patient bedroom to give visual indication of the maintained positive pressure within the bedroom to corridor.

4.0 Description of Works

4.1 Site Accommodation

Space shall be made available externally for a single container to facilitate site office / storage. Refer to the Hai-scribe document.

The contractor may use the 'on site' facilities for toilets and catering provided that works clothing is removed before using any catering facilities.

No materials or equipment to be stored out with the site accommodation or the works area.
Works area to be secure at all times.

Working hours shall be 8am to 6pm 7 days per week.

4.2 Isolate Works Area

The contractor shall provide a supply / install and seal a solid partition HAI containment to the site that shall be effectively air tight to prevent migration of dust. Expectations of this hoarding are as indicated in the following photograph. This installation shall be by Messrs Kwik Klik (www.kwik-klik.co.uk) or equal and approved.

Example of expectation for isolating construction from Operational

Suitable signage shall be provided to indicate works area / no entry & contact details.

A magnahelic gauge shall be taken from one of the existing rooms and shall be instated in the temporary partition to offer indication of maintained negative pressure.

4.3 Create Safe Area

The existing room supply AHU plant shall be shut down and the associated dampers closed. The existing extract systems shall be maintained in operation to negatively pressurise the works area with visible indication via the magnahelic gauge installed within the works area temporary partition. The extract fan speed shall be adjusted on the existing frequency converter drives to maintain a negative pressure with the entrance door from lobby to corridor closed.

4.4 Builderswork Elements

All builderswork shall form part of the contract and shall comprise all alterations to ceilings, forming of holes in partitions, fire sealing, sealing perimeter to achieve air permeability test, making good, decoration and final clean.

Potentially supporting Multiplex access to repair / replace damaged window blinds, while rooms are out of service.

For the purposes of tender it shall be assumed that the existing solid ceilings to the bedroom, ensuite and lobby are to be down taken and reinstated in their entirety. This will be reviewed once ductwork routes are coordinated.

A hole shall be formed in the wall between the lobby and corridor for each room for the installation of a new pressure stabiliser.

Form new holes in walls above ceilings for diverted ductwork.

Installation of a new termination for the magnahelic impulse tube within the bedroom ceiling.

Installation of the supply diffuser within the bedroom ceiling.

Installation of the extract grille in the existing tiled corridor ceiling.

Works associated with dropping a new electrical conduit down the existing partition between bedroom and corridor.

Installation of the new alarm panel at the nurses station. For the purposes of tender it shall be assumed that the existing partition shall require reinforcement for mounting the alarm panel.

Re-install all existing ceiling mounted services including but not limited to light fittings and smoke detectors.

Carry out room air leakage testing ***(Provide name – JM Action)***

On completion of works the contractor shall provide a clinical clean of the complete works area. On acceptance of cleanliness (Visual) rooms will be handed over to the Hotel Services team for sparkling clean and Board sampling.

4.5 Ductwork and Grille Modifications

Take down existing supply diffuser from the bedroom lobbies and relocate to the bedroom in a central location above bed.

Divert existing 315mm diameter galvanised spiral wound supply duct from bedroom lobby into bedroom and connect to supply diffuser. No flexible connections to be utilised.

Supply and install new HEPA filter in supply diffuser housing. Provide challenge port at AHU discharge.

Modify ensuite 160mm diameter galvanised spiral wound duct to remove volume control damper.
Supply and install a new ensuite extract grille suitable of 20 l/s extract and with face adjustable integral VCD and removable core.

Take down existing extract grille from the bedroom with associated VCD and relocate grille and VCD to the corridor.

Divert existing 315mm diameter galvanised spiral wound extract duct from bedroom into corridor and connect to extract grille.

Take down existing pressure stabiliser damper in bedroom/lobby wall and reinstate with reverse air flow or otherwise reverse blades if damper configuration permits.

Supply and install a new pressure stabiliser damper in wall between corridor and

4.6 Electrical/Controls Installations

Supply and install a new centralised alarm panel at the nurse base. This panel shall be designed, supplied and installed by Schneider Controls or their approved contractor. The panel shall be surface mounted and stove enamel white or equal finish. The panel shall incorporate a sounder and mute for common alarm condition and green (healthy) and red (alarm) lamps for each room. For each room the panel shall monitor terminal HEPA healthy condition, room magnahelic pressure healthy condition (time delay required to allow for open door conditions) and supply AHU and extract fan healthy condition. The panel shall interface with the existing building BMS for receipt of information on the plant status and relay of information for the room status. The panel supplier shall allow for graphics and software update at the head end to accommodate the alterations.

Supply and install a new magnahelic gauge mounted on the corridor wall outside each room with a -30/0/30Pa scale. The gauge shall offer visual indication of the room pressure (+20Pa design) via a dial face or digital readout and a tell tale interface with the alarm/monitoring system for room low pressure.

Supply and install an individual sounder and mute alarm on the corridor wall of each room to provide local individual room specific alarm.
Supply and install all necessary impulse tube, cable, containment, field mounted equipment and power supply from local distribution as required to provide a fully operational installation.

4.7 Test & Commission

Pressure test the supply and extract ductwork installations to DW/143 medium pressure.

Clean supply and extract ductwork systems for all bedrooms to TR/19 PDI Level 3.

Set to work existing supply and extract systems and balance to achieve design air flows as stated on drawing 70520(57)01.

DOP test the HEPA filters.

Adjust pressure stabiliser blades as required for stability under steady state conditions.
Function check all alarm interfaces

4.8 Validation and Demonstration

Validation to be carried out by H&V Commissioning or equal and approved.

All air sampling and microbiological sampling shall be carried out by others. Does not form part of this contract

4.9 O&M Information

Obtain and modify the existing ventilation installation drawings to reflect the modifications and provide in hard copy, pdf and editable electronic format.

Provide hard copy and pdf all relevant manufacturer's literature, commissioning results and test certificates.
Supply in hard copy and pdf all electrical wiring and panel diagrams.

All hard copy information to be provided in hard backed ring binder folder complete with all contractor and sub-contractor contact details.
Demonstration shall comprise two half day sessions. One session shall be provided for the clinical staff to inform them on the operation of the rooms from a user perspective. One session shall be provided for the NHS Estates staff to inform them on the technical operation of the rooms.

4.10 Client Liaison

Prior to and throughout the works duration the contractor shall allow for daily liaison with the NHS project manager and clinical stall as required.

5.0 Summary Bill

Item	Description	Cost (£)
1	Builderswork including decoration and clinical clean	
2	Ventilation ductwork including grilles, dampers etc.	
3	Alarm panel installation including room alarms, BMS interface, head end software and graphics update, magnahelics, tubing, cable containment and power.	
4	Commissioning	
5	O&M information	
6	Validation	
7	Demonstrations	
8	Prelims/overheads	
9	Forming enclosure around works area	
10	Compliance with hai-scribe	
	Total	

APPENDICES

Appendix A – Positive Pressure Isolation Schematic

Double click to launch application

70520(57)01-HK_A2.
pdf

Appendix B – HAI-SCRIBE

Appendix c – ‘As built’ ventilation ductwork layout drawing number ME-ZC-02-PL-524-508

From: McVeigh, Alanna
Sent: 08 May 2017 15:13
To: Powrie, Ian; Dodd, Susie; 'John.McEwan[redacted] Inkster, Teresa; Gibson, Brenda; Kirkwood, Jean; Brattey, David; Parker, Amanda
Cc: Redfern, Jamie; Dawes, Heather
Subject: RE: Ward 2A isolation room modification meeting

Dear Jamie/Iain

This looks fine to me.

Regards.

Brenda

From: Powrie, Ian
Sent: 06 May 2017 21:08
To: Powrie, Ian; McVeigh, Alanna; Dodd, Susie; 'John.McEwan[redacted] Inkster, Teresa; Gibson, Brenda; Kirkwood, Jean; Brattey, David; Parker, Amanda
Cc: Redfern, Jamie; Dawes, Heather
Subject: RE: Ward 2A isolation room modification meeting

Dear Colleague,.

Please see attached a copy of the final HAI SCRIBE for the proposed modification works for ward 2A isolation rooms, including amendments received as feedback from the initial draft document (highlighted in yellow for clarity).

John can you please include this with the tender documents once we have received formal sign off of the proposed design from Teresa, Professor Gibson, Jamie & Heather.

Regards

Ian
<< File: HAI SCRIBE WARD 2A Isolation room modifications.docx >>

I. Powrie
Deputy General Manager (Estates)

Queen Elizabeth University Hospital Campus
Property, Procurement & Facilities Management Directorate
Facilities Corporate Services Dept
CMB Building
Glasgow
G51 4TF

[redacted]

Mob: [redacted]

From: Powrie, Ian
Sent: 28 April 2017 14:55
To: Powrie, Ian; McVeigh, Alanna; Dodd, Susie; 'John.McEwan[redacted] Inkster, Teresa; Gibson, Brenda; Kirkwood, Jean; Brattey, David; Parker, Amanda
Cc: Redfern, Jamie; Dawes, Heather
Subject: RE: Ward 2A isolation room modification meeting

Dear All,

Please find attached for your review and approval the draft HAI SCRIBE risk assessment document jointly developed at our project meeting on 21st April 2017.
I would be grateful if you could feed back any commence, additions or amendments you may have on this draft by close of play on Thursday 4th May, to allow for its inclusion in the Tender due for issue on the 8th May 2017.

Non response will be deemed as agreement with the Draft for tender purposes.

The document will be reviewed and ratified by the project group prior to award of contract.

Regards

Ian

<< File: HAI SCRIBE RHC Ward 2a Isolation rooms V 1.docx >>

I. Powrie
Deputy General Manager (Estates)

Queen Elizabeth University Hospital Campus
Property, Procurement & Facilities Management Directorate
Facilities Corporate Services Dept
CMB Building
Glasgow
G51 4TF

[redacted]

From: Powrie, Ian
Sent: 20 April 2017 09:32
To: McVeigh, Alanna; Dodd, Susie; 'John.McEwan[redacted]; Inkster, Teresa; Gibson, Brenda;

Kirkwood, Jean; Brattey, David; Parker, Amanda
Cc: Redfern, Jamie; Dawes, Heather
Subject: RE: Ward 2A isolation room modification meeting

Dear all,

Heather and I have just discussed the arrangements for this meeting in light of current issues within the unit? Heather has agreed that this meeting should go ahead as planned with a view that we closed the meeting by 11:45 in time for your schedule meeting at 12:00noon. Heather has also advised that due to current pressures Professor Gibson will join the HAI SCRIBE meeting later on is possible to ensure her requirements are included in the HAI SCRIBE Risk Assessment.

Susie, can you please confirm your attendance?

Alanna; Heather has requested that you arrange for the meeting to be held in the RHC, level 2 seminar room, can you please confirm.

Regards

ian

I. Powrie
Deputy General Manager (Estates)

Queen Elizabeth University Hospital Campus
Property, Procurement & Facilities Management Directorate
Facilities Corporate Services Dept
CMB Building
Glasgow
G51 4TF

[redacted]

From: Powrie, Ian
Sent: 19 April 2017 15:33
To: McVeigh, Alanna; Dodd, Susie; 'John.McEwan[redacted] Inkster, Teresa; Gibson, Brenda; Kirkwood, Jean; Brattey, David; Parker, Amanda
Cc: Redfern, Jamie; Dawes, Heather
Subject: RE: Ward 2A isolation room modification meeting

Dear Colleague,

I am not sure where the proposed meeting for tomorrow came from, however I would like to propose a meeting for Friday 21st April at 10:30am, Venue TBC.

The purpose of this meeting is to develop and sign off on the HAI Risk assessment for the above modification works, unfortunately this could not be completed as planned at last week's scoping review meeting due to pressures affecting our ICT colleagues availability. In order to develop a suitable HAI SCRIBE document I will need support and input at this meeting from ICT, Ward 2A SCN, John McEwan(Hulley & Kirkwood) and preferably (due to the high risk nature of the ward environment) Dr Tereas Inkster (ICD) and Prof Brenda Gibson in order to ensure all patient related issued are covered in this risk assessment.

The HAI SCRIBE is critical for inclusion within the Tender Specification to ensure that all protective measures are fully costed and allowed for within the project prelims.

I have attached FYI a copy if the minute from last week's meeting and will send out a meeting request on the back of this e-mail, I would be grateful if you could confirm your availabuility by return to allow me to move the tender process forward within a reasonable time frame.

Best Regards

Ian

<< File: RHC Ward 2AIsolation Room Ventilation Configuration Meeting Minutes 12 04 17 (2).doc >>

I. Powrie
Deputy General Manager (Estates)

Queen Elizabeth University Hospital Campus
Property, Procurement & Facilities Management Directorate
Facilities Corporate Services Dept
CMB Building
Glasgow
G51 4TF

[redacted]

From: Kirkwood, Jean
Sent: 19 April 2017 14:22
To: McVeigh, Alanna; Powrie, Ian; Dodd, Susie; Redfern, Jamie; Inkster, Teresa; Dawes, Heather; Gibson, Brenda; 'John.McEwan[redacted]
Subject: RE: Ward 2A isolation room modification meeting

hi there,
Sorry I am am not available tomorrow.
many thanks
Jean

From: McVeigh, Alanna
Sent: 19 April 2017 13:56

To: Powrie, Ian; Dodd, Susie; Redfern, Jamie; Inkster, Teresa; Kirkwood, Jean; Dawes, Heather; Gibson, Brenda; 'John.McEwan[redacted]
Subject: RE: Ward 2A isolation room modification meeting

Hi Ian

Sorry but I was on annual leave last week and just picked this up. Unfortunately I didn't know that a meeting date/time had been proposed/agreed. Our HTA inspection is tomorrow so not ideal. If needs to go ahead tomorrow we could try to do 12 – 1pm if that suits (handover is in the seminar room from 1pm)?

Kind regards.

Alanna

-----Original Appointment-----
From: Powrie, Ian
Sent: 07 April 2017 13:37
To: Dodd, Susie; McVeigh, Alanna; Redfern, Jamie; Inkster, Teresa; Kirkwood, Jean; Dawes, Heather; Gibson, Brenda; 'John.McEwan[redacted]
Subject: Ward 2A isolation room modification meeting
When: 12 April 2017 12:00-13:30 (UTC+00:00) Dublin, Edinburgh, Lisbon, London.
Where: RHC 2nd floor seminar room
Importance: High

Confirmation of above meeting.

Susie\Jean, I will need your support at the end of the meeting to draft a suitable HAI SCRIBE document for issue with the tender to allow for a full and appropriate costing of the proposed works within the live working environment. Susie can you please bring along the SCIBE template for completion.

Regards

ian

From: Redfern, Jamie
Sent: 17 May 2017 07:22
To: Powrie, Ian
Subject: Ward2a Tender

Hi Ian
Following on from conversation last night I can confirm just like Prof Gibson and Dr Inkster I too am from service perspective happy with the documentation circulated for tender of ward 2a bmt (x4) cubicles estate work. No issues from service in terms of proceeding with the project.
Jamie

Sent from my iPhone

From: Inkster, Teresa (NHSmail)
Sent: 16 May 2017 17:37
To: Powrie, Ian
Subject: Fw: RHC Ward 2a Draft Tender Document
Attachments: RHC Ward 2a Isolation Rooms Tender.doc

Hi Ian - happy to approve this document

KR
Teresa

Dr Teresa Inkster
Lead Infection Control Doctor NHSGGC
Training Programme Director Medical Microbiology
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Inkster, Teresa [redacted]
Sent: 05 May 2017 15:35
To: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)
Subject: FW: RHC Ward 2a Draft Tender Document

From: Powrie, Ian
Sent: 05 May 2017 14:27
To: Inkster, Teresa; Redfern, Jamie; Dawes, Heather; Gibson, Brenda; Hunter, William
Cc: 'John.McEwan[redacted]
Subject: FW: RHC Ward 2a Draft Tender Document

Dear all,

I would be grateful if you could review the attached tender specification for the conversion of 4 isolation rooms within ward 2A to positive pressure rooms from the current PPVL.
In order to allow me to progress to tender stage next week I would be grateful if you would formally sign of on this tender specification confirming that it meets with you clinical and HAI requirements?
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Please advise if there are any relevant amendments or changes that you feel should be incorporated in this specification?

Regards

ian
.

I. Powrie
Deputy General Manager (Estates)

Queen Elizabeth University Hospital Campus
Property, Procurement & Facilities Management Directorate
Facilities Corporate Services Dept
CMB Building
Glasgow
G51 4TF

[redacted]

hulley & kirkwood
consulting engineers

Royal Hospital for Children

Ward 2a Isolation Rooms

Tender

Draft for Comment

May 2017

Hulley & Kirkwood Consulting Engineers Ltd
Head Office
Watermark Business Park
305 Govan Road
Glasgow
G51 2SE

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(f): 0870 928 1028
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(w): www.hulley.co.uk

Prepared By:	Colin Peacock
Authorised By:	John McEwan
Revision:	Draft
Date:	May 2017
File Location:	K:\70520

Royal Hospital for Children

Ward 2a Isolation Rooms

Tender

Draft for Comment

April 2017

REV	DESCRIPTION	PREPARED BY	DATE
Issue No. 1	First issue - Draft	C.Peacock	May 2017

Index:

1.0 Introduction

Patient isolation facilities are required in healthcare premises to prevent Healthcare Associated Infection (HAI). There are two main types of patient isolation:

(a) Isolation to protect other patients and staff from a patient with an infection.

(b) Isolation to protect patients from exposure to infection.

Ward 2a of the children's hospital has currently isolation rooms constructed as Positive Pressure Ventilated Lobby.

Hulley & Kirkwood have been asked by Greater Glasgow & Clyde NHS Estates to review the requirements for changing of 4No. PPVL isolation rooms (17,18,19 & 20) within Ward 2A to positive pressure isolation rooms for the continued use for transplant and severely immune-compromised patients. This tender details the requirement to carry out this works.

It is important to note that the works will be carried out in a live ward environment and management of cleanliness is a critical factor to ensure no cross contamination within the live ward environment. Contractor will be required to demonstrate experience within similar environments using previous project references.

The project is to be priced based on the following 2no potential scenarios:

(a) All 4no rooms are available to work in (17,18,19 & 20)
(b) 2no rooms are available (17 & 18) and on successful validation and acceptance by clinical team rooms (19 & 20) will be made available.

2.0 Existing Systems Overview

The existing 4no isolation rooms are single bed rooms with PPVL and en-suite. These are located within Ward 2a (Schiehallion). Refer to drawing 70520(57)01 Proposed Isolation Rooms Ventilation Modifications within appendix A.

Each room has its own dedicated supply & extract systems:

Room 17 – Supply AHU 41/33 & Extract 41-33-EF01

Room 18 – Supply AHU 41/32 & Extract 41-32-EF01

Room 19 – Supply AHU 41/31 & Extract 41-31-EF01

Room 120 – Supply AHU 41/30 & Extract 41-30-EF01

ME-ZC-02-PL-524-508_Z1.pdf

The as-built ductwork layout ME-ZC-02-PL-524-508 Rev Z1 Identifies the current ventilation distribution within the 4no isolation rooms. Contractor will be responsible for verifying arrangements prior to going into manufacture for new ventilation installations.

3.0 Modification from PPVL to Positive Pressure Isolation within Ward 2A

As noted in the introduction there would not appear to be any published UK NHS guidance on the design of Positive Pressure (PP) Isolation rooms. However it is reasonable to take guidance from SHTM 03-01 and in particular the guidance pertaining to operating theatre ventilation system design.

SHTM 03-01 Part A Table A4 offers advice on air volume flows through doorways between rooms of different cleanliness in order to control cross-contamination. The table advises that an air flow of 0.28m3/s is adequate to offer protection to a single doorway between a room and another one level lower in the hierarchy of cleanliness. With reference to SHTM 03-01 Part A Table A2, if one assumes the patient bedroom to be 'Sterile', the lobby as 'Clean' and the ward corridor as 'Transitional' then it can be concluded that a cascading air flow from the isolation room to the ward corridor at a rate of 0.28m3/s is adequate to prevent cross-contamination. This is based on the premise that when the rooms are in use there will be a management procedure in place such that the 'corridor to lobby' and the 'lobby to bedroom' doors are not opened coincidentally. Furthermore it is assumed that the half door of the 'pair and a half' door sets is only used for bed transport and when the room is in use only the single door is opened.

Since the supply air plants appear to be capable of delivering at least 0.3m3/s to the rooms it is reasonable to allocate 0.28m3/s of this volume to the door protection leaving 0.02m3/s to the en-suite extract. While the 'en-suite' may be classed as 'dirty' in the hierarchy of cleanliness and hence requiring an air flow of 0.47m3/s for 'sterile' to 'dirty' protection, according to SHTM 03-01 Part A Table A4, it is assumed that because the en-suite is only used by the patient it does not present a risk to the patient. The extract rate of 0.02m3/s from the en-suite will maintain the room at a negative pressure with respect to the bedroom and will significantly exceed the air change rate stated in SHTM 03-01 Part A Table A1 for a single room en-suite.

As the rooms have been identified as accommodating severely immune-compromised patients and in order to create the cascade of door protection it is proposed that the existing supply system be modified to re-locate the HEPA filtered supply terminal to the bedroom. (Refer to Drg:70520(57)01 within Appendix A).The existing pressure stabiliser damper installed over the 'lobby to bedroom' door shall be reversed to allow air flow from the room to the lobby at a 10Pa pressure differential. A new pressure stabiliser damper sized for 10Pa differential pressure shall be installed in the wall between the lobby and corridor. The lobby will have a positive pressure differential from lobby to corridor. This provision will create a continuous air flow from the bedroom to the corridor with a target 20Pa positive pressure differential between the bedroom and the ward corridor.

The extract system shall be altered to divert the extract duct currently extracting air from the bedroom to instead extract from the corridor. This will balance the supply air flow and ensure that the other ventilation systems serving the ward are not adversely affected. The extract terminals shall be replaced with terminals with integrated volume control dampers that can be accessed from below through the grilles such that the existing duct mounted volume control dampers can be removed along with any associated ceiling access hatches.

The existing dial pressure gages shall be replaced with gauges with a - 30/0/30Pa scale and shall have the room side impulse tube replaced from the lobby to the patient bedroom to give visual indication of the maintained positive pressure within the bedroom to corridor.

4.0 Description of Works

4.1 Site Accommodation

Space shall be made available externally for a single container to facilitate site office / storage. Refer to the Hai-scribe document.

The contractor may use the 'on site' facilities for toilets and catering provided that works clothing is removed before using any catering facilities.

No materials or equipment to be stored out with the site accommodation or the works area.
Works area to be secure at all times.

Working hours shall be 8am to 6pm 7 days per week.

4.2 Isolate Works Area

The contractor shall provide a supply / install and seal a solid partition HAI containment to the site that shall be effectively air tight to prevent migration of dust. Expectations of this hoarding are as indicated in the following photograph. This installation shall be by Messrs Kwik Klik (www.kwik-klik.co.uk) or equal and approved.

Example of expectation for isolating construction from Operational

Suitable signage shall be provided to indicate works area / no entry & contact details.

A magnahelic gauge shall be taken from one of the existing rooms and shall be instated in the temporary partition to offer indication of maintained negative pressure.

4.3 Create Safe Area

The existing room supply AHU plant shall be shut down and the associated dampers closed. The existing extract systems shall be maintained in operation to negatively pressurise the works area with visible indication via the magnahelic gauge installed within the works area temporary partition. The extract fan speed shall be adjusted on the existing frequency converter drives to maintain a negative pressure with the entrance door from lobby to corridor closed.

4.4 Builderswork Elements

All builderswork shall form part of the contract and shall comprise all alterations to ceilings, forming of holes in partitions, fire sealing, sealing perimeter to achieve air permeability test, making good, decoration and final clean.

Potentially supporting Multiplex access to repair / replace damaged window blinds, while rooms are out of service.

For the purposes of tender it shall be assumed that the existing solid ceilings to the bedroom, ensuite and lobby are to be down taken and reinstated in their entirety. This will be reviewed once ductwork routes are coordinated.

A hole shall be formed in the wall between the lobby and corridor for each room for the installation of a new pressure stabiliser.

Form new holes in walls above ceilings for diverted ductwork.

Installation of a new termination for the magnahelic impulse tube within the bedroom ceiling.

Installation of the supply diffuser within the bedroom ceiling.

Installation of the extract grille in the existing tiled corridor ceiling.

Works associated with dropping a new electrical conduit down the existing partition between bedroom and corridor.

Installation of the new alarm panel at the nurses station. For the purposes of tender it shall be assumed that the existing partition shall require reinforcement for mounting the alarm panel.

Re-install all existing ceiling mounted services including but not limited to light fittings and smoke detectors.

Carry out room air leakage testing ***(Provide name – JM Action)***

On completion of works the contractor shall provide a clinical clean of the complete works area. On acceptance of cleanliness (Visual) rooms will be handed over to the Hotel Services team for sparkling clean and Board sampling.

4.5 Ductwork and Grille Modifications

Take down existing supply diffuser from the bedroom lobbies and relocate to the bedroom in a central location above bed.

Divert existing 315mm diameter galvanised spiral wound supply duct from bedroom lobby into bedroom and connect to supply diffuser. No flexible connections to be utilised.

Supply and install new HEPA filter in supply diffuser housing. Provide challenge port at AHU discharge.

Modify ensuite 160mm diameter galvanised spiral wound duct to remove volume control damper.
Supply and install a new ensuite extract grille suitable of 20 l/s extract and with face adjustable integral VCD and removable core.

Take down existing extract grille from the bedroom with associated VCD and relocate grille and VCD to the corridor.

Divert existing 315mm diameter galvanised spiral wound extract duct from bedroom into corridor and connect to extract grille.

Take down existing pressure stabiliser damper in bedroom/lobby wall and reinstate with reverse air flow or otherwise reverse blades if damper configuration permits.

Supply and install a new pressure stabiliser damper in wall between corridor and

4.6 Electrical/Controls Installations

Supply and install a new centralised alarm panel at the nurse base. This panel shall be designed, supplied and installed by Schneider Controls or their approved contractor. The panel shall be surface mounted and stove enamel white or equal finish. The panel shall incorporate a sounder and mute for common alarm condition and green (healthy) and red (alarm) lamps for each room. For each room the panel shall monitor terminal HEPA healthy condition, room magnahelic pressure healthy condition (time delay required to allow for open door conditions) and supply AHU and extract fan healthy condition. The panel shall interface with the existing building BMS for receipt of information on the plant status and relay of information for the room status. The panel supplier shall allow for graphics and software update at the head end to accommodate the alterations.

Supply and install a new magnahelic gauge mounted on the corridor wall outside each room with a -30/0/30Pa scale. The gauge shall offer visual indication of the room pressure (+20Pa design) via a dial face or digital readout and a tell tale interface with the alarm/monitoring system for room low pressure.

Supply and install an individual sounder and mute alarm on the corridor wall of each room to provide local individual room specific alarm.
Supply and install all necessary impulse tube, cable, containment, field mounted equipment and power supply from local distribution as required to provide a fully operational installation.

4.7 Test & Commission

Pressure test the supply and extract ductwork installations to DW/143 medium pressure.

Clean supply and extract ductwork systems for all bedrooms to TR/19 PDI Level 3.

Set to work existing supply and extract systems and balance to achieve design air flows as stated on drawing 70520(57)01.

DOP test the HEPA filters.

Adjust pressure stabiliser blades as required for stability under steady state conditions.
Function check all alarm interfaces

4.8 Validation and Demonstration

Validation to be carried out by H&V Commissioning or equal and approved.

All air sampling and microbiological sampling shall be carried out by others. Does not form part of this contract

4.9 O&M Information

Obtain and modify the existing ventilation installation drawings to reflect the modifications and provide in hard copy, pdf and editable electronic format.

Provide hard copy and pdf all relevant manufacturer's literature, commissioning results and test certificates.
Supply in hard copy and pdf all electrical wiring and panel diagrams.

All hard copy information to be provided in hard backed ring binder folder complete with all contractor and sub-contractor contact details.
Demonstration shall comprise two half day sessions. One session shall be provided for the clinical staff to inform them on the operation of the rooms from a user perspective. One session shall be provided for the NHS Estates staff to inform them on the technical operation of the rooms.

4.10 Client Liaison

Prior to and throughout the works duration the contractor shall allow for daily liaison with the NHS project manager and clinical stall as required.

5.0 Summary Bill

Item	Description	Cost (£)
1	Builderswork including decoration and clinical clean	
2	Ventilation ductwork including grilles, dampers etc.	
3	Alarm panel installation including room alarms, BMS interface, head end software and graphics update, magnahelics, tubing, cable containment and power.	
4	Commissioning	
5	O&M information	
6	Validation	
7	Demonstrations	
8	Prelims/overheads	
9	Forming enclosure around works area	
10	Compliance with hai-scribe	
	Total	

APPENDICES

Appendix A – Positive Pressure Isolation Schematic

Double click to launch application

70520(57)01-HK_A2.
pdf

Appendix B – HAI-SCRIBE

Appendix c – ‘As built’ ventilation ductwork layout drawing number ME-ZC-02-PL-524-508

From: McVeigh, Alanna
Sent: 08 May 2017 15:13
To: Powrie, Ian; Dodd, Susie; 'John.McEwan[redacted]; Inkster, Teresa; Gibson, Brenda; Kirkwood, Jean; Brattey, David; Parker, Amanda
Cc: Redfern, Jamie; Dawes, Heather
Subject: RE: Ward 2A isolation room modification meeting

Dear Jamie/Iain

This looks fine to me.

Regards.

Brenda

From: Powrie, Ian
Sent: 06 May 2017 21:08
To: Powrie, Ian; McVeigh, Alanna; Dodd, Susie; 'John.McEwan[redacted]; Inkster, Teresa; Gibson, Brenda; Kirkwood, Jean; Brattey, David; Parker, Amanda
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Regards

Ian
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I. Powrie
Deputy General Manager (Estates)

Queen Elizabeth University Hospital Campus
Property, Procurement & Facilities Management Directorate
Facilities Corporate Services Dept
CMB Building
Glasgow
G51 4TF

[redacted]

Mob: [redacted]

From: Powrie, Ian
Sent: 28 April 2017 14:55
To: Powrie, Ian; McVeigh, Alanna; Dodd, Susie; 'John.McEwan[redacted]; Inkster, Teresa; Gibson, Brenda; Kirkwood, Jean; Brattey, David; Parker, Amanda
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Queen Elizabeth University Hospital Campus
Property, Procurement & Facilities Management Directorate
Facilities Corporate Services Dept
CMB Building
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G51 4TF

[redacted]

From: Powrie, Ian
Sent: 20 April 2017 09:32
To: McVeigh, Alanna; Dodd, Susie; 'John.McEwan[redacted]; Inkster, Teresa; Gibson, Brenda;

Kirkwood, Jean; Brattey, David; Parker, Amanda
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Susie, can you please confirm your attendance?

Alanna; Heather has requested that you arrange for the meeting to be held in the RHC, level 2 seminar room, can you please confirm.

Regards

ian

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Queen Elizabeth University Hospital Campus
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Facilities Corporate Services Dept
CMB Building
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G51 4TF

[redacted]

From: Powrie, Ian
Sent: 19 April 2017 15:33
To: McVeigh, Alanna; Dodd, Susie; 'John.McEwan[redacted]; Inkster, Teresa; Gibson, Brenda; Kirkwood, Jean; Brattey, David; Parker, Amanda
Cc: Redfern, Jamie; Dawes, Heather
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The purpose of this meeting is to develop and sign off on the HAI Risk assessment for the above modification works, unfortunately this could not be completed as planned at last week's scoping review meeting due to pressures affecting our ICT colleagues availability. In order to develop a suitable HAI SCRIBE document I will need support and input at this meeting from ICT, Ward 2A SCN, John McEwan(Hulley & Kirkwood) and preferably (due to the high risk nature of the ward environment) Dr Tereas Inkster (ICD) and Prof Brenda Gibson in order to ensure all patient related issued are covered in this risk assessment.

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Best Regards

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Deputy General Manager (Estates)

Queen Elizabeth University Hospital Campus
Property, Procurement & Facilities Management Directorate
Facilities Corporate Services Dept
CMB Building
Glasgow
G51 4TF

[redacted]

From: Kirkwood, Jean
Sent: 19 April 2017 14:22
To: McVeigh, Alanna; Powrie, Ian; Dodd, Susie; Redfern, Jamie; Inkster, Teresa; Dawes, Heather; Gibson, Brenda; 'John.McEwan[redacted]
Subject: RE: Ward 2A isolation room modification meeting

hi there,
Sorry I am am not available tomorrow.
many thanks
Jean

From: McVeigh, Alanna
Sent: 19 April 2017 13:56

To: Powrie, Ian; Dodd, Susie; Redfern, Jamie; Inkster, Teresa; Kirkwood, Jean; Dawes, Heather; Gibson, Brenda; 'John.McEwan[redacted]
Subject: RE: Ward 2A isolation room modification meeting

Hi Ian

Sorry but I was on annual leave last week and just picked this up. Unfortunately I didn't know that a meeting date/time had been proposed/agreed. Our HTA inspection is tomorrow so not ideal. If needs to go ahead tomorrow we could try to do 12 – 1pm if that suits (handover is in the seminar room from 1pm)?

Kind regards.

Alanna

-----Original Appointment-----
From: Powrie, Ian
Sent: 07 April 2017 13:37
To: Dodd, Susie; McVeigh, Alanna; Redfern, Jamie; Inkster, Teresa; Kirkwood, Jean; Dawes, Heather; Gibson, Brenda; 'John.McEwan[redacted]
Subject: Ward 2A isolation room modification meeting
When: 12 April 2017 12:00-13:30 (UTC+00:00) Dublin, Edinburgh, Lisbon, London.
Where: RHC 2nd floor seminar room
Importance: High

Confirmation of above meeting.

Susie\Jean, I will need your support at the end of the meeting to draft a suitable HAI SCRIBE document for issue with the tender to allow for a full and appropriate costing of the proposed works within the live working environment. Susie can you please bring along the SCIBE template for completion.

Regards

ian

From: Redfern, Jamie
Sent: 17 May 2017 07:22
To: Powrie, Ian
Subject: Ward2a Tender

Hi Ian
Following on from conversation last night I can confirm just like Prof Gibson and Dr Inkster I too am from service perspective happy with the documentation circulated for tender of ward 2a bmt (x4) cubicles estate work. No issues from service in terms of proceeding with the project.
Jamie

Sent from my iPhone

From: Inkster, Teresa (NHSmail)
Sent: 16 May 2017 17:37
To: Powrie, Ian
Subject: Fw: RHC Ward 2a Draft Tender Document
Attachments: RHC Ward 2a Isolation Rooms Tender.doc

Hi Ian - happy to approve this document

KR
Teresa

Dr Teresa Inkster
Lead Infection Control Doctor NHSGGC
Training Programme Director Medical Microbiology
Dept of Microbiology
Queen Elizabeth University Hospital
Glasgow
[redacted]

From: Inkster, Teresa [redacted]
Sent: 05 May 2017 15:35
To: INKSTER, Teresa (NHS GREATER GLASGOW & CLYDE)
Subject: FW: RHC Ward 2a Draft Tender Document

From: Powrie, Ian
Sent: 05 May 2017 14:27
To: Inkster, Teresa; Redfern, Jamie; Dawes, Heather; Gibson, Brenda; Hunter, William
Cc: 'John.McEwan[redacted]
Subject: FW: RHC Ward 2a Draft Tender Document

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Sent: 19 April 2017 13:56
To: Powrie, Ian; Dodd, Susie; Redfern, Jamie; Inkster, Teresa; Kirkwood, Jean; Dawes, Heather; Gibson, Brenda; 'John.McEwan[redacted]
Subject: RE: Ward 2A isolation room modification meeting

Hi Ian

Sorry but I was on annual leave last week and just picked this up. Unfortunately I didn't know that a meeting date/time had been proposed/agreed. Our HTA inspection is tomorrow so not ideal. If needs to go ahead tomorrow we could try to do 12 – 1pm if that suits (handover is in the seminar room from 1pm)?

Kind regards.

Alanna

-----Original Appointment-----
From: Powrie, Ian
Sent: 07 April 2017 13:37
To: Dodd, Susie; McVeigh, Alanna; Redfern, Jamie; Inkster, Teresa; Kirkwood, Jean; Dawes, Heather; Gibson, Brenda; 'John.McEwan[redacted]'
Subject: Ward 2A isolation room modification meeting
When: 12 April 2017 12:00-13:30 (UTC+00:00) Dublin, Edinburgh, Lisbon, London.
Where: RHC 2nd floor seminar room
Importance: High

Confirmation of above meeting.

Susie\Jean, I will need your support at the end of the meeting to draft a suitable HAI SCRIBE document for issue with the tender to allow for a full and appropriate costing of the proposed works within the live working environment. Susie can you please bring along the SCIBE template for completion.

Regards

ian

From: Armstrong, Jennifer
To: Calderwood, Robert
Subject: FW: Infection control concerns
Date: 30 December 2015 10:08:00

Robert
We perhaps need to find a way to address the issues raised and note the last sentence; I had asked, through Syed, for HPS too input into adult BMT but not the other areas mentioned
j

From: Peters, Christine
Sent: 29 December 2015 17:07
To: Stewart, David; Inkster, Teresa (NHSmail)
Cc: Cruickshank, Anne
Subject: RE: Infection control concerns

Dear David,

Thank you for your response to our letter regarding concerns for patient safety with regard to infection control.

My concerns remain and in fact further issues have arisen.

Primarily we had requested that there would be an external review of the issues raised – particularly with regard to the new build. HFS and HPS have become involved to a degree with the adult BMT, through consistent and hard work by Teresa, but without a clear mandate from the Board to do this and as I understand it has met with resistance at many levels. To my knowledge HPS and HIS have not been asked for their expert input into Theatre design and commissioning, the Infectious patients isolation suites or children's BMT.

The key here is that we are now picking up problems with regard to the building and continue to have question marks over the suitability of the accommodation with regard to specialist areas namely the ID unit, isolation rooms, theatres, BMT in children and adults. This is a highly complex area and input from external experts is critical to ensuring that the best possible solutions are put in place.

It would be very helpful to understand how this has been addressed by the Board and what precisely our remit is in taking this forward.

Regards,

Christine

Dr Christine Peters
Consultant Microbiologist
Southern General Hospital
GGC
[redacted]

From: Stewart, David
Sent: 22 December 2015 13:10
To: Peters, Christine; Inkster, Teresa (NHSmail)
Cc: Cruickshank, Anne
Subject: Infection control concerns

Dear Christine and Teresa

I am conscious that we have not yet replied formally to your letter in which you documented your outstanding concerns regarding infection control issues on the QEUH campus. I was mindful that events were moving on at some pace and that many of the issues you had raised were being actively looked at. Pertinent to this of course is the recent involvement of HFS and HPS.

Given the work that has been undertaken or is planned, could you please confirm if your concerns have been addressed or what, if anything remains an outstanding issue?

Kind regards

David

Dr David Stewart
Deputy Medical Director
NHS Greater Glasgow and Clyde

From: Loudon, David
Sent: 27 January 2016 17:53
To: Moir, Peter; Alan Seabourne; Armstrong, Jennifer; Williams, Craig; Powrie, Ian; David Hall; Ramsay, David (Capita); Griffin, Heather; Archibald, Grant
Cc: Calderwood, Robert
Subject: QEUH & RHC - BMT & Theatres Action Plan t, for catch up with IC team and also david stewart
Attachments: QUEH - BMT Action Plan ar 21 January 2016.doc; QUEH - BMT Action Plan ar 21 January 2016.pdf

Importance: High

Follow Up Flag: Follow up
Flag Status: Completed

Categories: Imran to action, tricia to action

Colleagues

I refer to my message of 25th January enclosing a draft action plan arising from our meeting on 21st January. I requested any comments on the draft by close of business today and have received a response from David Hall. His response has been incorporated in to the attached revised plan. The template has been extended to include a comments column.

The attached version of the action plan is final and I look forward to receiving your responses by the set deadlines.

Regards

David

David W. Loudon, MCIOB, CBIFM, MBA
Director of Facilities and Capital Planning
NHS Greater Glasgow & Clyde
Corporate Headquarters
JB Russell House
Gartnavel Royal Hospital
Glasgow
G12 0XH

Action Number	Description	Owner	Timescale	Comments
1	Collate all information on the design and sign off process pre PMI 228 and CE #10675.	Heather Griffin	By 29/01/16	
2	Provide reports and commissioning test certificates for completed works & covered by CE # 10675.	David Ramsey	By 29/01/16	
3	Provide report on design process for the additional works instructed under CE #18133 and commissioning certification.	Peter Moir	By 29/01/16	
4	Provide commission certificates for air permeability tests instructed under CE # 16807.	Peter Moir / David Ramsey	By 29/01/16	
5	Review of reasons why Hepa filters were not fitted in PICU and to establish cost, feasibility of retro fitting and timescale.	Peter Moir / Ian Powrie	By 29/01/16	**David Hall Note:** Hepa filters were not included within the ERs for isolation rooms which were understood to be for source protection rather than protective. The flexibility to add in the Hepa's was part of the design
6	Review document " Facilities for the Treatment of Adults with Haematological Malignancies – 'Levels of Care' and published by BCSH Haemato-Oncology Task Force 2009 (Note: Date for Review November 2014) is the current recommendation for BMT operations. This may require consultation with HPS & HFS. Consideration to be given to the implications of delivering a built environment to meet Level 3 definitions and requirements on completion of the above review.	Craig Williams / Jennifer Armstrong Project Team	ASAP On receipt of review outcome	

7	Provide briefing data and sign off process for the Adults Theatres.	Heather Griffin	By 29/01/16	
8	Provide commission data and certificates for Adults Theatres to confirm specification compliance.	Peter Moir / David Ramsey	By 29/01/16	
9	Establish if the proposed increase of extract in the en-suite rooms in the Schiehallion ward is a betterment over the original specification for the rooms.	Peter Moir / Ian Powrie	By 29/01/16	
10	Forward E mail requesting that a request was made to the Project Team to provide increased extract in the en-suite rooms in the Schiehallion rooms.	Craig Williams / Jennifer Armstrong	By 29/01/16	
11	Provide bacteriology test benchmark results and certificates for the Beatson and former Schiehallion Wards. Compare to results in QUEH.	Craig Williams	By 29/01/16	
Notes				
1	RHC: Currie & Brown (DH) confirm that the Isolation Rooms, Theatres and Schiehallion room designs are compliant with building regulations and the relevant SHTM's and SHPN 04 Supplement 1.			

David Loudon

Director of Facilities & Capital Planning

27th January 2016

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 – Miscellaneous Document – Volume 8

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