



2022/23

# Infection prevention and control annual report

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## Foreword

This annual report presents a summary of the work programme, outcomes and impacts for infection prevention and control (IPC) and antimicrobial stewardship (AMS) across the organisation for the period from 1 April 2022 until 31 March 2023.

It describes the overall work programme as well as detailing some of the areas of improvement, success and where challenges remain.

As the Trust continues to recover and remobilise after the Covid-19 pandemic, it is essential that we refocus on the full breadth of our IPC programme. We must remain vigilant to the challenges yet to emerge and be prepared to respond appropriately to the variety and range of pathogens that we now see. Much of this will be proactive, putting an emphasis on training, education, supporting best practice and learning from incidents and mistakes. We are doing more collaborative work with community partners, across the sector, London and beyond. This sharing of information, learning and experience will help us to deliver the best for our patients.

In aiming for the wider and more ambitious aspects of our work programme, it is important not to lose grip and focus on some of the basics, our attention to hand hygiene, screening programmes, line and catheter care. Also, the profile of antimicrobial stewardship is more prominent nationally and globally and we can be genuinely proud that this has been a priority for us as an organisation for some time.

There have been many successes. There are still many challenges, not least those presented by the age and condition of our hospitals. I would like to thank our expert IPC team and also all of our colleagues across all departments, who through their diligence and care, contribute to reducing hospital acquired infections and the impact for our patients.

**Mr Raymond Anakwe**

**Medical director and director of infection prevention and control**

**June 2023**

## Abbreviation list

| Abbreviation   | Definition                               | Abbreviation  | Definition                                     |
|----------------|--|---------------|--|
| <b>AE</b>      | Authorising engineer                     | <b>CQC</b>    | Care Quality Commission                        |
| <b>AE(D)</b>   | Authorising engineer for decontamination | <b>CQUIN</b>  | Commissioning for quality and innovation       |
| <b>AE(V)</b>   | Authorising engineer for ventilation     | <b>CPE</b>    | carbapenemase-producing Enterobacteriaceae     |
| <b>AE(W)</b>   | Authorising engineer for water           | <b>CRE</b>    | Carbapenem-resistant Enterobacteriaceae        |
| <b>AMR</b>     | Antimicrobial resistance                 | <b>DIVA</b>   | Difficult vascular access                      |
| <b>AMS</b>     | Antimicrobial stewardship                | <b>E coli</b> | Escherichia coli                               |
| <b>ANTT</b>    | Aseptic non-touch technique              | <b>ECDC</b>   | European Centre for Disease Control            |
| <b>AP</b>      | Authorised person                        | <b>EDU</b>    | Endoscopy Decontamination unit                 |
| <b>ARG</b>     | Antibiotic review group                  | <b>EFM</b>    | Estates and Facilities Management (EFM) System |
| <b>BAF</b>     | Board assurance framework                | <b>EMB</b>    | Executive management board                     |
| <b>BMT</b>     | Bone marrow transplant                   | <b>EMB-Q</b>  | Executive management board – quality           |
| <b>BSI</b>     | Bloodstream infection                    | <b>HA-BSI</b> | Healthcare associated bloodstream infection    |
| <b>C. diff</b> | Clostridioides difficile                 | <b>HAEM</b>   | Haematology                                    |
| <b>CABG</b>    | Coronary artery bypass graft             | <b>HCAI</b>   | Healthcare associated infection                |
| <b>CDI</b>     | <i>C. difficile</i> infection            | <b>HOHA</b>   | Healthcare onset healthcare associated         |
| <b>CJD</b>     | Creutzfeldt-Jakob disease                | <b>HSE</b>    | Health service executive                       |
| <b>COHA</b>    | Community onset healthcare associated    | <b>HTM</b>    | Health technical memorandum                    |
| <b>CP</b>      | Competent person                         | <b>ICS</b>    | Integrated Care System                         |
| <b>CPE</b>     | Carbapenemase-producing Enterobacterales |               |  |

| <b>Abbreviation</b> | <b>Definition</b>   | <b>Abbreviation</b> | <b>Definition</b>                                |
|---------------------|---|---------------------|--|
| <b>ICU</b>          | Intensive Care unit                                       | <b>PEAT</b>         | Patient environment action team                  |
| <b>IHEEM</b>        | Institute of Healthcare Engineering and Estate Management | <b>PICC</b>         | Peripherally inserted central catheters          |
| <b>IMP</b>          | Imipenemase   | <b>PICU</b>         | Paediatric Intensive Care unit                   |
| <b>IPC</b>          | Infection prevention and control                          | <b>PLACE</b>        | Patient-led assessment of the care environment   |
| <b>IPH</b>          | Imperial Private Health                                   | <b>PO</b>           | Per oral   |
| <b>IV</b>           | Intravenous   | <b>PPE</b>          | Personal protective equipment                    |
| <b>KLOE</b>         | Key line of enquiry                                       | <b>PPS</b>          | Point prevalence survey                          |
| <b>KPI</b>          | Key performance indicator                                 | <b>PVC</b>          | Peripheral venous catheter                       |
| <b>LSMG</b>         | Line safety management group                              | <b>RO</b>           | Reverse osmosis                                  |
| <b>MRSA</b>         | Methicillin-resistant Staphylococcus aureus               | <b>SI</b>           | Serious incident                                 |
| <b>MSSA</b>         | Methicillin-sensitive Staphylococcus aureus               | <b>SLA</b>          | Service level agreement                          |
| <b>NatPSA</b>       | National Patient Safety Alert                             | <b>SSD</b>          | Sterile services department                      |
| <b>NHS</b>          | National Health Service                                   | <b>SSI</b>          | Surgical site infection                          |
| <b>NHSE/I</b>       | NHS England/NHS Improvement                               | <b>TBP</b>          | Transmission based precaution                    |
| <b>NICE</b>         | National Institute for Clinical Excellence                | <b>TIPCC</b>        | Trust infection prevention and control committee |
| <b>NICU</b>         | Neonatal intensive care unit                              | <b>UKHSA</b>        | United Kingdom Health Security Agency            |
| <b>NNAP</b>         | National Neonatal Audit Programme                         | <b>VSG</b>          | Ventilation safety group                         |
| <b>PAQ</b>          | Pre-acquisition questionnaire                             | <b>WHO</b>          | World Health Organization                        |
| <b>PAs</b>          | Programmed activities                                     | <b>WSG</b>          | Water safety group                               |
| <b>PCR</b>          | Polymerase chain reaction                                 | <b>WSP</b>          | Water safety plan                                |

## Introduction

Imperial College Healthcare NHS Trust provides acute and specialist healthcare to over one million people a year with over 15,000 members of staff. Our five hospitals in central and west London – Charing Cross, Hammersmith, Queen Charlotte's & Chelsea, St Mary's and the Western Eye – have a long track record in research and education, influencing care and treatment nationally and worldwide. We offer private healthcare in dedicated facilities on all our sites.

This annual report offers assurance that Imperial College Healthcare is fully compliant with the Care Quality Commission (CQC) Health and Social Care Act 2008 (Regulated Activities) regulations 2014, regulation 12 (2)(h)), regulation 15 (2). This annual report also details the work we have undertaken this year to ensure we discharge our statutory duties in meeting the standards laid out in the Code of Practice on the prevention and control of infection as detailed in the Health and Social Care Act (2008). Table 1 outlines the ten-criterion covered in the code which was re-issued in December 2022. It describes the work of the infection prevention and control (IPC) team and wider staff, both clinical and operational, to reduce the harm associated with infection.

| Criterion | Description  |
|-----------|--|
| 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.          |
| 2         | The provision and maintenance of a clean and appropriate environment in managed premises that facilitates the prevention and control of infections.  |
| 3         | Appropriate antimicrobial use and stewardship to optimise outcomes and to reduce the risk of adverse events and antimicrobial resistance.  |
| 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.                             |
| 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. |
| 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.   |
| 7  | The provision or ability to secure adequate isolation facilities.  |
| 8  | The ability to secure adequate access to laboratory support as appropriate.  |
| 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.       |
| 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. |

**Table 1:** Health and Social Care Act 2008: Code of practice on the prevention and control of infection

Preventing the spread of organisms that cause healthcare associated infections (HCAI) and ensuring optimal antimicrobial use is fundamentally important for all healthcare facilities. The prevention and control of infection remains a top priority for the Trust and is central to how services are planned, and care delivered to patients. The IPC service is responsible for ensuring that policies and procedures for appropriate antimicrobial use and reducing the risk of HCAI are in place, that these practices are embedded throughout the organisation and that expert advice is available continuously.

Our patients have increasingly complex care needs, with ageing populations and increasing co-morbidities. This means that for many, the impact and consequences of HCAI are more serious. Over 2022/23, the re-mobilisation of services following the Covid-19 pandemic has been the pre-eminent challenge for healthcare organisations. At the same time, the Trust have continued work to address the other infection and avoidable HCAI risks including the more familiar challenges of methicillin-resistant *Staphylococcus aureus* (MRSA), bloodstream infections and *Clostridiodes difficile* (*C. difficile*) infections.

## Organisation of the service

The chief executive has overall corporate responsibility for IPC within the Trust. The medical director reports to the Trust board on all aspects of IPC and is currently the designated director of IPC. The IPC directorate is a clinical directorate within the office of the medical director. The service underwent a formal consultation and restructure in 2022 which resulted in an increase in the establishment, and appointment of several new posts.

The multidisciplinary service is led by the director of IPC, with the support of a newly implemented deputy director of IPC post. Together they oversee the service comprising of medical staff, nurses, pharmacists, data scientists and other technical and operational experts who work collaboratively across the organisation to ensure patient safety through effective infection control practices (Figure 1). The service also works closely with key external regulatory and public health agencies and experts and provides clinical and operational expertise throughout the Trust.

# Infection Prevention and Control

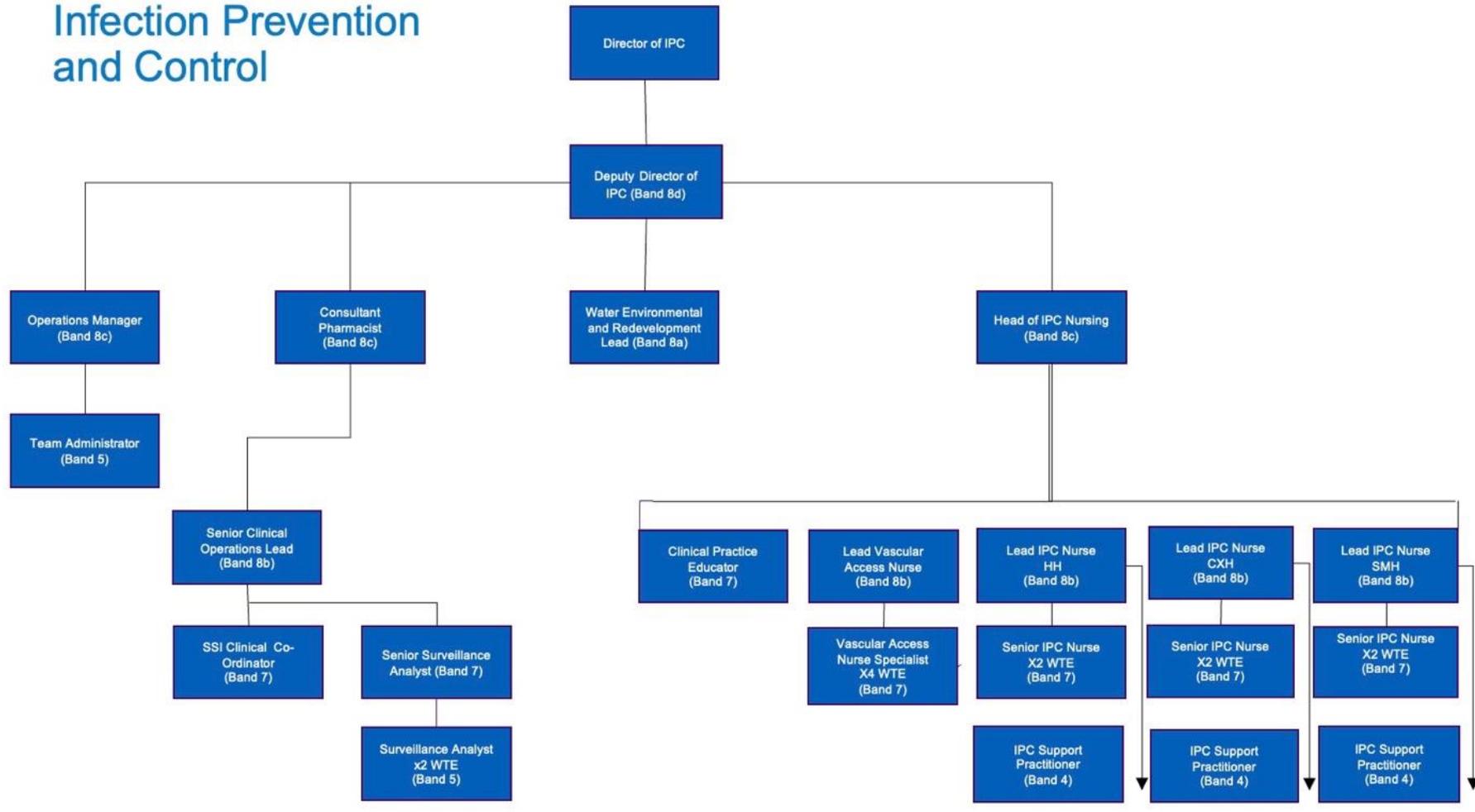


Figure 1: IPC establishment structure

## Key activities of the Infection prevention and control team

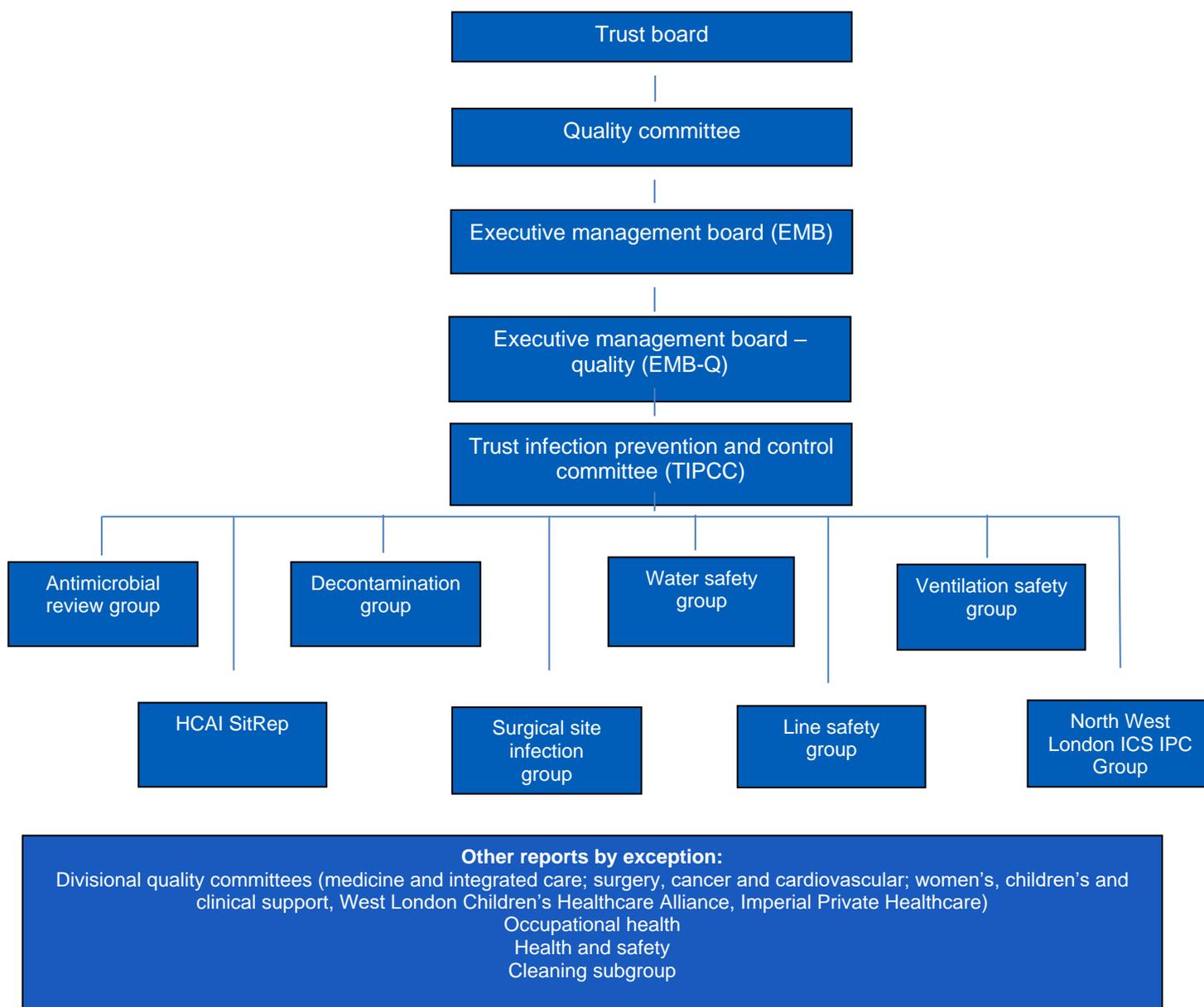
The IPC team encompasses aspects of IPC nursing, vascular access, environmental management, antimicrobial stewardship (AMS) and epidemiology. The team:

- provides expert advice and guidance to staff, patients/relatives and visitors in relation to infection prevention and control;
- participates in surveillance, investigation and management of HCAI and infectious diseases;
- ensures that current legislation in relation to IPC is implemented and adhered to Trust-wide;
- advises and assures the Trust board on IPC legislation, its implementation and compliance;
- plans and implements strategies to reduce HCAI, including mandatory requirements;
- ensures that policies and procedures within the IPC manual are up to date and are readily available on the Trust's intranet;
- provides education for all staff on all aspects of IPC to carry out safe and effective IPC measures, including hand hygiene;
- organises and conducts IPC audits and reports compliance in accordance with IPC policy;
- ensures responsible antimicrobial use through safe, appropriate and economic application, in line with good antimicrobial stewardship;
- records and follows up incidents of infection after surgery, and uses results to review or change practice as necessary;
- provides advice and support to staff on all aspects of clinical care relating to vascular access, including line placement when an expert is required; and
- provides a robust surveillance and epidemiology service to monitor progress on controlling major HCAI and for providing epidemiological evidence to inform action to reduce them.

## Governance

During 2022/23, the Trust maintained its compliance with the criteria set out in the Health and Social Care Act codes of practice (2008). The annual plan for IPC for 2022/23 set out the proposed activities for the IPC directorate ensuring that we continued to meet the expected requirements and standards outlined by regulation and legislation. The plan also accounted for locally agreed actions, as well as internal programmes of work that we planned to deliver throughout the year. We have on-going action plans focusing on the prevention and management of HCAs and AMS across our hospitals, and these underpin the programmes of work referenced in this report. The plan is reviewed annually through the quality governance framework to assess impact and provide assurance. Progress on actions is also followed up by regular operational meetings. While the Trust has many examples of excellent work and high-quality care, it recognises that there is more to do to achieve its goals and ambitions. The IPC annual plan and associated action plans support the Trust to deliver its strategic objectives.

## IPC reporting structure



## **Trust infection prevention and control committee (TIPCC)**

The role of the TIPCC is to oversee the delivery of IPC across the organisation (Figure 02). TIPCC reports to the executive management board – quality group (EMB-Q),

Executive management board (EMB), and to Trust board through the non-executive director chaired quality committee through regular reports. TIPCC meetings are held quarterly, chaired by the director of IPC, and attended by external stakeholders representing United Kingdom Health Security Agency (UKHSA) and the North West London Integrated Care System (ICS), as well as key internal stakeholders and lay partners. The committee receives reports from a range of subsidiary committees and groups.

## **External assurance**

The Trust underwent one external inspection in 2022/23. The British Society Antimicrobial Chemotherapy – Global Antimicrobial Stewardship Accreditation Scheme attended the Trust in November 2022 to review the services provided by Imperial College Healthcare NHS Trust. A formal report is expected in Q1 2023/24.

## **Risk register**

The IPC risk register identifies risks to the organisation in relation to IPC practices. In 2022/23 key risks included the lack of side room capacity, limitations of the estates structure contributing to concerns in both ventilation and safe water supply, risk of poor practice relating to vascular access, fragility of antimicrobial supply chain to support effective treatment plans and limited or insufficient staffing across the IPC team.

The risk register is currently being rewritten in collaboration with clinical and corporate directorates and the corporate risk team. Risks are monitored monthly and reviewed at each TIPCC on a quarterly basis.

## **Infection prevention and control board assurance framework (BAF)**

In June 2020, NHS England/NHS Improvement (NHSE/I) published an IPC board assurance framework (BAF) to support the provision of assurance to Trust boards that their approach to the management of Covid-19 was in line with national IPC guidance and that risks had been identified and were mitigated against. The BAF was subsequently revised, initially in December 2021 and then again in October 2022 aligning previous key lines of enquiry (KLOE) with a broader focus to account for all seasonal respiratory viruses. The BAF now contains 95 KLOE over ten domains. An action plan is in place to undertake the necessary work that will improve board assurance related to IPC management. This is being monitored regularly at the clinical reference group (CRG), reporting to EMB-Q. The majority of KLOEs are rated

green (92 KLOE), with one amber and two red. Actions are in place in response to the amber and red KLOEs. These KLOE are in two key work streams, with one covering staff fit testing on two or more FFP3 masks, and the remaining seven covering aspects of ventilation, risk assessment and embedding a hierarchy of control model for risk assessment.

In addition to our routine monitoring and reporting on the BAF, the Trust commissioned an independent audit via the corporate audit assurance plan. The Trust's external auditors, KPMG, conducted a review of our management and governance processes surrounding the BAF. Following a detailed review of our operating processes in relation to the BAF, and well as scrutiny of a selection of KLOEs including supporting evidence to substantiate the rating we were awarded a finding of 'significant assurance with minor improvements'. We have developed and incorporated several actions to address the areas of recommendation offered.

### **Freedom of information (FOI) requests**

During 2022/23, five requests for data and information were received by the Trust under the Freedom of Information (FOI) Act (2000) relating to IPC. All requests were completed within the legislated timeframe.

### **Responding to external directives**

In 2022/23 the Trust responded to one National Patient Safety Alerts (NatPSA) relating to IPC practices specifically. The alert was:

- NatPSA/2022/005/UKHSA: Contamination of hygiene products with *Pseudomonas aeruginosa*

The Trust have complied with all aspects of these alerts with no outstanding actions.

## Review of policies and guidelines

There is a well-established, comprehensive policy review programme, managed through corporate governance, to ensure all policies, guidelines and patient information leaflets are up to date and reflect the latest evidence-based practice. IPC participate fully in this programme and ensure that all documents owned by or requiring IPC input follow the necessary review and approvals process.

The following policies, guidelines and patient information leaflets have been updated and approved in the previous year:

| Policy title   | Date of approval |
|--|------------------|
| Personal protective equipment (PPE) policy   | July 2022        |
| Infection prevention and control management of Carbapenem-resistant Enterobacteriaceae (CRE) | July 2022        |
| Chickenpox and shingles policy   | August 2022      |
| Methicillin-resistant Staphylococcus aureus (MRSA) policy                                    | August 2022      |
| Standard precautions policy  | August 2022      |
| Diarrhoea and/or vomiting policy   | August 2022      |
| Ectoparasitic infection policy   | November 2022    |
| Infection control – building construction and refurbishment                                  | November 2022    |
| Influenza and highly pathogenic respiratory organisms IPC policy                             | November 2022    |
| Isolation of patients to prevent the transmission of infection policy                        | January 2023     |
| Tuberculosis (respiratory) infection prevention and control policy                           | January 2023     |
| Infection prevention and control management of Candida auris policy                          | January 2023     |
| Guideline title  | Date of approval |
| Standard operating procedure for central venous catheter (CVC) insertion                     | February 2023    |
| Ultrasound guided peripheral cannula insertion   | February 2023    |
| Patient leaflet name   | Date of approval |
| MRSA screening   | November 2022    |
| MRSA – what does it mean?  | November 2022    |

## Significant and reportable incidents

There were 66 infection-related incidents in 2022/23, requiring formal investigation. This is an increase from 42 in 2021/22. Out of 66 incidents, 57 were related to Covid-19 outbreaks and nine due to other organisms. There were 13 Covid-19 outbreaks and two non-Covid-19 outbreaks declared as serious incidents (SIs). The process for reviewing and declaring outbreaks as SIs was reviewed in July 2022 and has resulted in a reduction in the automatic declaration of all outbreaks as SIs. Each SI results in a specific set of actions to ensure that learning is captured and to reduce the risk of issues reoccurring. A summary of each is provided:

### **CPE (*Enterobacter cloacae* IMP) on a medical ward (May 2022)**

An outbreak of CPE (carbapenemase-producing *Enterobacteriaceae* imipenemase) occurred in May 2022 affecting five patients on a medical ward. All patients were colonised with the organism however did not require treatment for this infection. Typing suggested that four patients were epidemiologically linked, suggestive of cross infection. A review of practice and the environment revealed issues around hand hygiene and cleaning standards as well as opportunities to improve the correct use of personal protective equipment (PPE). Support and education were provided by the IPC team and no further cases were identified.

### ***Pseudomonas* on a neonatal unit (July 2022)**

There was a cross infection incident on the neonatal unit in July 2022 where nine babies (including two sets of twins) acquired *Pseudomonas aeruginosa*. These infections were identified through enhanced screening processes. All nine babies were colonised but fortunately none required treatment for their infection. Typing suggested that two babies were epidemiologically linked. Whilst the exact reason for how cross transmission occurred is unclear the root cause for these incidents is likely to be multifactorial and linked to IPC practices. Routine water testing for *Pseudomonas* is undertaken in this unit and low levels of *Pseudomonas* were identified in two outlets on the unit. All remedial actions for water hygiene were implemented correctly at the time.

### ***Acinetobacter baumannii* on surgical wards (August 2022)**

There was an outbreak of a resistant *Acinetobacter baumannii* affecting the surgical wards in August 2022 – 18 patients were affected. One of the affected patients died during the outbreak, however the infection is unlikely to have been a significant contributor to their death. There were 16 patients colonised with the organism with two patients requiring treatment. Additional enhanced screening of skin sites was implemented to increase detection rates. The investigation found that the root cause was multifactorial but likely due to lapses in IPC practices. This was further compounded by the changes to side rooms prioritisation during this period where Covid-19 was still prevalent. This resulted in patients with colonisation or higher risk factors not always being isolated in a timely manner.

### **CPE (*Klebsiella pneumonia* NDM) on a medical ward (December 2022)**

An outbreak of CPE affecting three patients on a medical ward was identified in December 2022. Two of these patients acquired the organism whilst in hospital and typing suggested that all three cases were epidemiologically linked. One patient died but this was not related to their infection. A review of practice in the ward and of the environment did not reveal any issues.

### **Increase in MSSA BSIs at renal dialysis units (Dec 2022 – Feb 2023)**

An increase in the number of cases of MSSA bloodstream infections was noted across patients undergoing dialysis in six of the Trust's renal dialysis satellite units between December 2022 and February 2023. Typing suggested that there were no epidemiological links between these patients and no evidence of cross transmission. All 12 patients received treatment with no adverse outcomes. A review of practice and the environment did suggest some areas for improvement and a series of educational sessions and supportive visits by the IPC and vascular access teams were put in place.

### **Influenza A on a renal ward (December 2022)**

There was an outbreak of influenza A on a renal ward affecting seven patients in December 2022. All patients were symptomatic, and some required additional therapy, but all recovered and were discharged well. A review of practice and the environment did not highlight any issues. Vaccination was encouraged for both patients and staff.

### **CPE (*Klebsiella pneumoniae* OXA48) on a renal ward (January 2023)**

There was an outbreak of CPE on a renal ward affecting four patients in January 2022. All patients were colonised however none required any treatment for infection. All affected patients were discharged home well. Typing on two patients was suggestive of an epidemiological link. The remaining two patients' samples were unable to be typed. Although the identification of this organism did not affect the prognosis or outcomes of these patients an investigation was undertaken to identify root causes and any actions. Cross transmission between patients was believed to be multifactorial and due to lapses in IPC practices and additional challenges of these patients being mobile and their adherence to isolation whilst admitted.

### **Adenovirus on a haematology ward (March 2023)**

There was an outbreak of adenovirus in the haematology ward in March 2023 affecting five patients. All patients were symptomatic but recovered after a short illness and were discharged home well. A review of the environment and IPC practices did not identify any immediate areas for concern. There was a recognised challenge in the provision of isolation facilities in this area given the potential for an extended duration of infectivity in this immunocompromised patient group. Daily senior clinical review of these patients was put in place to specifically to address this risk.

### **Candida auris on major trauma unit (March 2023)**

Cross transmission of *Candida auris* occurred between two patients on the major trauma unit in March 2023. After the first case was identified enhanced and intensive screening was undertaken and a second case was identified four weeks later. Both patients required treatment and one patient was discharged well. One patient remains an inpatient and is expected to have a prolonged admission (unrelated to this organism). Enhanced screening continues to promptly identify any new cases.

### **Recovery and remobilisation following Covid-19**

The IPC team has been central to the ongoing Trust response to the Covid-19 pandemic through 2022/23. They provide expert support, advice and training to ensure that pathways, working practices and environment are as safe as possible for patients and for staff.

Building on changes implemented early in the pandemic, the processes for IPC supported decision making continued to evolve, with new assurance structures implemented. IPC expertise has continued to be integral to decision making during the Trust management of Covid-19, including in the provision of advice, development of guidelines and clinical pathways. The advice, guidelines and pathway development includes:

- implementing the return to transmission-based precautions (TBP), specifically regarding the use of PPE and removal of universal mask wearing towards the end of 2022/23 in response to best practice and sustained low prevalence of Covid-19 in the community;
- continued provision of on-going support and advice to colleagues across the divisions, occupational health and health and safety services in issues relating to supporting staff safety;
- working collaboratively with site operations teams to ensure safe placement of patients and prioritising best use of isolation facilities;
- focusing on antimicrobial stewardship (AMS) and treatment of both Covid-19 and other infections was maintained during 2022/23;
- continued identification and management of hospital-onset Covid-19 infections and associated transmission events;
- on-going provision and support to provide training and education to staff as the pandemic evolved, particularly in respect to new pathways, changing definitions, and adjusted advice on PPE; and
- ongoing support to the Trust communications team participating in various staff briefings and supporting the development and accuracy of the Trust's intranet pages.

## Incidence of seasonal influenza

The influenza vaccination campaign commenced in September 2022 and ran until February 2023. Unfortunately, Imperial College Healthcare showed a 44.8 per cent uptake during the staff flu vaccination campaign, which was lower than previous years. However, this was a trend seen across the sector, with Imperial College Healthcare ranking number 10 out of 22 acute trusts in London. Although vaccine uptake was lower than expected, it was noted that it was well matched to the circulating strains.

2022/23 saw a higher number of patients being admitted with influenza than in the previous year, with the peak arriving in week 51 and a steep rise in cases from week 47 which is earlier than the previous year. Most patients were asymptomatic and incidentally found through the Trust Polymerase chain reaction (PCR) screening programme in place at the time. The Trust saw predominantly influenza A (H3N2) earlier in the season with only a few cases of influenza B that came in greater numbers at the end of the season. The Trust experienced one incident of influenza outbreak in 2022/23, on a renal ward involving seven patients (see extended narrative in significant and reportable incidents).

## HCAI for the Trust

Cases of identified infections for each Trust are reported to UKHSA as part of their *mandatory acute trust mandatory healthcare associated infection surveillance*.

Tables 2 and 3 shows the submission for the Trust.

| Mandatory reportable infections   | Q1 | Q2 | Q3 | Q4 | Total cases | Year-end ceiling 22/23 |
|---|----|----|----|----|-------------|------------------------|
| <i>C.difficile</i> (all hospital-associated cases, HOHA + COHA)                                   | 26 | 26 | 21 | 17 | 90          | 67                     |
| Methicillin-resistant <i>Staphylococcus aureus</i> (all healthcare-associated cases, HOHA + COHA) | 2  | 0  | 0  | 3  | 5           | 0                      |
| Methicillin-sensitive <i>Staphylococcus aureus</i> (all healthcare-associated cases, HOHA + COHA) | 9  | 13 | 13 | 11 | 46          | -                      |
| <i>E.coli</i> (all healthcare-associated cases, HOHA + COHA)                                      | 26 | 33 | 39 | 17 | 115         | 95                     |
| <i>Klebsiella spp.</i> (all healthcare-associated cases, HOHA + COHA)                             | 12 | 25 | 11 | 12 | 60          | 78                     |
| <i>P. aeruginosa</i> (all healthcare-associated cases, HOHA + COHA)                               | 11 | 5  | 8  | 14 | 38          | 44                     |

**Table 2:** Summary of mandatory reportable infections

\* HOHA = Healthcare onset healthcare associated (samples taken  $\geq$  48 hours into a patient's admission)

\*\*COHA = Community onset healthcare associated (samples taken  $<$  48 hours into a patient's admission and where the patient was an inpatient at the reporting Trust in the 28 days prior to sample collection date)

| Section    |                                 | Indicators  | Q1   | Q1 ceiling | Q2   | Q2 ceiling | Q3   | Q3 ceiling | Q4  | Q4 ceiling | Year end ceiling 22/23 |
|------------|---------------------------------|---|------|------------|------|------------|------|------------|-----|------------|------------------------|
| Infections | Mandatory reportable infections | Methicillin-resistant <i>Staphylococcus aureus</i> (all healthcare-associated cases, HOHA + COHA) | 2    | 0          | 0    | 0          | 0    | 0          | 3   | 0          | 0                      |
|            |                                 | Methicillin-sensitive <i>Staphylococcus aureus</i> (all healthcare-associated cases, HOHA + COHA) | 9    | -          | 13   | -          | 12   | -          | 11  | -          | -                      |
|            |                                 | <i>E.coli</i> (all healthcare-associated cases, HOHA + COHA)                                      | 26   | 23         | 33   | 24         | 39   | 24         | 17  | 24         | 95                     |
|            |                                 | <i>Klebsiella spp.</i> (all healthcare-associated cases, HOHA + COHA)                             | 12   | 18         | 25   | 21         | 11   | 21         | 12  | 18         | 78                     |
|            |                                 | <i>P. aeruginosa</i> (all healthcare-associated cases, HOHA + COHA)                               | 11   | 10         | 5    | 12         | 8    | 12         | 14  | 10         | 44                     |
|            |                                 | <i>C.difficile</i> (all hospital-associated cases, HOHA + COHA)                                   | 26   | 16         | 26   | 18         | 21   | 18         | 17  | 15         | 67                     |
|            | COVID-19                        | Hospital-Onset Indeterminate Healthcare Associated  | 36   | -          | 81   | -          | 51   | -          | 36  | -          | -                      |
|            |                                 | Hospital-Onset Probable Healthcare-Associated   | 23   | -          | 35   | -          | 46   | -          | 40  | -          | -                      |
|            |                                 | Hospital-Onset Definite Healthcare-Associated   | 39   | -          | 54   | -          | 86   | -          | 65  | -          | -                      |
|            |                                 | Incidents   | 45   | -          | 35   | -          | 7    | -          | 2   | -          | -                      |
|            |                                 | Outbreaks   | 12   | -          | 14   | -          | 17   | -          | 15  | -          | -                      |
|            | Surgical site infection         | Knee Replacement  | 0.0% | 0.6%       | 2.8% | 0.6%       | 0.0% | 0.6%       |     |            | 0.6%                   |
|            |                                 | Hip Replacement   | 0.0% | 0.6%       | 0.0% | 0.6%       | 0.0% | 0.6%       |     |            | 0.6%                   |
|            |                                 | CABG  | 5.6% | 3.8%       | 1.1% | 3.8%       | 2.9% | 3.8%       |     |            | 3.8%                   |
|            |                                 | Other Cardiac   | 0.0% | 1.3%       | 0.0% | 1.3%       | 2.7% | 1.3%       |     |            | 1.3%                   |
|            | CLABSI                          | ICU CLABSI rate per 1000 line days  | 2.6% | 3.6%       | 2.3% | 3.6%       | 2.4  | 3.6%       | -   | 3.6%       | 3.6%                   |
|            |                                 | PICU CLABSI rate per 1000 line days   | 3.4% | 3.6%       | 2.9% | 3.6%       | 4.5  | 3.6%       | -   | 3.6%       | 3.6%                   |
|            |                                 | NICU CLABSI rate per 1000 line days   | 4.9% | 4.4%       | 1.9% | 4.4%       | 2.1  | 4.4%       | -   | 4.4%       | 4.4%                   |
|            |                                 | PAED HAEM CLABSI rate per 1000 line days  | 2.8% | 4.5%       | 2.6% | 4.5%       | 0    | 4.5%       | 2.5 | 4.5%       | 4.5%                   |

| Section           |                    | Metrics/Division  | Q1  | Q1 target | Q2  | Q2 target | Q3  | Q3 target | Q4  | Q4 target |
|-------------------|--------------------|---|-----|-----------|-----|-----------|-----|-----------|-----|-----------|
| Screening metrics | COVID-19 Screening | Metric 1: NonElec 12 hr testing                                 | 81% | 90%       | -   | 90%       | -   | 90%       | -   | 90%       |
|                   |                    | Metric 2: 5 day preadmission testing - inpatient electives only | 74% | 90%       | -   | 90%       | -   | 90%       | -   | 90%       |
|                   |                    | Metric 3: 72 hr pre discharge testing                           | 90% | 90%       | -   | 90%       | -   | 90%       | -   | 90%       |
|                   |                    | Metric 4: Inpatient 7 day testing                               | 85% | 90%       | -   | 90%       | -   | 90%       | -   | 90%       |
|                   |                    | Metric 5: Inpatient 3 day testing                               | 88% | 90%       | -   | 90%       | -   | 90%       | -   | 90%       |
|                   | MRSA Screening     | Medicine and Integrated Care                                    | 87% | 90%       | 86% | 90%       | 84% | 90%       | 86% | 90%       |
|                   |                    | Surgery, Cancer and Cardiovascular                              | 88% | 90%       | 87% | 90%       | 85% | 90%       | 87% | 90%       |
|                   |                    | Womens, Childrens and Clinical Support                          | 91% | 90%       | 88% | 90%       | 90% | 90%       | 93% | 90%       |
|                   |                    | Imperial Private Healthcare                                     | 98% | 90%       | 99% | 90%       | 97% | 90%       | 97% | 90%       |
|                   | CPE Screening      | Medicine and Integrated Care                                    | 93% | 90%       | 94% | 90%       | 92% | 90%       | 91% | 90%       |
|                   |                    | Surgery, Cancer and Cardiovascular                              | 80% | 90%       | 86% | 90%       | 78% | 90%       | 81% | 90%       |
|                   |                    | Womens, Childrens and Clinical Support                          | 57% | 90%       | 86% | 90%       | 82% | 90%       | 79% | 90%       |
|                   |                    | Imperial Private Healthcare                                     | 94% | 90%       | 94% | 90%       | 95% | 90%       | 96% | 90%       |

**Table 3:** Summary of the number of cases reported to UKHSA in their mandatory reporting scheme

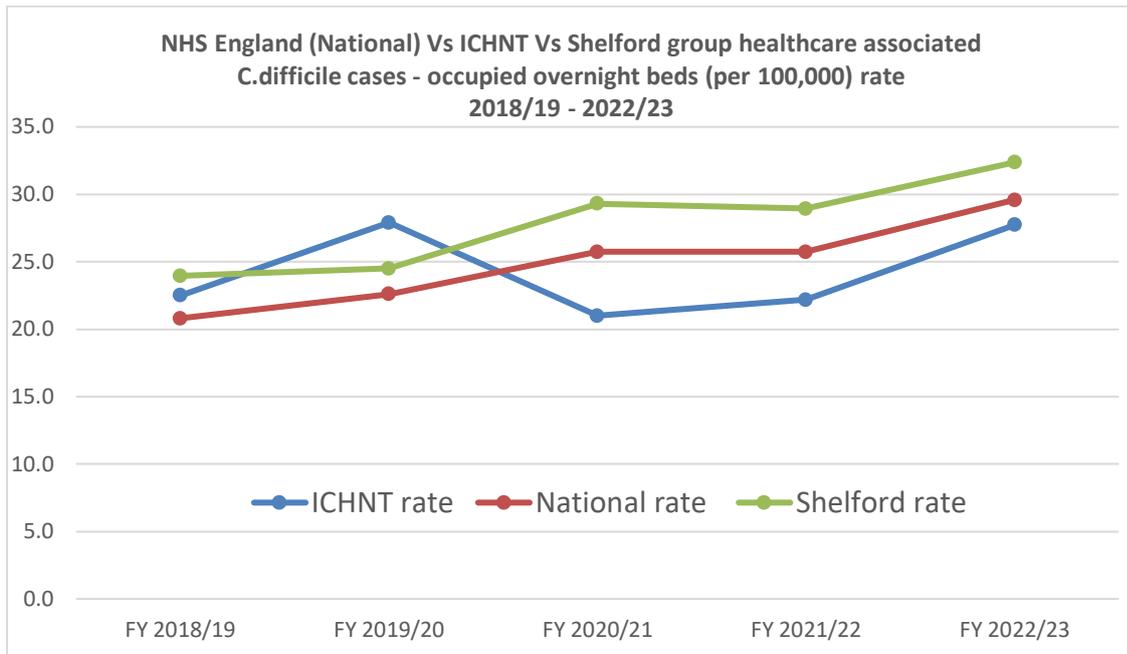
## Clostridioides *difficile* infection

In 2022/23, there were 90 cases of Trust-attributed *C. difficile* infection (CDI), against a nationally set threshold of 67 (Figures 3 and 4). Whilst there have been no lapses in care during 2022/23 – an improvement from previous years where the Trust reported one lapse in care in 2021/22 and one lapse in 2020/21 – it is recognised that improvements could still be made. An audit of cases occurring between Q1-Q3 2022/23 noted 30 per cent of patients were not isolated in line with Imperial College Healthcare’s policy. There were several reasons for this but predominantly, the unavailability of side rooms was a recognised issue. The cause for this was both the limitations of an aged estate, as well as the prioritisation of other infections requiring isolation.

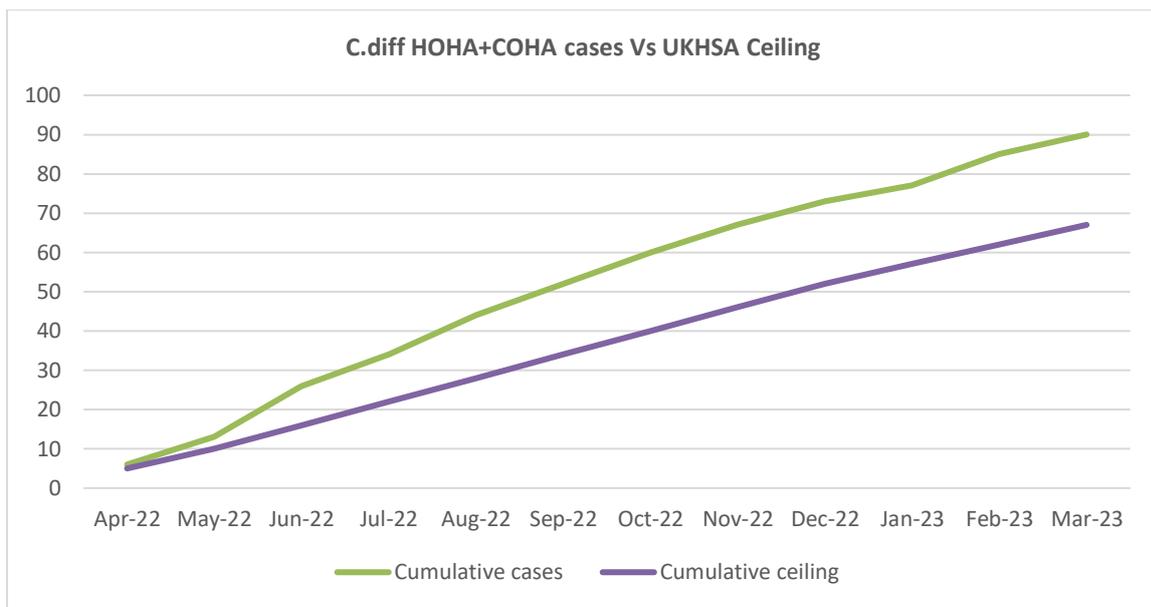
As part of the Trust’s review process, a comprehensive set of measures to prevent cross-transmission and to optimise antimicrobial use is in place, with the aim to minimise the risk of CDI. This included an expert review of individuals’ antimicrobial and healthcare exposure, medical risk factors together with environmental and hand hygiene scores. Additionally, multidisciplinary peer review monthly meetings with key stakeholders (Imperial College Healthcare NHS Trust, ICS, primary care) take place, to identify any learning and associated themes.

In 2022/23 there was a rise in CDI patients with pre-existing gastrointestinal disease, those undergoing chemotherapy and those requiring appropriate antimicrobial therapy due to other polymicrobial infections. There was also an observed rise in the number of patients acquiring CDI in the 72 hours following admission, suggesting previous colonisation outside the organisation.

Imperial College Healthcare is part of a CDI north west London task and finish group, set up to examine the rise in CDI cases. The focus has been antimicrobial primary care and acid suppression use, previous healthcare contact and a rise in the complexity of patient pathologies. This work will continue in 2023/24 with particular focus on CDI sample collection, environment and a further understanding of potential risk factors.



**Figure 3:** National *C. difficile* reported rate



**Figure 4:** Imperial College Healthcare *C. difficile* infection rates 2022/23

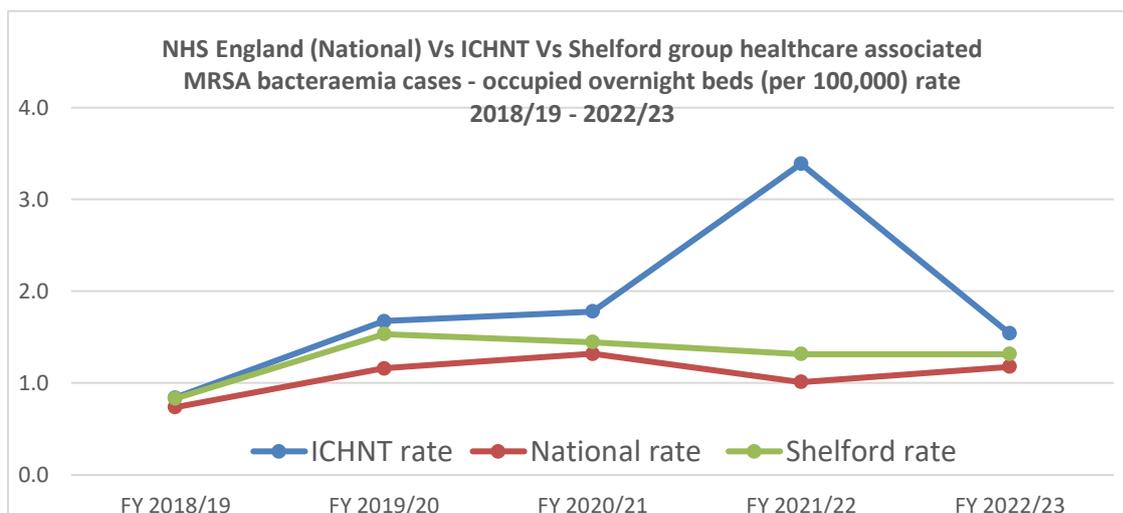
\* HOHA = Healthcare onset healthcare associated (samples taken  $\geq$  48 hours into a patient's admission)

\*\*COHA = Community onset healthcare associated (samples taken  $<$  48 hours into a patient's admission and where the patient was an inpatient at the reporting Trust in the 28 days prior to sample collection date)

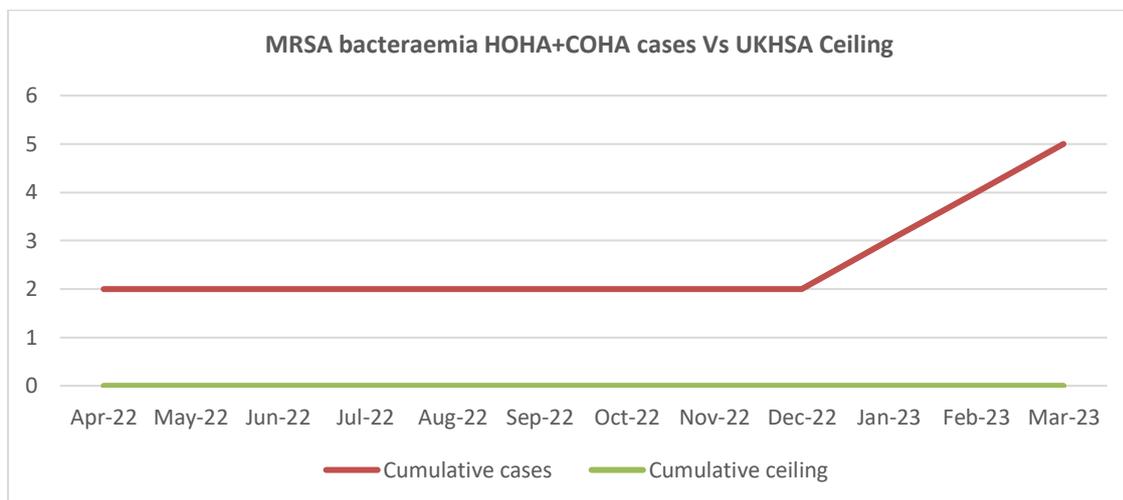
## MRSA

### MRSA bloodstream infection

Whilst the Trust reported a downward trend in the number and rate (per 100,000 bed days) of healthcare associated MRSA bloodstream infections (BSI) for the period 2014/15 to 2019/20 (Figure 5), 2020/21 saw five healthcare associated blood stream infections (HA-BSI), followed by 11 in 2021/22 and back down to five HA-BSI in 2022/23 (Figure 6). Based on UKHSA data Imperial College Healthcare ranked fourth highest amongst the Shelford Group of ten large acute trusts in England. Six of 10 Shelford Group trusts report an MRSA rate higher than the national mean, suggesting a higher burden of healthcare-associated MRSA BSI across larger acute trusts.



**Figure 5:** National MRSA reported rate



**Figure 6:** Imperial College Healthcare MRSA BSI cases 2022/23

\* HOHA = Healthcare onset healthcare associated (samples taken  $\geq$  48 hours into a patient's admission)

\*\*COHA = Community onset healthcare associated (samples taken  $<$  48 hours into a patient's admission and where the patient was an inpatient at the reporting Trust in the 28 days prior to sample collection date)

Each case was reviewed in detail for source of bacteraemia and key outcomes and related learnings from each post-infection review, a summary of which is provided below:

- Case 1:** A 62-year-old man admitted to the intensive care unit (ICU) following significant blood loss after a self-inflicted cutting of his Tesio line. Blood cultures taken 48 hours after admission were positive for MRSA and were determined to be a contaminant. There were no significant findings from the review.
- Case 2:** An 81-year-old female, admitted electively to ICU following cardiac surgery. She became bacteraemic during a prolonged admission. The most likely source of infection was determined to be either line related or a chest source.
- The investigation found that there were opportunities missed to perform MRSA screening of her wounds as well as the administration of MRSA suppression therapy.
- Case 3:** A 52-year-old man, transferred to Imperial College Healthcare following admission to a local hospital with headache and confusion. The patient tested positive for MRSA on admission swabs and subsequently grew MRSA in his blood cultures. The source of the BSI was thrombophlebitis linked to the peripheral cannula which was cited in the originating hospital.
- Case 4:** A 12-year-old admitted for bone marrow transplant (BMT) conditioning who was known to be previously colonised with MRSA. There was a Hickman line present at the time her blood cultures grew MRSA. The most likely source of infection was determined to be line related, with learning identified around documentation of dressing changes.
- Case 5:** A 62-year-old patient admitted to ICU as an emergency, who sadly died following a cardiac arrest. Blood cultures and screening swabs taken a day prior to death grew MRSA. Despite an investigation the source of the infection was not determined. The investigation did identify learning opportunities around improved hand hygiene compliance and reducing the rate of blood culture contaminants within ICU.

## MRSA admission screening

On average, 1,781 admissions were screened for MRSA each month in 2022/23, with an average compliance of 87 per cent, which is three per cent under the 90 per cent threshold internally set. An audit completed in Q2 2022/23 measuring compliance against the MRSA policy, noted a relatively high level of assurance related to efficacy of MRSA screening implementation.

## MSSA BSI

There were 46 hospital associated methicillin-susceptible *Staphylococcus aureus* (MSSA) BSI in 2022/23, compared to 38 cases in 2021/22 and 31 case in 2020/21 (Figures 7 and 8). Whilst there is no national threshold for MSSA BSI, each case is reviewed by a multidisciplinary group and those related to a vascular access device are reviewed by vascular access specialists, to identify and implement learning from these cases.

Of the 46 cases reported in 2022/23, 18 were assessed to be related to vascular access devices. Nine of these were related to peripheral vascular cannulas, and eight related to central vascular access devices. One case was attributed to haematogenesis spread from urosepsis. Themes from the review of these cases include poor insertion records for vascular access devices and their subsequent ongoing care, inconsistent use of chlorhexidine impregnated dressings and inconsistent decontamination of the needle free device. Specific actions include additional teaching on the wards in relevant areas around vascular access device care, record keeping and promoting contacting the vascular access team for support. There has been no evidence of patient-to-patient transmission.

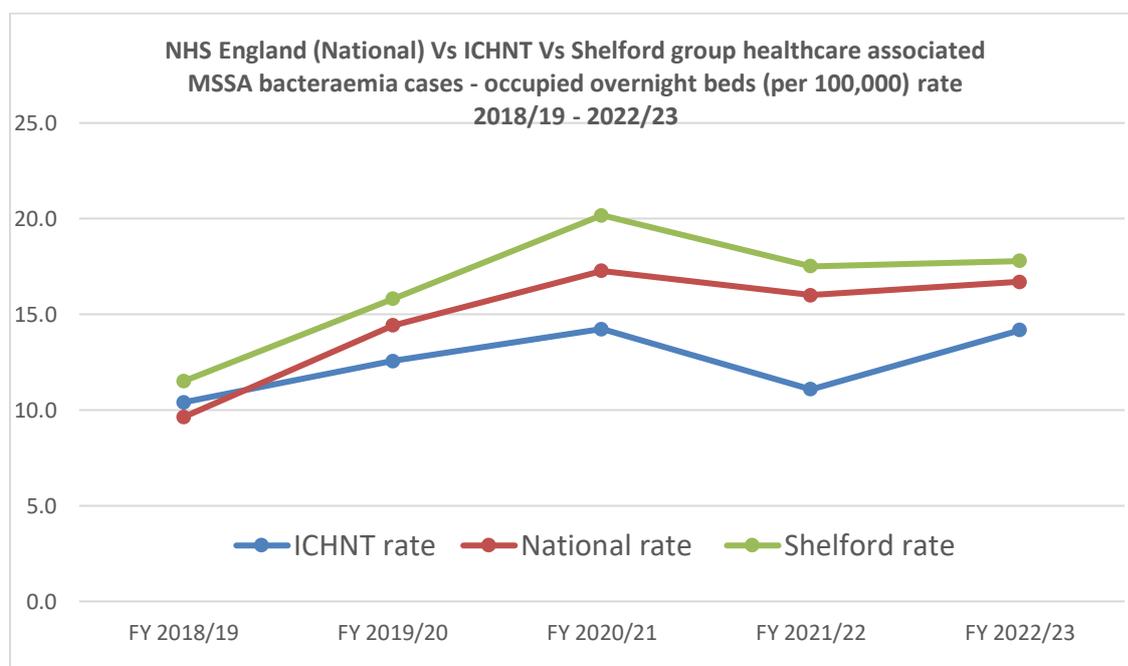
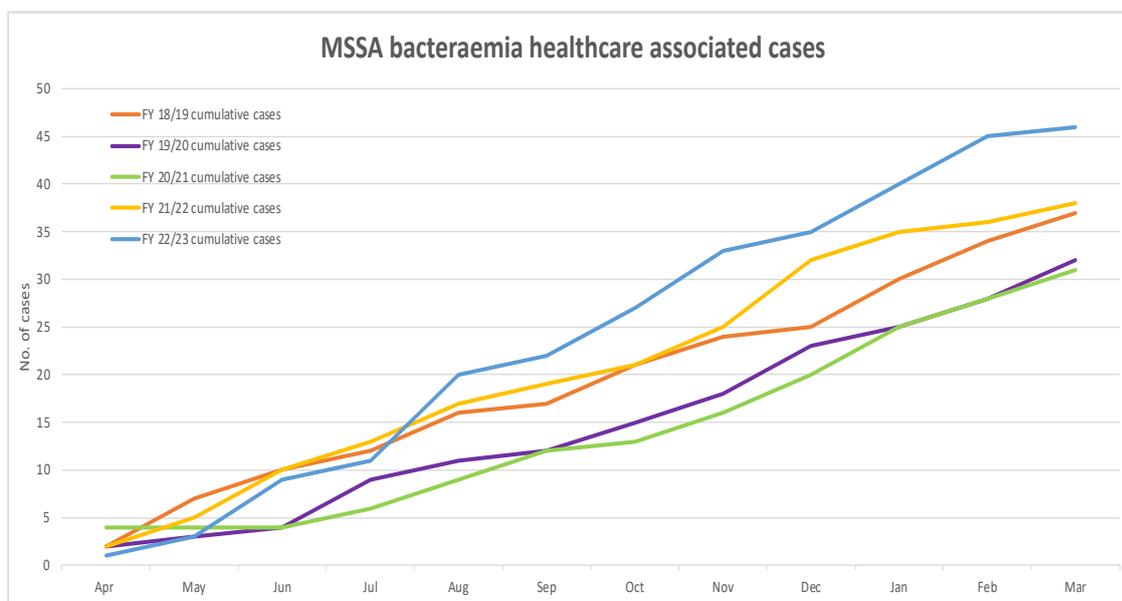


Figure 7: National MSSA reported rate



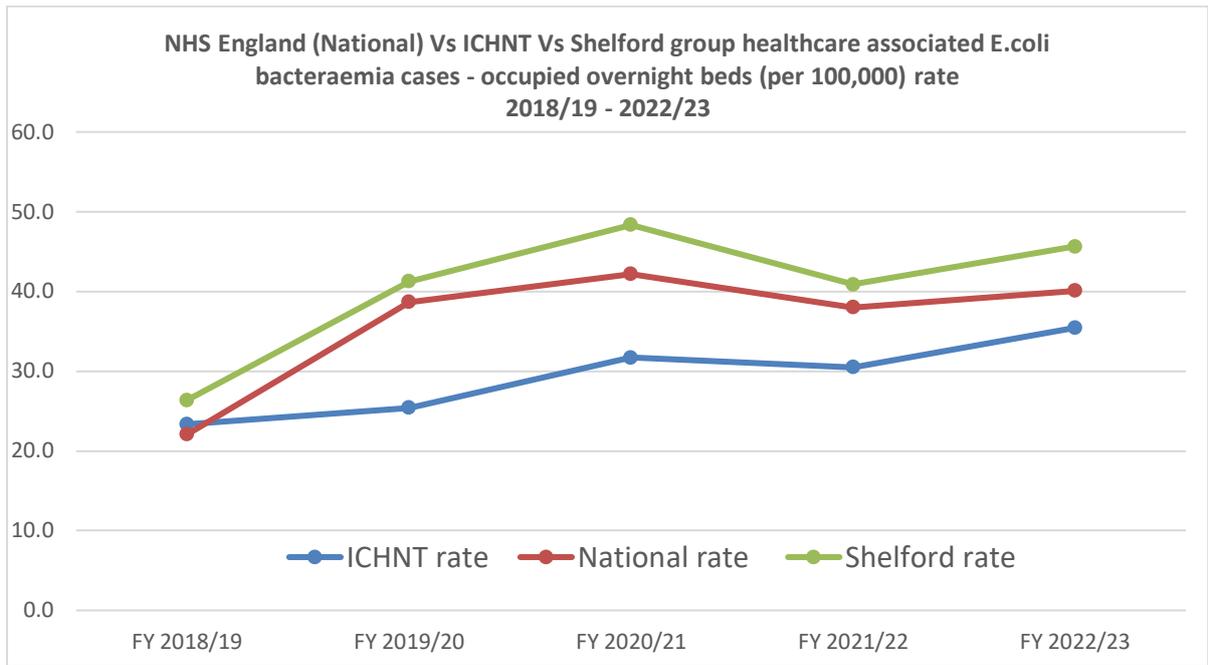
**Figure 8:** Imperial College Healthcare MSSA cases 2018/19 – 2022/23

### Escherichia coli

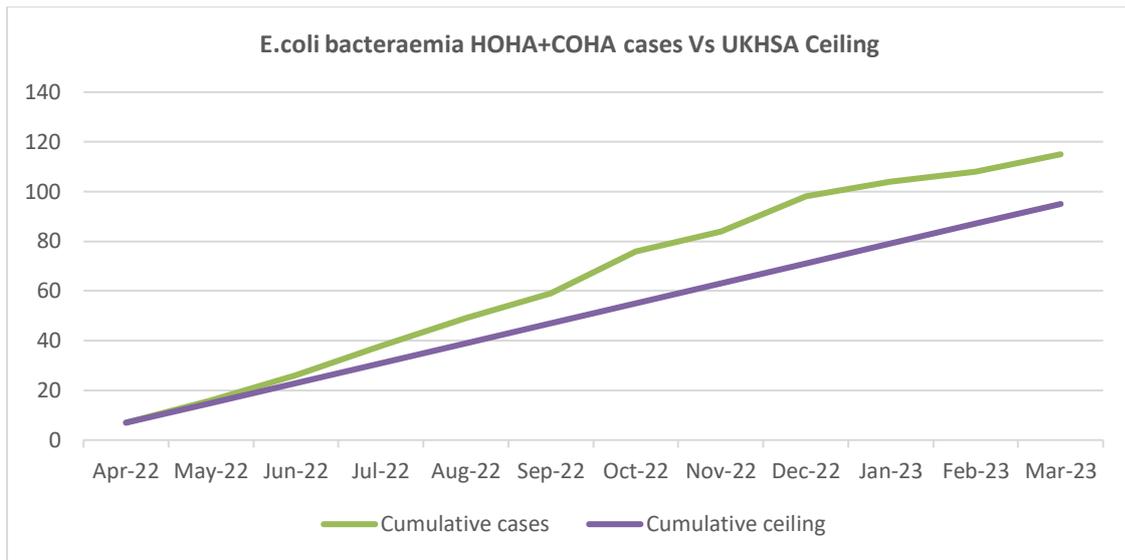
Escherichia coli (E coli) is the most common pathogen causing bacteraemia both in the community and in healthcare setting. A bacteraemia usually develops as a complication of other infections, with the most common sources being urinary tract, gastrointestinal and hepatobiliary infections. Sources for cases reported in 2022/23 can be found in Table 4.

| Source                         | Number     |
|--------------------------------|------------|
| Urinary tract                  | 48         |
| Gastrointestinal/hepatobiliary | 29         |
| Intravascular device           | 12         |
| Other                          | 6          |
| Unknown                        | 20         |
| <b>TOTAL</b>                   | <b>115</b> |

**Table 4:** E coli source data



**Figure 9:** National E coli reported rate



**Figure 10:** Imperial College Healthcare E coli cases 2022/23

\* HOHA = Healthcare onset healthcare associated (samples taken  $\geq$  48 hours into a patient's admission)

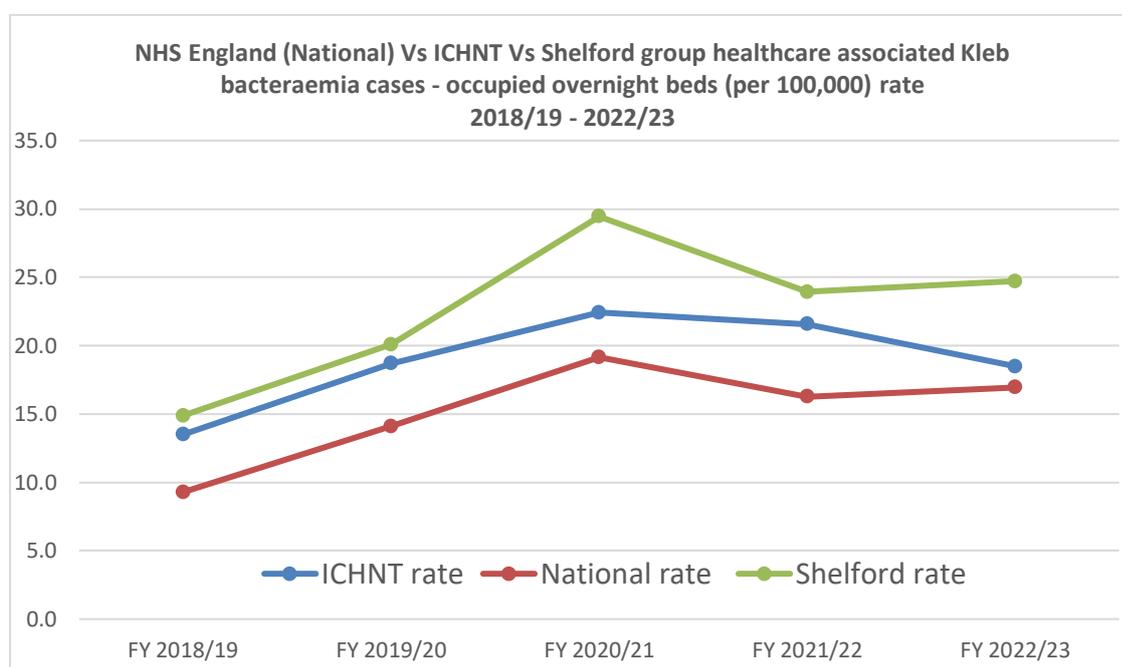
\*\*COHA = Community onset healthcare associated (samples taken  $<$  48 hours into a patient's admission and where the patient was an inpatient at the reporting Trust in the 28 days prior to sample collection date)

## Klebsiella

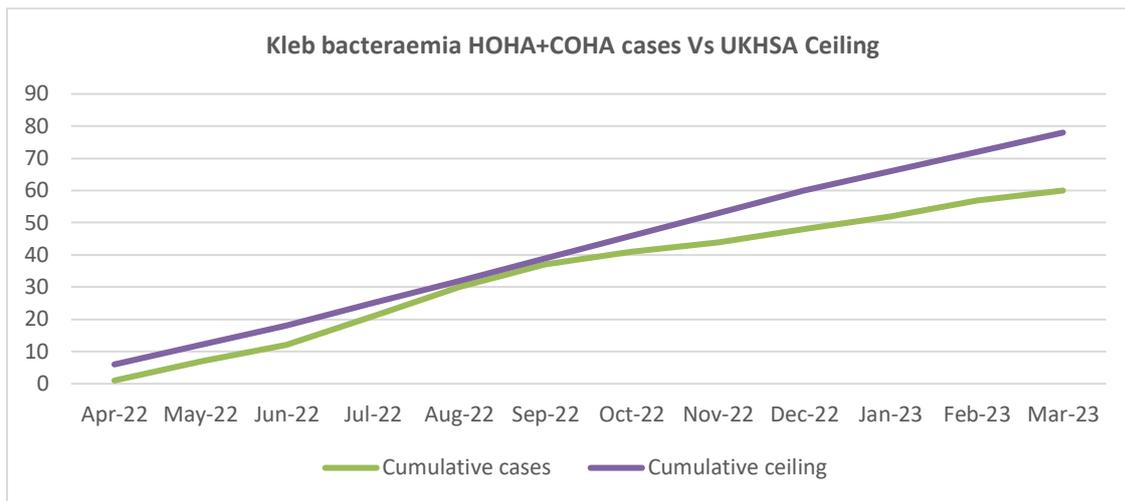
Klebsiella species are Gram-negative bacteria belonging to the Enterobacteriaceae family. These species can cause a range of HCAI, including pneumonia, BSI, wound or surgical site infections (SSI) and meningitis. Infections can be associated with the use of invasive devices or following medical procedures. Sources for cases reported in 2022/23 can be found in Table 5.

| Source                         | Number    |
|--------------------------------|-----------|
| Urinary tract                  | 18        |
| Gastrointestinal/hepatobiliary | 15        |
| Intravascular device           | 12        |
| Respiratory tract              | 2         |
| Bone / joint                   | 1         |
| Unknown                        | 13        |
| <b>TOTAL</b>                   | <b>61</b> |

**Table 5:** Klebsiella source data



**Figure 11:** National Klebsiella reported rate



**Figure 12:** Imperial College Healthcare Klebsiella cases 2022/23

\* HOHA = Healthcare onset healthcare associated (samples taken  $\geq$  48 hours into a patient's admission)

\*\*COHA = Community onset healthcare associated (samples taken  $<$  48 hours into a patient's admission and where the patient was an inpatient at the reporting Trust in the 28 days prior to sample collection date)

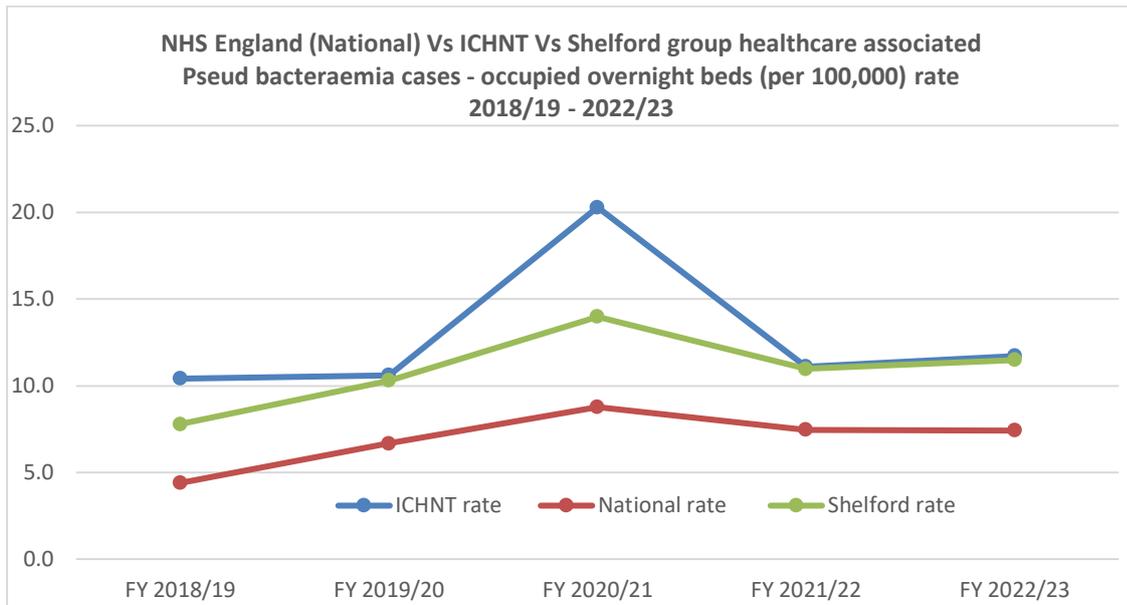
### Pseudomonas aeruginosa

*Pseudomonas aeruginosa* is a Gram-negative opportunistic pathogen which rarely affects healthy individuals, but can cause a wide range of infections, particularly in those with a weakened immune system. In hospitals, the organism can contaminate devices that are left inside the body, such as respiratory equipment and catheters.

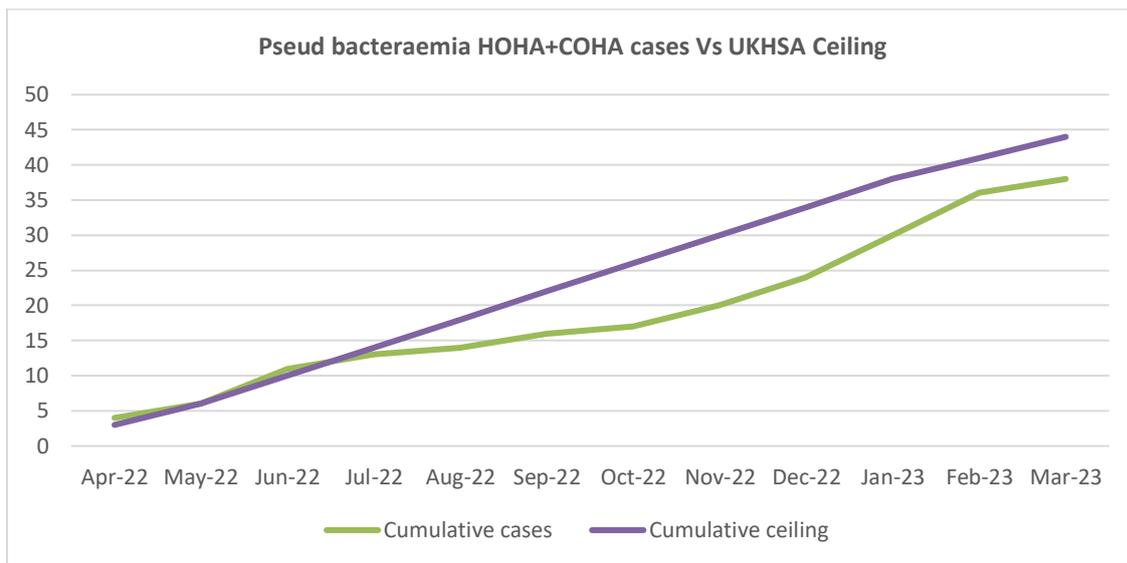
*Pseudomonas aeruginosa* is resistant to many commonly used antibiotics. Sources for cases reported in 2022/23 can be found in Table 6.

| Source                         | Number    |
|--------------------------------|-----------|
| Urinary tract                  | 5         |
| Gastrointestinal/hepatobiliary | 6         |
| Intravascular device           | 12        |
| Respiratory tract              | 6         |
| Skin / soft tissue             | 1         |
| Unknown                        | 8         |
| <b>TOTAL</b>                   | <b>38</b> |

**Table 6:** *Pseudomonas aeruginosa* source data



**Figure 13:** National Pseudomonas aeruginosa reported rate



**Figure 14:** Imperial College Healthcare Pseudomonas aeruginosa cases 2022/23

\* HOHA = Healthcare onset healthcare associated (samples taken  $\geq$  48 hours into a patient's admission)

\*\*COHA = Community onset healthcare associated (samples taken  $<$  48 hours into a patient's admission and where the patient was an inpatient at the reporting Trust in the 28 days prior to sample collection date)

## Bloodstream infections surveillance

### Quality of blood culture collection

Blood cultures remain the standard for the diagnosis of BSI. It is important to distinguish between micro-organisms causing pathogenicity versus those 'contaminating' the culture and not pathogenic to the patient. Contaminants are organisms introduced either during culture collection or processing and is a marker for poor blood culture collection technique, with a rate above three per cent a surveillance flag. The rate of contaminants has reduced to 2.7 per cent (12-month average) over 2022/23, from 3.3 per cent in 2021/22.

#### Adult intensive care units (ICU)

2022/23 had 51 central line-associated bloodstream infection (CLABSI) episodes of 20,661 catheter line-days, a rate of 2.5 per 1,000 catheter line-days: below the benchmark rate of 3.6 per 1,000 catheter-line days (European Centre for Disease Control (ECDC) benchmark) and is in keeping with Trust reported rates for the last two consecutive years.

#### Paediatric intensive care units (PICU)

2022/23 had eight CLABSI episodes reported in the PICU, a rate of 5.5 per 1,000 catheter line-days, over the benchmark rate of 3.6 per 1,000 catheter-line days (ECDC benchmark). This also represents an increase from 2021/22 where six cases were reported. Each of the episodes have been individually investigated by the speciality, with the escalation and complexity of case severity noted as a key emerging theme.

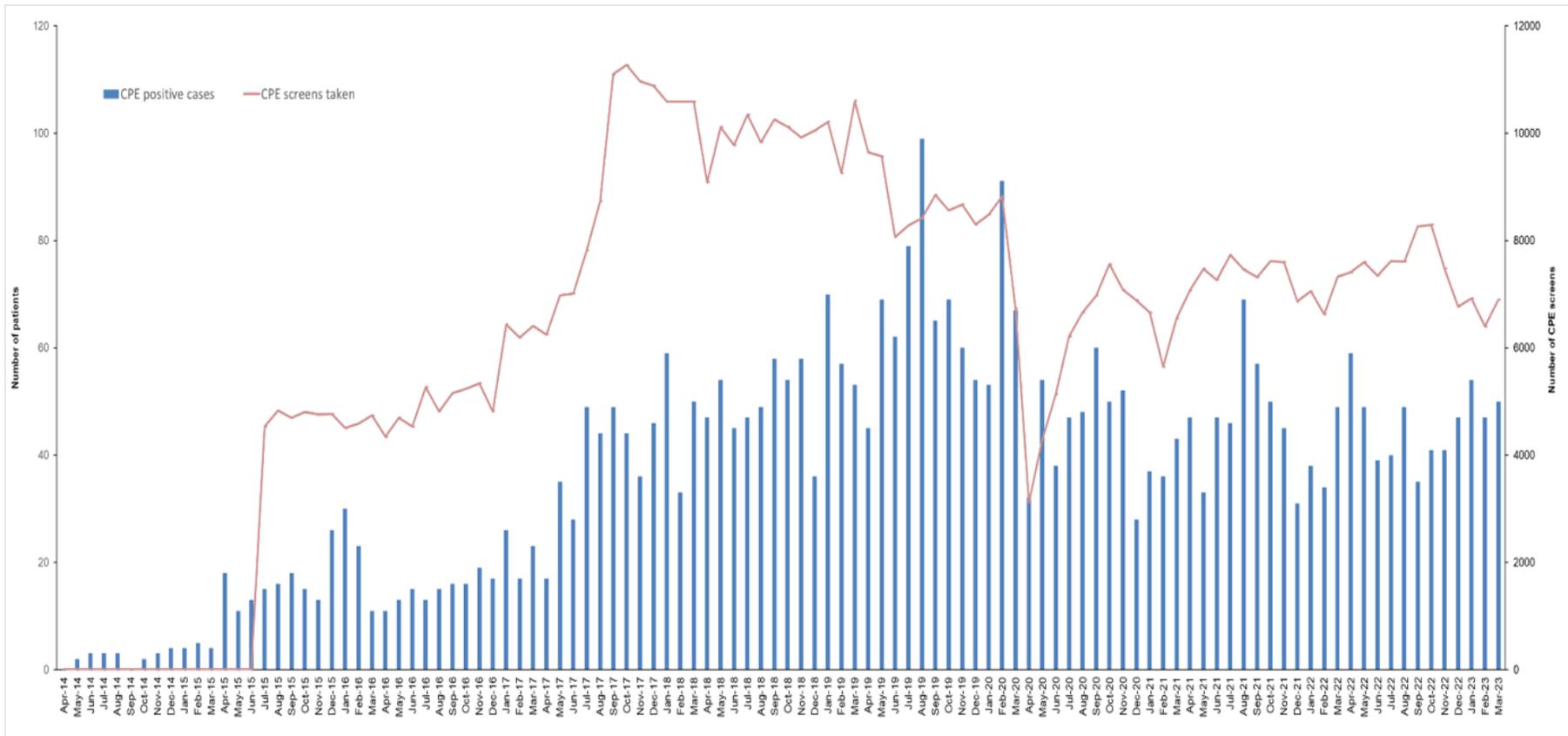
#### Neonatal intensive care units (NICU)

2022/23 had six CLABSIs across the NICUs, a rate of 3.4 per 1,000 catheter line-days, an increase in rate compared to the year previous which saw four cases reported. However, benchmark figures from the National Neonatal Audit Programme (NNAP) are 4.5 per 1,000 line-days, meaning the Trust remains lower than the NNAP benchmark.

## Carbapenemase-producing Enterobacterales (CPE) surveillance

CPE surveillance ensures all patients colonised or infected with CPE are recorded in a comprehensive centralised database which includes information on the strain, molecular mechanisms, and culture collection details. The number of patients with CPE identified each month has remains between fifty and 60 each month (Figure 15). This active surveillance allows us to isolate, and where necessary treat individuals, particularly in several of our high-risk specialties where there have been previous outbreaks.

CPE screening compliance remains static with an average compliance rate of 84 per cent Trust-wide for 2022/23, just under our internally set threshold of 90 per cent, and is on par with previous years.



**Figure 15:** CPE detected at the Trust, de-duplicated by patient April 2014 – March 2023. The line represents the total number of screens taken each month

## Surgical site infection (SSI)

SSI are a significant cause of HCAI and are associated with poor clinical outcomes, negatively affecting wound healing and rehabilitation, with a corresponding cost and time implication for healthcare providers, as well as morbidity and distress incurred by patients. Co-ordinated surveillance and IPC programmes, where clinical feedback is provided, have been shown to significantly reduce the rate of SSI.

The Trust established an SSI programme in February 2020 with a remit to develop and implement a SSI surveillance platform, initially in key high-risk surgical specialities, with a plan to extend over time to all surgical specialities at the Trust. As part of this the Trust developed a Surgical site infection policy, in line with NICE prevention and treatment guidelines on SSI (NG125). In addition to the promotion of best practice the programme aims to mitigate the risk of surgical infections through a reduced rate of SSI, improved patient experience and reduced post-operative length of stay.

Imperial College Healthcare currently performs both mandatory and additional voluntary surveillance in orthopaedic and cardiothoracic surgery. Data is continuously tracked and formally reviewed on a quarterly basis in both surgical specialities with information submitted on SSI rates to UKHSA's national surveillance platform.

SSI rates following orthopaedic surgery (knee / hip) remain below the UKHSA national benchmark figure of 0.6 per cent. Whilst the Trust reported no cases of SSI in hip patients, there were two SSIs flagged in Q2 2022/23 for knee patients. These infections were reviewed, however no similarities in infection pattern were noted. The service has implemented local measures, including post-operative review of all high-risk patients in a wound clinic following discharge. Formal notification from UKHSA was received on these cases and a Trust response with investigation and findings submitted.

SSI rates following coronary artery bypass graft (CABG) procedures have remained under the national average of 3.8 per cent. In non-CABG procedures, one SSI was identified in Q4 2022/23. Whilst this raised the percentage to 2.6 per cent within the quarter, we remain below the annual national benchmark with a rolling four-year average of 0.5 per cent. Imperial College Healthcare recognise that cardiothoracic data reporting is not mandated by UKHSA, but the Trust have undertaken this for a number of years and has established practices built into the existing follow up procedures to collate data.

## Antimicrobial stewardship

The overarching aim of antimicrobial stewardship (AMS) is to optimise safe, appropriate, and economic use of antimicrobial agents to improve patient outcomes from infection while minimising negative consequences such as HCAI and the development of antimicrobial resistance (AMR). The AMS programme allows us to control and maintain antimicrobial use and respond to the rising global resistance threat of antimicrobial resistance.

The AMS programme reported on several key achievements in 2022/23. These include:

- approval of a business case to continue supporting antifungal stewardship with recruitment expected in Q1 2023/24;
- establishing regular AMS ward rounds at St Mary's and Hammersmith hospitals in Q2 2022/23, which form a core part of the AMS programme, helping to optimise antimicrobial therapies and reduce unintended consequences;
- updating and relaunching the adult empirical treatment of infection guidance together with a smart phone application;
- collaboration with north west London acute partners to align antimicrobial guidance including treatment of Covid-19 therapies;
- celebration of World Antimicrobial Awareness Week (WAAW) focusing on the theme of 'preventing antimicrobial resistance together';
- participation in the process to approve the revised UKHSA intravenous to oral national switch criteria;
- participation in the programme to develop novel therapeutic strategies for high consequence infectious diseases such as MPox; and
- contributed to 14 peer review articles in collaboration with our partners at Imperial College.

There are a series of national AMS indicators and prescribing quality indicators to give assurance around the AMS agenda and are detailed into AMS assurance and AMS safety.

### AMS assurance

The effectiveness of AMS is measured by evaluating quantity, type and quality of antimicrobial prescriptions.

### Point prevalence survey

Prescribing standards and the safety and quality indicators are usually monitored through biannual point prevalence surveys (PPS), based upon standards advised by

the Department of Health and Social Care 'Start Smart then Focus' antimicrobial stewardship guidance. Two surveys were undertaken during 2022/23, the most recent survey being in January 2023 (Figure 16). An overall compliance of >90 per cent was achieved in all divisions, apart from private patients (composite of three indicators). Within the survey, 24 interventions were made by the infection pharmacy team, with immediate education given at the point of review to optimise therapy and overall care.

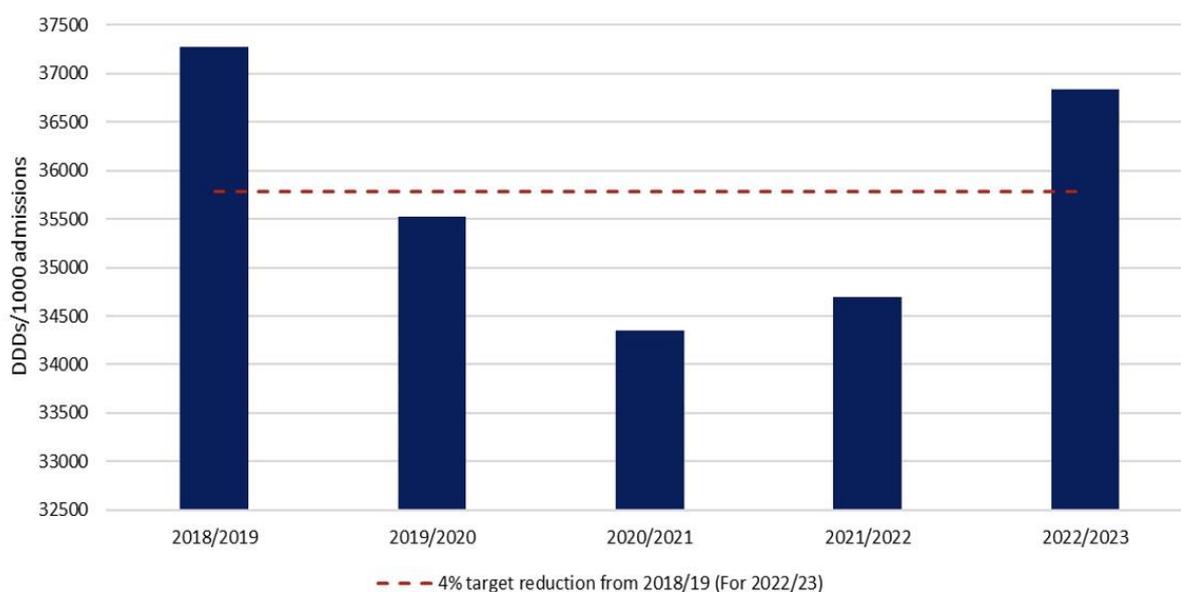
Survey results were circulated via the divisional triumvirates. The infection pharmacy team continue to work with the specialist areas that demonstrated low compliance (lower than 90 per cent) in one or more indicators. Local action plans are being drawn up to help drive improvement. This work will continue through 2023/24. Overall, acknowledging the operational challenges of the recent years, maintaining prescribing practices above 90 per cent is a success and indicates resilience of our AMS programme.

| Division                           | Number of patients on antimicrobial(s)/total patients seen (%) |                | Number of antimicrobials prescribed |          | INDICATOR A<br>% antimicrobials in line with policy or approved by Microbiology/ID |          | INDICATOR B<br>% review within 72 hours of initial prescribing |          | INDICATOR C<br>% duration in line with policy or approved by Microbiology/ID |          |
|------------------------------------|--|----------------|-------------------------------------|----------|--|----------|--|----------|--|----------|
|                                    | Aug 2022   | Jan 2023       | Aug 2022                            | Jan 2023 | Aug 2022   | Jan 2023 | Aug 2022   | Jan 2023 | Aug 2022   | Jan 2023 |
| <b>Trust Results</b>               | 452/1067 (42%)   | 521/1307 (40%) | 829                                 | 915      | 89%  | 91%      | 94%  | 96%      | 90%  | 92%      |
| Medicine                           | 207/569 (%)  | 216/687        | 369                                 | 338      | 88%  | 90%      | 96%  | 94%      | 89%  | 90%      |
| Surgery, Cardiovascular and Cancer | 181/368 (%)  | 224/426        | 338                                 | 422      | 90%  | 92%      | 91%  | 97%      | 91%  | 93%      |
| Women's and Children's             | 60/110 (%)   | 50/130         | 116                                 | 89       | 87%  | 94%      | 97%  | 91%      | 89%  | 94%      |
| Children's Services                | -  | 26/46          | -                                   | 57       | -  | 96%      | -  | 100%     | -  | 96%      |
| Private                            | 4/20 (%)   | 5/18           | 6                                   | 9        | 83%  | 44%      | 80%  | 100%     | 83%  | 44%      |
| <b>Trust Target 2022/23</b>        |  |                |                                     |          | 90%  |          | 90%  |          | 90%  |          |

**Figure 16:** Overview of Trust and divisional performance on the appropriate use of systemic antimicrobial use

### NHSE contract reduction – national (mandated)

In 2022/23 the NHSE contract suggested a four per cent reduction in antibiotics from the ‘watch and restrict’ categories of the World Healthcare Organization (WHO) list (from 2018 baseline data). In previous years, the Trust has continually achieved the reduction target, however for 2022/23 The Trust was three per cent above the desired target (Figure 17). This is related to increased macrolide use associated with the national group A strep outbreak which occurred in late 2022. In addition, certain watch agents were utilised to aid early discharge during the winter months. Monthly review of consumption targets together with site specific discussions continue to ensure any increased usage of these agents are promptly investigated.



**Figure 17:** NHS contract reduction in WHO ‘Watch and Reserve’ antimicrobials

In line with the national five-year AMR national action plan, the target for 2023/24 has been amended to a 10 per cent cumulative reduction against the 2017 baseline. Data on usage will be tracked monthly and shared with relevant specialities where necessary to ensure any high usage is addressed.

### Total antimicrobial consumption – national (non-mandated)

Whilst this indicator was previously mandated, it now serves as a proxy to allow the Trust to understand total antimicrobial consumption including total intravenous (IV) use. 2022/23 saw a four per cent increase in the total use of antimicrobials from the previous financial year. Proportional use of ‘access’ (narrow spectrum) antimicrobials from the WHO classification was reported at 45 per cent, a reduction of one per cent from 2021/22. The Trust’s overall IV: phosphate/oxygen (PO) ratio in 2022/23 was 80:20, which is comparable to other organisations across the sector.

## Safety of antimicrobial use

Due to their nature of action and risk of toxicity associated with antimicrobials, the AMS programme ensures there are measures in place to minimise these risks. This is principally via the antimicrobial review group (ARG), frequent clinical infection ward rounds and bespoke project work.

### Antimicrobial review group (ARG)

The ARG, in conjunction with TIPCC, is responsible for antimicrobial use to ensure their safe, appropriate and economic use in line with good antimicrobial stewardship. This includes review of anti-infective policies and clinical guidelines, AMS performance targets, unintended consequences and support of formulary applications and research and development. ARG met bi-monthly in 2022/23. It reviewed 18 clinical guidelines, approved eight research studies, and added three new antimicrobials for the Trust formulary.

Key outputs from the ARG for 2022/23 include:

- full review of the Trust anti-infective guidelines and the Trust antifungal guidelines;
- addition of Cefipime to the Trust formulary for use in a carbapenem sparing agent for treatment of Amp C producing Enterobacteriaceae or infections due to multi-drug resistant pseudomonas before using more costly antimicrobials;
- Approval of the use of methenamine for urinary tract infections prophylaxis thereby reducing the need of long-term antimicrobials; and
- developed guidance to address the risks of adverse drug reactions associated with developing serotonin syndrome when linezolid is co-prescribed in concomitant use of serotonergic agents.

### Anti-infective incidents for 2022/23

Anti-infective incident numbers have risen over the last two years, reflecting changes in activity across the Trust. This may in part be explained by the effects of the Covid-19 pandemic. In 2022/23 353 incidents relating to anti-infectives were reported, which represents 15 per cent of the total medication incidents reported for the Trust. This proportion is consistent with pre-pandemic years. Most of these incidents were no harm or near miss and all were reviewed by the ARG and medication safety group to ensure ongoing risk mitigation.

## AMS audits/projects 2022/23

To support the improvement of systems and processes for effective AMS the following audits/projects were undertaken during 2022/23:

- a systematic review on amphotericin B prophylaxis for the prevention of invasive fungal disease in patients with haematological malignancies; and
- a service evaluation of weight-based voriconazole dosing in clinical haematology.

## Antifungal stewardship

The Trust previously participated in an antifungal CQUIN that was then discontinued in 2021/22. This CQUIN had allowed for dedicated clinical rounds, regular auditing with focussed areas for improvement, consumption reporting and guideline development. The Trust's achievements in the CQUIN reinforced the need to continue the antifungal stewardship programme. In 2022/23 a business case was successful in securing funding for both medical and pharmacy support for 2023/24. The fungal multidisciplinary team have continued to review complex patients advising on diagnostics, coordinating speciality input, treatment monitoring, and identifying opportunities for antifungal de-escalation.

## AMS priority objectives

AMS objectives have been set for the next three years. Core objectives which run annually and seek to give assurance to national indicators. Priority objectives are set in line with any emerging issues.

## Priority objectives for 2023/24

The Trust's priorities for 2023/24 are to:

1. develop a penicillin de-labelling allergy service (for non-specialists);
2. focus on developing strategies for IV to oral switches including taking part in the NHSE CQUIN around prompt switching of IV to PO antimicrobial treatment;
3. explore the most efficient mechanism to feedback prescribing data to specialities;
4. review the Trust's resistance data every 6 – 12 months; and
5. align the fungal programme with wider AMS objectives.

| <b>Antimicrobial Stewardship Portfolio</b> | <b>Antimicrobial Stewardship Objectives 2022-2025</b>  | <b>Existing or New</b>                               |
|--|--|--|
| <b>Clinical</b>                            | To maintain clinical infection reviews [ward round / MDT / OPAT/ infection clinic]   | Existing activity                                    |
|  | To review adult Treatment of Infection Guidelines particularly around durations of therapy.  | <b>NEW (Not started)</b>                             |
|  | To focus on developing strategies for IV to oral switches  | <b>2023/2024</b>                                     |
|  | To continue to develop Cerner automation systems to deliver more efficient and lean AMS interventions                                    | Existing activity                                    |
|  | To develop a penicillin de-labelling allergy service (for non-specialists)   | <b>2023/2024</b>                                     |
|  | To develop antifungal diagnostics to aid prescribing   | <b>NEW (Not started)</b>                             |
| <b>Governance + Policy</b>                 | To continue to regularly review guidelines, policies, new therapies via ARG in accordance with review dates/ as the clinical need arises | Existing activity                                    |
|  | To explore resources needed for maintaining and expanding the ASP programme – e.g. pharmacists / medical staff/ pharmaco-epi position    | <b>2022/23 COMPLETE</b>                              |
|  | To submit a business case to create substantive posts and continue the AFS programme   | <b>2022/23 COMPLETE</b>                              |
|  | To work develop and foster relationships with our primary care/ NHSE partners around the AMS agenda                                      | Existing activity                                    |
| <b>Education and Training</b>              | To develop, promote and maintain the newly developed Antimicrobial App   | <b>2022/23 COMPLETE - moves to existing activity</b> |
|  | To consolidate all antimicrobial guidelines onto one place/ intranet net site  | <b>NEW (Not started)</b>                             |
|  | To support infection audit and quality improvement projects  | Existing activity                                    |
| <b>Surveillance</b>                        | To explore the most efficient mechanism to feedback prescribing data to specialities   | <b>2023/2024</b>                                     |
|  | To explore how to automate the antimicrobial point prevalence survey   | <b>NEW (Not started)</b>                             |
|  | To review our local ICHNT Resistance data every 6-12 months  | <b>2022/23 NOT COMPLETE - CARRY OVER</b>             |
|  | To review ESPAUR national data every 6-12 months   | <b>NEW (Not started)</b>                             |

**Table 7:** AMS objectives for 2022 – 2025

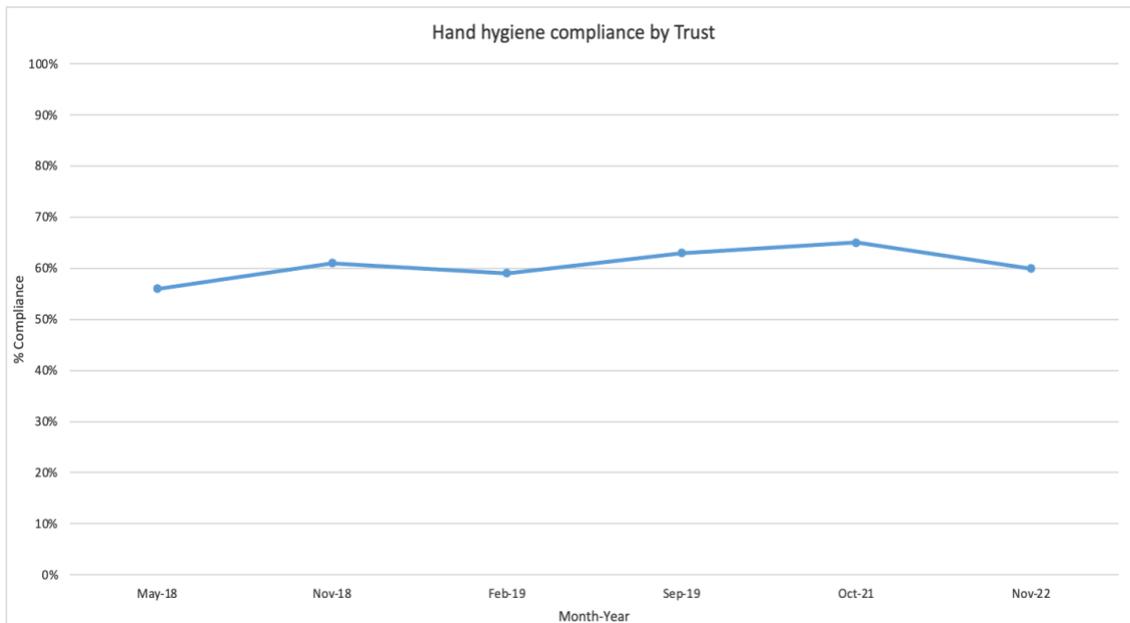
## PPE, hand hygiene and ANTT improvement

In 2022/23 the hand hygiene, ANTT and PPE improvement project established in 2021/22 continued to progress. The bespoke e-learning module which focused on ANTT, and vascular access devices was launched in June 2022 and has received excellent feedback. This module supplements the Level 2 IPC module with more detailed education on IPC practice issues particularly affecting the organisation. The frequency of the existing Level 2 IPC module was increased to annual updates and launched in June 2022 bringing the Trust in line with the skills for health framework.

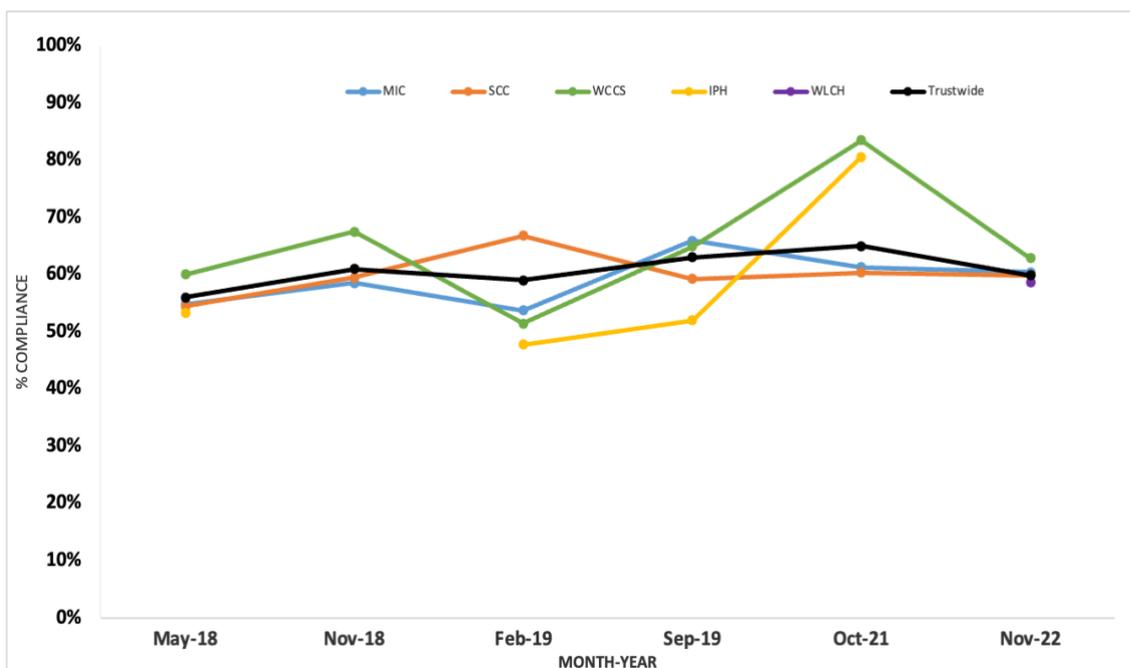
As part of the Trust-wide focus, 'Better Together', there was a focus on IPC held in September 2022. The day focused on several key initiatives relating to IPC practices, with associated observation of practice, education, and training in clinical areas. Topics covered on the day included vascular access devices and ANTT, hand hygiene and PPE, as well as environmental cleanliness and IPC notices.

Our annual Trust-wide audit of hand hygiene compliance was completed in Q3 2022/23. 67 inpatient wards across the Trust were audited. Results have been analysed and show a slight reduction at Trust level from previous years (Figure 18). There was a noted disparity between the hospital sites, with compliance being lowest at Charing Cross Hospital (46 per cent) (Figure 19). The highest performing staff group was the domestic and ward host/hostess group with a compliance of 76 per cent (Figure 20). Results have been shared with divisional colleagues and the data presented to EMB-Q. Divisions have supplied action plans in response. Key actions focus on raising awareness of hand hygiene, engaging patients and staff and driving improvement through local leadership. A review of how future audits will be conducted is planned, with the anticipation that enhanced audit arrangements via supplementary smaller, more regular audits, conducted by IPC, would support improved monitoring of trends locally.

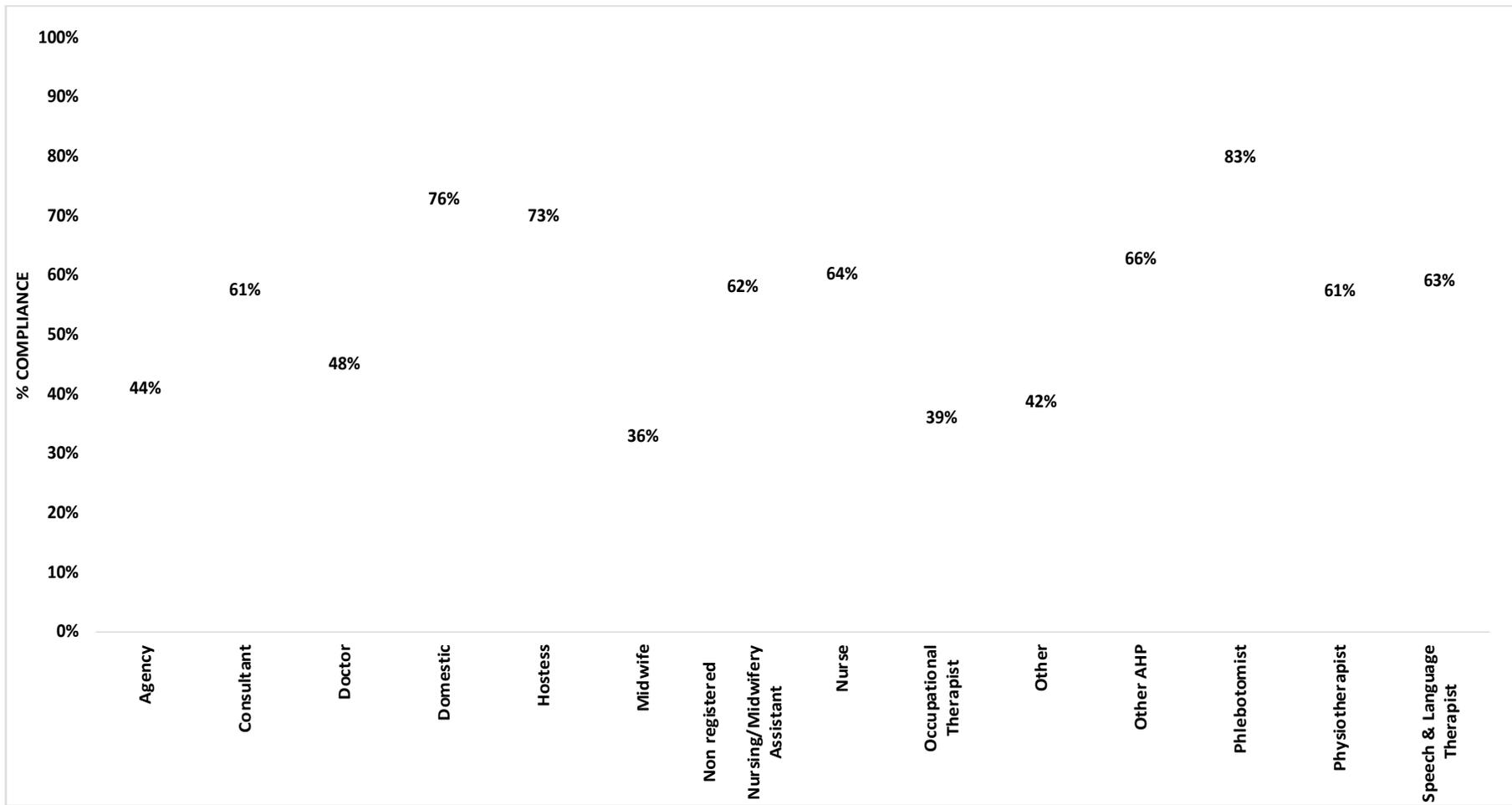
The Trust partnered with the 'Change Lab' team from Imperial College in Q4 2022/23 to work alongside the IPC team, as well as frontline clinical staff to improve hand hygiene compliance. The aim is to develop change ideas based on behavioural insights to prompt behaviour changes. Initial interventions which completed pilot testing in Q4 2022/23 include the use of stickers on key items such as patient beds and glove dispensers. Analysis of findings are currently being reviewed with the report due for review by IPC and Patient Safety Partners prior to any further expansion or roll out of the project.



**Figure 18:** Hand hygiene audit – Trust-wide performance



**Figure 19:** Hand hygiene audit – site performance



**Figure 20:** Hand hygiene audit – professional group performance

## Education

The Trust implemented the UK Core Skills Training Framework in 2013. This is now well embedded across the organisation. In 2022/23 the Trust increased the frequency of the Level 2 IPC module. Moving from three yearly to an annual update provides clinical staff with more regular and up to date education and brings the Trust in line with the Skills for Health Framework.

**Level 1** – Completed by all staff, bank and volunteers (unless compliant at a higher level) is every three years. Trust Compliance = 92.9 per cent

**Level 2** – Completed by all healthcare workers every year. Trust compliance = 91.3 per cent

**ANTT Module** – Completed by staff who undertake aseptic non-touch technique (ANTT) as part of their role. Trust compliance = 93.7 per cent.

In March 2023 a new IPC clinical practice educator post was appointed, following the formal consultation and restructure in late 2022. The role has been designed to support practice education in IPC across all professional disciplines. The establishment of this post supports the team to embed the revised approach to IPC education, training and competency assessment previously agreed by the EMB-Q in 2022.

A national IPC education framework was released in March 2023. This will provide the basis for enhanced IPC training to the Trust. This will be strengthened by the relaunch of the IPC Link practitioner programme in 2023/24.

## Vascular access

The vascular access service provides expert advice and support to staff on all aspects of clinical care relating to vascular access. The team consists of a lead nurse and four clinical nurse specialists. The team supports both inpatient and outpatient services in various clinics across the Trust.

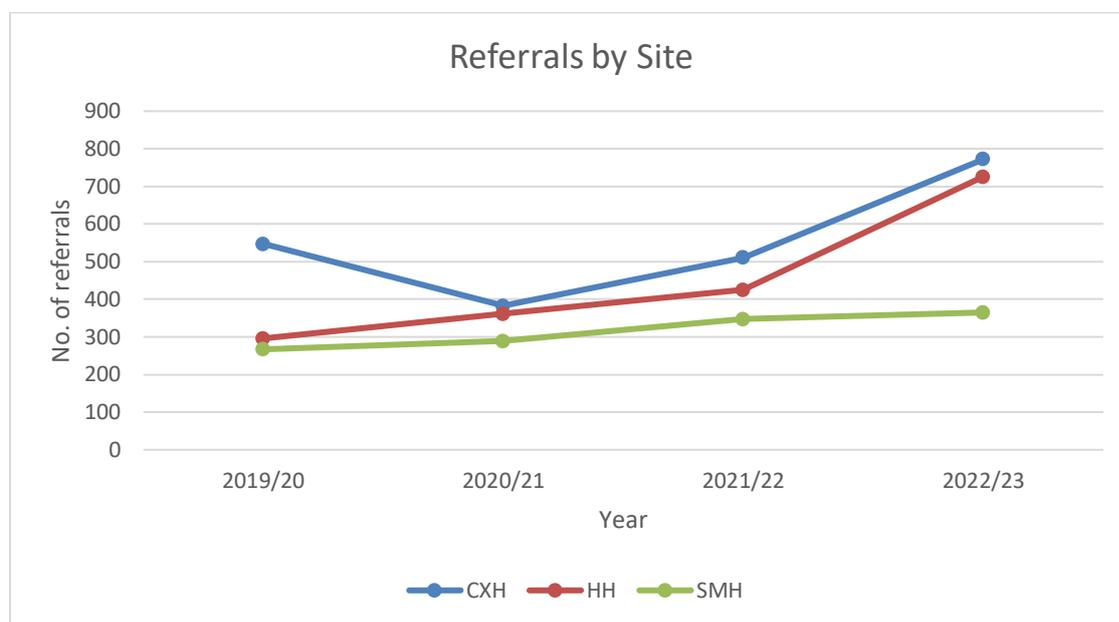
The primary activity of the team involves the insertion of peripherally inserted central catheters (PICC), midlines, and on occasion, some peripheral cannula, where expertise is required for securing vascular access in the most challenging patients. The team also provide follow up insertion care, ensuring that vascular access devices are managed in-line with Trust guidance.

The team provide a comprehensive and successful programme of education designed to minimise the risk associated with the insertion, maintenance and prompt removal of peripheral cannulae. Demand for this training often outweighs supply and the vascular access team are looking at ways for expanding this programme. Much of this increased demand is because training is no longer being included in pre-registration programmes across many disciplines including nursing, midwifery and trainee nurse associates and radiographer undergraduate training. In 2022/23, the team have trained 292 staff in cannulation and 91 staff in venepuncture.

Ultrasound-guided deep vein cannulation training has also been piloted in a very small number of restricted areas. Once the pilot is complete, the programme will be assessed for viability and patient satisfaction prior to any decision on implementation. Any implementation plan is likely to be limited to small numbers due to the constraints of the service.

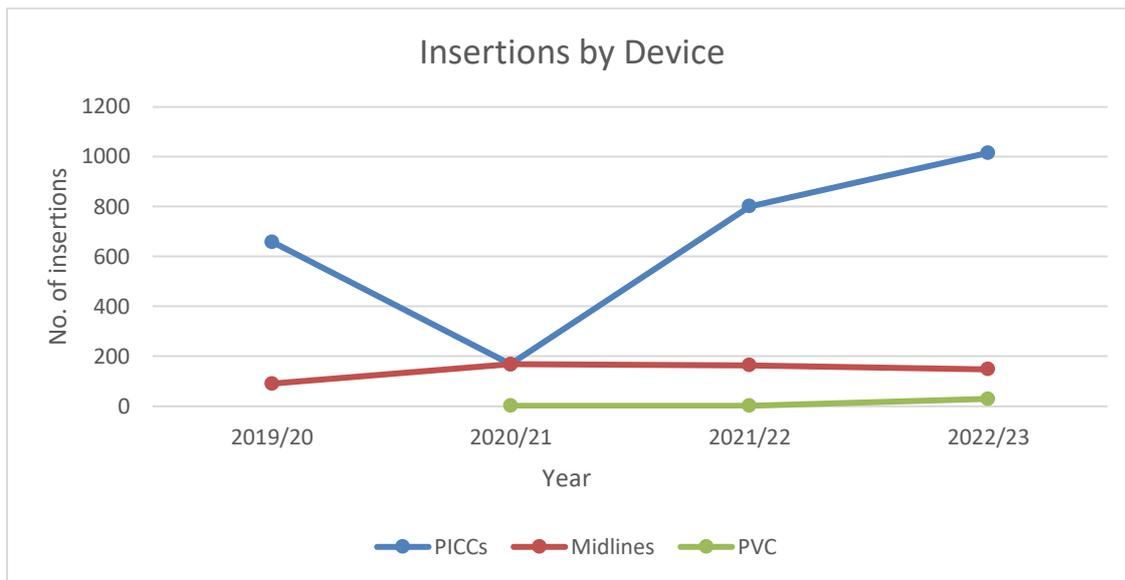
### Intravascular device insertions

During 2022/23, the vascular access service received a total of 1,869 referrals, an increase of 586 from 2021/22 (Figure 21). The increase in referrals is across all hospital sites, and now exceeds pre-pandemic referral levels. Referrals are also increasing in complexity which has an impact on the time dedicated to each case.



**Figure 21:** Imperial College Healthcare NHS Trust referrals by site

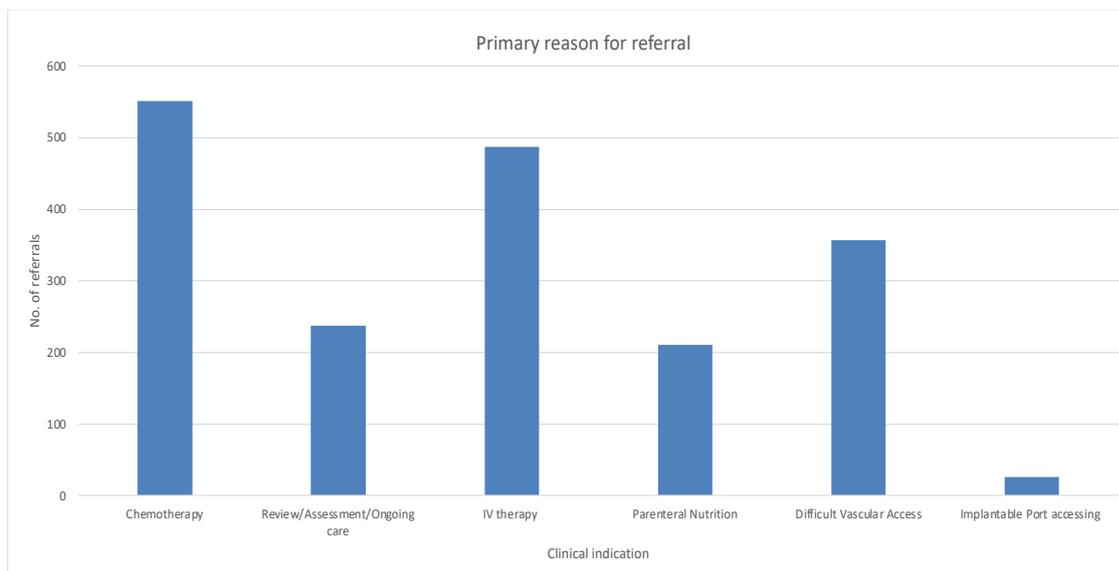
The team are inserting a variety of vascular access devices, with the choice of vascular access device inserted based on expert assessment (Figure 22). Of the 1,869 referrals received, 1,195 patients (64 per cent) went on to have a line cited. Most lines cited were PICCs (n=1,016), with the remainder either midlines (n=149), or a small number of peripheral cannulae (n=30). The team continue to see a small number of patients (n=4) in a weekly outpatient clinic, for issues ranging from accessing implantable ports for blood tests and radiological procedures to complex medical adhesive related skin injuries in patients with peripherally inserted catheters in situ. This is due in part to more patients having long term vascular access devices in-situ for a range of complex medical conditions.



**Figure 22:** Imperial College Healthcare NHS Trust insertion by device

The primary reason for referrals is indicated in Figure 23, with chemotherapy being the largest patient cohort, followed by IV therapy and those with very difficult vascular access (DIVA).

The team provides a booked outpatient clinic for haematology and oncology patients who require PICC insertion prior to commencement of chemotherapy or other IV therapies. Six clinic appointments are provided for each speciality on set days. This provides greater flexibility and subsequently capacity for inpatients rather than reactive working.



**Figure 23:** Imperial College Healthcare NHS Trust primary reason for referral

Of note, there have been 19 PICCs in-situ more than 100 days, indicating both a clinically appropriate device selection as well as very good ongoing care by clinical teams in maintaining patency of the devices and the associated dressing care.

A review was undertaken of PICC and midline catheters that are removed after a very short dwell time to ascertain how and why they are removed prematurely. Our investigations concluded several factors, with one key issue being late referrals. To address this, we are encouraging clinical teams to refer at the first instance of difficult cannulation rather than following multiple failed attempts.

A number of referrals were declined throughout the year. There were a variety of reasons, the predominant ones being a change in clinical circumstances or change in treatment plan, patient refusal or failure to attend, or access that is contraindicated, such as in the case of intravenous drug users. A small number of cases were declined due to capacity issues.

### Line safety management group

The line safety management group (LSMG) is the Trust-wide group with responsibility for reviewing matters relating to the safety of intravascular devices. This includes the review of incidents relating to vascular access devices and IV therapy to ensure adherence to best practise and make recommendations where appropriate. The clinical divisions are represented on this group by senior clinical staff who contribute to the multidisciplinary group reviews of all bacteraemia related to vascular access devices. Trends are noted and acted upon to provide safe practice for our patients.

The LSMG played an active role in developing new educational materials for medical staff in Q1 2022/23. This consisted of an on-line module on central venous access device insertion and the implementation of an insertion checklist, and the new wire buddy training. This is now fully implemented.

Two notable areas of concern noted by LSMG include poor decontamination of needle free connectors and adherence to the five moments of hand hygiene. This has been addressed with the new aseptic non-touch technique training (ANTT) on the Learn platform. There has been a focus of education delivered by the vascular access team and is a continued feature of improvement projects in several clinical areas. Education materials including step by step guides in poster format have been developed for clinical areas to use in safety briefings and in local teaching huddles. The team continue to support local teaching in areas with particular concern.

The LSMG continued to note challenges throughout 2022/23 due to fragile supply chain of consumables associated with vascular access and IV therapy. They continue to collaborate with colleagues within the north west London sector to have standardisation of product selection, as well as establishing agreed alternatives which can be used when supply issues occur. The LSMG also review new products prior to implementation. In 2022/23 the group reviewed two key products with the potential to assist in reducing catheter related blood stream infections. Curos, a passive disinfecting cap, and a chlorhexidine impregnated integral dressing are both being evaluated for potential implementation in the forthcoming year, if approved.

## IPC in the built environment (water, ventilation and decontamination)

### Water safety

The IPC team have a pivotal role in keeping patients safe and are often the conduit between clinical and estates teams and contractors. Water safety is an integral feature in all healthcare settings and the Trust continues to experience increasing challenges in the management of water safety due to a number of factors:

- age of the estate;
- age and condition of the water systems;
- number of adaptations made to original water systems;
- number of water results exceeding normal ranges;
- expense associated with required works;
- complexities required to operationalise required maintenance; and
- operational capacity pressures versus the ability to carry out maintenance in clinical areas.

The water safety group (WSG) is a multidisciplinary group tasked with discharging the responsibility of commissioning, maintenance, development, implementation and review of the water safety plan (WSP). The aim of the WSG is to ensure the safety of all water used by patients, residents, staff and visitors across all Trust premises, minimising the risk of infection associated with waterborne pathogens in-line with Health Technical Memorandum 04-01: Safe water in healthcare premises Part B: 'Operational Management' and the HSE's technical guidance HSG274 Part 2.

The WSG provides a forum where people with a range of competencies come together to share responsibility and take collective ownership for ensuring water-related hazards are identified, risks are assessed, control measures are monitored, and to develop incident protocols, guidance and other documentation as required. The WSG meets monthly and is subordinate to the TIPCC. Additional site-specific water safety meetings to review the finer detail or site-specific issues are also held monthly, or more frequently when required. The WSG sits within the IPC governance reporting structure and has clearly identified lines of accountability up to the Trust's duty holder (Imperial College Healthcare NHS Trust's chief executive).

Associated risks in relation to water safety are managed via risk registers in both the estates department and IPC. Risks are reviewed and managed at pre-determined intervals to ensure they are continually minimised. The Trust employs the services of an independent authorising engineer (AE) for water. They provide unbiased expert guidance to the WSG. In addition, site-based authorised persons (APs) for water are in post across the Trust. Sub-contractors are used to monitor and carry out remedial works where required. An IPC environmental advisor works closely with all teams involved in water safety to ensure there is strong clinical representation in all forums.

## Ventilation safety

Ventilation systems across the Trust are overseen by the ventilation safety group (VSG). In response to recommendations made in the recently revised Health Technical Memorandum 03-01: Specialised ventilation for healthcare premises Part B: The management, operation, maintenance and routine testing of existing healthcare ventilation systems, a new Trust VSG was established in 2022/23. The VSG has clearly defined roles and responsibilities and is embedded in the Trust's governance structure, subordinate to the TIPCC. It is chaired by the associate director of health, safety and working environment.

The VSG is a multidisciplinary group with a remit to assess all aspects of ventilation safety and resilience required for the safe development and operation of healthcare premises. The main aims of the group are to oversee the following:

- ventilation elements in design process for new healthcare premises;
- ventilation elements in design process for modifications to existing premises;
- commissioning and validation process;
- management and maintenance of specialist and non-specialist ventilation;
- annual verification and performance testing;
- prioritising the plant replacement programme; and
- decommissioning and removal of redundant equipment.

All decisions affecting the resilience, safety and integrity of the ventilation systems at the Trust and its associated equipment are made with the agreement of the Imperial College Healthcare VSG.

The Trust employs the services of an independent authorising engineer (AE) for ventilation. They provide unbiased expert guidance to the VSG.

In addition, site-based APs for ventilation are in post across the Trust. The Trust has commissioned CBRE as approved sub-contractors, who are used to monitor and carry out remedial works where required. An IPC environmental advisor works closely with all teams involved in water safety to ensure there is strong clinical representation in all forums.

## Specialised ventilation

Since HTM 03-01 was published in 2021, all new ventilation instalments must comply to the corresponding standards. Maintenance of all pre-existing systems continues at the standards that were in place when those systems were first designed.

All specialist mechanical ventilation plants undergo a rolling annual verification process. This work is conducted by an appointed subcontractor, independent of the Trust. All new building works which require specialist ventilation must have the design signed off by the independent authorising engineer for ventilation (AE(V)).

## Non-specialised ventilation

In September 2022 the Trust commissioned ETA Projects Ltd to undertake a survey of the rates of air change from mechanical ventilation systems (excluding specialist ventilation areas) across the Trust. They were also asked to review and identify:

- areas with no mechanical ventilation but with openable windows (natural ventilation); and
- rooms with no means of ventilation either mechanical or natural.

The findings of that report indicated a significant number of areas where air changes were below the new HTM guidance for non-specialist ventilation areas. Given the aged estate across the Trust this was expected and is a similar position to other hospitals of similar ages.

A summary report was presented at the clinical reference group in Q4 2022/23 with a task and finish group then established comprising of colleagues from estates, IPC, site operations, divisional and health and safety teams. The group was asked to review the report findings and make recommendations for immediate action. The group were also asked to consider potential solutions to improve ventilation and reduce risk across the organisation.

Initial actions in aspects of operational maintenance such as resetting fire dampers, adjusting flow rates and installing additional volume control dampers to improve system balancing were carried out by CBRE through Q4 2022/23. Whilst these will offer some improvement, due to the age of the plant and estate structures it is not possible to easily improve ventilation to areas that only have natural ventilation due to the constraints of ventilation ductwork.

A high-level feasibility appraisal was commissioned by estates for areas where 'through wall heat recovery ventilation units' may be an option. These options will be considered as part of future refurbishments however they are not practical in much of the estate.

Mitigations continue to focus on existing IPC controls for respiratory viruses, outbreak management and working with site operations teams to reduce risk as far as practicable.

## Decontamination

### Sterile services department (SSD)

The Trust's SSD is sub-contracted to IHSS Ltd. a third-party supplier as part of the north west London collaboration. They are accredited to ISO 13485: Medical Devices Quality Management. The contract is managed by the Imperial College Healthcare estates and facilities team. SSD operates to standards set in HTM 01-01: decontamination of surgical instruments. This guidance offers best practice on the whole decontamination cycle, including the management and decontamination of surgical instruments used in acute care.

The SSD team includes a decontamination manager, quality manager and receipt and dispatch operatives for each site. IPC provide supplementary advice and expertise when required.

IHSS Ltd, as part of its contractual and governance arrangements hold customer contract management meetings, as well as a joint management board. These report into the estates quality meeting which in turn reports to TIPCC. As part of the service level agreement (SLA) the Trust has set key performance indicators (KPIs) which are reported monthly. Issues such as fast track activity, quality of service, and turnaround times are all monitored. In accordance with the HTM, all surgical sets are electronically tracked and are traceable. Additionally, individual instruments which are high value or for high-risk surgery are also laser marked.

In addition to the regular monitoring of KPIs the Trust conducts an annual audit which takes place between the Trust and IHSS Ltd. and involves IPC team representatives. The IPC team also work collaboratively with SSD services and the external contractors when service or product changes are required.

### **Endoscopy decontamination units (EDU)**

The Trust has endoscopy facilities on all three of the main hospital sites. These departments continue to maintain accreditation against ISO 13485 in 2022/23. This is evidenced by both internal and external audits conducted through their quality management system. The Trust appointed AE(D) as an independent external person who performs yearly 'Institute of Healthcare Engineering and Estate Management' (IHEEM) audits. They are also part of the Joint Accreditation of Gastroenterologists (JAG) accreditation process. Assessments are conducted to the standards specified in HTM 01-06.

The AE(D) assesses each authorised persons (AP) competence and will sign them off accordingly. The AP is then responsible for endorsing the weekly and quarterly reports. In turn, the AP's sign the competent persons (CP) off to perform tasks.

CPs perform weekly water testing to ensure each washer or disinfectant is considered fit for purpose. All technicians are trained and signed off as competent and their training is updated annually. Additional training and competency assessment can be deployed when necessary.

The quality management systems in place have both work instructions and standard operating procedures, which provide assurance and standardisation of all three EDUs. This is substantiated with an annual internal audit. In accordance with the HTM, all endoscopes are electronically tracked and are traceable.

2022/23 saw a refurbishment to the EDU at Charing Cross Hospital leading to a significantly improved reverse osmosis (RO) water supply, and the installation of larger capacity machines allowing for a faster turnover of equipment and more efficient service delivery.

## Other decontamination areas

Medical devices outside of designated SSD and EDUs may also require decontamination. Staff in those areas must also comply with HTM requirements.

Local equipment such as ultrasound probes may require local decontamination with high level disinfection. This is monitored by staff within those areas who have been trained and assessed as competent and who undergo annual update and revalidation of competence.

Equipment, such as bedpan washers, is monitored daily, weekly, quarterly and yearly. This is provided both internally by end users and externally using sub-contractors when required.

Laboratory areas are required to have sterilisers to render discarded specimens inactive and safe for waste disposal. These are also subject to HTM 01-01, with weekly, quarterly and annual testing takes place by a CP. These are also signed off by the AP and have a yearly audit conducted by the AE(D) who is independent to the Trust.

## Medical devices

All medical devices purchased, loaned or acquired by the Trust for trial purposes have a pre-acquisition questionnaire (PAQ) supplied by the manufacturer. The PAQ supplies decontamination instructions and how the equipment should be treated to comply with safety requirements. All PAQs are assessed by IPC team to ensure they can be processed in the Trust. Oversight for medical devices is via the medical device management group (MDMG), of which the IPC team is a member.

## CJD and NICE 666 risk management

Policies and procedures are in place to ensure full compliance with NICE 666 guidance for the management of instruments used with high-risk tissue and health safety executive (HSE) requirements. In 2022/23 no patients have been identified as having Creutzfeldt-Jakob Disease (CJD).

## Redevelopment

Following the IPC team restructure in 2022, a post was part funded within the Trust's redevelopment team. This post was implemented to ensure expert advice can be provided at the conceptual phase of new projects, right through to completion of redevelopment works. The implementation of this role will ensure a greater understanding and communication between both teams as well as an appreciation for IPC requirements in new builds.

## Capital projects

IPC play an important part in the Trust's capital programme which incorporates building works, water safety and ventilation. Health Building Note 00-09 (HBN 00-09) 'Infection Control in the Built Environment' is used to risk assess the environment within the healthcare sectors. The various stages of a capital project are covered,

from initial concept through to post-project evaluation with particular focus on aspects such as dust control measures that may be required. Other HTM's and HBN's are consulted when needed.

## **Cleaning services**

The provision of a clean and safe healthcare environment remains a key priority for all healthcare organisations. It provides not only a foundation for effective IPC, but also promotes patient confidence and demonstrates the existence of a positive safety culture. The absolute requirement to provide clean, safe healthcare is now written into a range of key legal processes and documents which govern the delivery of NHS funded care.

## **Accountabilities**

The delivery of cleaning services and monitoring arrangements are delivered through the Director of estates and facilities. The Chief nurse is the designated board nominee responsible for Estates and facilities services, and thus is responsible for ensuring that there are effective arrangements throughout the Trust as stated in the National Standards of Healthcare Cleanliness 2021. The board nominee with responsibility for the overall delivery of IPC is the Director of infection prevention and control.

## **The National Cleanliness Standards**

In setting cleanliness standards, the Trust uses the National Standards of Healthcare Cleanliness 2021 as its reference point. The Facilities department has responsibility for the operational cleaning services to our five main hospital sites, all of which are managed and delivered by an in-house service. NHS Property Services (NHSPS) provides facilities and cleaning services to our services managed on external sites, such as satellite units and community services operated by the Trust.

## **Monitoring arrangements**

Monitoring is conducted as per the requirements of The National Standards of Healthcare Cleanliness 2021. The facilities department is responsible for monitoring cleaning procedures and standards. A programme of audits is in place to monitor the performance and effectiveness of the service being delivered and to validate achievement of cleaning standards.

The system has three objectives, to:

1. maintain consistently high standards and meet the required specification by means of inspection analysis and action;
2. identify any failures to meet the required level of service; and
3. rectify any such failures.

The audits include items cleaned by clinical staff, as well as facilities staff. Table 8 details the scores per hospital site for all functional risk categories and includes both clinical and non-clinical areas across the Trust.

| Combined cleaning, average scores (all FRs) |       |       |       |       |       |       |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Site  | M1    | M2    | M3    | M4    | M5    | M6    | M7    | M8    | M9    | M10   | M11   | M12   |
| SMH / WEH                                   | 98.03 | 97.88 | 91.67 | 95.34 | 94.73 | 97.25 | 93.40 | 94.64 | 96.63 | 96.23 | 93.14 | 96.52 |
| CXH   | 93.32 | 92.09 | 91.26 | 86.99 | 93.79 | 90.54 | 91.99 | 90.72 | 92.79 | 91.24 | 88.30 | 87.93 |
| HH / QCCH                                   | 97.52 | 97.56 | 96.83 | 96.60 | 95.79 | 96.04 | 96.12 | 96.22 | 97.30 | 95.91 | 95.53 | 96.26 |
| IPH   | 97.61 | 98.28 | 96.23 | 96.62 | 96.98 | 96.89 | 96.25 | 96.81 | 97.88 | 96.48 | 95.29 | 96.32 |
| Site  | Q1    |       |       | Q2    |       |       | Q3    |       |       | Q4    |       |       |
| SMH / WEH                                   | 95.86 |       |       | 95.77 |       |       | 94.89 |       |       | 95.30 |       |       |
| CXH   | 92.22 |       |       | 90.44 |       |       | 91.83 |       |       | 89.16 |       |       |
| HH / QCCH                                   | 97.30 |       |       | 96.14 |       |       | 96.55 |       |       | 95.90 |       |       |
| IPH   | 97.37 |       |       | 96.83 |       |       | 96.98 |       |       | 96.03 |       |       |

**Table 8:** National Standards of Healthcare Cleanliness results 2022/23 for all areas

### Patient-led assessments of the care environment (PLACE)

The Department of Health and Social Care and the NHS Commissioning Board requires all hospitals, hospices and independent treatment centres to undertake an annual PLACE.

PLACE was introduced in 2013, replacing the previous patient environment action team (PEAT) inspections as a system for assessing the quality of the patient environment. The assessments primarily apply to hospitals and hospices providing NHS-funded care in both the NHS and private or independent sectors, but others are also encouraged and helped to participate in the programme.

The aim of PLACE assessments is to provide a snapshot of how an organisation is performing against a range of non-clinical activities which impact on the patient experience of care, which include cleanliness, the condition, appearance and maintenance of healthcare premises, the extent to which the environment supports the delivery of care with privacy and dignity, how well the needs of patients with dementia are met, how well the needs of patients with a disability are met and the quality and availability of food and beverages.

In response to the Covid-19 pandemic, it was confirmed in September 2020 that the regular PLACE collection would be suspended in 2020. It was agreed that this was the best way forward given the risk to patient assessors and staff in undertaking the full assessment programme whilst the Covid-19 pandemic continued, which was then extended through 2021. The schedule of assessments for 2022 were modified to allow trusts to determine what was best for their circumstances based on local prevalence and recovery plans.

Imperial College Healthcare opted for conducting PLACE lite and 'dip tests' which involved facilities staff and patient assessors and were carried out in accordance with the NHS required timetable. As these were not full assessments, although formally submitted, the results did not appear in the Estates and Facilities Management (EFM) System published tables in spring. Plans are already in a mature stage for a full PLACE programme to run in 2023/24.

This 2022/23 infection prevention and control annual report was written on behalf of Mr Raymond Anakwe, Executive director, medical director and director of infection prevention and control

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