Royal United Hospitals Bath
NHS Foundation Trust

Report to:	**Public Board of Directors**	**Agenda item:**	**14**
Date of Meeting:	**4 September 2024**		

Title of Report:	**Infection, Prevention and Control (IPC) Annual Report 2023/24**
Status:	**For approval**
Board Sponsor:	**Antonia Lynch, Chief Nursing Officer and Director of Infection, Prevention and Control (DIPC)**
Author:	**Lisa Hocking, Deputy DIPC, Associate Chief nurse**
Appendices	**Appendix 1: DIPC Annual Report 2023/24**

1. Executive Summary of the Report

The Director of Infection, Prevention and Control (DIPC) Annual Report contains the infection, prevention and control activities within the Royal United Hospitals (RUH) NHS Foundation Trust from April 2023 to March 2024. This report follows the format of the Health and Social Act, reporting on each of the 10 criteria outlined in the Act.

The Infection, Prevention and Control (IPC) Board Assurance Framework was published in September 2023. This framework is aligned to the Health and Social Care Act 2008: Code of Practice on the prevention and control of infections and related guidance. The identified gaps within this framework are identified as risk on the Trust risk register.

During 2023/24 there were three Methicillin Resistant *Staphylococcus Aureus* (MRSA) Bacteraemia against a threshold of zero tolerance. There were two Hospital-Onset, Healthcare Associated (HOHA) and one Community-Onset Healthcare-Associated (COHA) cases of MRSA bacteraemia. There have been no MRSA bacteraemia's reported since August 2023.

There were 22 healthcare onset Methicillin Sensitive *Staphylococcus Aureus* (MSSA); there are no thresholds for this infection. This was a reduction of two cases from the cases reported during 2022/23. There is not a singular, clear contributing factor for this infection occurring.

The Trust reported 90 Escherichia Coli (E.coli) Bacteraemia, against a threshold of 72. This was however a 4.2% reduction on the number reported for 2022/2023.

15 Pseudomonas Bacteraemia were reported against the threshold of 15. This was an increase of three cases from the previous year.

There were 26 cases of Klebsiella bacteraemia reported against a threshold of 25. This was a reduction of seven cases from 2022/2023.

National data demonstrates the Gram-negative infections can be linked to dehydration, which leads to systemic infections, such as urinary tract infections. A pilot hydration project went live across the South West during 2023/24 to focus on

improving hydration and reducing infections which is being implemented across the Trust.

There were 77 cases of healthcare associated *Clostridioides difficile* (*C.diff*) reported against a threshold of 41 (36 cases over). This represented an increase of five cases from the previous reporting year. Of the 77 Trust reported cases, none were classed as preventable or had any significant lapses in care identified prior to the infection developing. Lessons learnt included when samples should be collected (or not), and the standards linked to cleaning audit scores. Actions have also been taken to improve the care once a diagnosis has been made.

Norovirus activity during 2023/24 has been managed primarily as bay closures. This accounted for 11 of the outbreaks with a total of 90 bed days lost. Closures varied between two and 17 days, with an average of 6 days per bay. In addition to the bay closures there were five full ward closures throughout the year. During this period 109 bed days were lost for an average of 4.6 days.

COVID-19 has continued to present in waves, often only a few weeks apart. Whilst there is an overall reduction in the numbers of patients being tested positive each time, the impact on the Trust when numbers increase remains significant. The risk of nosocomial infection remains high, and this remains evident in the older persons wards. Most cases are isolated within single rooms or cohort bays when the numbers increase.

The RUH detected 265 cases of influenza (flu) during 2023/2024, this was predominantly flu A. The ability to rapidly isolate is a real challenge as most of the cases occurred at the same time a COVID-19, creating operational challenges.

IPC mandatory training is part of Skills for Health on the RUH eLearning platform. Trust wide compliance with infection, prevention and control Level 2 training has met the 85% target for 11 months of the year. Level 1 training has maintained >85% throughout the year.

The Surgical Site Infection (SSI) surveillance categories for 2023/2024 have included the following orthopaedic surgeries: Total Hip Replacement (THR), Total Knee Replacement (TKR), fractured Neck of Femur (NOF) at the RUH and THR/TKR surgeries caried out at the RUH modular theatre, sited at The Sulis Hospital. Data is also submitted for colorectal which includes large and small bowel surgery.

The annual report also includes an annual summary from all committees that report into the Infection, Prevention and Control Committee.

2.	Recommendations (Note, Approve, Discuss)
This report is for approval. This report will be presented to the Trust Board and subsequent publication on the Trust intrant for public access as per the Health and Social Care Act 2008 requirements.	

3.	Legal / Regulatory Implications
Health and Social Care Act 2008: code of practice on the prevention and control of infections and related guidance. CQC regulation.	

4.	Risk (Threats or opportunities, link to a risk on the Risk Register, Board Assurance Framework etc)
2398: Not achieving cleanliness standards in clinical and non-clinical areas. Rated 16. 2557: Single room and ensuite capacity. Rated 14. 2558: Single room capacity and bariatric room capacity, which at present has no funding to address. Rated 16.	

5.	Resources Implications (Financial / staffing)
Nil	

6.	Equality and Diversity
NA	

7.	References to previous reports/Next steps
All data included in this report has been discussed at Infection, Prevention and Control Committee.	

8.	Freedom of Information
This report can be made Public and will be published on the Trust web page.	

9.	Sustainability
Positive impact.	

10.	Digital
Implementation of Paperless in Patients in August 2024 is pivotal in improving compliance with the infection alerts and infection care plans on the Electronic Patient Record.	

Royal United Hospitals Bath
NHS Foundation Trust

Royal United Hospitals Bath Infection Prevention and Control Annual Report 2023/24

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Julia Vasant and Sabrina Fudge, Consultant Microbiologist and Infection Control Doctors

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Infection Prevention and Control Annual Report 2023-2024

Purpose

This report provides the Trust Board with an annual review of the mandatory reporting and activities undertaken by the Infection Prevention and Control Team between April 2023 and March 2024. The publication of the Infection Prevention and Control (IPC) Annual Report is a requirement to demonstrate good governance, adherence to Trust values and public accountability in line with the Health and Social Care Act 2008: Code of Practice on the Prevention and Control of Infection and related guidance.

This report follows the format of the Health and Social Act, reporting on each of the 10 criteria outlined in the Act.

Infection Prevention and Control Board Assurance Framework (BAF)

The adoption and implementation of the National Infection Prevention and Control Board Assurance Framework (2023) remains the responsibility of the organisation and all registered care providers must demonstrate compliance with the Health and Social Care Act 2008. This requires demonstration of compliance with the 10 criteria outlined in the Act.

Areas of partial compliance with the BAF (there are no non-compliant areas), have been added to the Trust Risk Register.

Background

The Director of Infection Prevention and Control (DIPC) Annual Report includes infection prevention and control activities within the Royal United Hospitals (RUH) Bath NHS Foundation Trust from April 2023 to March 2024. The report is comprehensive of the Infection Prevention and Control (IPC) practice on the RUH Combe Park site, the NHS activity undertaken in the modular theatre, located at the Sulis Hospital Bath and any activity where services are run from community sites, such as midwifery services.

A zero-tolerance approach continues to be taken by the Trust towards all avoidable Healthcare Associated Infections (HCAIs). We ensure that good IPC practice is applied consistently to ensure that people who use the RUH services receive safe and effective care.

This report acknowledges the hard work of all staff, clinical and non-clinical, who play a vital role in improving the quality of patient and stakeholders experience in addition to helping to reduce the risk of infections. The Trust continues to work collaboratively with several stakeholders as part of the IPC governance arrangements including:

- NHS Bath and North East Somerset, Swindon and Wiltshire Integrated Care Board (ICB)
- NHS Bath and North East Somerset Public Health team
- South West UK Health and Security Agency (UKHSA)
  South West NHSE IPC team

The Infection Prevention and Control Committee (IPCC) meets monthly and is chaired by the Chief Nursing Officer and DIPC. The IPCC reports to the Quality and Governance Committee (as it was known during the reporting period) with a schedule that has moved from monthly to quarterly reporting.

Committees and services reporting to the IPCC are:

- Decontamination Committee
- Clinical Divisions
- Surgical Site Infection Surveillance
- Antimicrobial Stewardship (AMS)
- Estates and Facilities
- Soft Facilities Management
- Occupational Health & Wellbeing (OHWB)

Criterion 1

Systems to manage and monitor the prevention and control of infection. These systems use risk assessments and consider the susceptibility of service users and any risks that their environment and other users may pose to them.

Infection Prevention and Control Staffing

To deliver a safe service, there is a close working relationship with all teams across the Trust, including the Clinical Site Team, Ward leaders, Microbiology Laboratory services, Estates and Facilities team, Health and Safety team, Procurement, Occupational Health and Wellbeing and the Trust's Communications Team.

Table 1 shows the organisational chart for the IPC team, and supportive arm as of the end of March 2024.

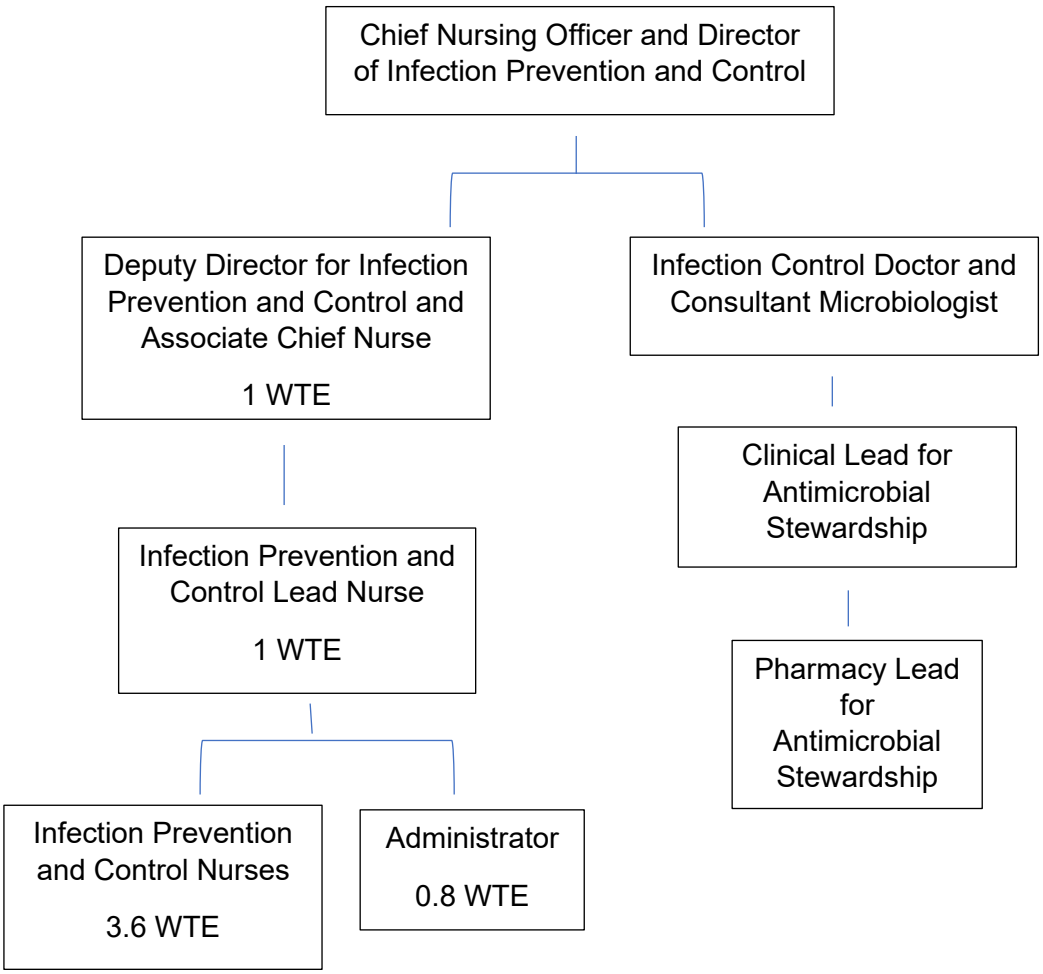

Table 1: Organisational Structure of Infection Prevention Service

Organisms subject to mandatory reporting

The RUH is required to report to UKHSA on the following organisms:

- Methicillin-resistant Staphylococcus aureus (MRSA)
- Methicillin-sensitive Staphylococcus aureus (MSSA)
- Gram negative Bloodstream Infections
- *Clostridioides difficile* (C. difficile)

Bacteraemia Trust exposure categories (2020)

The two categories of reporting cover:

Hospital-Onset, Healthcare Associated (HOHA)
Any NHS patient specimens taken on the third day of admission onwards (i.e. ≥ day 3 when day of admission is day 1) at an Acute Trust.

Community-Onset Healthcare-Associated (COHA)
Any case reported by an NHS Acute Trust not determined to be Hospital-Onset Healthcare Associated and where the patient was discharged within 28 days prior to the current specimen date (where date of discharge is day 1).

Reporting and Investigation

HOHA and COHA cases of Methicillin-resistant Staphylococcus aureus (MRSA) bacteraemia and HOHA *Clostridioides difficile* (C. *difficile*) are reported through the Trust incident reporting system Datix. The root cause analysis (RCA) tool and action plan is completed and attached to the incident. Upon the identification of cases the incident report is completed by the division in collaboration with the IPC team. Divisions report by exception to IPCC with improvement plans.

Methicillin-resistant Staphylococcus aureus (MRSA)

There were 2 HOHA and 1 COHA cases of MRSA bacteraemia (the latter was a repeat positive). All cases have undergone a root cause analysis (RCA) and were presented and discussed at IPCC. The learning from each case has been briefly outlined below.

Division	Category	Source and learning
Medicine	HOHA (day 34)	Necrotic toes. Did not meet screening criteria on admission. Wound positive to MRSA when swabbed. All care and referrals made at correct intervals.
Surgery	HOHA (day 44)	Peripherally inserted central catheter (PICC). Patient led directed care may have contributed to the MRSA bacteraemia.
Medicine	COHA (day 1)	Repeat positive, more than 14 days after initial onset which was initially a community onset case. Known MRSA colonisation.

Table 2: Learning from RUH MRSA Bacteraemia 2023-2024

Figure 1 shows the MRSA bacteraemia rates for the South West Trusts alongside the National rates per 100,000. The RUH have no reported cases since August 2023.

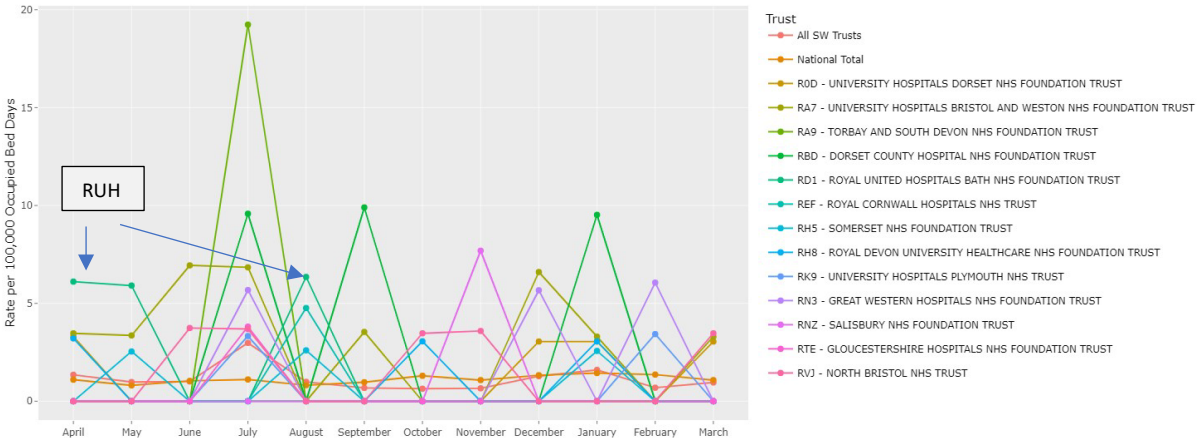

Figure 1: UKHSA MRSA data plot

Methicillin-sensitive Staphylococcus aureus (MSSA) Bacteraemia

The Trust reported 22 HOHA cases in 2023/24, compared to 24 reported cases in 2022/23. The main recorded infection sources are documented below.

Source	Number of cases
Bone and joint	1
Hepatobiliary	2
Lower Respiratory Tract	2
Lower Urinary Tract	1
Lower Urinary Tract & Catheter	1
Peripheral Venous Catheter	2
Skin & Soft Tissue	4
Unknown	7
Upper Urinary Tract	1
Wound infection	1

Table 3: MSSA Bacteraemia 2023-2024

Nine of the 12 monthly totals are on or below the median line, demonstrating a high degree of statistical control for 2023. A non-statistically significant increase was observed in February and March 2024, both sets of data remained below the upper control limit.

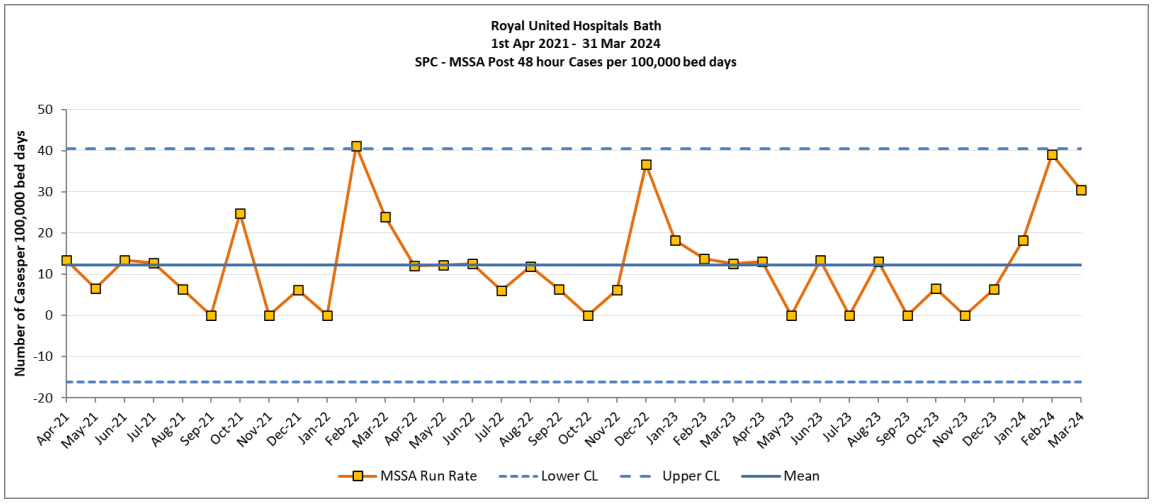

Figure 2: SPC Healthcare associated MSSA bacteraemia data 2021 – 2024 per 100,00 bed days

The RUH benchmarked well during the year against all the South West Trusts, however the rise in MSSA during February and March 24 placed the RUH as the second highest Trust in February (six cases) and the Trust with the highest rate in March 24, which equated to five cases, two of these cases were associated to a hepatobiliary infection and two to skin and soft tissue, one cause was not identified.

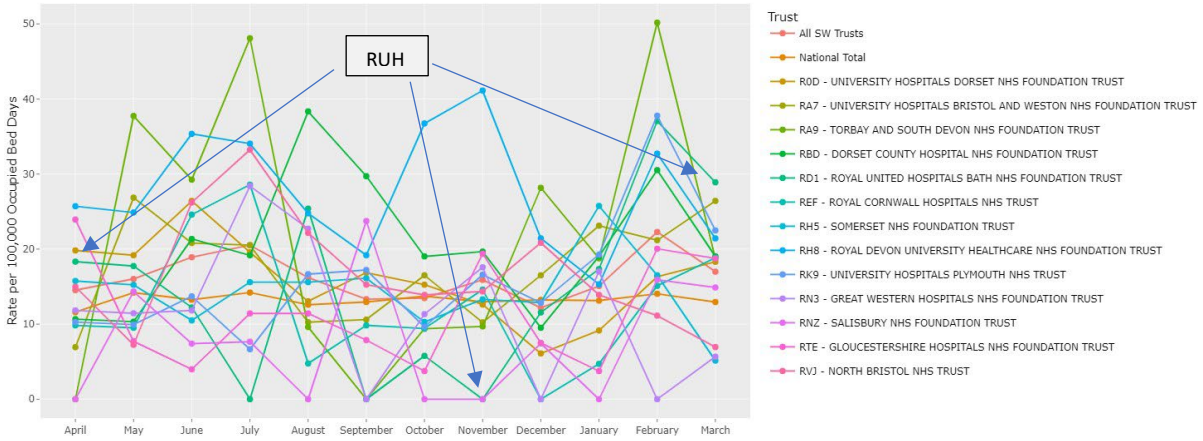

Figure 3: UKHSA MSSA data plot

Gram Negative Bloodstream Infections

NHS England has set a national target of halving healthcare associated Gram-negative blood stream infections (GNBSI) by 2024/25. In 2021/22, thresholds related to GNBSIs were introduced to the NHS Standard Contract for the first time - set at a 5% reduction on calendar year 2019 figures.

There are no clear themes or interventions to reduce the rate of rise of *Escherichia coli* (E. coli) infections. The changes in patient demographics with an ageing population (18.6% of the total population were aged 65 years or older in the 2021 census compared with 16.4% at the time of the previous census in 2011) and more

people at risk because of comorbidity or treatment such as immunosuppression are likely to contribute to an increase in cases.

All GNBSI have a short RCA completed by the ward leader and the IPC team to identify the source, any potential risk factors and whether the infection was a healthcare associated infection (HCAI).

Whilst the thresholds set have been exceeded during 2023/24, there has been a 4.2% reduction in the Trust *E.coli* rate since 2022/23 and a 21% reduction in the Klebsiella rate. This is contrasted by a 25% increase in the Pseudomonas rate [number of cases +3].

Key improvements required for 24/25

Whilst there has been a reduction in *E. Coli* and Klebsiella from the previous year's figures, the IPC and divisional work plan for 2024/25 will include the promotion of the hydration project. This project is aimed to improve the fluid intake of our patients in the Trust. This will not only prevent urinary tract infections, but it will also prevent constipation, improve cognitive ability, improve skin integrity, improve mobility, and prevent falls.

Infection	Threshold for 22/23	Final Numbers 22/23	Threshold for 23/24	Final Numbers 23/24	Difference in final Numbers 22/23 and 23/24
E.coli	76	94	72	90	**-4**
Pseudomonas	17	12	12	15	**+3**
Klebsiella	26	33	25	26	**-7**

Table 4: Thresholds for 2022/23 and 2023-2024

Figures 4 to 12 demonstrate the Trust associated cases per month of each Gram-Negative bloodstream Infection, between April 2023 and March 2024. The cases are plotted against the annual threshold set by NHS England for 2023/24.

E coli

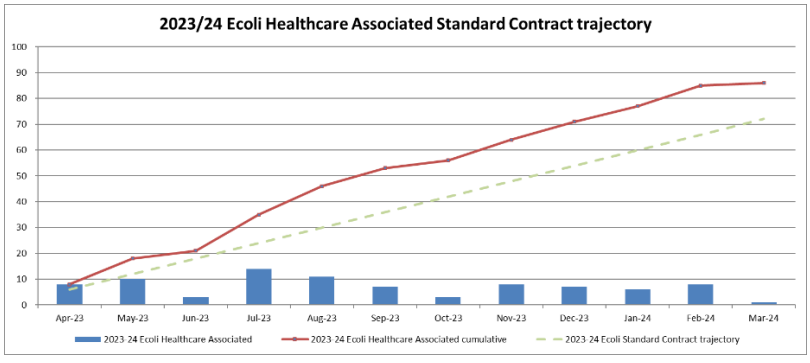

Figure 4: All *E.coli* against trajectory for 2023/24

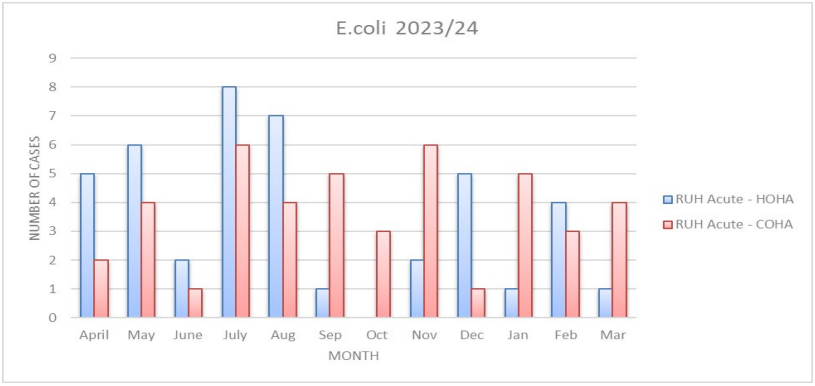

Figure 5: *E.coli* HOHA and COHA split against trajectory for 2023/24

The RUH has seen a downward trend in *E.coli* bacteraemia infections over the year and for the past seven months has been in the middle of the UKHSA data plot as seen in figure 6. National data demonstrates this infection can be linked to dehydration. Hence, the pilot hydration project within the South West to address the unwarranted variance in 2023/24.

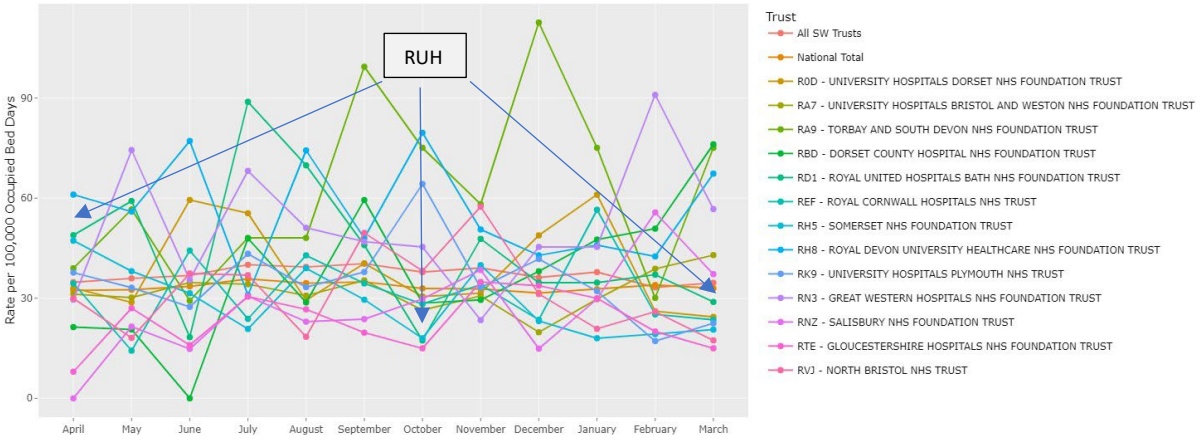

Figure 6: UKHSA *E. Coli* data plot

Pseudomonas

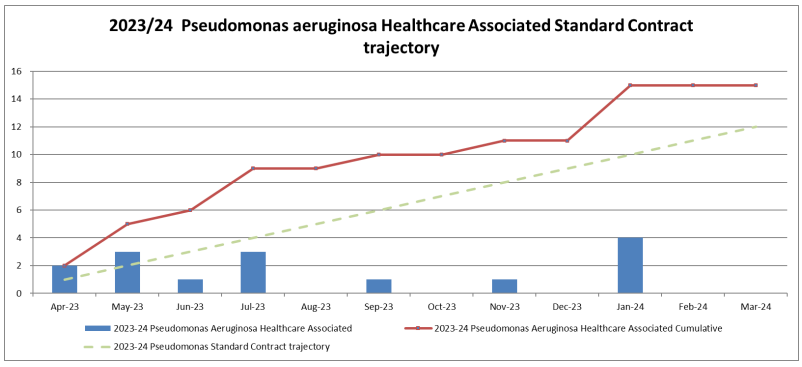

Figure 7: All Pseudomonas infections against trajectory for 2023/24

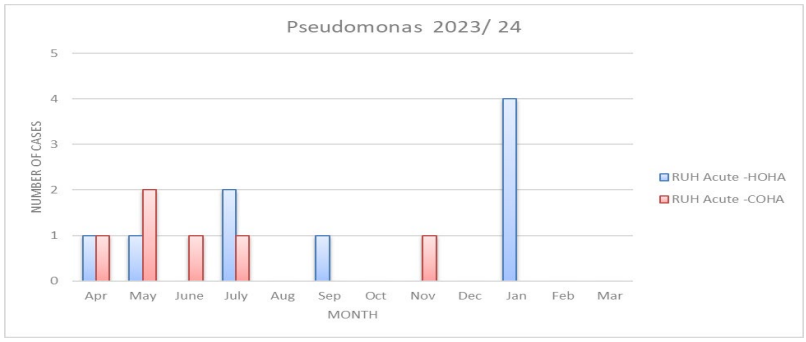

Figure 8: Pseudomonas HOHA and COHA split against trajectory for 2023/24

The RUH identifies as an outlier when more than three cases are reported. Overall low rates of Pseudomonas are reported across all organisations. Spikes are seen within several organisations throughout the year, but do not appear to be associated with any seasonal changes.

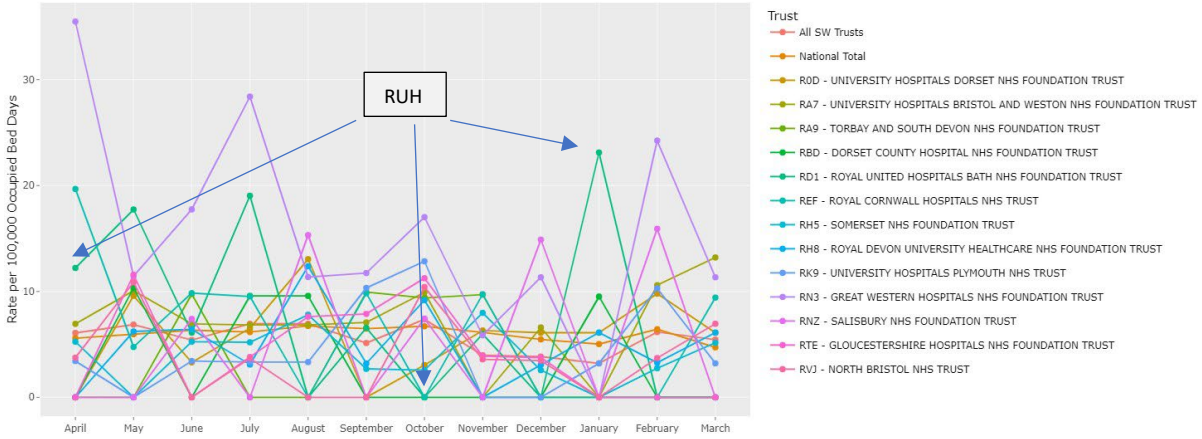

Figure 9: UKHSA Pseudomonas data plot

Klebsiella

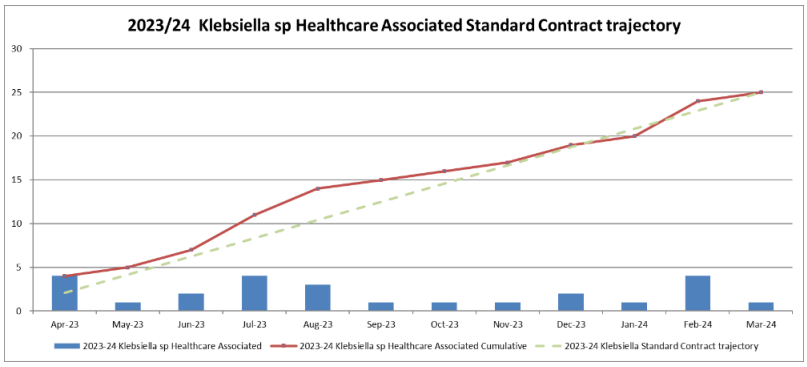

Figure 10: All Klebsiella infections against trajectory for 2023/24

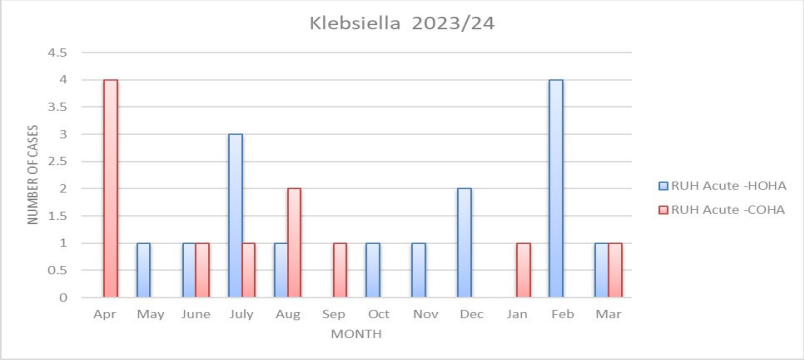

Figure 11: Klebsiella HOHA and COHA split against trajectory for 2023/24

Figure 12 below, demonstrates month by month variation of this infection across all the South West Trusts. The RUH stands out significantly during the months when four cases are reported (April, July, and February). National data demonstrates this infection can be linked to dehydration. The pilot hydration project within the South West has been commenced to address this inequality during 2023/24.

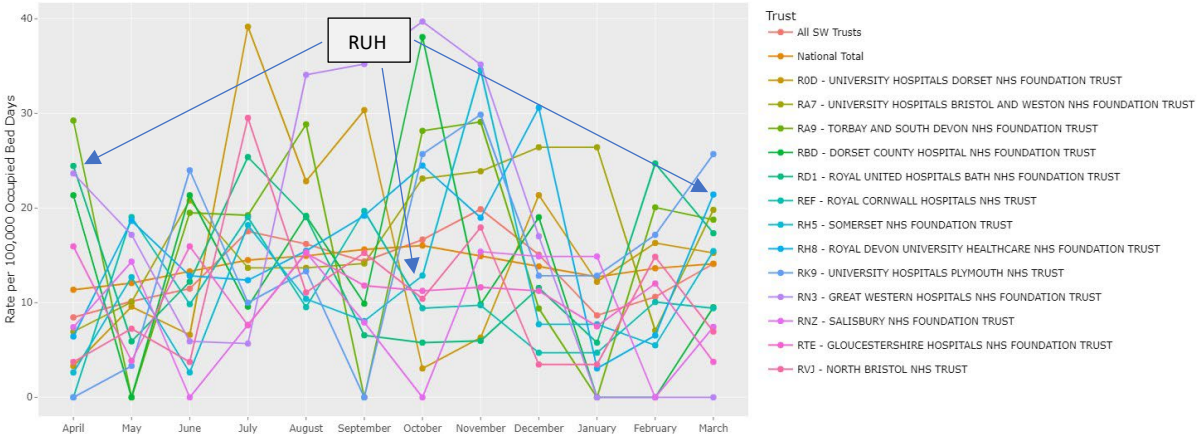

Figure 12: UKHSA Klebsiella data plot

Clostridioides difficile (C. difficile)

The threshold for RUH apportioned cases of *C. difficile* for 2023/24 was set at 41 cases, with 77 being reported at the end of March 2024, this comprised of 60 HOHA and 17 COHA infections. This was 36 cases over the threshold. There were five more cases reported in 2023/24 than in 2022/23 which equates to a 6.9% increase in cases.

C. difficile root cause analysis is linked with Datix incident reporting for all HOHA cases. COHA cases are investigated using the same RCA tool, but only added to Datix if harm is identified. None of the 77 Trust reported cases were classed as preventable or had any significant lapses in care identified. There were however lessons learnt for when samples should be collected (or not), and the standards linked to cleaning scores. There have also been recommendations and actions taken to improving the care once a diagnosis has been made. All actions have been implemented by Divisions, closed on Datix and discussed at IPCC.

It is Trust policy to isolate patients who are carriers of *C. difficile* (*C. difficile* positive on the polymerase chain reaction (PCR) test only). The numbers are not required to be externally reported, however, the patients are treated if they have symptoms consistent with *C. difficile* infection (CDI), as they can potentially transmit *C. difficile* in the ward environment.

As per the national *C. difficile* guidance (2013), periods of increased incidence (PII) are identified when two or more cases are reported on a ward within a 28-day period. These have been identified on eight areas throughout the year. There has been no evidence of cross infection through ribotyping for areas meeting PII criteria.

RUH Typing Results 2023-24

Month of 23/24	Ward	Ribotype	Ribotype	Ribotype
April	Haygarth	016	207	
	OPAU	015	430	
May	Charlotte	054	018	871
May / June	ICU	015	002	
May/ July	Waterhouse	023	023	
Dec/ Jan 24	OPUSS	015	002	
	Pulteney	029	062	202
Feb 24	OPAU	013	015	

Table 5: Ribotyping results for Periods of Increased Incidence (PII)

Threshold set since 2022 – 2023/4

Infection	Threshold for 22/23	Final Numbers 22/23	Threshold for 23/24	Final Numbers 23/24	Difference in final Numbers 22/23 23/24
C. difficile	42	72	41	77	**+5**

Table 6: Thresholds for 2022/23 and 2023-2024

Trust Annual *C. difficile* data, by month against threshold

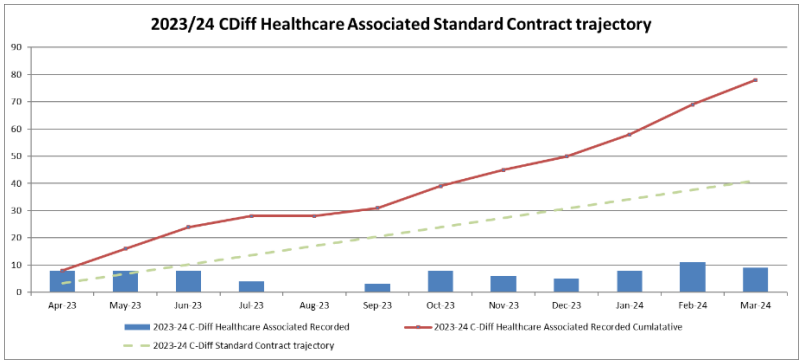

Figure 13: Total number of *C. difficile* cases April 2023-March 2024

Trust Annual C. difficile data, by COHA and HOHA per month

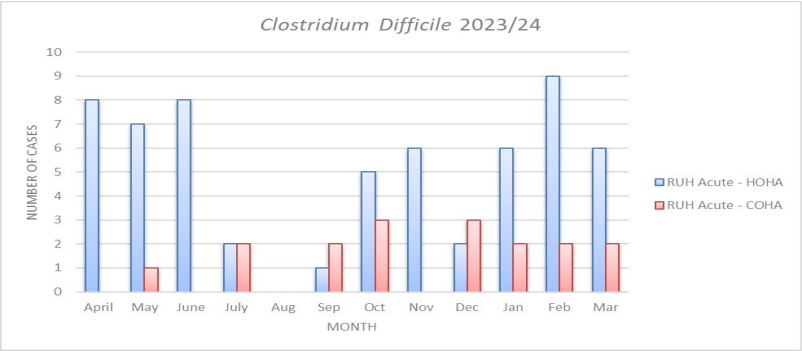

Figure 14: COHA and HOHA cases April 2023–March 2024

Trust SPC *C. difficile* data, by month 2021-2024

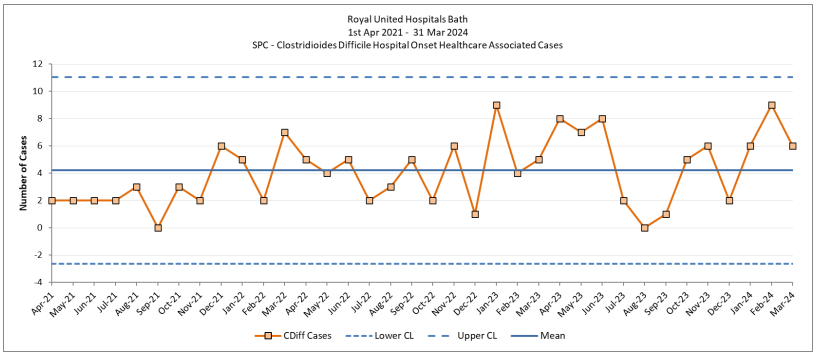

Figure 15: SPC HOHA cases April 2021–March 2024

Review of Repeat/Relapse/Continuing Infection

The 60 *C. difficile* HOHA cases were reviewed in detail looking specifically at rates of recurrence, antibiotic usage and risk factors for diarrhoea, to identify learning themes. It is also known that toxin producing *C. difficile* can sometimes colonise patient's bowel flora, without causing symptomatic disease, particularly in hospitalised patients. Such cases are included in the Trusts total number of cases, but it is useful to understand the proportion of cases that are likely to represent colonisation versus true *C. difficile* infection.

Key findings from this analysis were:

- 63% of HOHA were likely to represent true *C. difficile* infection.
- 25% of HOHA cases were likely to represent colonisation only.
- In the remaining cases, it was not possible to determine if the positive *C. difficile* result represent infection or colonisation.
- 20% of HOHA cases had prior *C. difficile* infection or carriage (down from 25% last year).
- 41 % of HOHA were on laxatives at the time of sampling (up from 33% last year). In some instances, laxatives were continued after the time of the positive *C. difficile* test for unclear reasons.

- 70% of HOHA cases were on a proton pump inhibitor (medications that have a known association with the development of CDI). This increased by 51% in comparison to last year.
- 88% of HOHA cases had received antibiotics in the past 3 months (static from last year when it was 86%).
- Of these, only two cases had a significant deviation from guidance/microbiology advice in hospital prescribing that could significantly increase *C. difficile* risk.
- The onset of new diarrhoea is not always documented in the notes, and the medics do not always appear to know about it on their ward rounds.

National increase in *C. difficile*

The increase in the number of cases overall is of concern and is reflected in the numbers nationally. NHSE have collaborated with the South West IPC network to review the increase in *C. difficile* numbers. There is no straightforward explanation for the increase in rates.

In November 2023, UKHSA announced they were investigating a newly evolving ribotype (955) which has emerged in England over the last 2 years (total 48 cases). This new ribotype is concerning, because it has caused 2 large hospital clusters, with sporadic cases identified elsewhere in England with no apparent links to the two hospital clusters. It appears to transmit readily, may present with severe disease or as a recurrence and has caused significant mortality. The RUH has not seen any cases of 955.

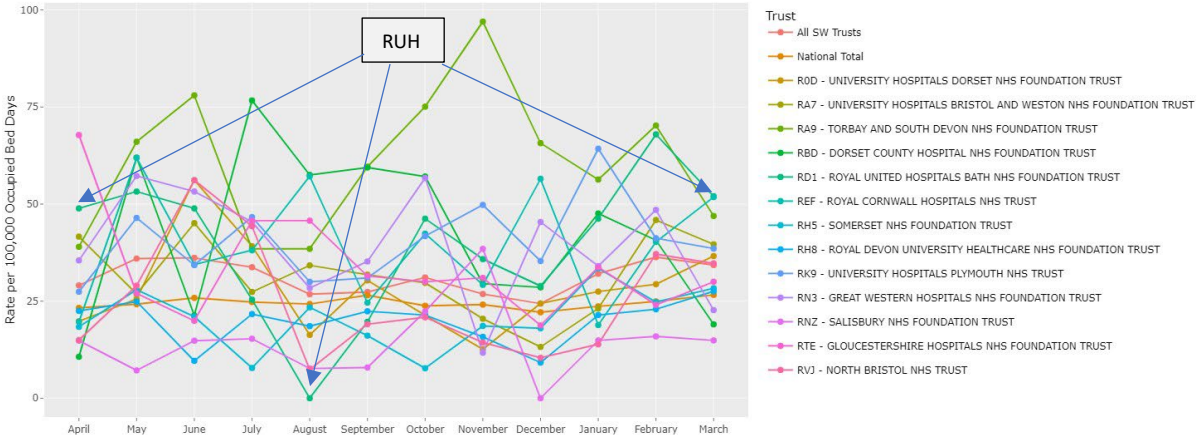

Figure 16: UKHSA *C. difficile* picture data plot

Key improvements for 24/25

- Focus on patient hand hygiene during an admission to prevent ingestion of *C. difficile* spores, and other infections.

- Focus on appropriate and timely sampling ensuring staff do not obtain samples directly after administering aperients for constipation.
- Proton Pump Inhibitor (PPI) usage review, as this was a significant finding from the case reviews. The continued use of PPI's whilst on antibiotics needs to be risk assessed on an individual basis.
- Continue to closely monitor the Trusts usage of antimicrobials and ensure we are using them appropriately based on current best practice and guidelines.
- The microbiologists will continue to ensure all clinical queries, within the Trust and in Primary Care, consider AMS principles alongside the presenting infection.

Criterion 2

The provision and maintenance of a clean and appropriate environment in managed premises that facilitates the prevention and control of infections

Environmental IPC and decontamination

The IPCC receives reports from the operational teams on decontamination, water, ventilation, and cleaning throughout the year. IPC are also active members of these operational meetings. A summary of each working group is detailed in this section.

Water Safety Group (WSG)

The Water Safety Group (WSG) of the Trust, which includes active participation from the IPC team, meets quarterly to discuss and manage water safety issues. In the past year, we have taken numerous proactive measures to ensure water safety. This includes conducting all necessary monitoring and testing under HTM04-01, which has not highlighted any major concerns. We also reviewed the Trust's Water Sampling Plan and Legionella Risk Assessments to ensure their relevance and thoroughness. Staff training was also implemented to reinforce aseptic sampling techniques and consider staff competency levels.

A noteworthy achievement was the successful annual Authorising Engineer (AE) audit, where most of the criteria were rated as 'outstanding' or 'good', and no major non-conformances were detected. The Estates team has also temporarily taken over the flushing of little-used water outlets. This involves implementing a flushing regime that effectively mitigates this risk until the cleaning department is ready to resume responsibility.

Key improvements for 24/25

Further strengthen the protocols for positive test result responses. This involves implementing remedial actions, notifying the relevant authorities, and communicating

with stakeholders as required. It is anticipated this will further enhance the strong working relationship between Estates and IPC. An Estates Officer is also performing an ongoing review and audit of monitoring data, sampling results, and testing outcomes, which we anticipate will identify trends, areas for improvement, and opportunities to enhance water safety protocols within the Trust.

A 24/25 AE audit action plan is being developed and arranging for a new Estates Officer to attend an Authorised Person water course to reduce single points of failure.

Ventilation Safety Group (VSG)

Throughout the past year, the Ventilation Safety Group (VSG) of the Trust, with active members from the Infection Prevention and Control (IPC) team, has completed all necessary monitoring, testing, verifications, and inspections. One notable achievement was the creation of a new programming section to ensure the automatic restart of Air Handling Units (AHUs) after any future power outages, as a proactive measure following the most recent black start generator test. Another significant accomplishment was the successful resolution of issues with Theatre 5 Ultra Clean Ventilation (UCV) canopy through a system rebalance, allowing the theatre to be back in use.

There is a risk associated with the age of the air handling units serving critical areas, such as the main theatres, which are approximately 40 years old and were deemed end-of-life 20 years ago. There were also key risks related to Magnetic Resonance Imaging (MRI) AHUs not being treated as critical systems, potentially leading to nosocomial transmission due to a lack of mechanical ventilation. The team also faced difficulties with new staff members becoming familiar with complex specialist ventilation systems and dealing with outdated systems that are not compliant with current Health Technical Memorandum (HTM) standards.

Key improvements for 24/25

The Estates team plan to continue addressing actions from annual verifications of AHUs, enhance resilience for ventilation systems through additional Competent Persons training, and develop a user and operator list to ensure proper management of critical ventilation systems. The group are also strengthening the process for failed verifications, ensuring users are immediately made aware of the reasons for failure so that a multi-disciplinary risk assessment can take place to determine if the system can continue being used. Future recommended actions include addressing verification actions and AE Audit actions, training new starters, and updating Datix.

Decontamination of Medical Devices
Central Decontamination

The Sterile Services Department (SSD) is accredited to BS EN ISO 13485:2016 and registered with the Medicines and Healthcare products Regulatory Agency (MHRA) for the assembly, supply and distribution of sterile packs and instrument sets for hospitals and other health care related establishments. SSD re-manufactures procedure packs, single instruments and theatre sets using the items which are mutually compatible and used in accordance with manufacturer's instructions and users requirements – to meet the provisions of Regulation 14, clause 1 (points a & b) of the Statutory Instrument 2002 No. 618, Medical Device Regulations 2002, as amended and are in conformity with the UK designated standards BS EN ISO 13485:2016, BS EN ISO 14971:2019, BS EN ISO 14644-1:2015. The items are thermally disinfected and will be sterilised in accordance with Health Technical Memorandum (HTM) 01-01 guidelines.

Currently SSD supplies to 130 locations – internal & external to RUH. During 2023-24 SSD process 259,142 items which includes 2,579,212 instruments.

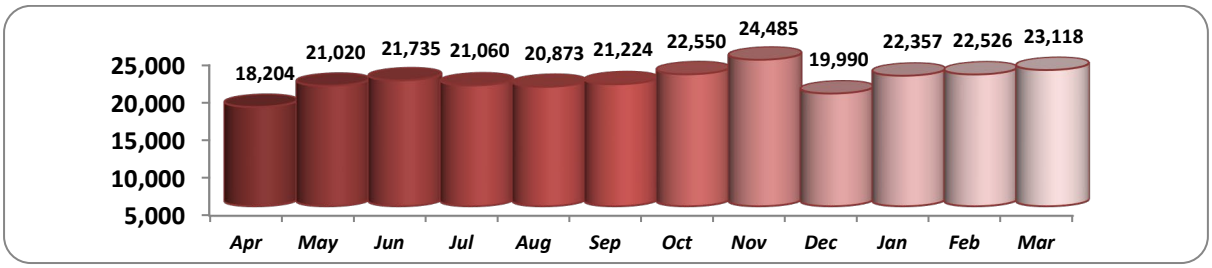

Figure 17: Surgical instruments processed per Month 2023-24

SSD also provides a comprehensive decontamination service to various service users for re-useable heat sensitive flexible endoscopes. High level disinfection service for flexible endoscopes is managed by SSD in accordance with the British Society of Gastroenterology (BSG) Guidelines for Gastrointestinal Endoscopy and HTM 01-06.

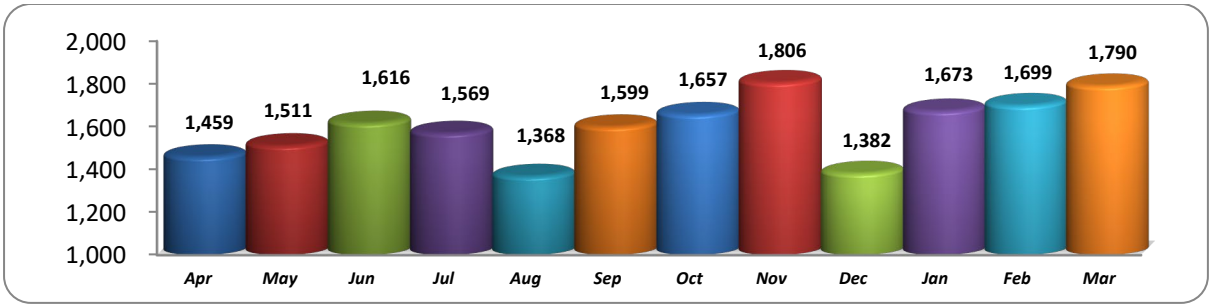

Figure 18: Endoscopes processed per Month 2023-24

The Trusts decontamination manager attends and provides quarterly update reports to the IPCC regarding overall Trust compliance with decontamination requirements. The Decontamination Committee meets quarterly and provides assurance to the Health & Safety Committee and the IPCC and report key messages and risks.

Local Decontamination

The SSD & IPC team, work with clinical colleagues to improve the local decontamination standards. Addressing pitfalls mainly on documentation (policies, standard operating procedures (SOPs), risk assessments & training records) is very important to give assurance on patient safety. ENT OPD is using Tristel Trio to disinfect non-lumened nasendoscopes between the procedures. The ophthalmology outpatient department is following Moorfields Eye Hospital NHS Foundation Trust's SOP to decontaminate contact lenses; as per the SOP, the lenses are being cleaned with detergent wipes. This is being done by the consultants after they have seen the patient in the individual clinic rooms. Transoesophageal Echocardiography Probes (TOE) are cleaned with Tristel Trio system and traceability records are in use and stored in dedicated storage cabinets. Gynae OPD and Antenatal are using Tristel Duo to decontaminate their transvaginal (TV) probes.

Cleaning

The Cleaning Standards Group (CSG) at the RUH has been striving to ensure compliance with the National Standards of Healthcare Cleanliness 2021. This commitment aligns with Criterion 2 of the Health and Social Care Act, which emphasises the maintenance of a clean and suitable environment throughout the RUH premises. The CSG conducts monthly meetings to evaluate cleaning standards, manage action plans, and review cleanliness-related incidents. Operating under an approved term of reference, the group reports to the Infection Prevention and Control Committee (IPCC) and the Safer Environment Group (SEG). These meetings involve participation from multidisciplinary stakeholders across the RUH.

Challenges

The previous year presented the team with considerable challenges. High staff turnover within the cleaning management team, coupled with high absence rates and a 23% vacancy rate within the cleaning team, hindered the team’s ability to consistently meet the National Standards of Healthcare Cleanliness 2021 and their internal standards. The scores from the technical auditing programme have been inconsistent, indicating that the required cleanliness standards across the RUH are not consistently met. These challenges have adversely affected staff morale. The leadership of Facilities, inclusive of cleaning, was transferred to the Chief Nursing Officer in March 2024.

Risk Management Measures

In response to these challenges, the team recorded this as a risk on Datix (the RUH risk register), scored at 16 - Datix ID 2398 – Cleaning standards in clinical and non-

clinical areas – Infection Risk. This risk has an associated action plan that undergoes review at CSG meetings and the monthly Estates and Facilities (E&F) risk meeting to ensure it is kept current and progress is maintained.

The Chief Nursing Officer has requested that the Director of Facilities undertake an external review of Facilities. On completion of this an improvement plan will be developed, reporting to the Non-Clinical Governance Committee.

Progress and Achievements

Despite the challenges, progress has been made in addressing these issues. The team has successfully completed 90% of the listening events with the cleaning team aimed at identifying areas for improvement to enhance, staff engagement, staff morale and performance. A dedicated cleaning team has also been assembled and mobilised for the Dyson Cancer Centre Building (DCC). A new cleaning product, supported by IPC, has been introduced for use on the linoleum floors in the DCC to maintain cleanliness without causing damage. With assistance from the e-rostering team, new rosters have been built to support the cleaning team in managing such a large team. A Matron has been seconded to the cleaning team to provide senior leadership focussing on morale, recruitment and retention and cleaning standards. A new Cleaning Manager has been recruited.

Key improvements for 24/25

Moving forward, collaboration is underway with the Culture and OD team to determine the next steps and actions from listening events and to develop and professionalise the supervisor role.

Additionally, driver measures are being implemented to reduce sickness to below 5%, with the aim to reduce the vacancy rate to below 5%, and work is ongoing with recruitment to hire approximately 35 cleaners. Focus is also being placed on improving the engagement and understanding of the cleaning supervisory team with the audit process. The primary goal is to stabilise the team, boost morale and cleanliness standards, and professionalise the service.

Criterion 3

Appropriate antimicrobial use and stewardship to optimise outcomes and to reduce the risk of adverse events and antimicrobial resistance.

Antimicrobial Stewardship (AMS)

Antimicrobial resistance is a global public health threat. The UK has responded to this with a series of national action plans and by carrying out national surveillance of

antimicrobial resistance. There are key aims pertaining to the reduction of inappropriate antibiotic use, specifically broad-spectrum antibiotics. AMS activities within the Trust are briefly outlined below.

Staff update

The Trust has a clinical lead position for AMS which is currently held by one of the Consultant Microbiologists. There is also a Trust lead antimicrobial pharmacist who has support from a pharmacy technician 0.2 WTE.

Antimicrobial Stewardship Activities

AMS Activities	Description
Committee	Quarterly meetings, chaired by the Deputy Chief Medical Officer, report to IPCC and Medicine Assurance Committee. Membership has been expanded to include representation from areas of high consumption including: • Respiratory • Haematology • Acute medicine • General Surgery • Older Persons Unit (OPU) • Trauma and Orthopaedics. There is a ratified and updated Antimicrobial Stewardship Policy in place which sets out the governance structure for AMS and defines roles and responsibilities. Standing items on the agenda discussed quarterly include: Trust antimicrobial compliance audits, the Trust's consumption of antimicrobials, patient safety incidents related to their use, quality improvement and research initiatives and new additions to the drug formulary.
AMS Rounds	Microbiology rounds have been in progress since October 2021. These include: - • Intensive Therapy Unit (ITU) – daily visit weekdays • Staphylococcus aureus bacteraemia weekly reviews • Complex patient reviews - weekly • Outpatient Parenteral Antimicrobial Therapy (OPAT) virtual round - weekly • Carbapenem reviews - weekly • Monthly prosthetic joint infection meetings • Medical Assessment Unit (MAU) multi-disciplinary team (MDT) - weekly • AMS rounds on Parry and Pulteney ward based on antimicrobial compliance audit data and complexity of patients on these wards.
C. difficile	Weekly review by Consultant Microbiologist. Contribution to RCAs, data on potential causitive antibiotic trends, primary care feedback of non-guideline use of antibiotics.

CQUIN/ MOP/Standard contract	Intravenous to oral switch (IVOS) Commissioning for Quality and Innovation (CQUIN): met all parameters for 2023/24. Standard contract: reduction in broad spectrum antimcirobial use met.
Regional	Bath and North East Somerset, Swindon and Wiltshire (BSW) AMS network. South West antimicrobial pharmacist network. HCAI collaborative workshops.
Training	Level 2 AMS update complete and live on ESR. Full programme of face to face/hybrid teaching by AMS team underway since Summer 2021 including updates to: • Acute medical team • Pharmacy team • Emergency medicine medical team • Surgical trainee doctors • Stroke team • Respiratory team • Primary Care teaching • Medical nurse practitioner teaching
Audit	Trustwide compliance audit performed quarterly by AMS pharmacist and fed to Division and governance leads in addition to the antimicrobial stewardship group members. Clinical areas that require improvement discuss and action this at their local governance meetings. Areas of good performance are ranked in top 3 and celebrated. Carbapenem reviews – weekly. Teicoplanin audit – ongoing since changes to dosing and implementation of prescribing care plan on ePMA in 2023/24 results expected October 2024.
Guidelines	There are comprehensive antimicrobial guidelines available on the Trust intranet and MicroGuide. These are updated regularly to try and achieve the correct balance between offering appropriate treatment of infections and maintaining AMS goals. They are designed to ensure they are in line with new national guidance and take into consideration local *C. difficile* infections and resistance patterns. Within the past year many of these guidelines have been updated to ensure they are current and offering the best guidance to our clinicians. Several other guidelines are also currently undergoing review, and this is an ongoing process which will continue going forwards. Paediatric guidelines – for full review and update in 2024, including paediatric IVOS. Adult guidelines – updated in 2023/24. New Line infection guideline in adults currently under consultation.
Safety	Review of OPAT prescribing processes, clinical governance and structure ongoing.
Comms	World antibiotic awareness week Nov' 2023. Antimicrobial stewardship newsletter quarterly. Updated guidelines highlighted on workplace and staff brief.

Table 7: Antimicrobial Stewardship Activities

Antimicrobial stewardship at the RUH is important to improve antibiotic prescribing, protect individual patients and the local population from unintended harm from antibiotic overuse including HCAIs and contribute to slowing antibiotic resistance.

The Trust is committed to following the principles outlined in the Department of Health (DH) guidance "Antimicrobial Stewardship: Start Smart then Focus" and follow the guidance and processes set out in NICE NG15 and the Public Health England 5- and 20-year action plans on AMR and will follow any upcoming national action plan/ guidance in 2024.

As indicated in table 7, the microbiology consultants and specialist pharmacists carry out regular stewardship rounds in areas of high antibiotic use within the Trust, such as daily ITU rounds and weekly rounds on Pulteney and Parry ward. They also contribute to a weekly OPAT antimicrobial review meeting and the monthly orthopaedic prosthetic joint infection MDT. This ensures clinicians have regular direct support to aid the appropriate clinical use of antibiotics.

Key improvements for 24/25

Ensure the Trust uses antimicrobials appropriately based on current best practice and guidelines.

Antimicrobial Consumption

The AMS team continuously monitor total antibiotic consumption within the Trust. Antibiotic consumption is presented as defined daily doses (DDDs) which are an internationally recognised measure of antimicrobial consumption. A DDD is the assumed average maintenance dose per day for a drug used for its main indication in adults. The amount of antibiotics used by the Trust are reported quarterly and this looks both at total usage and usage of specific groups of antimicrobials. Within the past year we have seen the overall usage of antibiotics at the Trust increase, the reasons for this are not clear but are being investigated. We do well in our usage of narrow spectrum 'access' antibiotics and are also below the national average for England in our overall usage of carbapenems (very broad-spectrum antibiotics). The AMS Team will continue to monitor and report on this usage going forwards.

There is also a quarterly antibiotic compliance audit carried out by the AMS pharmacist and reviewed by the antimicrobial stewardship group (ASG) which looks at the Trusts use of antibiotics. Compliance to guidelines is monitored through this audit and is reported both to the ASG and the IPCC via their respective group meetings. Results from the compliance audits are disseminated to clinical governance leads who are expected to cascade and discuss this data with their respective clinical bodies. Any relevant feedback from this should then be discussed at the ASG meetings.

Total Antibiotic Consumption since 2020

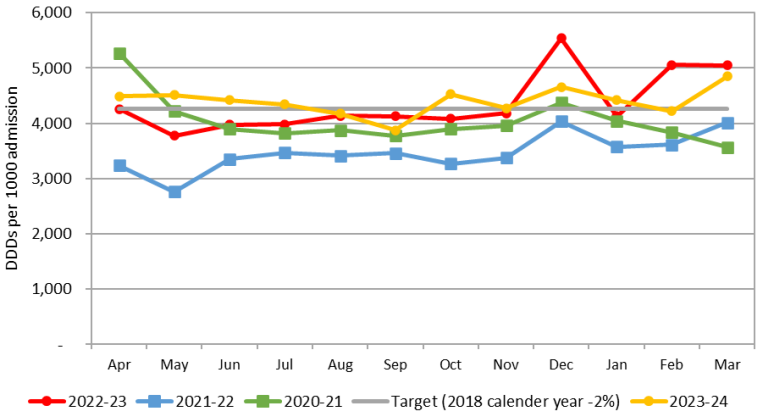

Figure 19: Total antibiotic consumption

Total Carbapenem Consumption since 2020

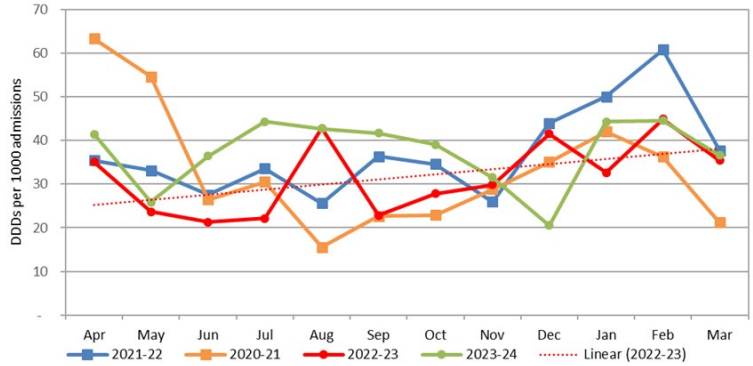

Figure 20: Total Carbapenem consumption 2023/24

Access Group since 2020

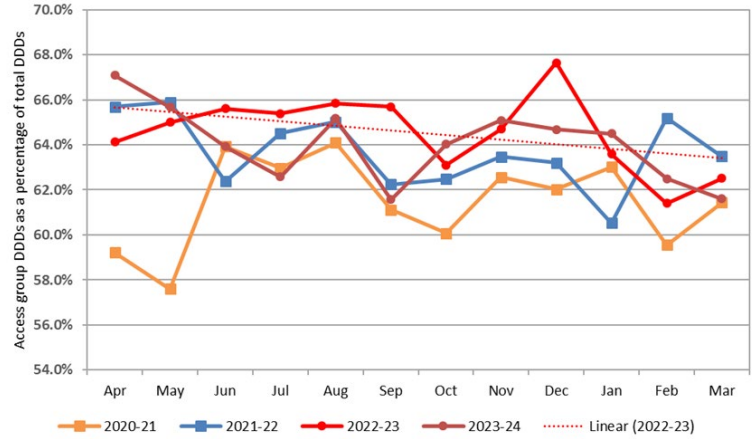

Figure 21: Access group antibiotic consumption 2023/24

Broad Spectrum prescribing from Watch and Reserve since 2022

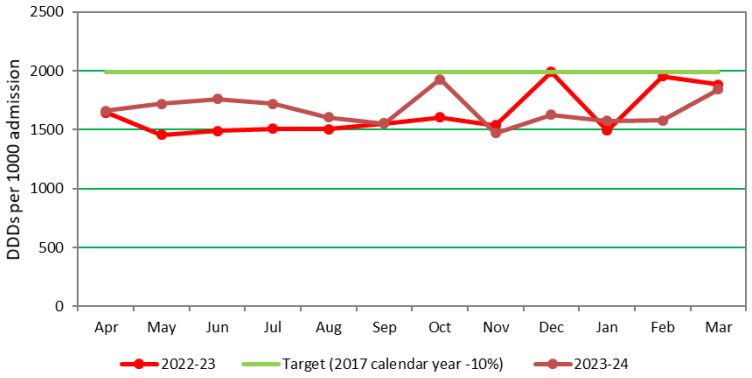

Figure 22: Watch and Reserve group antibiotic consumption 2023/24

Broad Spectrum Prescribing

The target for the RUH for 2023/24 is 1990 DDDs per 1000 admissions to achieve the 10% reduction in Watch and Reserve antimicrobial prescribing from our 2017 baseline.

The RUH has met this target for 2023/24 with an average of 1671 DDDs/1000 admissions. The RUH is also the lowest user of broad-spectrum antibiotics in our region.

The AMS team continues to monitor broad spectrum prescribing and educate prescribers and pharmacists and carry out AMS ward rounds to ensure all antimicrobial prescribing is appropriate and course lengths are kept to a minimum.

Education and training

Education on AMS within the Trust is mandated via the AMS level 1 and level 2 modules and the Antibiotic Review Kit (ARK) toolkit which form part of the Trusts mandatory training. In addition, the AMS pharmacist and microbiology consultants also regularly deliver teaching sessions which cover core AMS themes to various groups of clinical staff within the Trust.

- AMS Level 1 = 94.49% (target 85%)
- AMS Level 2 = 80.68% which includes ARK as a pre-requisite

Lowest compliance is amongst bank staff which requires focussed improvement.

Criterion 4

The provision of suitable accurate information on infections to service users, their visitors and any person concerned with providing further social care support or nursing/medical care in a timely fashion.

Provision of Information

The IPC team have continually reviewed and provided staff briefing alerts and standard operating procedure for staff to reflect COVID-19 testing changes and any new and emerging infections such as Mpox, Measles and Pertussis. This has been in addition to an increase in Group A streptococcus and an isolated case of Diphtheria at the end of quarter 4 2022/23.

Staff have been supported by action response cards for new and emerging infections. Half study days have been provided throughout the year for clinical staff. This was led by the IPC team and supported by microbiology, cleaning, and the venous access team. These sessions were well attended, and an ambassador programme is being implemented during 2024 to create ward level networks.

The IPC team work closely with the three Divisions on visiting and supporting access to patients with infections or exposure with informed choice. This includes assessing the risk of potential nosocomial transmission with compassion and use of personal protective equipment (PPE) as appropriate.

Patient information leaflets have been reviewed in line with policy updates. There is a gap with leaflets available in a variety of languages including easy read, which needs to become part of the forward work plan for 2024/25. Undertaking this as a System would be beneficial from an IPC perspective and will be scoped further during 2024.

Criterion 5

That there is a policy for ensuring that people who have or are at risk of developing an infection are identified promptly and receive the appropriate treatment and care to reduce the risk of transmission of infection to other people.

Infection Prevention and Control Surveillance Software

The RUH upgraded ICNET supported by Baxter during 2023. This provides fully supported services for infection alerts for the future.

The IPC team review the reports each day and any alert flags to the electronic patient records. This allows the appropriate management of infectious or potentially infectious patients in real time to reduce the risk to others as part of the admission risk assessment.

KPMG review

During July 2023, KPMG undertook a review of the IPC controls and governance processes. KPMG concluded, that whilst there is governance to monitor infection prevention and control (IPC), there are gaps in processes and controls that require improvement to operate effectively.

Areas of good practice

- IPC risks are recorded on the risk register and are discussed at each IPCC meeting.
- A thematic review into *C. difficile* was conducted at the request of the Chief Nurse & DIPC to identify reasons for increased cases and possible actions to take.
- Enhanced surveillance is conducted for *C. difficile* cases, with root cause analysis undertaken to determine the reasons for the infection occurring.
- Annual E-learning on infection prevention and control is mandatory for clinical staff, with compliance monitored and reported on by wards to the IPC Committee.
- The IPC team have introduced in-person, optional 'Why' training sessions covering individual topics on infection prevention and control for staff to attend.

Findings and management actions (high and medium risk)

- Initial risk assessments are not always competed accurately.
- The action plans created for each hospital onset C. *difficile* case were not always completed or attached to the incident on Datix. Completion of the actions was not monitored by the IPC team and there was no required reporting of completed actions by the Division to the IPC Committee.
- Agenda items on the Infection Prevention and Control Committee terms of reference are not always discussed in committee meetings, one meeting that had no representation from one Division and one meeting that had no representation from two Divisions.

All actions have since been addressed and the action plan reported as closed.

Infection Prevention and Control Incidents and Learning

MRSA Colonisation

The Neonatal Unit (NNU) was under close observation during September 2023 – January 2024 as there has been six MRSA colonisation cases reported, from the routine admission and weekly screening programme. This was highly unusual, and action was taken to support the unit and improve the environmental cleanliness and review clinical practice.

The samples were sent for whole-genome sequencing, as this is currently the most robust and discriminatory technique for tracking hypervirulent/well-adapted MRSA clones to look at the clonal structure. Specific MRSA clones can differ in their pathogenic, epidemiological, and antimicrobial resistance profiles. The findings are included in table 7 below.

Case number	MRSA clone
Case : 1 Included 2 infants	ST8 clone Not sent but likely to be the same as twin
Case 2	Different antibiotic sensitivity pattern to all other isolates – was subsequently determined not to be MRSA
Case 3	ST5 clone
Case 4	Colonised at birth
Case 5	Not available for lab testing

Table 8: Isolates results for NNU colonisation

Learning

There was no evidence of cross infection seen from the samples tested and no further cases were detected afterwards. IPC worked with the NNU staff, and the following actions were taken:

- All staff are trained on how to take swabs correctly, this continues as part of the induction package.
- A thorough declutter and clean of the unit took place and continues to be part of the daily routine.
- The IPC link nurses on the ward have been focussing on a 'back to basics' approach. The UV lightbox has been set up and continues to be used. All staff were asked to practice hand washing technique and this continues to be a valuable learning tool for new members of staff.
- All medical staff were updated on the cases and were invited to take part in the teaching sessions on the unit.
- A timeline was completed of staff looking after the babies and incubators used and there was no evidence to show any overlap.
- Incubators continue to be cleaned by trained cleaners.

Diphtheria

Diphtheria is a notifiable disease in the UK. Diphtheria is a vaccine preventable, infectious and potentially life-threatening (if left untreated) infection, caused by a toxin (poison) made by bacteria. Corynebacterium diphtheriae and Corynebacterium ulcerans are the 2 most common bacteria that can cause diphtheria, but it can also be caused by Corynebacterium pseudotuberculosis, although this is very rare.

A single case of Corynebacterium ulcerans was detected in wound swab during 2023. Whilst the swab was taken and detected in another Trust, there were some gaps in knowledge of this information upon transfer to the RUH. This form of diphtheria is mostly associated with pets, of which there were pets in the household.

UKHSA supported community contact tracing and Occupational Health followed up staff contacts. Close contacts were identified and offered screening.

Learning

There was a gap in the communication between the discharging hospital and the Trust as the receiving hospital, with the handover of the swab results, and what this meant in practice. This is a rare event, (despite a case being detected in 22/23) and put our staff at risk. Three staff members required a course of prophylaxis antibiotics and a booster vaccination.

It was agreed there was ambiguity in the UKHSA guidance as to when contacts needed to be treated with prophylaxis. The UKHSA guidance was subsequently amended to address the gaps in the guidance following and investigation with the incident management team at UKHSA.

Measles

Measles is highly infectious notifiable disease, and the most infectious of all diseases transmitted through the respiratory route. Measles can be severe, particularly in immunosuppressed individuals and young infants. It is also more severe in pregnancy, and increases the risk of miscarriage, stillbirth, or preterm delivery. The most effective way to control measles is by achieving high uptake of two doses of measles, mumps, and rubella (MMR) vaccine.

There was one measles case detected at the RUH during this reporting period. 'Warn and inform' letters were sent to contacts traced. There were no further cases reported from this isolated case.

The Trust Measles Standard Operating Procedure (SOP) was updated and republished to reflect the revised UKHSA guidance dated January 2024. Guidance was also developed with Divisions to administer the immunoglobulin pathway for unvaccinated individuals who are exposed to the virus, as this was a developing new requirement following the outbreaks in Birmingham and London.

The RUH also took an active part in the UKHSA measles preparedness exercise, which was held in February 2023. This event supported collaborate working and used lessons learnt to improved integrated working.

Carbapenemase-producing Enterobacterales (CPE)

CPE organisms spread rapidly in healthcare settings and lead to poor clinical outcomes because of limited therapeutic options. CPE has significant cost and operational implications for healthcare, there is also significant uncertainty regarding the most effective measures to minimise the transmission of CPE however the evidence base is constantly evolving. Key actions currently in place are to; undertake active patient admission screening of risk groups, have appropriate surveillance systems monitor rates, have consistent adherence to infection prevention and control practices and contact precautions, minimise CPE reservoirs by effective environmental cleaning and decontamination, and effective antimicrobial stewardship programmes to minimise inappropriate use of broad-spectrum antibiotics, including carbapenems.

There have been two new diagnoses of colonisation during admission, and two readmissions of patients with known CPE.

Learning

Patients with known colonisation and alert flags were not being consistently isolated on admission. This leads to patient exposure, which requires additional isolation and screening, all of which could have been avoided. This is being addressed by using Improving Together methodology, to use the alert flags at the point of attendance and completing accurate risk assessments on admission.

Norovirus Outbreaks

Norovirus is easily transmitted through contact with people with the infection and any surfaces or objects that have been contaminated with the virus. Symptoms include sudden onset of nausea, projectile vomiting and diarrhoea but can also include a high temperature, abdominal pain and aching limbs.

The incubation period of norovirus is 12 to 48 hours, which is the time between catching the virus and developing symptoms. Individuals are most infectious when symptomatic, but it is possible to pass on norovirus or shed the virus, thereby contaminating surfaces, objects or even food, both before developing symptoms and after symptoms have stopped.

The RUH tests all hospital stool samples for norovirus (in line with best practice), so there are cases detected throughout the year. It should be noted that isolated cases do not necessary develop in to outbreaks of infection on our wards. The IPC estates work to increase the number of isolation facilities completed during 2022 has enabled the Trust to isolate an increased number of patients with infections and reduce the incidence of ward closures due to infections such as Norovirus.

Most of the norovirus activity during 2023/24 has been managed as bay closures, with a total of five wards closed to new admissions throughout the year, in comparison to four wards being closed to new admissions during 2022/23 and three during 2021/22. There were 109 bed days lost during this period with beds closed to new admissions for an average of 4.6 days.

The longest ward closures were for nine consecutive days, which for norovirus outbreaks is relatively swift. It is noted that the two older person wards were the areas most effected and subsequently closed to new admissions, primarily driven by patient safety reasons to swiftly stop the spread of infection, especially when patients are mobile on this type of ward.

MONTH	AREA	DAYS CLOSED	BED DAYS LOST
Oct	Combe Ward	9	56
Nov	Combe Ward	1	9
Jan 24	Combe Ward	1	9
Feb	B41 Ward	3	6
March	B41 Ward	9	29
		23	109

Table 9: Ward closures 23/24

There were 11 outbreaks resulting in bay closures with an additional 90 bed days lost. Closures varied between two and 17 days, with an average of 6 days per bay. Some of the bay closures were used to cohort patients with norovirus and created capacity along with safer flow across the site and prevented whole ward closures. This explains why some areas had such prolonged bay closures, which were not seen in the whole ward closures. Table 10 outlines the impact of the number of days bays were closed and bed days lost as a total.

Month	Area	Days closed	Bed days lost
May	OPRAA	2	5
July	OPUSS Area	10	7
	Cheselden bay	3	0
Oct	B41 Bay	2	3
	B41 Bay	10	17
Nov	Combe Bay	2	3
Dec	Pulteney Bay	3	6
	Combe Bay	2	3
March	B41 Bay	8	13
	OPUSS Area	17	19
	OPUSS Area	7	14
		66	90

Table 10: Bay closures 23/24

In addition to the outbreak closures, there were 50 bay closures due to exposure of a positive patient. There is a requirement to give 48 hours to ensure any patients who have been in contact do not develop any symptoms, before sharing facilities with new admissions. This resulted in 131 lost bed days over the year, bays were closed for an average of 2.08 days.

COVID-19

Throughout 2023/2024 we have continued to live with COVID-19. The vaccination programme has continued to be provided both in the spring and autumn for elderly and vulnerable population, with healthcare workers being given boosters each autumn. In response to changes in the prevalence of COVID-19 and living with COVID-19, changes were introduced in line with national guidance to reduce COVID-19 testing and mask wearing.

Testing changed in April 2023 whereby only symptomatic screening was supported, with the exclusion of oncology services where some testing remained in place for staff and patients.

Mask wearing was relaxed for non-infectious patients (they remained in the Emergency Department throughout winter months, due to the risk of seeing COVID-19 and or influenza in patients). Late winter and early 2024, mask wearing was relaxed in oncology services.

Prior to summer 2023, guidance was reissued to staff to clarify the PPE requirements for respiratory infection care and non-respiratory infection care, with a clear message to reduce glove use when not handling body fluids. The impact of the pandemic has resulted in staff not having the confidence in knowing what to wear or not wear when dealing with patients, which is resulting in the overuse of resources.

COVID-19 Outbreaks

COVID-19 continues to present in waves, often only a few weeks apart each time. Whilst there is an overall reduction in the numbers of patients being tested positive each time, the impact on the Trust when numbers increase remains significant. There were only two months in the year where the Trust was not using a cohort bay to help manage the increased case numbers (June 2023 and March 2024). April, September into October 2023, and January 2024 were particularly challenging times from an IPC and operational perspective with multiple cohort bays in use on wards alongside outbreak bays across multiple wards.

The risk of nosocomial infection remains high, and this remains evident in the older persons wards where spread remains predictable in certain wards. Most cases are isolated within single rooms or cohort bays. There has been one ward closed to non-

COVID-19 admissions during this reporting period, this was due to a ward outbreak and physical challenges to rapidly isolate and prevent spread of infection.

COVID-19 continues to play a significant part in bed days closed to new admissions and bed days lost, despite the vaccination programme and increased isolation facilities provided at the RUH. Figure 23 shows the cases since the start of the pandemic and demonstrates how the Trust continues to be impacted by COVID-19 each month.

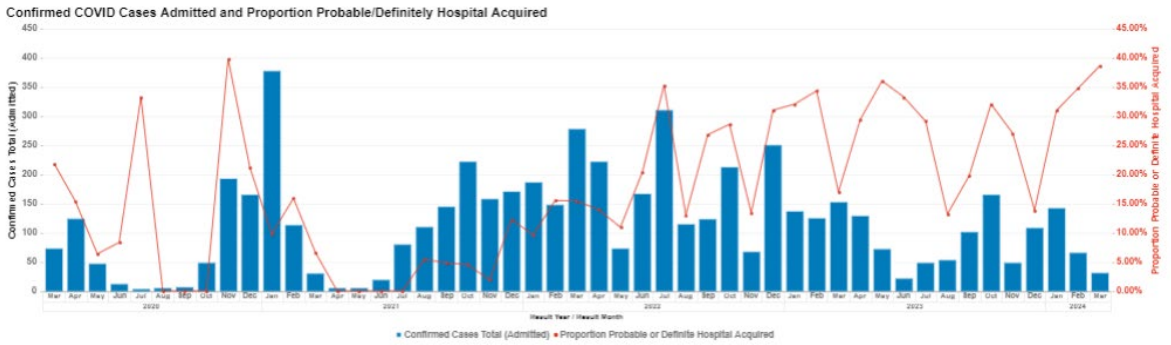

Figure 23: COVID-19 positive case numbers 2020 -2024

COVID-19 Outbreaks 2023/24

Month	Area	Days closed	Bed days lost
May	5 wards with bay closures	17	9
June	2 wards with bay closures	7	7
July	2 wards with bay closures	12	12
August	2 wards with bay closures	8	22
September	7 wards with bay closures	34	34
October	8 wards with bay closures	34	41
November	1 ward with bay closure	2	0
December	1 ward with bay closure	4	24
January	8 wards with bay closures	40	31
	Cheselden **Ward closure**	16	16
February	2 wards with bay closures	9	15
		183	**211**

Table 11: COVID-19 bay and ward closures due to outbreaks 2023-24

Influenza

The RUH has detected 265 cases of influenza (flu) this year. December 2023 saw its first rise in influenza cases, when 55 cases of influenza A were detected (4 were children) of which 50 were admitted, 2 wards experienced bay closures because of flu with onward transmission detected in 8 cases.

January 2024 saw 86 cases of Influenza A (7 were children) and 76 admissions, again 2 wards experienced bay closures for short periods of time, 7 nosocomial infections were identified. 4 cases were reported as requiring intensive care.

February saw 57 cases of influenza A and 4 flu B (11 cases within children). March saw a reduction of 46 influenza A and 3 influenza B with 6 cases within children.

The ability to rapidly isolate is a real challenge as most of these cases have occurred at the same time a COVID-19. Out of hours testing is limited to point of care in the emergency department, during flu season. Whilst this has proved reliable for influenza A, there is been too little prevalence of influenza B to validate the testing platform adequately. There have been no ward outbreaks due to influenza virus.

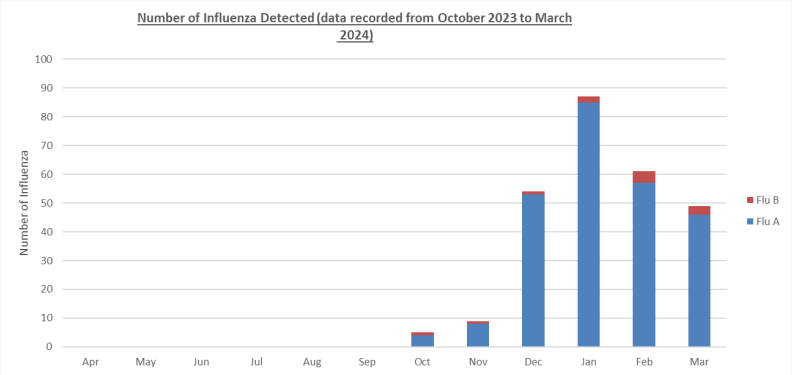

Figure 24: RUH Influenza positive case data 2023-24

Age breakdown of people admitted to hospital with influenza each week, shown as the rate per 100,000 Trust catchment population.

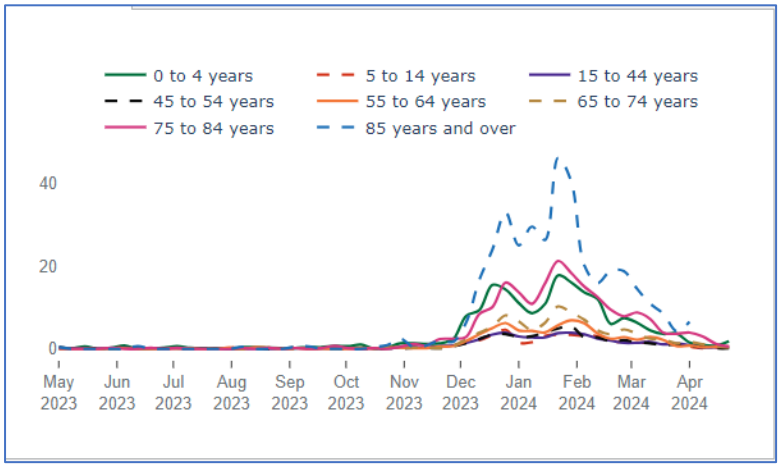

Figure 25: Hospital admission rates per 100,000 people by age (UKHSA data)

Surgical Site Infection Surveillance (SSI)
Trauma and Orthopaedic SSI Surveillance

Mandatory surveillance of infections in trauma and orthopaedics originally started in April 2004, specifying that each Trust should conduct surveillance for at least one orthopaedic category for one period in the financial year. The surveillance categories include following orthopaedic surgeries: Total Hip Replacement (THR), Total Knee Replacement (TKR) fractured Neck of Femur (NOF) at the RUH and THR/TKR

surgeries caried out at the RUH modular theatre, sited at The Sulis Hospital. Data is also submitted for colorectal which includes large and small bowel surgery.

RUH Neck of Femur data

A rate of 2.4% was reported for the April – June (Q2) data for 2023. This rate accounted for 3 reported infections. Q3 (July-Sept 2023) saw a rate of 2.7% and 1.5% in Q4 (October to Dec 2023).

During Q4, 35% of patients had an American Society of Anaesthesiologists (ASA) physical status classification score of 4, which is reported as almost double the national average. A score of 1 is completely healthy and a score of 4 is a patient who has incapacitating disease that is a constant threat to life.

Table 3: Trends in rates of SSI by surveillance period at your hospital

Year and Period	No. operations	Surgical Site Infection					
		Inpatient & readmission		Post discharge confirmed		All SSI*	
		No.	%	No.	%	No.	%
2023 Q1	103	0	0.0%	0	0.0%	0	0.0%
2023 Q2	125	3	2.4%	0	0.0%	3	2.4%
2023 Q3	110	3	2.7%	0	0.0%	3	2.7%
2023 Q4	131	1	0.8%	0	0.0%	2	1.5%

*All SSI = Inpatient & readmission, post-discharge confirmed and patient reported

Figure 26: RUH SSI trend data for fractured Neck of Femur

RUH Total Hip Replacement data

A rate of 0% was reported for Q2 and 3, and a rate of 1.5% during Q4. This equated to one patient infection, and the first joint space infection for 12 months.

Table 3: Trends in rates of SSI by surveillance period at your hospital

Year and Period	No. operations	Surgical Site Infection					
		Inpatient & readmission		Post discharge confirmed		All SSI*	
		No.	%	No.	%	No.	%
2022 Q3	93	1	1.1%	1	1.1%	2	2.2%
2023 Q2	29	0	0.0%	0	0.0%	0	0.0%
2023 Q3	69	0	0.0%	0	0.0%	0	0.0%
2023 Q4	68	1	1.5%	0	0.0%	1	1.5%

*All SSI = Inpatient & readmission, post-discharge confirmed and patient reported

Figure 27: RUH SSI trend data for Total Hip Replacement

RUH Sulis Modular Theatre - Total Hip Replacement data

The Sulis hospital is commissioned to carrying out NHS orthopaedic surgery. At the start of the surveillance period at Sulis Hospital the infection rate was reported as 3.3% in Q2. This rose to 10.3% (3 reported infections) during Q3, this data is skewed by

low number of cases being performed. There were actions taken to review practices and align with the RUH. The rate for Q4 was reported as 0%.

Table 3: Trends in rates of SSI by surveillance period at your hospital

Year and Period	No. operations	Surgical Site Infection					
		Inpatient & readmission		Post discharge confirmed		All SSI*	
		No.	%	No.	%	No.	%
2023 Q2	30	0	0.0%	0	0.0%	1	3.3%
2023 Q3	29	0	0.0%	2	6.9%	3	10.3%
2023 Q4	20	0	0.0%	0	0.0%	0	0.0%

*All SSI = Inpatient & readmission, post-discharge confirmed and patient reported

Figure 28: Sulis SSI trend data for Total Hip Replacement

RUH Total Knee Replacement data

A rate of 4% was reported during April – June 2023 (Q2), this equated to one reported infection. A further single superficial infection was reported during Q3 and Q4, providing a rate of 2.3% and 2% respectively.

Table 3: Trends in rates of SSI by surveillance period at your hospital

Year and Period	No. operations	Surgical Site Infection					
		Inpatient & readmission		Post discharge confirmed		All SSI*	
		No.	%	No.	%	No.	%
2022 Q3	69	0	0.0%	0	0.0%	3	4.3%
2023 Q2	25	0	0.0%	0	0.0%	1	4.0%
2023 Q3	44	0	0.0%	0	0.0%	1	2.3%
2023 Q4	49	0	0.0%	0	0.0%	1	2.0%

*All SSI = Inpatient & readmission, post-discharge confirmed and patient reported

Figure 29: RUH SSI trend data for Total Knee Replacement

RUH Sulis Modular Theatre - Total Knee Replacement data

At the start of the surveillance period at Sulis the infection rate was reported as 3.1%, this was a single reported infection. Q3 rate was reported as 2.8%, this was attributed to a single reported infection. During Q4, there were 3 patient reported infections, which all healed. This accounted for an infection rate of 6.5%.

Table 3: Trends in rates of SSI by surveillance period at your hospital

Year and Period	No. operations	Surgical Site Infection					
		Inpatient & readmission		Post discharge confirmed		All SSI*	
		No.	%	No.	%	No.	%
2023 Q2	32	0	0.0%	1	3.1%	1	3.1%
2023 Q3	36	1	2.8%	0	0.0%	1	2.8%
2023 Q4	46	0	0.0%	0	0.0%	3	6.5%

*All SSI = Inpatient & readmission, post-discharge confirmed and patient reported

Figure 30: Sulis SSI trend data for Total Knee Replacement

Colorectal SSI Data

The colorectal surgical infection rate has remained below 10% over Q4, at the start of the project in 2019, rates were as high as 40%. Overall bundle compliance has decreased slightly to a median of 65%, with poor compliance with use of antibacterial sutures (29%) being observed though the audit process. Use of Chlorhexidine in sterile preparation is 97% compliant, 2nd dose of antibiotics given if procedure over 4 hours at 87% and use of a wound protector at 39%. It is recognised that the low compliance with wound protector may be down to accuracy of documentation.

The charts below demonstrate the journey and the improvements made for elective colorectal surgery at the RUH (2019 - March 2024).

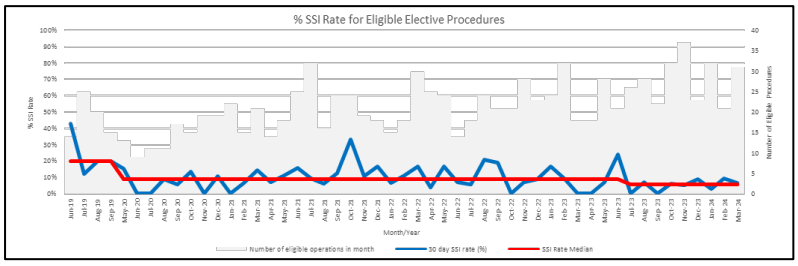

Figure 31: Percentage of infections for eligible elective procedures (low is good)

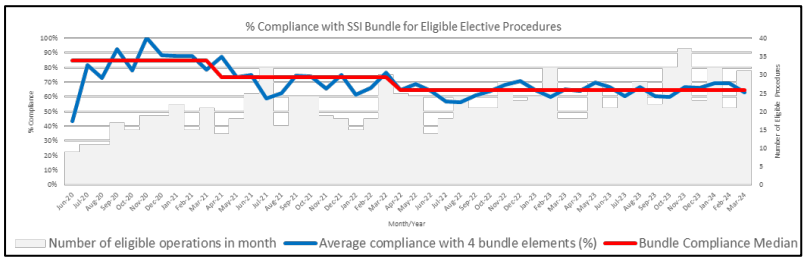

Figure 32: Percentage compliance with SSI bundle for eligible elective procedures (high is good)

Large Bowel Data

For Q2 a rate of 9.5% was reported, this comprised of one patient reported infection, and eight patient organ space infections. The rate for Q3 was reported as 7.5%, this was related to six reported infections, this rate is below the national average. The reported rate for Q4 was 8.8% and linked to seven patients, two of these were superficial infections.

Table 3: Trends in rates of SSI by surveillance period at your hospital

Year and Period	No. operations	Surgical Site Infection					
		Inpatient & readmission		Post discharge confirmed		All SSI*	
		No.	%	No.	%	No.	%
2023 Q2	95	8	8.4%	0	0.0%	9	9.5%
2023 Q3	80	6	7.5%	0	0.0%	6	7.5%
2023 Q4	102	4	3.9%	0	0.0%	9	8.8%

*All SSI = Inpatient & readmission, post-discharge confirmed and patient reported

Figure 33: RUH SSI trend data for Large Bowel Surgery

Small Bowel Data

For Q2 a rate of 16% was reported, this equated to four reported infections of which one was patient reported and one was classed a superficial. A rate of 2.9% was reported during Q3, this was related to one superficial infection. Q4 had a rate of 2.9% and related to two organ space infections.

Table 3: Trends in rates of SSI by surveillance period at your hospital

Year and Period	No. operations	Surgical Site Infection					
		Inpatient & readmission		Post discharge confirmed		All SSI*	
		No.	%	No.	%	No.	%
2023 Q2	25	2	8.0%	1	4.0%	4	16.0%
2023 Q3	35	1	2.9%	0	0.0%	1	2.9%
2023 Q4	34	1	2.9%	0	0.0%	1	2.9%

*All SSI = Inpatient & readmission, post-discharge confirmed and patient reported

Figure 34: RUH SSI trend data for Small Bowel Surgery

Criterion 6

Systems are in place to ensure that all care workers (including contractors and volunteers) are aware of and discharge their responsibilities in the process of preventing and controlling infection.

Training

All new staff to the Trust including contractors complete IPC induction. IPC mandatory training is part of core skills on eLearning. IPC have a slot on the new face to face induction, as of July 2023.

In addition, IPC half 'Why' study days were scheduled during 2023 to enhance mandatory training, these were well received by the clinical staff, and addressed many of the day-to-day knowledge gaps.

All Trust job descriptions have IPC roles and responsibilities written into them. IPC team support clinical areas where practice needs to be improved on case-by-case basis.

National IPC mandatory training module is being used (Skills for Health). Compliance rates are reported via Divisions to ICC. Tables 11 and 12 demonstrate the Trust wide monthly compliance for both levels of IPC mandatory training.

Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24
90.54%	90.13%	91.32%	91.77%	93.77%	93.69%	93.80%	93.50%	93.73%	94.39%	94.96%	94.66%

Table 11: Trust wide Level 1 IPC training rates 2023-24

Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24
85.50%	84.89%	86.33%	87.12%	88.69%	87.80%	86.71%	86.02%	86.71%	86.09%	86.12%	85.06%

Table 12: Trust wide Level 2 IPC training rates 2023-24

All identified staff are trained in the selection and use of personal protective equipment and respiratory protective equipment (RPE) appropriate for their place of work including how to safely put on and remove (donning and doffing) PPE and RPE. Staff who present for a Fit Test are instructed by the fit tester on how to safely put on the face masks as per manufacturer's instructions. Staff who are only able to use reusable masks are shown how to clean masks and how to attach filters within the fit test appointment. Each reusable mask comes with manufacturers guidance. All staff that are fit-tested have a training record kept by the fit test team.

The Trust at present has no central record of staff competent to deliver clinical procedural skills and minimal staff training records. Cannulation and Venepuncture training is delivered centrally via the Resuscitation Team. This is partially due to some education being delivered via workbooks or via informal methods (Catheterisation, nasogastric tube insertion) managed by subject matter experts in the past. This is now being addressed and will be implemented during 2024. A Trust Clinical Skills Team Lead will commence in post in May 2024.

Criterion 7

The provision or ability to secure adequate isolation facilities.

Building works

The RUH have undertaken extensive building work during 23-24 to continue with estates works commenced in 2022. This included creating a new Day Surgery area (trolley and chairs), this provides a segregated space and separate toilet facilities. Endoscopy has a new recovery area with additional clinical sub-wait areas, additional consenting room, new staff room and new changing facilities.

The Cardiac Catheter Laboratory has had a theatre room refurbished and Theatre 1 anaesthetic room has also been refurbished as part of an ongoing programme in theatres. Charlotte Ward have had a new clean utility room created to meet hygiene standards and to create the space they need to deliver safe care. Pulteney ward have had a doctor's hub and new treatment room created.

Staff room refurbishments have been completed on the Medical Assessment Unit, Coronary Care unit, Respiratory ward and main theatres. It was important this year that staff welfare was considered under the 'You Matter' strategy. Helena ward have also had their staff changing facilities refurbished.

Several changes have been made to maternity services. The Bath Birthing Centre have had a sluice upgrade, Mary ward have had a new patient dining and rest area developed. A new Day Assessment Unit has been created on the first and a Maternity Triage Unit has created on the ground floor, this work was completed in early 2024.

Isolation facilities and premises

The RUH is aware there are limited isolation facilities despite the investment in the past two years. 18.76% of the adult bed base are single side rooms, against the recommended 75%. This increases to 19.63% when women and children's beds are included in the overall capacity.

Side room capacity is a risk that remains on the risk register. Whilst we will not achieve the 75% requirement of a new build, we should be aiming for 22% in each ward as a minimum.

For patients with known infections, alert flags are used to flag patients that require isolation or assessment. The clinical site team have a constant visual on all clinical flags to influence patient placement. Clinical handover processes are in place between clinical areas.

Cohort areas are used when side rooms are not available. There are often delays in patients being moved out of bays with infections. The use of Datix reporting is encouraged when delays in single room access occur. Escalation plans are in place; this is led by the medical division for winter pressures, and staff are supported by the IPC team. This is to predominantly manage influenza, COVID-19 and Norovirus.

Criterion 8

The ability to secure adequate access to laboratory support as appropriate

Laboratory support

Patient/service user testing for infectious agents is undertaken by competent and trained individuals and meet the standards required within a nationally recognised accreditation system.

The RUH Laboratory operates within United Kingdom Accreditation Service (UKAS) accreditation covering SOPs and competencies as part of a yearly external assessment, as well as internal review through the Quality Management System. The RUH has access to an adequate repertoire of UKAS accredited microbiological diagnostic testing through a contract with the UKHSA Bristol Regional Laboratory (routine tests off-site, on-site 'hot lab' for time-critical testing).

The Trust pathology laboratory also provide on-site UKAS accredited testing for pathogens of IPC concern (e.g. Norovirus, C. difficile, COVID, Influenza). Laboratory performance is monitored through a Quality and Clinical Governance infrastructure. A clinical microbiology service is provided by Consultant Microbiologists for diagnostic support both in-hours, and out-of-hours through a collaborative service with University Hospitals Bristol and Weston. IPC monitor test results for patients awaiting screening results.

Point of care testing was supported by the laboratory team for Influenza and COVID - 19 during the winter months within the Emergency department, using the Abbott ID Now platform. This supported out of hours testing completed by lab trained ED staff, which enabled 'informed' patient placement and flow.

Criterion 9

That they have and adhere to policies designed for the individual's care, and provider organisations that will help to prevent and control infections

Policies and Infections

The National Infection Prevention Control (NIPC) manual is used by the Trust and the IPC team. The document is linked via the staff intranet. All IPC related polices have been reviewed within Trust time scales, and Standard Operating Procedures (SOP) introduced where deemed necessary replacing some existing policies the IPC Team had in place.

Outbreak meetings are held daily during ward closures and during times when there is a significant number of bay closures affecting site operations.

The Trust works closely with the IPC teams within the Integrated Care Board, a jointly created risk assessment is in place for enactment during escalation and outbreaks. This for example considers the need to bring certain patients out of isolation when the balance of infections is significantly challenged.

Criterion 10

That they have a system or process in place to manage staff health and wellbeing, and organisational obligation to manage infection, prevention and control.

Staff Health and Wellbeing

The Chief Nursing Officer (DIPC) and Associate Chief Nurse (Deputy DIPC) work in collaboration with Occupational Health and specific questions/enquiries are responded to or advice given in a timely manner.

Occupational Health needs are managed by OPAS-G2 supplied by Civico. The system specifically designed for Occupational Health purposes, is on the framework, paperless, independent of other systems (for confidentiality), is easy to use and information is stored in a secure cloud hosted by Civica that meets all data protection requirements. G2 also interfaces with Trac our recruitment and on boarding system.

At offer of employment the recruitment Trac system will send a link to the appointed candidate to fill in a pre-placement questionnaire (PPQ) and this includes requirement

from the candidate to upload any vaccination evidence as well as their exposure prone procedure (EPP) clearance evidence. This, along with other health questions is triaged by an experienced nurse and any issues identified are escalated to a more senior nurse. Skin assessments are also available through management referrals, at new starter or at any time via self-referral.

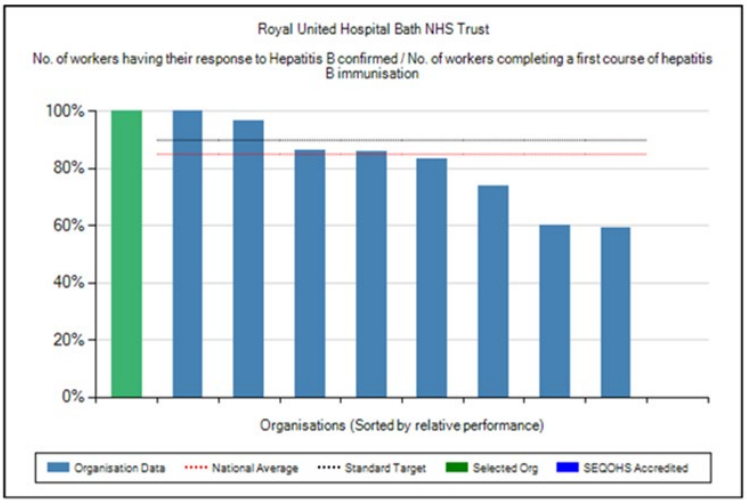

Figure 35: RUH Hepatitis B staff data, national data comparison

Any staff who are unable to provide evidence of their vaccination status (as required for their job role) are sent a link to self-book an appointment into the vaccination clinic OR to send in any evidence they may now have found. These clinics are available most days of the week excluding bank holidays. Staff who DNA their appointment are sent an email asking them to phone in to reschedule and their manager is also informed. Further DNA and the staff and their manager receive notification that they are now at risk and should complete a risk assessment or phone in and book an appointment.

Staff who move roles within the Trust must complete an 'internal transfer' questionnaire which identifies the new role. This is triaged in the same way as a new starter and any change in category of role which requires further vaccinations the same process is repeated as for new starters e.g. staff nurse moving from a ward environment to Emergency Department will require further vaccination potentially or serology.

Staff who sustain a sharps injury follow the flow chart procedure which is available in every department and on the intranet. This includes calling in to the OH sharps line. Monday – Friday these calls are picked up by the electronic system and an experienced nurse will answer the call and take any necessary action. These staff are always prioritised for boosters/serology etc.

Health surveillance for a range of tests is available for staff whose job roles require it. For example, plaster room staff will require annual spirometry and audiometry as well

as hand/arm vibration tests. Currently our infection control health surveillance covers staff who live with ‘blood borne virus’ (BBV).

In the case of outbreak our system can report accurately both individually and Trust wide vaccination status as recorded within it. Annual flu vaccinations, and, from autumn 2024, COVID-19 vaccinations are provided in house via the occupational health team.

The Flu and COVID-19 campaigns are reported Trust wide via a dashboard which all managers can access. Progress is charted weekly, and a separate bespoke system (Vaccination Trac) enables us to do this in a granular fashion in order that hot spot areas can be targeted using a different delivery model where necessary.

Trust vaccination status, in general, is an ongoing dynamic situation and currently it is necessary to build and run specific reports at time of request. However, we are constantly developing ways to get our system to work better for the Trust assurances whilst responding to the ever-changing infection status that is nationwide.

Infection Prevention and Control Quality Improvement Plans for 2024/25

1. Trust wide quality improvement project to implement the gloves off campaign, in collaboration with the sustainability team at the RUH.
2. Implement the hydration project in Older Persons wards in collaboration with the nutrition and hydration group at the RUH.
3. Improve patients’ hand hygiene pre and post meal within a medical ward, in collaboration with the ward as part of a dissertation.
4. Development and launch of the RUH PPE App to support the correct choice of PPE for the clinical task being undertaken.

Improving Together methodology will be used along with collaborative working with key stakeholders. The work plans for these projects will be overseen by the Patient Quality and Safety Improvement Group.