

Annual Report Infection Prevention and Control 2022 – 2023

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Executive summary

The purpose of this report is to provide the Board with information on Trust performance and provide assurance that suitable processes are being employed to prevent and control healthcare associated infections (HCAI) at Sandwell and West Birmingham NHS Trust.

The Trust has continued to recover from the impact of the global pandemic of SARS-CoV-2, the virus that causes Covid-19. During 2022-23, 3221 patients tested positive via PCR at the point of their admission or during their admission to one of our hospitals. However, in line with the national move towards living with Covid-19, our mask wearing policy was modified as the year progressed. This meant that mask wearing became required only in areas where there were untriaged patients whose Covid-19 or suspected respiratory infection was unknown, on respiratory pathways, and where there was known or suspected respiratory infection. In addition to this, areas such as Haematology/Oncology retained mask wearing due to the vulnerability of these patient groups.

During 2022-23 the Trust recorded three cases of Trust apportioned Meticillin resistant *Staphylococcus aureus* (MRSA) bacteraemia (blood stream infection), one case in each of August 2022 and January 2023 where the blood culture specimen was taken beyond admission day plus two days of admission. One further case occurred during November 2022 in a patient where the blood culture specimen had been taken within admission day plus two days, but where the patient had a previous recent admission, and it was concluded that this patient's MRSA was likely hospital associated. This compares to no Trust attributable cases during 2021-22.

There were 47 cases of Trust apportioned *Clostridioides difficile* infection against an NHS England target of no more than 41 cases. This compares to 33 cases during 2021-22. However, it is noted that rates of *Clostridioides difficile* infection have increased both across the Black Country and nationally.

There were 18 Trust apportioned cases of Meticillin sensitive *Staphylococcus aureus* (MSSA) bacteraemia during 2022-23 compared to 15 during 2021-22. There are no local or national trajectories set for MSSA bacteraemia.

There were very low numbers of influenza cases reported during the winter season 2022-23. There were four occasions when wards were fully closed to admissions and discharges due to a Norovirus outbreak.

An inspection of arrangements for Infection Prevention & Control was undertaken by NHS England during March 2023. The outcome was for the Trust to be categorised as 'routine maintenance and support' (equivalent of green) on the NHSE Midlands IPC matrix. This was a positive outcome for the Trust. However, the Trust continues to take the issue of HCAI seriously and has increased provision in the Infection Prevention & Control Team during 2022-23. A note of thanks is offered to all our staff at Sandwell and West Birmingham NHS Trust who continue to take staunchly that prevention of infection at the Trust is everyone's business. We look forward to further strengthening infection prevention and control practices at the Trust during 2023-24.

1. Infection Control Team and reporting arrangements

The Infection Prevention & Control Team currently consists of the following establishment:

Deputy Director Infection Prevention & Control (IPC) (Band 8C)	1.0 WTE
Infection Control Doctor/ Consultant Microbiologist	5 PA
Matron Infection Prevention & Control (Band 8a)	1.0 WTE
Infection Prevention & Control Nurse Specialist (Band 7)	6.2 WTE
IPC Decontamination Manager (Band 7)	1.0 WTE
Infection Prevention & Control Nurse (Band 6)	2.0 WTE
IPC Data Analyst (Band 6)	1.0 WTE
IPC Admin Support Secretary (Band 4)	1.0 WTE
IPC Support Officer (Band 4)	1.0 WTE
IPC Health Care Assistant (Band 3) (Vacant)	1.0 WTE
IPC Mask Fit Testers (Band 2)	2.0 WTE

The *Trust Board* recognises and agrees their collective responsibility for minimising the risks of healthcare associated infection and agrees and supports how these risks are controlled. The responsibility for Infection Prevention and Control (IPC) lies with the Director of Infection Prevention & Control (DIPC) who is also the Chief Nurse at the Trust. The DIPC is supported by a Deputy Chief Nurse who retains day to day line management for the Infection Prevention & Control Team. The Deputy DIPC Leads the IPC Team and all the team are supported by a Consultant Microbiologist who is the dedicated *Infection Control Doctor* for the Trust and is part of Black Country Pathology.

The Deputy DIPC is a senior nurse who provides leadership for the IPC Nurse Team. The Deputy DIPC reports managerially to the Deputy Chief Nurse and professionally to the Chief Nurse (DIPC) and works closely with the Infection Control Doctor and other Consultant Microbiologists to ensure the agreed IPC priorities are implemented and that an appropriate response is maintained to any infection prevention incident arising.

There are two Infection Prevention & Control (IPC) forums at the Trust. The Operational IPC Group is held bi-monthly and is chaired by the Deputy DIPC. This Group oversees the monthly performance against HCAI trajectories and addresses operational barriers to effective IPC at the Trust. The Strategic IPC Group is also held bi-monthly (in sequential months) and is chaired by the Chief Nurse (DIPC). This forum receives assurance on IPC practice at the Trust. The membership of both Groups includes representation from all Groups, Hotel Services and Estates at the Trust, with the Strategic Group additionally inviting representatives from the local Integrated Care Board (ICB), the local UKHSA Health Protection Team and the Local Authority Public Health Team. A quarterly report from the Strategic IPC Group is forwarded to the Quality and Safety Committee, which is a subcommittee of the Trust Board.

The *Infection Prevention & Control Team* (IPCT) provides expert knowledge and day to day management of IPC related issues. The IPCT liaise regularly with clinicians and managers across the Trust. They are supported by *IPC Link practitioners* based in clinical areas for whom study events are held quarterly.

Members of the IPCT also attend and participate in (but are not limited to) the following groups / committees:

Infection Prevention & Control Operational Group
Infection Prevention & Control Strategic Group
Operational Water Safety Group
Strategic Water Safety Group
Waste Group and Waste Project Group
Decontamination Group
Health and Safety Group
Ventilation Safety Group
Antimicrobial Stewardship Group
Building planning meetings
Patient Led Assessments of the Care Environment (PLACE)
Clinical Products Evaluation Group
Critical Care IPC meeting
Dedicated daily IPC meeting with Consultant Microbiologist, Capacity /Site Team and Support Services
Other Trust capacity and site meetings
Midland Metropolitan University Hospital Activation Project Group

In addition to the above meetings, the Deputy DIPC also attends the Trust Quality and Safety Committee to present a quarterly report and attends the Clinical Quality Review Meeting, which comprises of a quarterly report to the Black Country ICB outlining Trust performance on IPC issues and learning. The Operational and Strategic Infection Prevention and Control Groups receive regular updates on Trust compliance with the Hygiene Code.

2. Compliance with the Hygiene Code

The Trust is required to demonstrate compliance with The Health and Social Care Act 2008: Code of Practice on the prevention and control of infections and related guidance (The Hygiene Code). Evidence of compliance to each section of the Hygiene Code was reviewed periodically during the year and was received at the Infection Prevention & Control Operational and Strategic Groups. The Department of Health refreshed the Hygiene code, and it was re-issued in December 2022. The Trust declared compliance with all ten criteria of the Hygiene Code (listed below) during 2022-23. However, the Trust declares some challenges to compliance with the Hygiene Code, in criterion two around the fabric of some estate and in waste segregation; and in criterion 4 around the provision of information for patients in a range of languages.

Criterion one: Systems to manage and monitor the prevention & 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.

Criterion two: Clean Environments. Provide and maintain a clean appropriate environment in managed premises that facilitates the prevention and control of infections.

There are some challenges to the good physical repair of the estate due to old premises at both City and Sandwell Hospital sites and there is an associated backlog of repairs (notwithstanding some retained estate is now beyond the end of its working life prior to the opening of the Midland Metropolitan University Hospital in 2024-25). There are also challenges to effective waste management in particular appropriate segregation of waste. However, a plan is in place via a waste working group to improve compliance with correct segregation and improved provision of bins in

clinical areas.
<u>Criterion three:</u> Antimicrobial Use - Ensure appropriate antimicrobial use and stewardship to optimise service user outcomes and to reduce the risk of adverse events and antimicrobial resistance.
<u>Criterion four:</u> Information on Infections - Provide suitable accurate information on infections to service users, their visitors and any person concerned with providing further health and social care support or nursing/medical care in a timely fashion. There is a limited range of languages for which infection prevention control patient information leaflets are available. However, the IPC Team is working with the Patient Experience Team to improve this during 2023-24.
<u>Criterion five:</u> Those at risk of infection - Ensure that people who have or 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.
<u>Criterion six:</u> Registered providers responsibility to health and social care workers and those in care settings (including contractors and volunteers). Systems to ensure that all care workers (including contractors and volunteers) are aware of and discharge their responsibilities in the process of prevention and controlling infection.
<u>Criterion seven:</u> Isolation facilities - Provide or secure adequate isolation facilities.
<u>Criterion eight:</u> Laboratory support - Secure adequate access to laboratory support as appropriate
<u>Criterion nine:</u> Policies - The service provider should have and adhere to policies designed for the individuals care and provider organisations that will help to prevent and control infections.
<u>Criterion ten:</u> Occupational Health - The registered provider will have a system or process in place to manage health and care worker health and wellbeing and organisational obligation to manage infection, prevention, and control.

Compliance with the Hygiene Code continues to be monitored at the Operational and Strategic Infection Prevention & Control Groups as part of the calendar of business for these Groups.

3. Summary of Infection Prevention and Control Performance

Trusts are required to participate in organism mandatory reporting schemes:

- I. Meticillin resistant *Staphylococcus aureus* (MRSA) bacteraemia
- II. Meticillin sensitive *Staphylococcus aureus* (MSSA) bacteraemia
- III. *Clostridium difficile* infection
- IV. Gram negative - *Escherichia coli*, *Klebsiella* and *Pseudomonas aeruginosa* bacteraemia
- V. Carbapenemase producing *Enterobacteriaceae*

MRSA, MSSA and *E. coli* Bloodstream Infections (BSI) and laboratory detected *Clostridium difficile* toxins are reported monthly via the UKHSA Health Care Associated Infection (HCAIs) data capture system.

3.1 MRSA Bacteraemia

All MRSA bacteraemia are initially apportioned to the organisation based on the timing of the positive blood culture. The MRSA bacteraemia then undergoes a post infection review (PIR) process.

There have been two episodes of Trust-apportioned MRSA bacteraemia during the financial year 2022-23, where the specimen (blood culture) was taken beyond admission day plus two days, and were classified as hospital onset, hospital associated (HOHA) and one other case that while the specimen was taken within admission day plus two days, and was therefore classified as Community onset hospital associated (COHA), the patient had a recent previous admission, and it was concluded that this patient's MRSA was likely hospital associated.

Case 1: An MRSA bacteraemia was reported in a patient admitted to Priory 5 at Sandwell on 05/08/22, following pyrexia and a blood culture was obtained on 08/08/22. The patient had a diagnosis of Acute Liver Disease and was on a Palliative Care Pathway. MRSA screens to nose and groin on admission were negative so the case is likely hospital acquired. The patient had x2 paracentesis drains inserted, at the bedside, whilst an inpatient. As the patient had screened negative on admission, no decolonisation treatment had been prescribed.

A Post Infection Review (PIR) meeting was held on 29/09/22, which included the patient's Consultant, members of the IPC Team and Consultant Microbiologist. There was no firm conclusion as to the likely portal of entry for the MRSA leading to the bacteraemia. However, it is possible that the portal of entry was via an ascitic drain site.

Case 2: The patient was admitted to Priory 2 on 03/01/23 and transferred to Lyndon 2 on 06/01/23 and was transferred to critical care on 09/01/23. The patient first presented with blood in stools and surgical problem with plan for examination under anaesthetic and follow up. However, the patient had a raised INR and thrombocytopenia and deteriorated. The patient transferred to critical care with multi organ failure secondary to small bowel obstruction. The patient sadly died on 11.01.23. MRSA blood culture was not known until after the patient's death. The patient was known to be MRSA positive from admission screen taken 03/01/23.

A post infection review (PIR) meeting was held on 02/02/23, which included the patient's Consultant, members of the clinical teams looking after the patient, members of the IPC Team and Consultant Microbiologist. It was not possible to be certain of the portal of entry of the MRSA leading to bacteraemia. The PIR meeting felt while it could not be ruled out, the source was unlikely to be via inserted lines. It was felt possible the source could have been the patient's chest infection.

MRSA did not feature on the patient's death certificate as a cause of death.

Case 3: A patient underwent emergency Caesarean section (C-section) and gave birth on 02.11.22. The patient was routinely screened for MRSA for which the result was negative. The patient made an unremarkable recovery and was transferred to the ward the same day and was discharged to the care of community midwives on 03.11.22.

The patient experienced abdominal pain on 09.11.22 and attended maternity Triage on 10.11.22 with an oozing and painful wound, when a swab of the abdominal wound was taken, which later identified MRSA.

On 15/11/22 an ambulance crew brought the patient to Triage, reporting a temperature of 40°C, tachycardia and shortness of breath. The patient was admitted and commenced on sepsis pathway. A blood culture was taken and was positive for MRSA which was treated with antibiotics effective against MRSA.

The likely source of MRSA in this case is a hospital acquired deep seated wound infection. The MRSA screen prior to C-section was negative and so this is likely hospital acquired during the C-section admission.

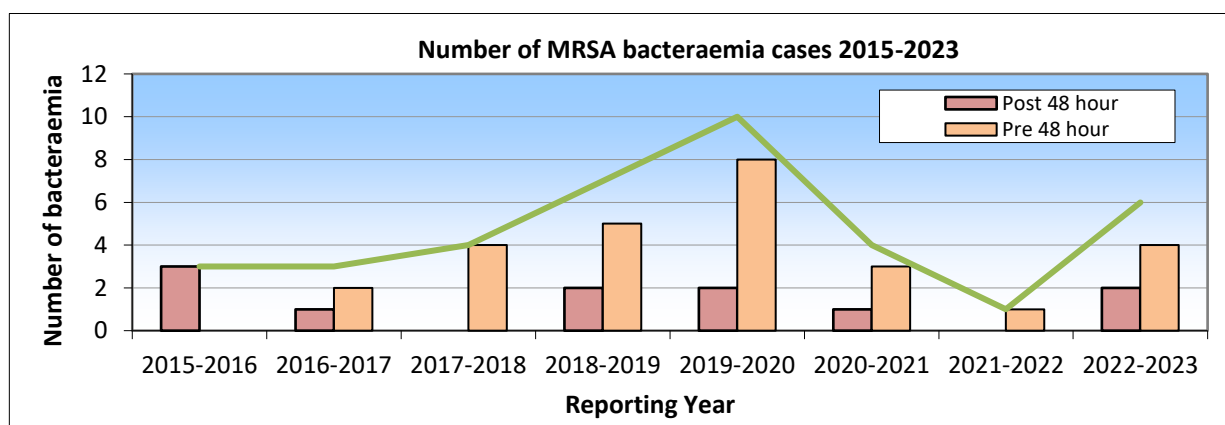
As the blood culture was taken on re-admission on 15/11/22, this MRSA bacteraemia is technically a pre-48-hour case, and so not attributed to Trust figures. However, this bacteraemia has been the subject of a serious incident investigation as the acquisition of MRSA is clearly healthcare associated and linked to the patient's episode of care. A serious incident report and action plan was finalised and submitted to the Integrated Care Board (ICB).

In addition to the three cases above, there were three other MRSA bacteraemia that were reported from blood cultures taken on patient admission which were not attributable to the Trust.

One case was in a patient who was admitted on 10/06/23 and for whom a blood culture was taken the same day. The patient was known to be previously positive for MRSA but had no recent admissions to hospital. A second case was in a patient admitted on 11/09/23 for whom a blood culture was taken the same day. The patient had no previous known history of MRSA and had no recent hospital admissions and was likely to be community acquired. A third case was in a patient admitted on 22/01/23 for whom a blood culture was taken the same day. The patient was a patient of a neighbouring Trust with no history at Sandwell and West Birmingham NHS Trust. The neighbouring Trust was aware of this patient whom they had seen on the previous day, and who had a history of previous MRSA bacteraemia.

Figure 1 below shows MRSA bacteraemia reported 2015 – 2023.

Figure 1: MRSA bacteraemia Sandwell and West Birmingham NHS Trust 2015-2023.

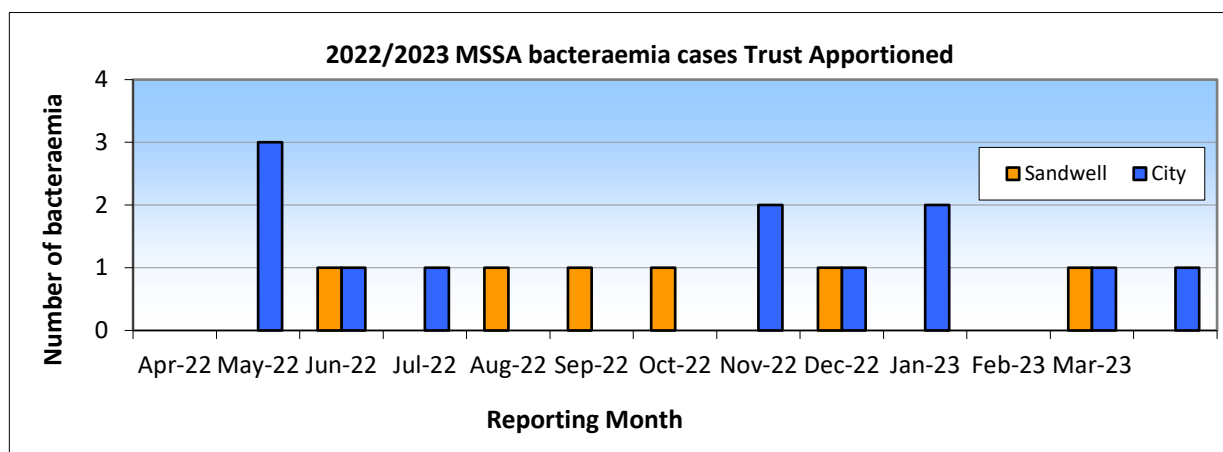


3.2 MSSA Bacteraemia

There were 18 episodes of MSSA bacteraemia during 2022-23 apportioned to the Trust, where the blood culture was taken during the period between admission day plus 2 days (Figure 2). This compares to 15 during 2021-22. Of the 18 cases, 5 were thought to be potentially associated with intravenous lines.

There are no national or local trajectories set for MSSA bacteraemia.

Figure 2: MSSA bacteraemia at Sandwell and West Birmingham NHS Trust 2022-23.



3.3 *Clostridium difficile*

Clostridium difficile infection (CDI) is a major cause of antibiotic-associated diarrhoea.

During 2022-23 Sandwell and West Birmingham NHS Trust recorded 47 episodes of Trust apportioned *Clostridium difficile* infection against an NHS England target of no more than 41 cases. This compares to 33 cases during 2021-22. However, this over trajectory position has also been reflected elsewhere in neighbouring Trusts in the Black Country ICB, across the wider west midlands and nationally.

The method of counting cases of CDI consists of

- **Hospital onset healthcare associated (HOHA):** cases that are detected in specimens taken in the hospital beyond the period of admission day plus two days.
- **Community onset healthcare associated (COHA):** cases that occur in the community, and where specimens are taken during the period of admission day plus two days and where the patient has been an inpatient in the Trust in the previous four weeks.

Of the 47 cases reported during 2022-23, 36 were classified as hospital onset healthcare associated (HOHA) and 11 were classified as community onset healthcare associated (COHA)

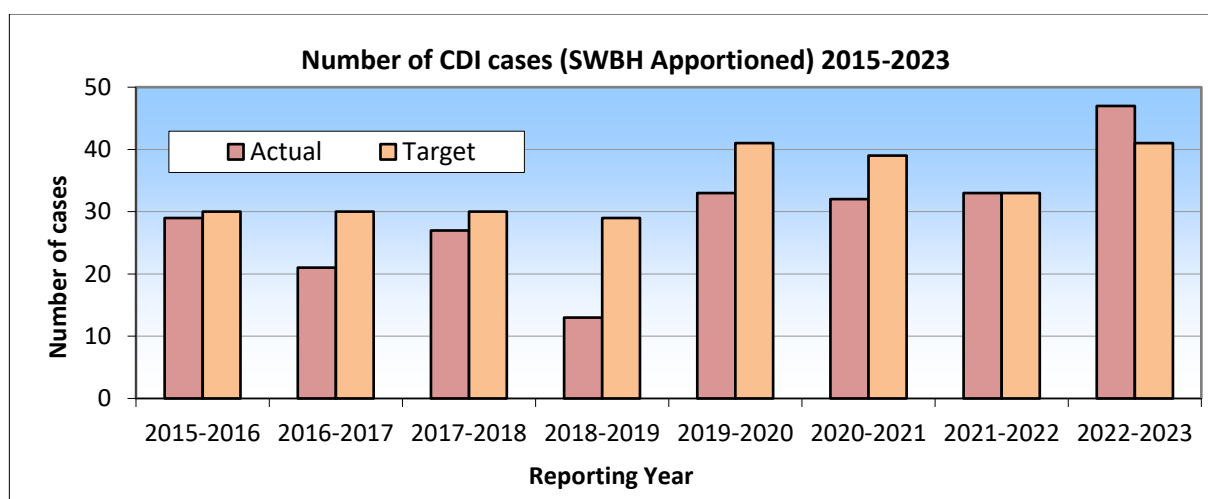
Each case that was Trust apportioned received a review. Identified lapses in care have been associated with links to antimicrobial agents and delays in taking a sample for testing. Any delays in isolation are usually related to the limited number of side rooms at the Trust.

Following each case review, feedback is given to the relevant Trust Group and outcomes of reviews are noted and discussed at the Infection Prevention & Control Operational and Strategic Groups.

There was one period of increased incidence, this is where two cases arise and are linked by time and place, on the same ward and within a 28-day period. This occurred on Priory 5 ward at Sandwell Hospital during August 2022. However, ribotyping was undertaken for both specimens and were found to be different. This means cross contamination did not occur between the two cases.

Most of the cases of *C. difficile* occur in response to the administration of appropriate antibiotics to patients with infections which were not preventable, and potentially life threatening if not treated with antibiotics. Therefore, most incidences of *C. difficile* infection are not preventable and occur as an unfortunate consequence of necessary antibiotic therapy. That said the importance of prudent antimicrobial stewardship is emphasised at the Trust to encourage use of the correct antibiotic in the advised dose for the type of infection, in accordance with the local Antimicrobial Prescribing Guidelines. Figure 3 shows cases of *Clostridioides difficile* at the Trust between 2015-23 and respective targets for each year.

Figure 3: *Clostridioides difficile* at Sandwell and West Birmingham NHS Trust 2015 to 2023.



3.4 Gram-negative bacteraemia

All Trusts are required to report cases of *E. coli*, *Klebsiella* and *Pseudomonas aeruginosa* bacteraemia using similar mechanisms for counting MRSA bacteraemia and *C. difficile*.

3.5 *E. coli*

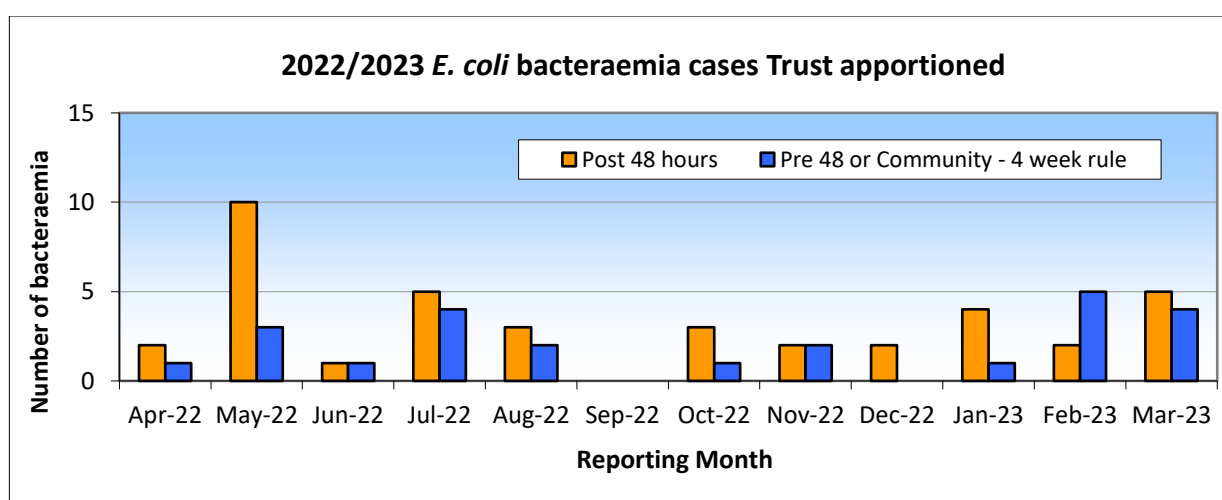
E. coli bacteria are frequently found in the intestines of humans and animals and can survive in the environment. There are many different types of *E. coli*, which can cause a range of infections including urinary tract infection, cystitis and intestinal infection. When primary *E. coli* infection spreads to the blood it is known as *E. coli* blood stream infection (BSI) or bacteraemia.

Typically, community acquired *E. coli* bacteraemia results from abdominal, biliary or urinary tract sepsis. Hospital acquired cases of *E. coli* bacteraemia can also be associated with urinary catheter infections.

For 2022-23 a total of 63 Trust apportioned *E. coli* bacteraemia were reported (Figure 4). Of these

Of these 63 cases, 24 were classified as Hospital onset healthcare associated (HOHA), where the specimen (blood culture) was taken beyond admission day plus 2 days; and 39 were classified as Community onset healthcare associated (COHA), where the blood culture was taken within the period of admission day plus 2 days. There was an NHS England trajectory of no more than 51 cases for 2022-23. The 63 cases, therefore, equate to an end of year position of 12 cases above trajectory. Predominant cause groups remain upper urinary tract and gastrointestinal tract infection. The 24 HOHA cases reported during 2022-23 compares to 23 cases reported for the previous year 2021-22.

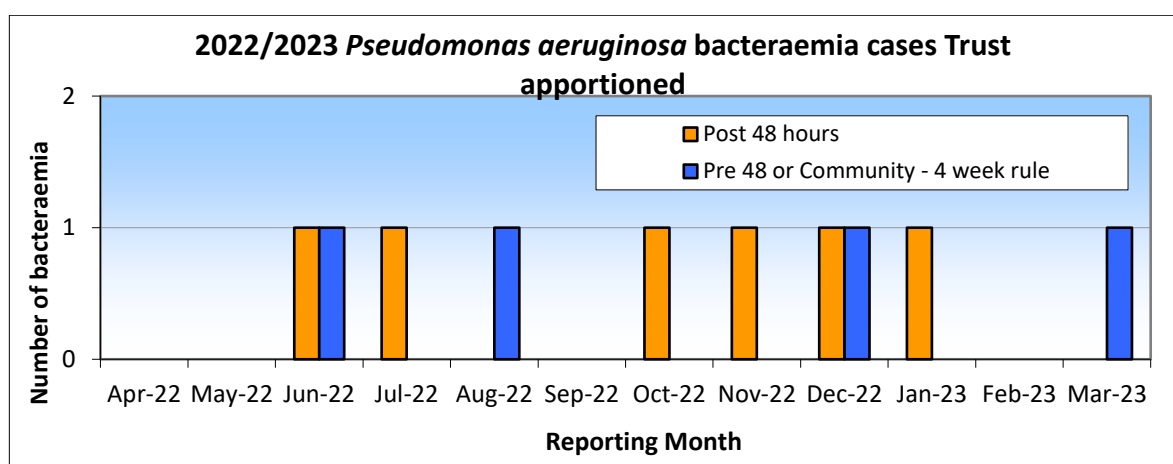
Figure 4: *E. coli* bacteraemia at Sandwell and West Birmingham NHS Trust 2022-23.



3.6 *Pseudomonas aeruginosa*

There were 10 cases of Trust apportioned *Pseudomonas aeruginosa* bacteraemia during 2022-23. The total of 10 cases is set against a NHSI/E trajectory of no more than 9 cases for the year. The Trust therefore completed the year one case above trajectory. Of these 10 cases, 6 were classified as Hospital onset healthcare associated (HOHA), where the specimen (blood culture) was taken beyond admission day plus 2 days; and 4 were classified as Community onset healthcare associated (COHA), where the blood culture was taken within the period of admission day plus 2 days. The 6 HOHA cases during 2022-23 compares to 6 HOHA cases during the preceding year 2021-22. Figure 5 identifies the distribution of cases 2022-23.

Figure 5: Trust apportioned *P. aeruginosa* bacteraemia 2021-22 showing 2020-21 figures.

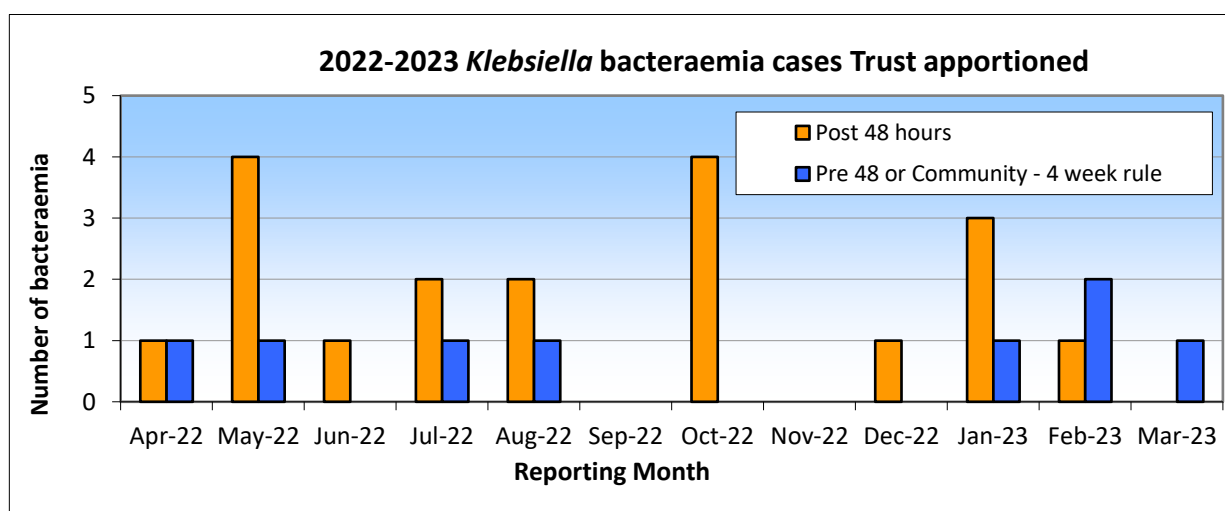


3.7 *Klebsiella*

There were 27 cases of *Klebsiella* bacteraemia reported during 2022-23 against a trajectory of no more than 19 cases. The Trust therefore completed the year above this trajectory.

Of these 27 cases, 19 were classified as Hospital onset healthcare associated (HOHA), where the specimen (blood culture) was taken beyond admission day plus 2 days; and 8 were classified as Community onset healthcare associated (COHA), where the blood culture was taken within the period of admission day plus 2 days. The 19 HOHA cases during 2022-23 compares to 11 HOHA cases during the preceding year 2021-22. Figure 6 identifies the distribution of cases 2022-23.

Figure 6: Trust apportioned *Klebsiella* bacteraemia 2021-22 showing 2020-21 figures.

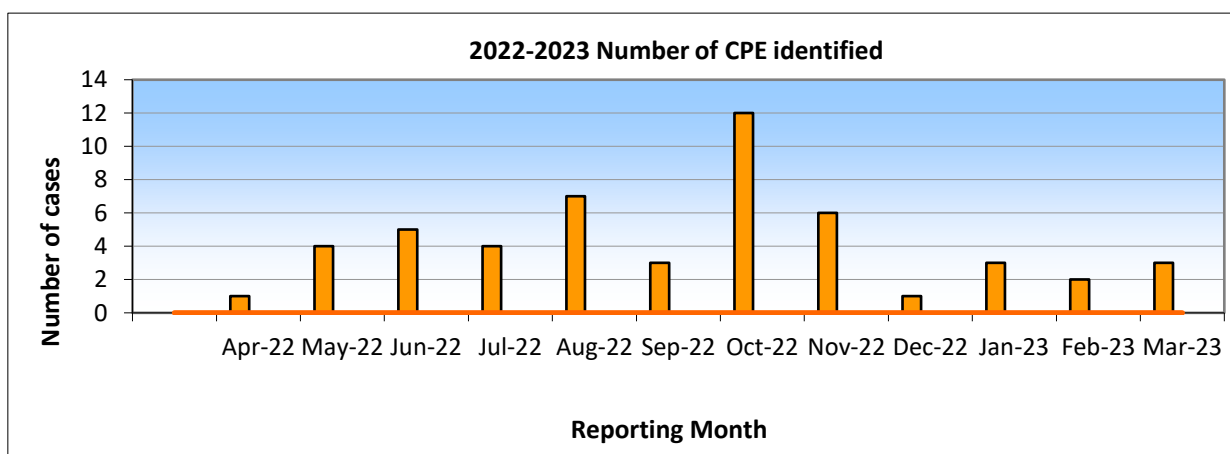


3.8 Carbapenemase producing *Enterobacteriaceae* and Carbapenem-resistant organisms (CPE/CRE)

Carbapenemase producing *Enterobacteriaceae* and Carbapenem-resistant organisms (CPE/CRE) are multi-resistant Gram-Negative bacteria that carry a Carbapenemase gene. Carbapenemases are enzymes (such as KPC, OXA-48, NDM, IMP and VIM) produced by these bacteria which cause destruction of the carbapenem antibiotics. This confers resistance to meropenem and ertapenem and is usually also associated with multiple other antibiotic resistances – meaning that any infections may be (nearly) untreatable. Typical CPEs include *Escherichia coli*, *Klebsiella sp.* and *Enterobacter sp.* While not strictly CPE, similar approaches can be taken to other Carbapenemase-producing bacteria such as *Pseudomonas*.

The Trust has relatively low number of CPEs. Figure 7 shows distribution of cases over the year 2022-23.

Figure 7: Carbapenemase producing *Enterobacteriaceae* during 2022-23.



The Trust has a policy in line with national guidance, to screen patients on admission, who have a history of hospital admission abroad and elsewhere in the UK, during the last year plus any patients who are known to have a history of CPE carriage. There is also a routine screening policy in place for admissions to critical care and the neonatal unit. Any positive patients are prioritised for a single room. Two or more cases linked by time and place are classified as an outbreak and an outbreak meeting is held. On closure of an outbreak, rooms are cleaned with a chlorine releasing agent and where possible treated with hydrogen peroxide fogging to remove the organism from the environment.

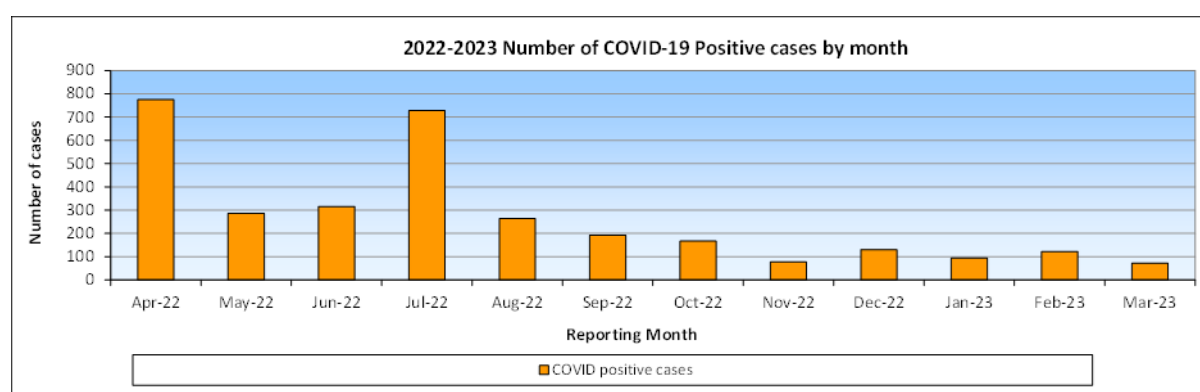
During the year 2022-23 there were 4 outbreaks of CPE identified across 3 wards at the Trust. An outbreak on D15 at the City site was identified 12/06/22 totalling 2 patients. Two outbreaks were reported on Priory 2 at Sandwell Hospital, both occurring during October 2022. However, these were two separate outbreaks as the causative organism was different for each outbreak. Outbreak 1 was identified on 16/10/22 and involved 2 patients, and outbreak 2 was identified on 17/10/22 and involved 4 patients. A further outbreak occurred on Lyndon 5 at the Sandwell Hospital site and was identified on 18/11/22 involving 3 patients.

4. Covid-19 and outbreaks

The SARS-CoV-2 (the virus that causes Covid-19) pandemic continued to create focus for the Infection Prevention and Control Team through 2022-23, though not to the extent of the previous 2 years. As we emerged from the Omicron wave in early 2022, and the national COVID regulations were repealed, and the harm from COVID infection declined, the IPCT has supported the process of COVID recovery. This included the replacement of restrictive COVID-related practices with more pragmatic policies designed to allow the NHS to function more normally and to clear backlogs and waiting lists.

During 2022-23, 3221 patients tested positive via PCR at the point of their admission or during their admission to one of our hospitals. Figure 8 shows the distribution across the year. However, in line with the national move towards living with Covid-19, our mask wearing policy was modified as the year progressed. This meant that surgical face mask wearing became required only in areas where there were untriaged patients whose Covid-19 or suspected respiratory infection was unknown, on respiratory pathways, and where there was known or suspected respiratory infection. In addition to this, areas such as Haematology/Oncology retained mask wearing due to the vulnerability of these patient groups.

Figure 8: Covid positive by PCR tests taken at the Trust 2022-23



4.1 Covid-19 outbreaks

There were 82 outbreaks of Covid-19 at the Trust during 2022-23, these included where cases were classified as probable hospital associated, where the swab was taken >8 days of admission and definite hospital associated where the swab was taken >15 days of admission. Other cases were also taken into consideration where cases were likely to be indeterminate (< 7 days of admission) or community associated (< 3 days of admission). Some outbreaks were recognised in asymptomatic patients because it was necessary to swab them prior to their transfer to another healthcare establishment or care home. Two or more cases in any location were investigated as a potential outbreak.

Outbreak actions are put into place by the IPC Team and Capacity Team with oversight from the Chief Nurse / DIPC. Outbreak meetings are held where necessary for any new outbreak where two or more cases are identified in the same area. ICB and UKHSA Health Protection colleagues are invited to any outbreak meeting to share information and best practice.

A daily meeting is also held between IPC Team and Capacity Team to discuss IPC requirements to prevent further spread of Covid-19 and any other organism or IPC issue that may be impacting on availability of patient beds at the Trust.

Figure 9 shows the distribution of Covid-19 outbreaks across the year showing an increase in cases during cooler weather periods and a decrease as 2023 progressed. Table 1 shows the numbers of patients positive, and staff involved in outbreaks during each month. During 2022 national guidance changed such that only symptomatic patients were tested and where an outbreak was suspected.

Figure 9: Covid outbreaks at the Trust 2022-23

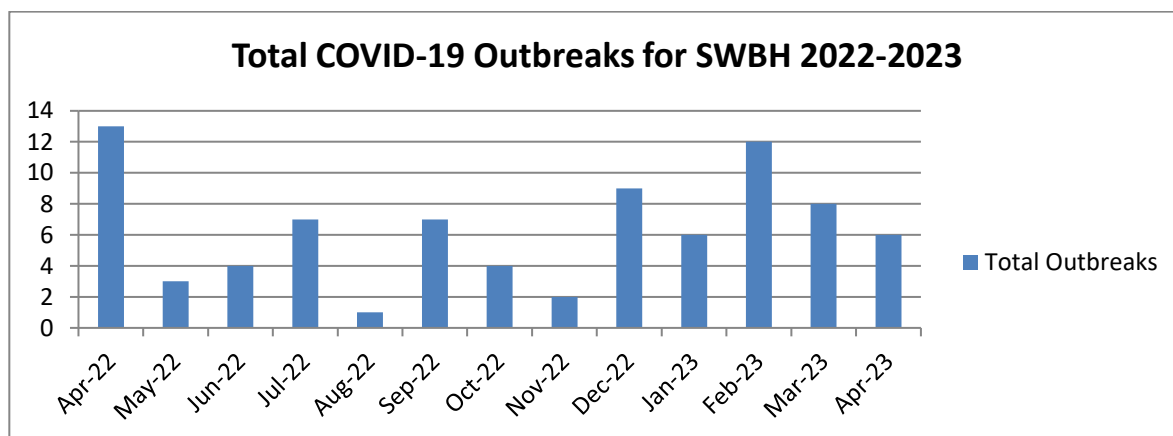


Table 1: Covid-19 outbreaks at the Trust 2022-23

Outbreak month start date	Total outbreaks	Total No. positive patients	Total No. Pos Staff
Apr-22	13	92	17
May-22	3	5	0
Jun-22	4	53	14
Jul-22	7	76	19
Aug-22	1	2	0
Sep-22	7	51	15
Oct-22	4	20	5
Nov-22	2	4	0
Dec-22	9	53	12
Jan-23	6	28	0
Feb-23	12	86	19
Mar-23	8	35	8
Apr-23	6	33	5

Co-operation with ICB and other neighbouring Trusts

The Sandwell and West Birmingham Infection Prevention & Control Team contributes actively to IPC and Health Protection forums led by the local Black Country Integrated Care Board (ICB), where possible comparing practice and learning from experience, and harmonising local protocols regarding prevention of HCAI.

5. Antimicrobial Stewardship

Antimicrobial resistance (AMR) is one of the leading risks to human health. Increasing AMR is making infections more difficult to treat, prolonging hospital stays and increasing morbidity/mortality. Antimicrobials also underpin much of modern medicine: if they lose their effectiveness, many routine therapies could become too dangerous to perform, for example, immunosuppressing treatments and even routine surgery could become life threatening due to the risk of infection that cannot be treated.

The UK Government has a 20-year vision for the containment and control of antimicrobial resistance. This encourages healthcare organisations to engage in antimicrobial stewardship (AMS) work to promote and monitor judicious use to preserve future effectiveness of antimicrobials.

Key government targets for secondary care include reducing secondary care consumption of 'watch and reserve' agents by 10% by 2024 and delivering Commissioning for Quality and Innovation (CQUIN) targets. 'Watch and reserve' agents are last resort antibiotics that should be reserved for severe infections caused by multi-drug resistant pathogens.

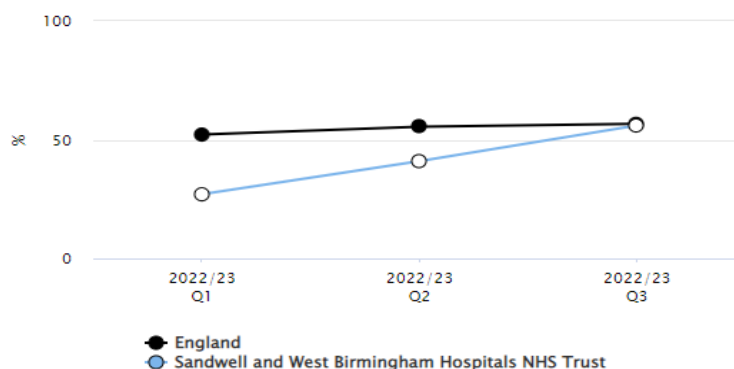
5.1 CQUIN 2022/23

A CQUIN target during 2022-23 was appropriate antibiotic prescribing for Urinary Tract Infection in adults aged 16+ with antibiotic prescriptions meeting NICE guidance for diagnosis and treatment (target 40-60%). This included:

1. Documented diagnosis of specific UTI based on clinical signs and symptoms.
2. Diagnosis excludes use of urine dipstick if >65 years or catheter associated UTI (CAUTI).
3. Empirical antibiotic regimen prescribed following NICE/local guidelines.
4. Urine sample sent to microbiology as per NICE recommendations.
5. For CAUTI only - documented review of urinary catheter in clinical record.

Results are improved on 2019/2020, although a changes in standards confound a direct comparison. Figure 10 shows an improvement over the year moving towards the England average. At the time of writing Quarter four data was not yet available on Fingertips (Public Health data collection system).

Figure 10: Trust compliance with 2022/23 UTI CQUIN vs English Mean Q1-Q3



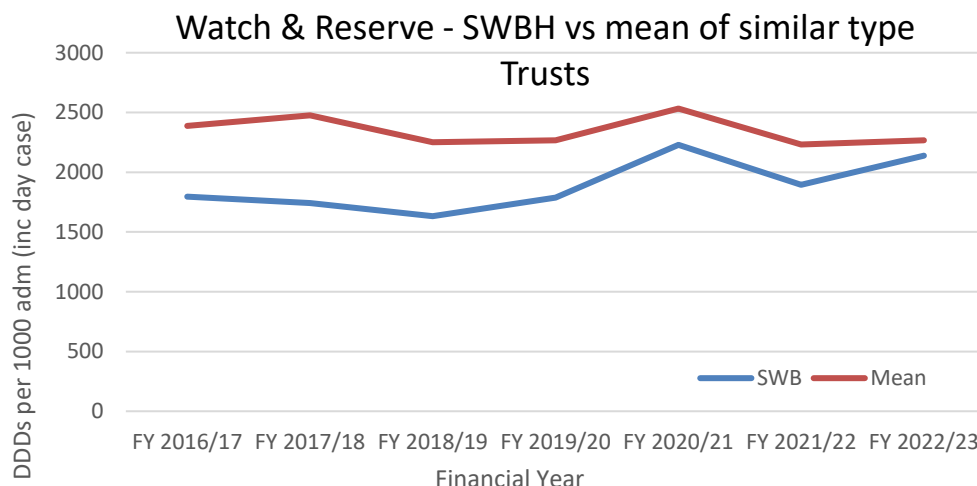
5.2 Antibiotic consumption

Sandwell and West Birmingham NHS Trust antibiotic consumption has been increasing in recent years. The Trust reduction target vs 2018 baseline has not been achieved for 2022-23 or in the preceding three financial years. Some of the factors accounting for this are outlined below. Peaks in the incidence of COVID-19 drove sharp, temporary increases.

- Carbapenem consumption remains low and well controlled – at the expense of other agents.
- Piperacillin/tazobactam use has grown substantially since it returned to the UK market with particularly high sharp increases during COVID-19 peak due to concerns about secondary bacterial infection. However, consumption at the trust remains below average for the region.
- This has meant an increase in use of other agents, with co-amoxiclav use considerable and growing.

Despite growth in consumption of these antibiotic our use has remained below the English average for 'watch and reserve' antibiotics. These are antibiotics that are monitored to avoid overuse and to treat severe infections caused by multi-drug resistant pathogens (Figure 11).

Figure 11: Watch and Reserve antibiotic consumption vs similar Trusts Q1-Q3 2022-23



AMS actions during 2023-24 will include a drive to reduce use of co-amoxiclav via local prescribing guideline changes and weekly ward rounds to monitor appropriateness of antimicrobial use. This will be assisted by the recruitment of an additional antimicrobial pharmacist. Work will also be undertaken to add mandatory stop and review dates within the electronic prescribing system within the electronic prescribing system 'Unity'.

6. Water Safety

The monitoring and preventative measures for control of *Legionella* and *Pseudomonas* in taps, showers and other water outlets continues in accordance with the Trust Water Safety Policy and Water Safety Plan. This means that for any positive legionella a point of use filter is applied to the outlet which ensures the supply of water is safe for patients. The Trust Estates provider also takes remedial action to disinfect the outlet and retest.

A programme of works continues in the Birmingham Treatment Centre to replace plastic piping with copper pipes, which are less likely to develop a biofilm to which legionella

bacteria can adhere. A high number of outlets sampling has continued in Birmingham Treatment Centre while the work has continued, in order to monitor and act upon any positive results and to provide assurance of the safety of water for vulnerable patients and staff.

The Trust Estates and Compliance team lead the Trust Operational Water Safety Group which is chaired by the Deputy Head of Estates and Compliance as part of the overall, Trust Board approved, Estates Governance Framework with representation from Infection Prevention & Control, the Birmingham Treatment Centre, and Authorised Persons (Water) from the FM Provider. The group is also attended by the Trust Authorising Engineer for Water who oversees all recommended actions to maintain the safety of water at the Trust. Actions from these monthly operational groups are escalated where appropriate to the Trust Quarterly Strategic Water Safety Group (SWSG). The SWSG, which has all the above representation but is chaired by the Chief Nurse and Director of Infection Prevention & Control. Both Groups receive a summary of the Authorising Engineer audits undertaken at the Trust and associated actions required.

Planning also continued for the commissioning of the water systems for the Midland Metropolitan University Hospital, which is expected to open during 2024-25. This planning has also been overseen by the Trust's external Authorising Engineer for Water.

7. Outbreaks and incidents

7.1 Influenza infections and outbreaks

There were low numbers of influenza cases reported during the winter season 2022-23. This is in line with the national picture of low number of influenza cases. The influenza vaccine for the 2022-23 winter season was also reported as a good match for circulating strains of the virus leading to good protection in those patients and staff who accessed the vaccine.

There was one outbreak of 'influenza A' at the Trust involving 4 patients on Ward D11 at the City Hospital site. This occurred between 27/01/23 and was fully resolved by 07/02/23, resulting in the closure of one bay on the ward during this period.

7.2 Norovirus infections and outbreaks

Norovirus outbreaks occur most winters (sometimes known as winter vomiting bug) but also in other seasons. The illness is usually self-limiting, but cases can spread very rapidly (vomitus is thought to be infectious via the airborne route and via contamination of the environment). Institutions such as hospitals are vulnerable to large outbreaks involving staff and patients – this can seriously disrupt the work of the hospital.

The incubation of illness can be up to 72 hours, but for practical purposes and to reduce the disruption to the Trust, in terms of lost bed days, bays and wards may be re-opened after 48 hours free of symptoms and following thorough cleaning with a chlorine releasing agent.

Patients are deemed to be infectious for up to 48 hours after their symptoms have resolved. This also applies to staff affected, who are advised to not attend work until 48 hours clear of symptoms.

During 2022-23 there were 8 reported outbreaks of Norovirus at the Trust. These involved full closure of a ward on four occasions, two closures at the Sandwell Hospital site and two closures at the Rowley Regis site. There were 4 other partial ward closures, all at the Sandwell site (Table 2). The occurrence of outbreaks at the Trust was in line with other outbreaks of Norovirus occurring in neighbouring Trusts and across the West Midlands region.

Table 2: Norovirus outbreaks at Sandwell and West Birmingham Hospitals 2022-23

Ward	Site	Ward or bay closure	Date outbreak started	Date outbreak resolved	Total patients affected	Total staff affected
Lyndon 3	Sandwell	Ward	24/01/23	29/01/23	7	5
Newton 3	Sandwell	Ward	28/01/23	06/02/23	15	5
Newton 1	Sandwell	One bay	01/02/23	03/02/23	2	1
Lyndon 1	Sandwell	One bay	10/02/23	13/02/23	2	0
Newton 5	Sandwell	Two bays	14/02/23	16/02/23	3	0
Lyndon 3	Sandwell	One bay	21/02/23	23/02/23	1	0
Eliza Tinsley	Rowley Regis	Ward	08/03/23	21/03/23	7	6
Henderson	Rowley Regis	Ward	09/03/23	15/03/23	6	0

The Trust has a standard response to Norovirus. This includes placement of patients in single rooms where possible and where there are multiple patients affected, a bay of patients, or the full ward may be closed. Cases are reviewed daily by the Infection Prevention & Control Team and cleaning is increased using a chlorine-based cleaning agent for the environment including touchpoints. There is also restriction of staff movement from an affected area. Ward closure signage is stationed outside an affected area to discourage any unnecessary movement of staff, and stringent hand hygiene is practiced.

Closure of a ward indicates no admissions, transfers in or out, or discharges other than to a patient's own home, and restriction on visitors with essential visiting only at the discretion of the nurse in charge. However, discharges to other health care facilities are permitted for asymptomatic patients with the agreement of the receiving organisation so that they can take necessary precautions e.g., identify single rooms for quarantine.

Visiting may be restricted during a Norovirus outbreak to help prevent spread but can still take place at the discretion of the nurse in charge where it is in the interests of patients. Visitors are asked to perform hand hygiene on entry to and exit from the ward.

When an outbreak occurs, outbreak meetings are held for any ward closure and these are attended by Consultant Microbiologist, Infection Prevention & Control Team, clinical team members from the affected area, the Support Services (Cleaning) Team, and the Deputy Director IPC, or DIPC. External colleagues at NHSE, local Health Protection Team (UKHSA) and ICB are invited to outbreak meetings as standard. An outbreak is declared over when all patients affected have been clear of symptoms for a least 48 hours.

8. Infection Control compliance and audit

8.1 Hand Hygiene

Effective hand hygiene remains the single most important action staff can take to prevent the spread of infection. Sandwell and West Birmingham NHS Trust has placed hand hygiene and monitoring of compliance with hand hygiene technique as a key ongoing priority for the IPCT and for infection prevention across the Trust. Clinical areas undertake their own hand hygiene audits using the audit platform known as Tendable®. Issues of non-compliance are dealt with by the wards and Groups themselves. However, for continued non-compliance a clear escalation process is in place ultimately leading to the Chief Medical Officer or Chief Nurse / Director of Infection Prevention & Control. Hand hygiene is part of the Trust wide Tendable® audit system used by clinical areas and the IPCT.

8.2 Bare below the elbow (BBE)

The Trust continues to monitor compliance with the Department of Health (DH) initiative 'Bare below the elbow' with all staff working in clinical areas. Compliance is monitored during hand hygiene audits, with results discussed at the Operational and Strategic IPC Groups. Staff are advised to locally resolve any non-compliance with colleagues and additional escalation to the DIPC, Clinical Director and/ or the Chief Medical Officer is available where BBE continues to be a challenge.

8.3 Tendable Infection Prevention & Control audits.

The Trust uses audit platform Tendable® for IPC audits across the Trust. Clinical areas conduct their own IPC audits and report the outcomes through the Infection Prevention and Control Operational and Strategic Groups. The number of IPC audits undertaken has increased during the year (Figure 12), and results have remained above 95% during the year (Figure 13).

Figure 12: Tendable IPC audits 2022-23

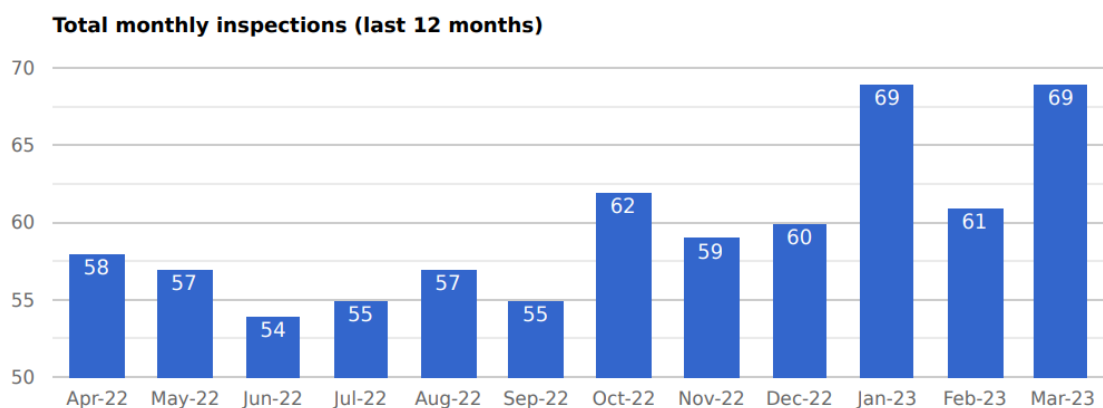
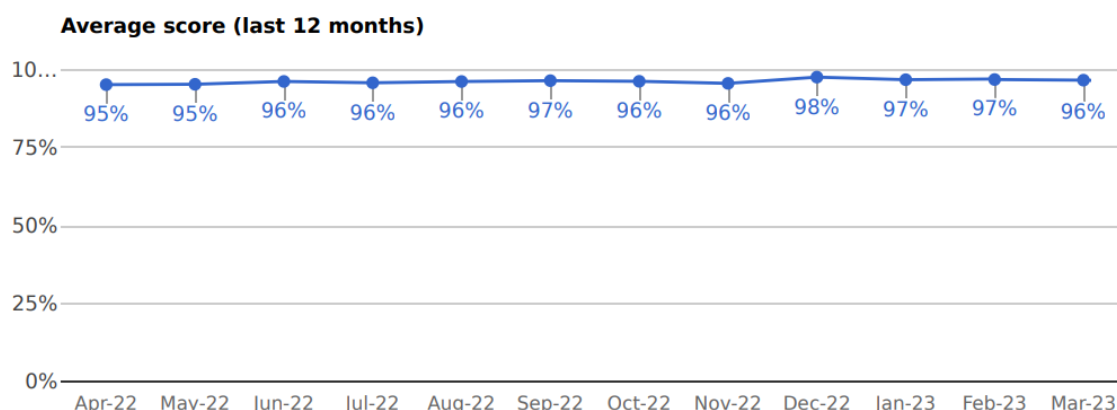


Figure 13: Tendable® audit scores across the year



8.4 Hotel Services

The Hotel Services Team conduct audits of cleaning undertaken to assure the Trust of its obligation to provide a safe care environment. The Trust average score for cleanliness during 2022-23 was 96%. For very high-risk areas including critical care the score was 99%.

8.5 Cleanliness in Hospitals

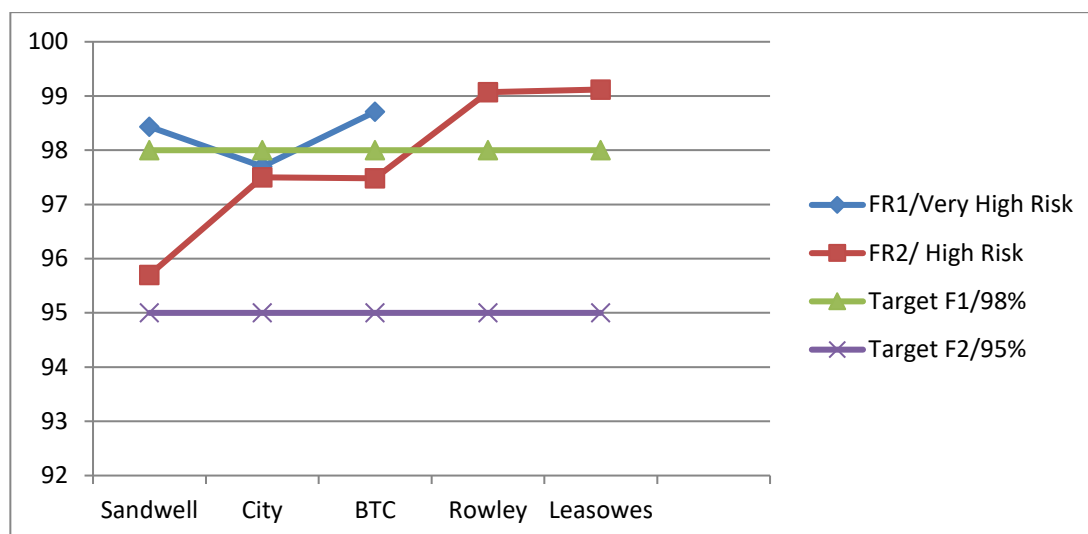
Environmental Cleanliness around UK hospitals is measured by new National Specifications for NHS Cleanliness Standards 2021. Each Hospital site has a target score which considers different risk categorisation and cleaning frequencies. The change is from Very High Risk, High Risk to Significant to Frequency Risk 1-6.

The Trust average score cleanliness for 2022-23 was above average of 98.28% for FR1/ Very High-Risk areas and 97.77% for FR2/ High Risk areas (Table 3 and Figure 14).

Table 3: Cleanliness scores High Risk / Very High Risk 2022-23

Sites	Risk Category	Target	Average	Variance
Sandwell	FR1/Very High Risk	98%	98.43%	0.43+
	FR2/High risk	95%	95.70%	0.70+
City	FR1/Very High Risk	98%	97.70%	0.30-
	FR2/ High Risk	95%	97.5%	2.50+
BTC	FR1/Very High Risk	98%	98.71%	0.71+
	FR2/ High Risk	95%	97.48%	2.48+
Rowley Regis	FR2/ High Risk	95%	99.07%	4.07+
Leasowes	FR2/ High Risk	95%	99.12%	4.12+
Overall 22-23	FR1/Very High Risk	98%	98.28%	0.28+
	FR2/High Risk	95%	97.77%	2.77+

Figure 14: Cleanliness scores High Risk / Very High Risk 2022-23



Throughout 2022-23 additional enhanced cleaning was in place in many areas of the trust to meet the challenge not only of Covid-19 but including other infection outbreaks. The daily combined IPC meeting with the Site / Capacity Team and other stake holders helps to mitigate any delays in cleaning to ensure the most efficient turnaround of beds.

The High Touch Point Audit and Efficacies Audit were introduced together with Star Ratings of the wards and clinical areas as part of the introduction of and commitment to the New National Standards of Healthcare Cleanliness 2021 and Cleaning Charter. During the Covid-19 pandemic, this included additional cleaning hours across the Trust and additional support in high foot fall areas such as the Emergency Department. Enhanced cleaning is routinely put in place in very high-risk areas such as Theatres, Elderly care, neo-natal and surgical wards.

An additional cleaning program is in place that includes steam cleaning of ward toilets on rotation. Public areas including high touch points are additionally cleaned at night using a microbe shield decontamination system.

8.6 Infection Control Team walkabouts

In addition to formal audits the Infection Prevention & Control Team also undertake regular scheduled visits to clinical areas to observe cleanliness of medical devices, the environment and IPC practice. Feedback is given to the nurse in charge following the visit and is followed up by communication to the Ward Manager, Matron and Head of Nursing.

9. IPC Mandatory Training and IPC Education

9.1 IPC Mandatory Training compliance

Trust staff are required to undertake mandatory training in Infection Prevention & Control. Level 1 is undertaken by non-clinical staff and Level 2 is undertaken by clinical staff. Compliance is currently as follows: (Data as of 5th July 2023).

Trust level compliance with IPC Mandatory Training:

Table 4: Trust level compliance with IPC Mandatory Training 2022-23

Infection Prevention Control L1 - 3 years			Infection Prevention Control L2 - 1 year		
Compliant	Target	Compliance %	Compliant	Target	Compliance %
1581	1627	97.17%	5474	5896	92.84%

Group level compliance with IPC Mandatory Training:

Table 5: Group level compliance with IPC Mandatory Training 2022-23

	Infection Prevention Control L1 - 3 years			Infection Prevention Control L2 - 1 year		
Group	Compliant	Target	Compliance %	Compliant	Target	Compliance %
Corporate	865	889	97.30%	718	765	93.86%
Imaging	43	43	100.00%	311	319	97.49%
Medicine & Emergency Care	178	184	96.74%	1326	1500	88.40%
Primary Care, Community and Therapies	254	261	97.32%	1079	1117	96.60%
Surgical Services	143	147	97.28%	1214	1300	93.38%
Women & Child Health	98	103	95.15%	826	895	92.29%

9.2 Education and Training

The IPC nurses continued to deliver a range of training across the organisation throughout the year, including sessions via MS Teams.

Training was delivered to the following groups, primarily nurses.

These included staff from the following locations and groups:

- Acute Medicine (including ED)
- Senior Health
- Haematology
- Surgery, Trauma and Orthopaedics
- Critical Care
- Paediatrics
- Nurse Induction/Overseas Nurses
- HCA Induction
- Physician Associates
- Junior Doctors
- Medical Students
- Student Nurses

10. NHS England Infection Prevention & Control inspection March 2023

An NHS England (NHSE) IPC inspection took place on 2nd March 2023. Planned areas visited included Outpatient Physiology at Sandwell to look at manometry decontamination using UVC light; Lyndon 5, AMU-A, and Critical Care at Sandwell. At the City site planned visits were made to the Emergency Department and D25. Unplanned visits were made to Outpatients and Lyndon 1 (Paediatrics) at Sandwell and Outpatients in the Birmingham Treatment Centre at the City Hospital site. Focus groups with the NHSE IPC inspector were held on 23rd February. Group 1 was the IPC Team including Consultant Microbiologist, Group 2 included Hotel Services, Estates, Procurement and Site Team and Group 3 included clinical representatives from the Groups e.g., Group Director of Nursing and Matrons. A separate meeting was held with the NHSE IPC inspector with the Estates Team on 2nd March.

Following the visit, NHSE categorised the Trust as 'routine monitoring and support' (equivalent of green) on the NHSE IPC Matrix. This is an improvement on the amber status awarded previously in October 2021 and represented a positive outcome for the Trust. The Trust is aware of the challenge to maintain this 'green' status on other future planned visits.

10.1 'Gloves off' campaign

As part of the visit and on an ongoing basis, the Trust has enacted the NHSE '**Gloves off**' campaign. This has been in response to the need to return to a state of 'business as usual' following the Covid-19 pandemic.

There is strong evidence that overuse of gloves actually increases the spread of HCAI. We know that overuse of gloves has increased rates of blood stream infections. This is because some staff have a false sense of security about being protected while wearing gloves. In fact, gloves become heavily contaminated if not changed between tasks can spread germs around onto medical equipment, surfaces, and touchpoints.

At the start of the Covid pandemic, staff were unsure of the risks, and wore gloves for all tasks, and have got used to this and so the challenge has been to unlearn a reliance on gloves which we now understand actually increases risk to patient safety. The 'Gloves off' campaign will continue into 2023-24'.



11. Support from UKHSA Health Protection Team

The IPC team continues to work closely with and are indebted to the Health Protection Practitioners and consultants based at the West Midlands West Health Protection Team, part of the United Kingdom Health Security Agency (UKHSA) for the continuing support received. A member of that team will usually be part of any outbreak/incident investigation team and the help and advice received at those times is invaluable.

12. Priorities for 2023-24

12.1 Mission Statement

The Infection Prevention & Control Service will promote and sustain expert evidence-based infection prevention practice in the pursuit of patient and staff safety wherever care is delivered at the Trust.

12.2 Strategic Aims

In order to achieve this, we will:

- Develop and inform the infection prevention agenda at the Trust and in collaboration with health economy partners across the Black Country and beyond
- Promote and influence the evidence base for infection prevention practice
- Seek to gain the confidence of patients, staff and stakeholders and the communities we serve

A number of actions will be prioritised by the IPCT during 2023-24.

- Continue to implement national guidance to resume normal services following SARS-CoV-2 (Covid-19) pandemic and any new guidance in the event of a further wave or for any other respiratory infection.
- Strengthen the IPC audit process using Tendable®, refresh audit questions, ensure all clinical areas conduct monthly audits and IPC team undertake a programme of validation audits.
- Develop a revised programme of regular walkabouts with clinical leaders in their areas to identify and rectify any IPC issues arising.
- Continue to aim for zero cases of MRSA bacteraemia.
- Improve learning from cases of MSSA, in particular, where cases may be line associated.
- Audit the trust strategy for screening of carbapenem-resistant organisms to measure compliance and target education.
- Continue to work collaboratively within the Trust and with other local NHS organisations to reduce the incidence of *E. coli*, *Pseudomonas aeruginosa* and *Klebsiella* bacteraemia, to keep within NHSE set trajectories.
- Continue to sustain high rates of compliance with hand hygiene and 'Bare below Elbow' and monitoring compliance with revised Trust dress code policy.
- Re-establish the process of surgical site surveillance for total hip replacements and further improve the process of investigation for surgical site infections, taking the opportunity to learn lessons and improve practice.
- Improve the range of patient IPC leaflets in a wider range of available languages.
- Continue the NHSE 'Gloves off' campaign.

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14. Glossary of Terms

Bacteraemia / BSI	The presence of bacteria in the blood / blood stream infection
<i>C difficile</i>	A bacterium that is one of the most common causes of infection of the colon. It can sometimes produce a toxin leading to colitis
Colonisation	Germs in or on the body but which not make the person unwell
CPE	Carbapenemase producing Enterobacteriaceae are Gram-negative bacteria that are resistant to the carbapenem class of antibiotics, considered the drugs of last resort for such infections
<i>E. coli</i>	<i>Escherichia coli</i> form part of the normal intestinal microflora in humans with some strains having the ability to cause disease. These can include food poisoning e.g., <i>E. coli</i> 0157 or infections of the urinary tract and bacteraemia
GRE	Glycopeptide resistant enterococci are bacteria resistant to the Glycopeptide antibiotics (vancomycin and teicoplanin) and are sometimes known as Vancomycin Resistant Enterococci (VRE)
Gram staining	A common technique used to differentiate two large groups of bacteria based on their different cell wall constituents. The Gram stain procedure distinguishes between Gram positive and Gram-negative groups by colouring these cells differently, thus affecting treatment options
HCAI	Healthcare Associated Infection: Any infection that develops as a result of receiving healthcare treatment
Influenza	A respiratory illness associated with infection with the influenza virus. Symptoms frequently include headache, fever, cough, sore throat, aching muscles and joints
MSSA	Meticillin sensitive <i>Staphylococcus aureus</i> : a bacteria that commonly lives on the skin or inside the nose without causing problems, but which is capable of causing infections e.g., in a wound or blood stream
MRSA	Meticillin resistant <i>Staphylococcus aureus</i> : strains of <i>Staphylococcus aureus</i> which is resistant to a number of antibiotics
RCA	Root cause analysis: A process for identifying “root causes” of problems or events leading to an approach for responding to them
Swabbing	Swabbing in order to test for Covid-19. This can be done using a PCR Test, which is processed in a laboratory or a Lateral Flow Test, which provides an instant response to the user. Swabbing involves rubbing the swab over both sides of the back of the throat and inside both nostrils
NHSE	NHS England – an NHS body that oversees Trust driving quality improvement