

# **INFECTION PREVENTION AND CONTROL**

## **DIRECTOR OF INFECTION PREVENTION AND CONTROL**

### **ANNUAL REPORT**

**April 2021 - March 2022**



**outstanding care  
listening and leading  
working together**

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May 2022

# DIPC Annual Report 2021 / 2022

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## EXECUTIVE SUMMARY

- There were 4 Trust attributed Methicillin Resistant *Staphylococcus aureus* (MRSA) bloodstream infections in 2021/22, compared to 3 the previous year.
- Overall, there were 46 Trust apportioned cases of *Clostridioides difficile* infection compared to 47 in the previous year. This comprised of 28 hospital onset cases and 18 community onset cases where the patient had an overnight stay in the Trust in the preceding 28-days.
- There were 35 Trust attributed Methicillin Sensitive *Staphylococcus aureus* (MSSA) bloodstream infections compared with 18 the previous year. A significant increase in cases is also seen nationally and across the Southwest region.
- There were 46 Trust attributed E.coli bloodstream infections, compared to 41 in the previous year.
- There were 16 Trust attributed *Klebsiella species* bloodstream infections. This was the first-year thresholds were applied.
- There were 7 Trust attributed *Pseudomonas aeruginosa* bloodstream infections. This was the first-year thresholds were applied.
- A Trust screening programme for patients assessed as at risk of Carbapenemase Producing Enterobacterales continued in 2021/22. No cases were identified from the screening programme however, 3 cases were identified from clinical specimens.
- There were 3 norovirus outbreaks in 2021/22, a lower number than would normally be seen
- There were 11 inpatients with influenza in the Trust this winter and no outbreaks.
- There were 1,489 inpatients with PCR confirmed COVID-19 in the Trust in 2021/2022. The majority were community onset cases (68%).
- There were 51 inpatient ward outbreaks of COVID-19 in the Trust in 2021/2022. In addition, there were 3 outbreaks confined to staff groups.
- Three categories of Surgical Site Infection Surveillance were included in the 2021/22 programme: total knee replacement, total hip replacement and spinal surgery.
- Hand Hygiene Trust wide compliance remained good at 94%.
- To ensure infection prevention and control remains embedded throughout the organisation, the Directorates receive monthly IP&C performance reports. These include details of infections occurring in the Directorates and outcomes of Hand Hygiene, Cleanliness and Decontamination of Equipment audits and compliance with Personal Protective Equipment (PPE) in response to the COVID-19 pandemic.
- The Trust has a dedicated multidisciplinary Infection Prevention and Control team who provide a specialist service relating to the identification, prevention, and management of healthcare associated infections within the Trust. Due to COVID-19 pressures some aspects of the annual programme of work were not achieved, mainly around policy reviews. These will be carried forward to the next year's programme.
- The full programme of work for 2022/23 was approved by the Infection Prevention and Control Committee in May 2022.

## 1 INTRODUCTION

The purpose of this report is to inform the public, staff, the Trust Board and Commissioners of:

- Infection Prevention and Control management arrangements within the Trust
- Incidents of Health Care Associated Infection (HCAI) within the Trust in 2021/22 and progress against performance targets
- Infection Prevention and Control activities undertaken in 2021/22 and plans for the coming year.

## 2 INFECTION PREVENTION AND CONTROL ARRANGEMENTS

### 2.1 Infection Prevention and Control (IP&C) team

The IP&C team provide specialist advice on matters relating to the identification, prevention, and management of infection within the Trust. The team works to an agreed annual programme of work, approved by the Trust Board.

The current structure of the team is set out below. The Deputy Chief Nurse is the Director of Infection Prevention and Control (DIPC) and reports directly to the Chief Executive for this part of their role.

Current substantive Infection Prevention and Control team Structure (integrated team for Acute, Community and Mental Health services):

- |   |              |
|---|--------------|
| - Director of Infection Prevention and Control (Deputy Chief Nurse) |              |
| - Infection Control Doctor  | 3.0 sessions |
| - Lead Nurse IP&CT  | 1.0 wte      |
| - Deputy Lead Nurse IP&CT   | 1.0 wte      |
| - Senior Infection Control Nurses (Band 7)                          | 2.92 wte     |
| - Infection Control Nurses (Band 6)                                 | 5.35 wte     |
| - Administration Officers (Band 4)                                  | 1.6 wte      |
| - Surgical Site Infection Surveillance Support worker (Band 3)      | 0.3 wte      |
| - Clerical Support (Band 2) currently vacant                        | 1.0 wte      |

In addition to the Infection Control Doctor sessions, the other Consultant Medical Microbiologists provide an out of hours infection control advice service via the microbiology on call arrangements.

### 2.2 Infection Prevention and Control Committee (IP&CC)

The IP&CC meets monthly. Membership of the group comprises:

- Director of Infection Prevention and Control / Deputy Chief Nurse (Chair)
- Deputy Chief Medical Officer
- Infection Control Doctor
- Lead Nurse, IP&C Team

- Infection Control Nurses
- Associate Director of Integrated Governance
- Associate Directors of Patient Care (or deputy) for each Directorate
- Director of Estates and Facilities or deputy
- Decontamination Lead
- Lead Antimicrobial Pharmacist
- Local Health Protection Team representation

The key purpose of this group is to:

- Monitor the IP&C arrangements, HCAI rates and incidents within the Trust, including compliance with the Health Act 2008, Code of Practice for the Prevention and Control of HCAI.
- Ensure appropriate action plans are in place to address areas of concern and monitor progress.
- Provide assurance to Trust Board and highlight any serious risks, problems or hazards relating to Infection Prevention and Control.
- Monitor the work of short-term working groups set up to address specific IP&C challenges.

### **2.3 IP&C Representation at Relevant Groups**

The IP&C team are also members of the following Trust / System wide groups: These include:

- Antimicrobial Stewardship Group
- Cleaning Standards Group
- Clinical Skills Strategy Group
- Decontamination of Equipment and Medical Devices Group (sub-group of IP&C Committee)
- Safety Environmental Action Group
- Sharps Safety Group
- Trust Waste Group
- Ventilation Safety Group (sub-group of IP&C Committee)
- Water Safety Group (sub-group of IP&C Committee)
- Somerset CCG IP&C Assurance Committee

## 2.4 Reporting Arrangements

The DIPC is accountable directly to the Chief Executive and can report directly to the trust board. IP&C reports are submitted monthly to the Board as part of the Trust Performance Assurance Report. This report details performance against MRSA, MSSA, Gram-negative organisms (*E.coli*, *Klebsiella* species, *Pseudomonas aeruginosa*), *Clostridioides difficile* objectives and actions taken in response to HCAI or related incidents in the Trust.

In 2021/22 an annual assurance report on IP&C was submitted to the Integrated Quality Assurance Board.

The Infection Prevention & Control Committee (IP&CC) meets monthly and monitors progress against the IP&C programme of work, incidents, and the management of HCAs in the Trust (including outbreaks). The IP&CC also receives regular progress reports from relevant sub-groups, including the Decontamination of Equipment & Medical Devices and Water Safety. Due to COVID-19 pressures some of the IP&CC and sub-group meetings were suspended. IP&CC still met most months (10 out of the usual 11) and any issues from the sub-group specialties were managed outside of meetings.

## 2.5 IP&C Annual Programme of Work

In consultation with the DIPC an annual programme of work is prepared by the Lead IP&C Nurse, approved by the IP&C Committee, and submitted to the Integrated Quality Assurance Board. Progress against the annual programme is monitored monthly at the IP&CC.

# 3 HEALTH CARE ASSOCIATED INFECTIONS STATISTICS AND SURVEILLANCE

## 3.1 Annual HCAI Surveillance Programme

The Infection Prevention and Control team completed an annual programme of HCAI surveillance. This includes daily 'alert organism' surveillance, with follow up of individual patients to ensure safe and appropriate infection control precautions are in place. The data is also used to monitor the number of cases over time and identify clusters / outbreaks of infection and ensure appropriate action is taken.

It is a mandatory requirement for English NHS Acute Trusts to report Methicillin Resistant *Staphylococcus aureus* (MRSA), Methicillin Sensitive *Staphylococcus aureus*, *Escherichia coli* (*E.coli*), *Klebsiella*, *Pseudomonas aeruginosa* bloodstream infections and *Clostridioides difficile* Infections (CDIs) to the Department of Health via the HCAI Data Capture system, hosted by UK Health Security Agency.

The thresholds for HCAI were not released until July 2022, delayed due to national COVID-19 pressures. Within these thresholds, the definitions of Trust apportioned bloodstream infections were changed to include prior healthcare exposure within the preceding 28 days. This increases the number of cases that will be classed as trust apportioned. As these changes occurred part way through the financial year, Somerset Clinical Commissioning Group have not applied them to our local reporting for the financial year covered by this report. They will be fully applied from 2022/23 financial year.

## 3.2 *Staphylococcus aureus* Blood Stream Infections

*Staphylococcus aureus* (*S.aureus*) is a bacterium that commonly colonises human skin and mucosa without causing any problems. However, if the bacterium enters the body, for example via a break in the skin or a medical procedure, it can cause disease, including blood stream infections (BSIs). Most strains of *S.aureus* are sensitive to the more commonly used antibiotics and infections can be effectively treated. These are termed Methicillin Sensitive *Staphylococcus aureus* (MSSA). Other strains are resistant to many antibiotics and treatment may be harder; these are termed Methicillin Resistant *Staphylococcus aureus* (MRSA).

Post Infection reviews are undertaken on all Trust attributed cases of *Staphylococcus aureus* BSIs (MRSA and MSSA) to help determine why the infection occurred and identify any areas

of practice that could be improved to prevent these infections. A Trust attributed BSI is one where the blood culture was taken on the 3<sup>rd</sup> day or later following the admission date which is counted as day one.

### 3.2.1 Methicillin Resistant *Staphylococcus aureus* (MRSA) BSIs

There were 4 Trust attributed MRSA BSI cases in 2021/22, compared to 3 cases in the previous year. One of the cases has been locally attributed to another Trust. The Trust rate of MRSA BSIs is 2.04 cases per 100,000 occupied bed days which is higher than the national rate (0.89) and the regional rate (1.31). The reason for higher rates in the Southwest region is not clear.

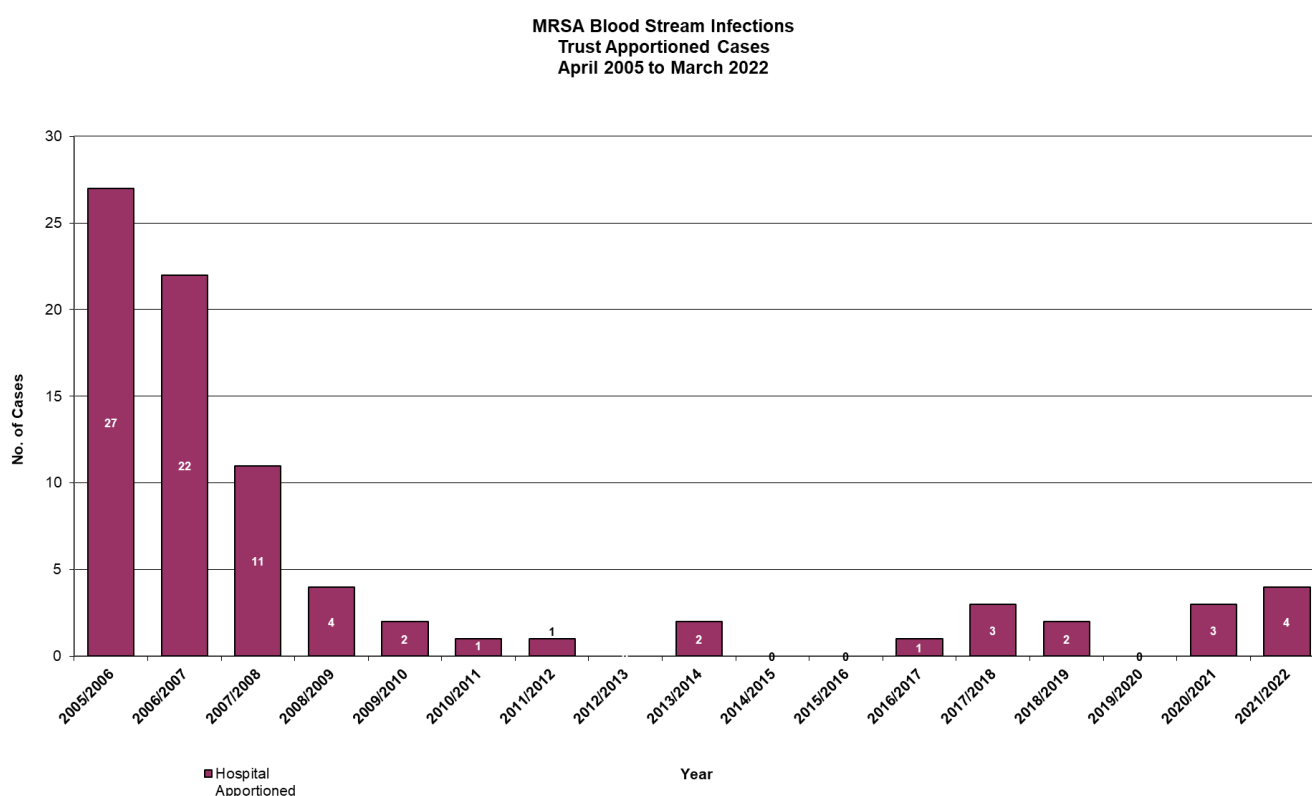


Figure 1 - Number of Trust attributed MRSA BSIs per year April 2005 to March 2022

### 3.2.2 Methicillin Sensitive *Staphylococcus aureus* (MSSA) BSIs

In 2021/22 the Trust had 35 Trust attributed MSSA bloodstream infection cases, a significant increase to the 18 cases identified in the previous year. There has been a national increase in cases of MSSA BSIs and the reasons for this remain unclear, the potential impact of COVID-19 on increased bloodstream infections is still being researched. The Trust rate of MSSA BSIs is 14.23 cases per 100,000 occupied bed days which is in line with the national rate (14.17) and slightly lower than the regional rate (16.47).

**MSSA Blood Stream Infections  
Trust Apportioned Cases  
April 2008 - March 2022**

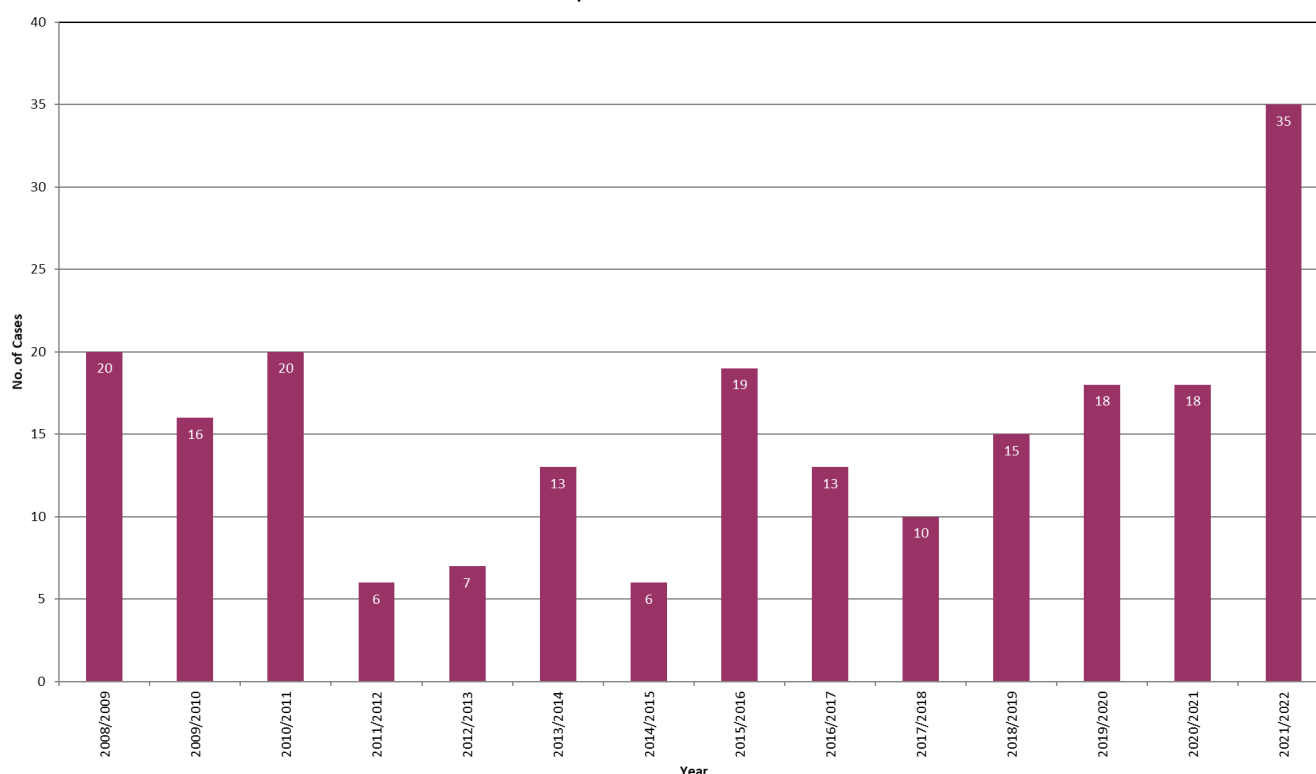


Figure 2 – Number of Trust assigned MSSA BSIs April 2008 to March 2022

The sources of the infections were diverse and occurred in different wards and Directorates. However, a third were related to vascular devices, most commonly peripheral vascular cannulas. Post infection reviews identified lapses in care that may have contributed to the infection in six of the cases; both linked to peripheral vascular cannula care. Work is ongoing at Directorate level to improve the care and monitoring of these devices.

### 3.3 *Clostridioides difficile* Infection

*Clostridioides difficile* Infection (CDI), formally known as *Clostridium difficile*, is a disease that can cause diarrhoea and colitis and can be life threatening. CDI is mainly a complication of antibiotic therapy, particularly affecting the frail and elderly who have been prescribed broad spectrum antibiotics. CDI has been linked to serious outbreaks in hospital.

A CDI case is defined as those detected by a combination of two tests: a glutamate dehydrogenase (GDH) test and a toxin enzyme immunoassay test. In addition, polymerase chain reaction (PCR) testing is carried out to help identify patients who may be carriers. Patients with CDI and those identified as carriers are cared for in side-rooms to prevent cross transmission to vulnerable patients.

In 2021/22 the Trust had 46 Trust apportioned cases in comparison to 47 cases the previous year. This comprised of 28 Hospital Onset Healthcare Associated cases (HOHAs) where the specimen was taken on day 3 or later following admission and 18 Community Onset Healthcare Associated cases (COHAs), where the specimen is taken in the community or within 2 days of admission **and** the patient had been an inpatient in the Trust in the previous 28 days. Case numbers and case rates have been increasing locally and nationally. The Trust rate is 15.7 cases per 100,000 occupied bed days which is lower than the national rate of 22.78. When compared to the regional rate (27.98) we still have the second lowest rates in the region.



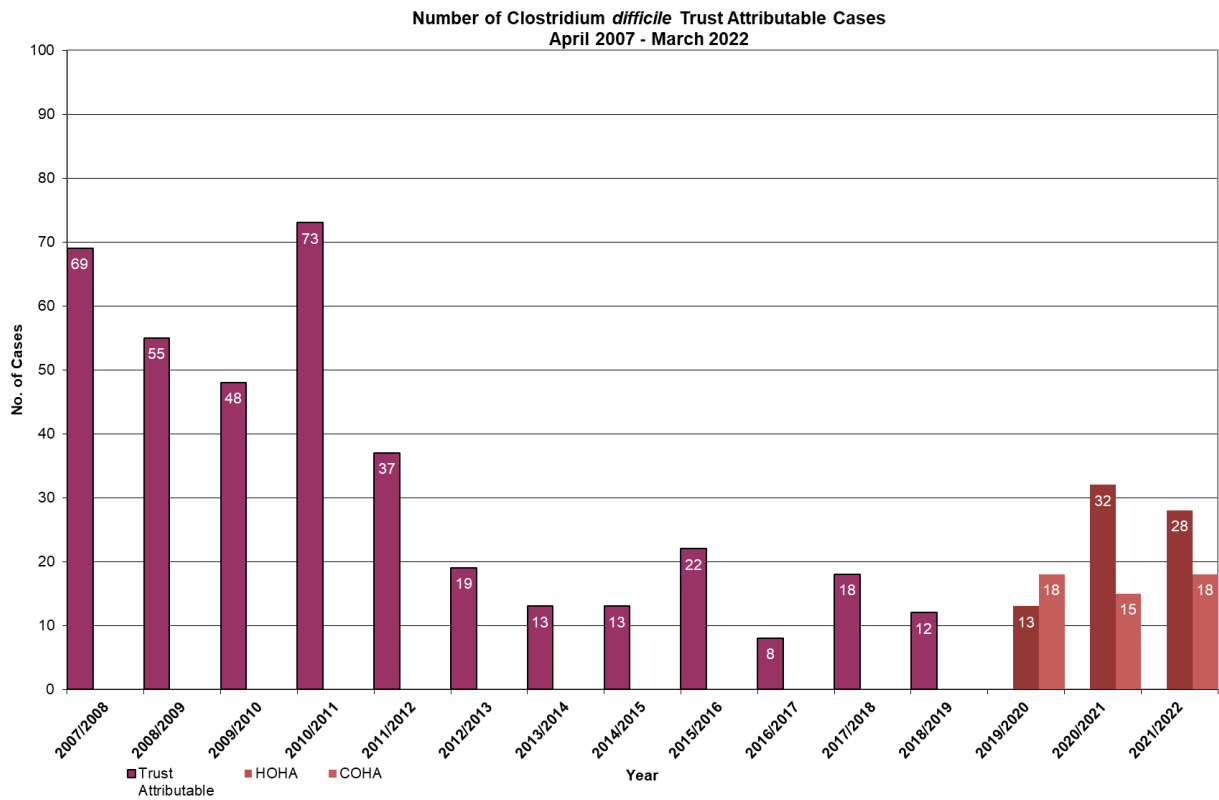


Figure 3 – Number of Trust attributed CDI cases April 2007 to March 2022

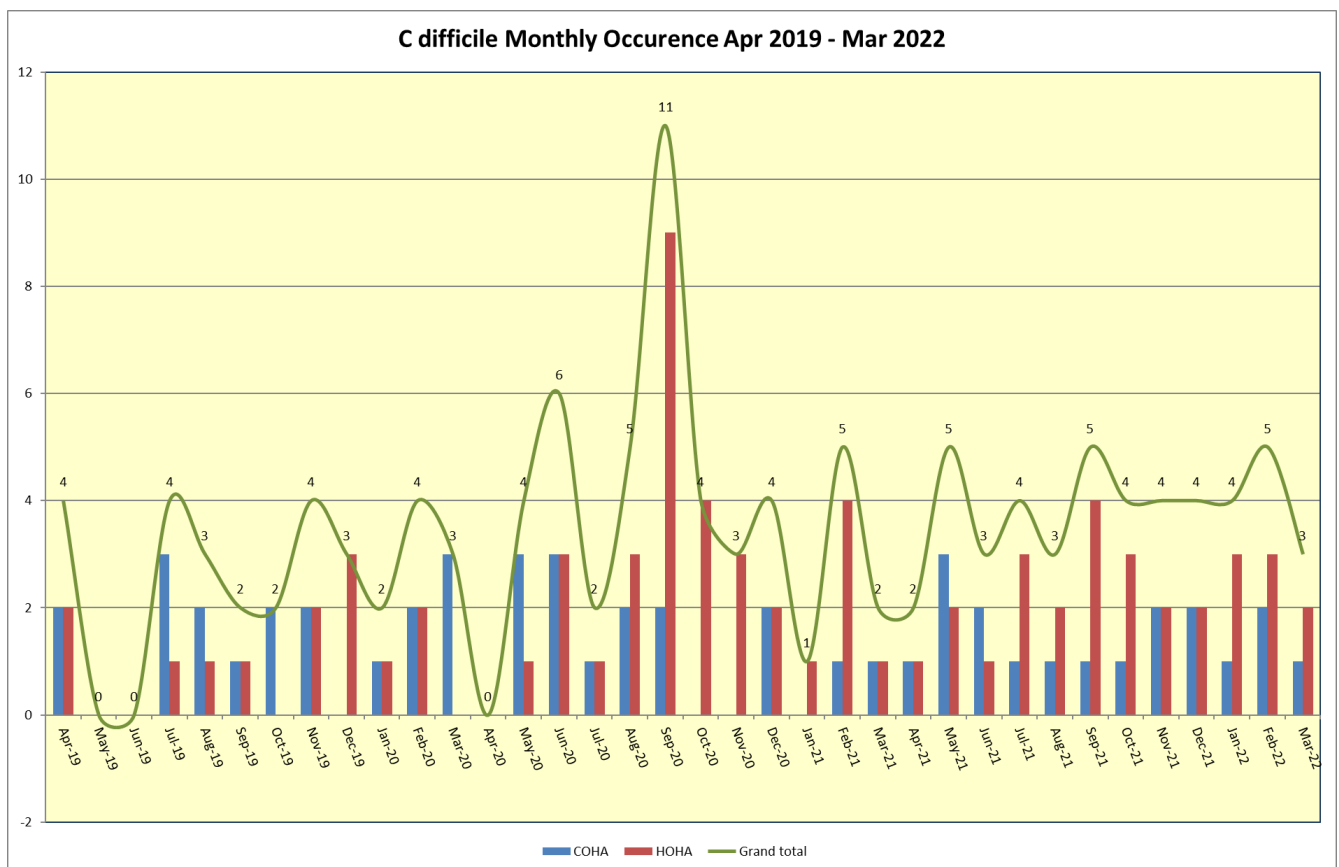


Figure 4 – Monthly occurrence of CDI April 2019 to March 2022

Figure 4 shows the monthly incidence of CDI in the Trust between April 2020 to March 2022. In comparison to the previous year, no spikes in cases have occurred this year, with case numbers occurring relatively evenly across the whole year.

The general increase in CDI case numbers and rates are not clear. In the previous year there was an increased use in broad spectrum antibiotics at the beginning of the COVID-19 pandemic. As greater knowledge about the virus was learned, antibiotic usage returned to normal and yet levels of CDI still increased, a trend which has continued into the current year. A Southwest collaborative has been set up to gather more detailed information on the CDI cases to try to establish any risk factors or trends that have not been noted previously. The purpose of the collaborative is to gain a better understanding of the changing pattern of CDI to reduce levels.

Post Infection Reviews (PIRs) are carried out on all Trust attributed CDIs (HOHAs and COHAs) to assess whether there was any lapse in quality of care provided to the patient and whether this contributed to the case. These assessments are peer reviewed and validated by the Trust Commissioners. Antibiotic pressure continues to be the main driver for CDI cases however, this year there have been a much greater number of CDI recurrence or relapse. The distinction between recurrence and relapse is not well defined, but a further episode of CDI within 3 months is often considered a relapse, and after 3 months a recurrence. There have been 9 cases of either relapse or recurrence this year. It is not clear why this is the case as treatment of CDI has not changed.

### **3.3.1 Period of Increased Incidence of CDI**

A Period of Increased Incidence (PII) is defined as two or more Trust attributed CDI cases where the specimen was taken on the same ward within a 28-day period (Dept. of Health 2008). When this occurs a standard set of actions are put in place including environmental and isolation practice audits, together with weekly antimicrobial review of all patients on the ward.

During the period covered by this report there was one PII in the Trust. As there are many different strains of *Clostridioides difficile*, enhanced testing is carried out to identify the specific strain and determine whether there had been cross transmission between patients. Enhanced testing confirmed there was no cross transmission.

## **3.4 Gram-Negative Bloodstream Infections**

The NHS Long Term Plan supports a 50% reduction in Gram-negative bloodstream infections by 2024/25. Gram negative organisms are commonly found in the gut and whilst most of these are harmless, pathogenic strains can cause a range of infections including urinary tract, intestinal and blood stream infection. The most common gram-negative organisms that result in bloodstream infections are *Escherichia coli*, *Klebsiella* species, and *Pseudomonas aeruginosa*. In addition to the threshold for *E.coli*, this was the first year thresholds were also applied to *Klebsiella* and *P. aeruginosa* BSIs.

An improvement project is in place across the County and the Region to reduce these infections however, due to the COVID-19 pandemic, much of this work has been on hold. Plans are in place to restart the work in the next financial year.

The outcomes of PIRs on the gram-negative BSIs show the majority are due to urinary tract infections (UTI). Prevention of UTI is therefore a key factor in reducing the risk of a gram-negative BSI.

### **3.4.1 *Escherichia coli* (E.coli) Bloodstream Infections**

*E.coli* accounts for around 55% of the gram-negative bloodstream infections with the majority occurring in the community. In the period covered by this report there were a total of 259 *E.*

coli bloodstream infections. Of these, 213 patients were admitted with the infection (occurred in the community) and 46 were Trust attributable. Compared to the previous year, there was a slight increase in case numbers. The Trust rate is 25.43 cases per 100,000 occupied bed days which is lower than both the national rate (33.63) and the regional rate (37.11). The most common source of the 46 infections remains the urinary tract (23 cases) but the majority are not related to urinary catheters.

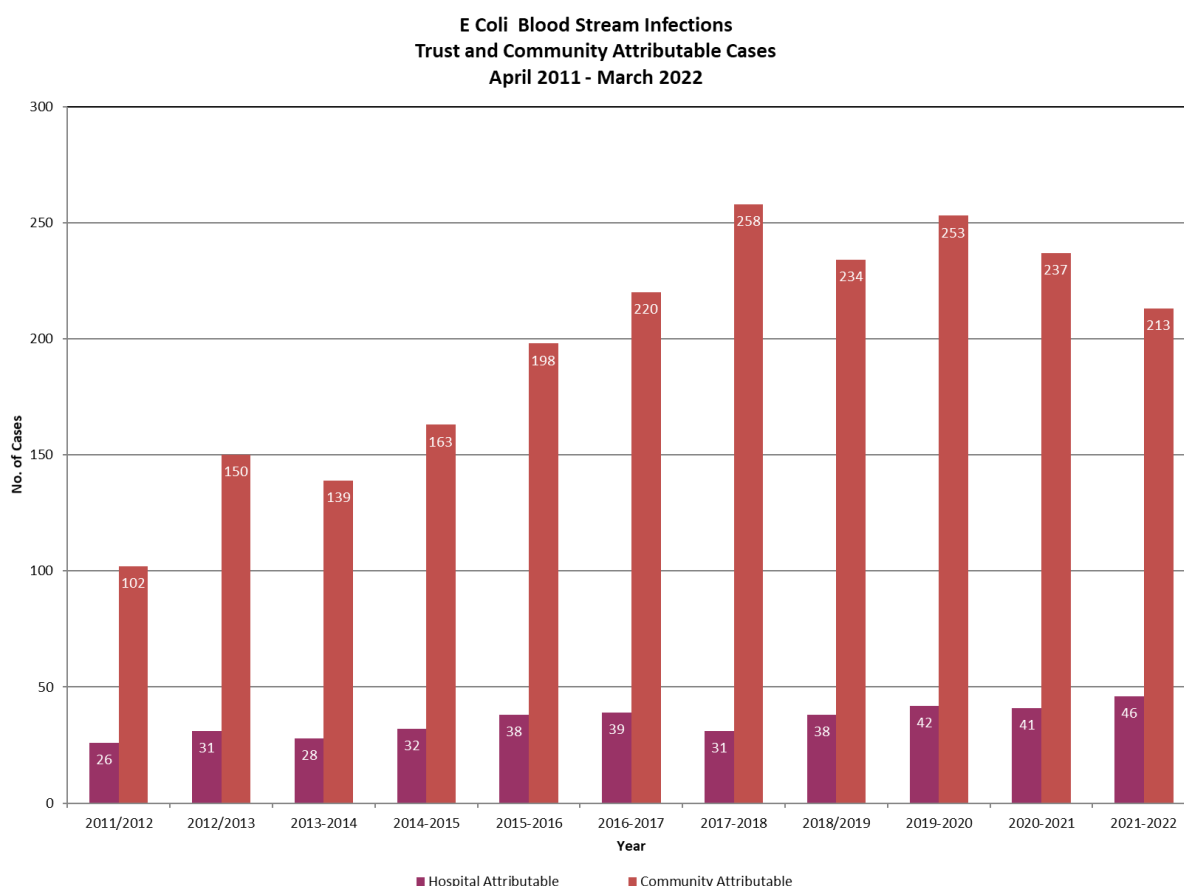


Figure 5 – Number of Trust and Community Attributable E Coli BSI cases April 2011 to March 2022

### 3.4.2 *Klebsiella species* Bloodstream Infections

In 2021/22 there were 16 Trust apportioned *Klebsiella* BSIs. The Trust rate is 8.85 cases per 100,000 occupied bed days which is lower than the national rate (14.38) and the regional rate (13.49). In comparison with the rest of the region the trust ranks second lowest for *Klebsiella* BSIs. The sources of these infections have a similar profile to E.coli and are predominantly due to urinary tract infections.

### 3.4.3 *Pseudomonas aeruginosa* (*P. aeruginosa*) Bloodstream Infections

In 2021/22 there were 7 Trust apportioned *P. aeruginosa* BSIs. The Trust rate is 5.17 cases per 100,000 occupied bed days which is in line with the national rate (5.91) and slightly lower than the regional rate (6.59). Once again, most are due to urinary tract infections.

## 3.5 Glycopeptide Resistant Enterococci (GRE) BSIs

Enterococci are normally found in the gut and are part of the normal human gut flora. Although a common cause of urinary tract infections, enterococci can occasionally cause serious infections. Mandatory surveillance and reporting of GRE bloodstream infections has taken place since October 2003. In 2021/22 there was one case identified in the Trust.

### **3.6 Multi Resistant Gram-Negative Organisms Including Carbapenemase-Producing Enterobacterales (CPE)**

Gram-negative organisms are bacteria often found living naturally in the human gut, and can sometimes cause disease, including urine, chest, wound, and bloodstream infections. These bacteria can develop resistance to several antibiotics and infections due to antibiotic resistant strains, which can be difficult to treat, and are becoming increasingly common.

Multi-Resistant Gram-Negative Organisms (MRGNOs) are graded within the Trust according to their antimicrobial resistance, with Grade A\* organisms being the most resistant and Grade C the least. Wherever possible isolation precautions are implemented for patients identified with an MRGNO. If there are insufficient side rooms available, those with higher levels of antimicrobial level of resistance are given priority for isolation.

Carbapenemase Producing Enterobacterales (CPE) are gram-negative organisms that are resistant to nearly all antibiotics including carbapenems, a powerful group of antibiotics used to treat severe infections which cannot be treated with more conventional antibiotics. This resistance makes infections with these organisms extremely difficult to treat. Outbreaks with these organisms have occurred in several countries and some areas of the UK, including hospitals in London, Northwest England and the Midlands.

In line with PHE guidance, the Trust has a policy in place to identify and screen patients who may be at an increased risk of CPE, including all patients admitted to the Intensive Therapy and High Dependency (Critical Care) unit.

In 2021/22 no patients with CPE were identified from the screening programme in Critical Care. However, 3 cases of CPE were identified in other areas of the trust. They were all found in clinical specimens and were incidental findings. Two of the cases were linked and were managed as an outbreak with support from the local Health Protection team. Extensive patient screening and investigation could not identify a common source therefore it was concluded that one of the cases was colonised on admission, resulting in transmission to the other case. Strict controls were implemented to prevent further transmission, no more cases were identified.

### **3.7 Surgical Site Infection (SSI)**

There is good evidence that prospective surgical site infection surveillance, together with timely feedback to clinicians will reduce infection rates. It is a mandatory requirement for NHS Trusts in England to complete orthopaedic surgical site infection surveillance for a minimum of a three-month period each year, using the National Surgical Site Infection Surveillance Service (NSSIS). This service is co-ordinated by the Communicable Disease Surveillance Centre at UK Health Safety Agency in Colindale.

The Infection Prevention & Control team usually undertakes a continuous surveillance programme of SSI (rather than just a 3-month period) as this gives a more accurate infection rate. However, due to the pressures of COVID-19 in the previous year SSI surveillance was suspended between October 2020 and March 2021. SSI surveillance was recommenced in April 2021 and full year of surveillance has been completed. However, as the previous year's data was incomplete, benchmarking against the national 5-year period is therefore no longer a direct comparison. This report presents only the Trust data for the period of this report.

For the period covered by this report, surveillance for all total knee replacements (TKR), total hip replacements (THR) and spinal surgery was undertaken. Results of the surveillance are disseminated to Clinical Directors, Surgeons, and Directorate Management Teams each month, who take appropriate actions where required.

- a) **Total Knee Replacements** – In the period covered by this report there were 5 infections identified, two superficial and three deep/organ space, giving an annual incidence rate of 4.6%. It is unusual for the Trust to identify this number of infections in a single year. Other centres in the area are also seeing an increase in infections for TKR and the reason is unclear. One of the factors is the effect of the COVID-19 pandemic. As elective services were suspended at the beginning of the pandemic many patients are waiting significantly longer for surgery. They have become de-conditioned, and their mobility has dramatically declined, potentially increasing their risk factors for post-operative complications including infection.
- b) **Total Hip Replacements** – In the period covered by this report there were two infections identified, giving an annual incidence rate of 0.8%.
- c) **Spinal Surgery** – In the period covered by this report there were no spinal infections.

## 4. UNTOWARD INCIDENTS INCLUDING OUTBREAKS

### 4.1 Norovirus

Norovirus, also called the winter vomiting bug, is highly contagious and is the most common cause of hospital outbreaks of viral gastroenteritis. To control the outbreak, wards are usually closed to new admissions until the outbreak is brought under control, and this can cause major operational disruption to the hospital. In 2021/22 there were 3 confirmed norovirus outbreaks in the Trust (defined as 2 or more cases on a ward in a 48-hour period).

### 4.2 Influenza

There were 17 cases of influenza identified in the Trust during the period of this report, the majority were influenza A. Only 11 of these cases were admitted and none were hospital acquired. There were no outbreaks of influenza.

### 4.3 COVID-19

Coronavirus disease (COVID-19) is caused by SARS-CoV-2, a newly emergent coronavirus that was first recognised in Wuhan, China in December 2019. Cases are apportioned to trusts depending on the time frame between the first positive specimen and admission date:

- **Community** onset, positive specimen date  $\leq$  2 days after admission or hospital attendance (CO)
- Hospital-onset, **Indeterminate** healthcare-associated, positive specimen date 3-7 days after admission (HOIHA)
- Hospital-onset, **Probable** healthcare-associated, positive specimen 8-14 days after admission (HOPHA)
- Hospital-onset, **Definite** healthcare-associated, positive specimen 15 days or more after admission (HODHA)

Between April 2021 and March 2022 there were a total of 1,489 inpatients with PCR confirmed COVID-19 across the Trust. This was an increase on the previous year where the Trust cared for 1,153 inpatients. The majority were community cases (68%) however, the portion of Trust attributable (probable and definite) increased this year to 23% compared to 16% last financial year. During the first quarter of the year the levels of COVID-19 in the Somerset population remained low (less than 20 cases per 100,000 population). This was reflected in low inpatient cases. As the community prevalence rose through the year this

resulted in an increase in inpatient cases, culminating in 722 inpatient cases during March 2022.

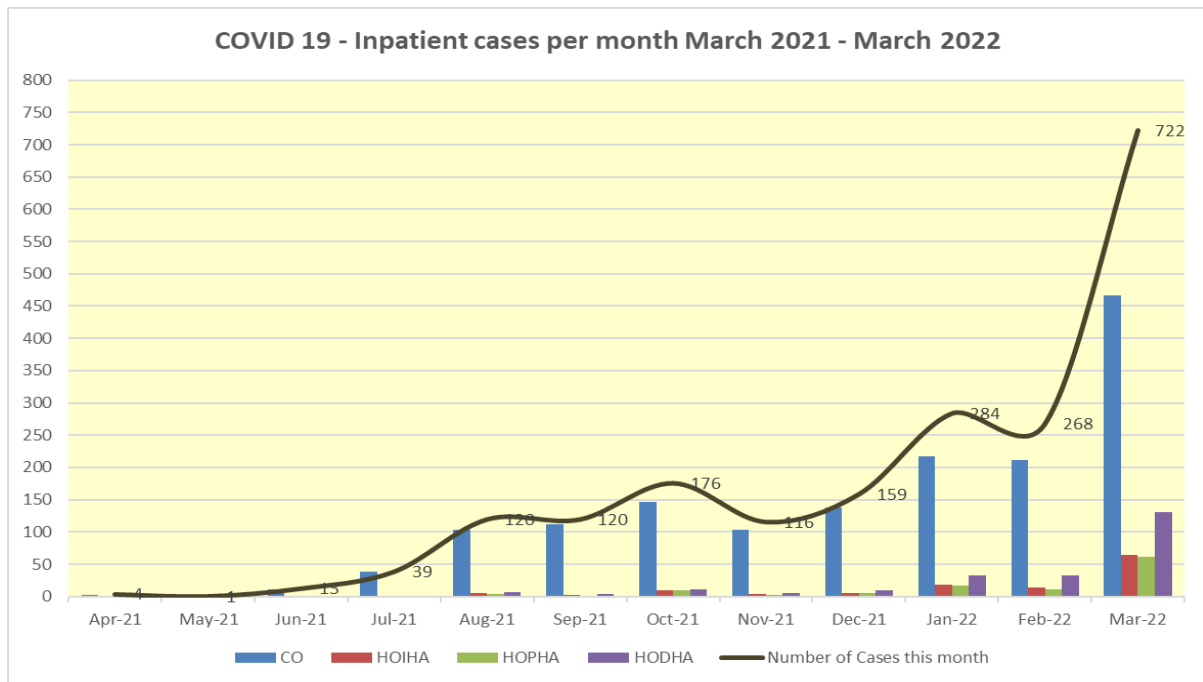


Figure 6 – COVID-19 Inpatient Cases per month March 21 – March 22

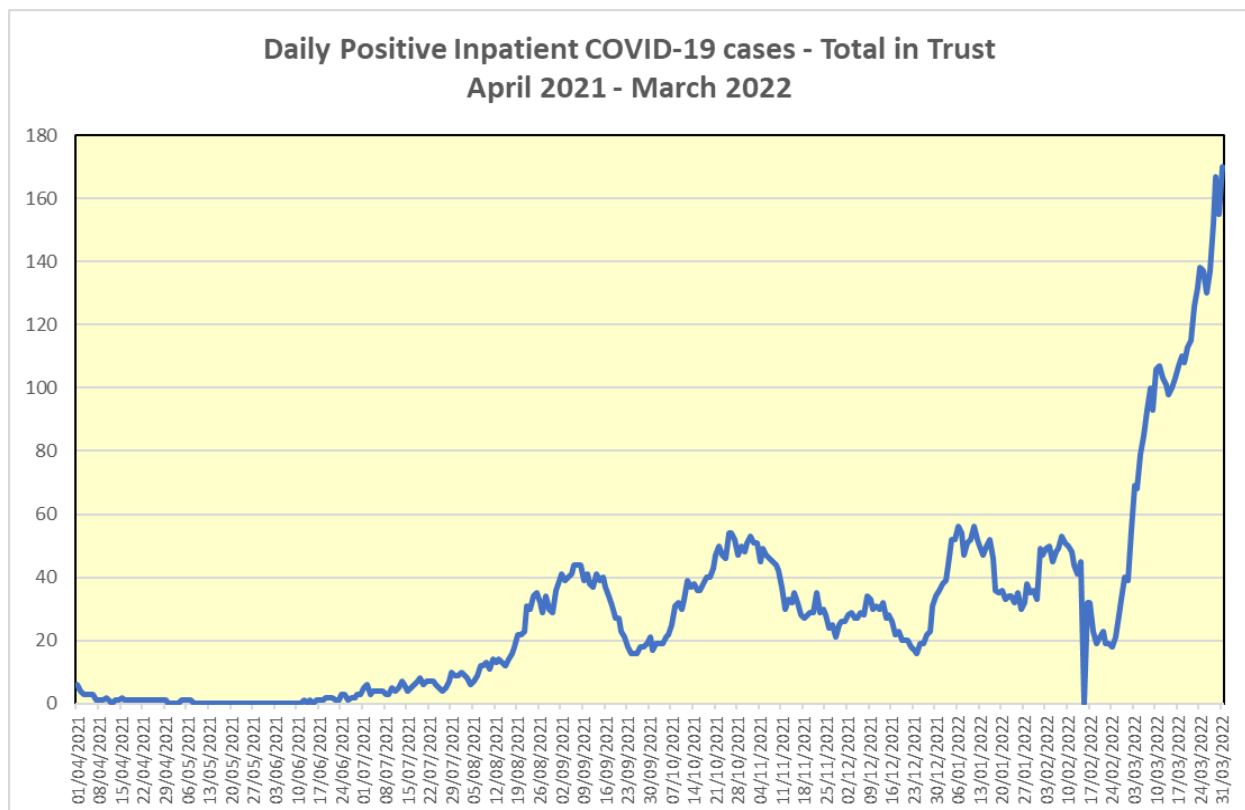


Figure 7 – COVID 19 - Daily Number of Positive Inpatient COVID-19 Cases – April 2021 – March 2022

### 4.3.1 COVID-19 Outbreaks

Between April 2021 and March 2022, there were 51 inpatient ward closures due to COVID-19 outbreaks, the majority in the last quarter of the year (figure 8).

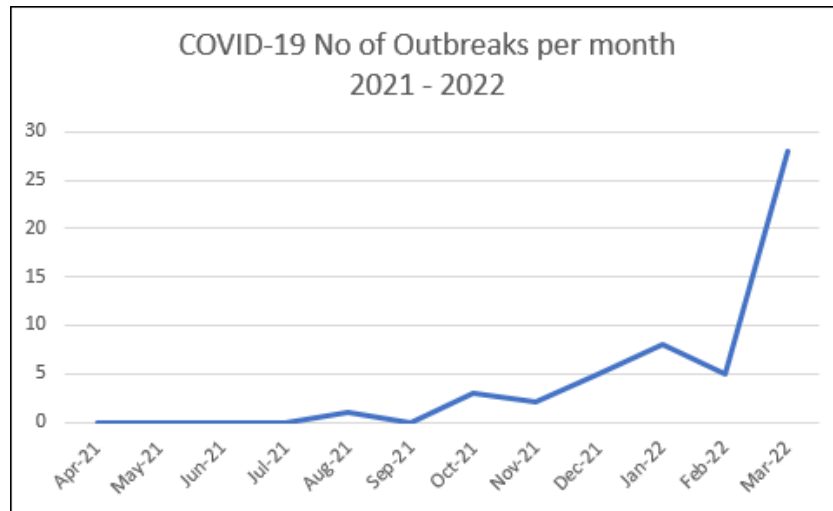


Figure 8 – COVID-19 Outbreaks per month

Most of the outbreak occurred in March 2022 when 28 were declared. At the peak there were a total of 16 inpatient areas affected simultaneously (figure 2).

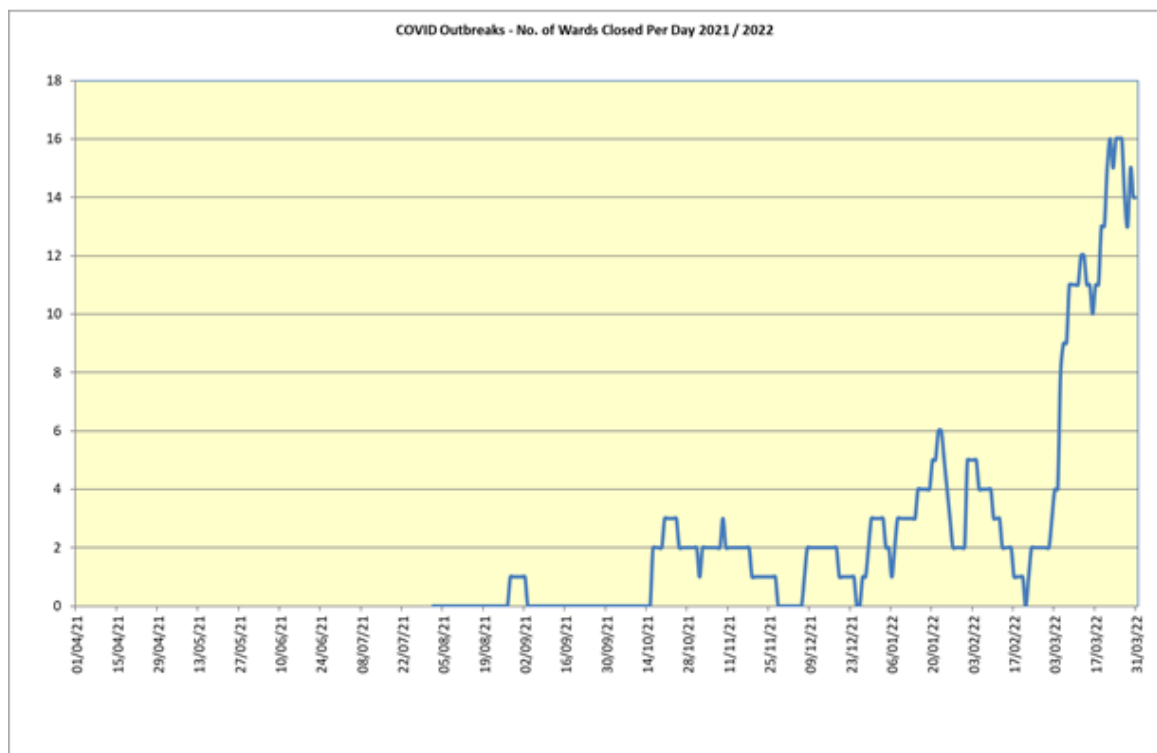


Figure 9 – Number of wards closed per day

In addition, there were three outbreaks confined to ward staff, the most notable of which was an Omicron outbreak in December, which were some of the first cases of Omicron in Somerset.

Outbreaks were managed in line with the Trust Management of COVID-19, Standard Operating Procedure, and the Southwest Regional Healthcare Setting Outbreak Framework. Key controls included isolation of all confirmed cases either in side-rooms or cohorted in bays and closing affected areas to new admissions.

A total of 396 patients were affected and 221 staff cases. Restrictions were in place for a total of 768 days with 1,268 bed days lost.

Post outbreak reviews have been completed. Due to the long incubation period of COVID-19 and the high community prevalence, it was difficult to identify the source of the outbreaks or some of the index cases with any real certainty.

## **5 HAND HYGIENE**

### **5.1 Hand Hygiene**

Hand Hygiene (HH) is considered the single most important measure for preventing the transmission of infection. All wards and clinical departments carry out a monthly audit of HH compliance in their area against the World Health Organisation's 5 moments for Hand Hygiene. The monthly Trust wide average compliance rate for the period covered by this report was 94%.

## **6 STAFF FLU VACCINATION PROGRAMME**

Ensuring a good uptake of the seasonal influenza vaccine in front line healthcare workers is one of the most effective measures to protect patients, staff and their families from flu, and the Trust has a comprehensive vaccination programme in place to ensure that all healthcare workers are offered the opportunity to be vaccinated.

This programme was successful in vaccinating 67% of staff, which was slightly less compared to 70% last year.

## **7 COVID-19 VACCINATION PROGRAMME**

Frontline health and social care workers were in one of the early priority groups for vaccination. The purpose of this was to protect patients in our care, many of whom would be at highest risk of serious illness or death should they develop COVID-19 infection.

For a period COVID 19 vaccines were going to be mandated for all frontline NHS colleagues. This national policy was withdrawn before it was implemented. A high percentage of primary vaccination and boosters was achieved. It is expected that further boosters will be offered to NHS colleagues from September 2022 to run alongside this year's flu vaccination programme, but this is still to be confirmed.

## **8 ANTIMICROBIAL STEWARDSHIP AND AUDIT**

Increasing global antimicrobial resistance is a major concern, as effective antibiotics are essential for modern medicine as we know it. Antimicrobial stewardship to ensure optimal use of antibiotics is a high priority in the Trust and is led by the Consultant Microbiologist Antimicrobial Prescribing Lead and the Lead Antimicrobial Pharmacist with the support of the Somerset Antimicrobial Stewardship Committee for SFT and YDH (sub-group of the Drug and Therapeutics Committee).



## **8.1 Membership of the Committee also includes:**

- Lead Antimicrobial Pharmacist SFT
- Consultant Microbiologist Antimicrobial Prescribing Lead (Chair)
- Director for Infection Prevention and Control
- Antimicrobial Pharmacist from YDH
- Pharmacists from Community and Mental Health
- A senior clinician representing each Directorate at SFT and YDH
- Senior nurse from SFT and YDH
- IP&C Nurse
- CCG prescribing advisor
- MPH antimicrobial pharmacists and consultant microbiologists
- Chief Pharmacists from SFT and YDH

The committee's role is to:

- Align antimicrobial stewardship at SFT with national recommendations and recognised good practice, including the UK 5-year AMR strategy, NICE guidelines for antimicrobial stewardship and the Health and Social Care act 2008: code of practice on the prevention and control of infections and related guidance.
- Develop, review, update and implement local antimicrobial prescribing policy and guidelines for secondary, community and primary care.
- Develop, implement, monitor, and feedback measures to improve antimicrobial prescribing such as antimicrobial ward rounds, antimicrobial prescribing bundle, formal and informal staff training, and prescribing restrictions.
- Undertake regular antimicrobial surveillance and audit with feedback of results to prescribers and relevant strategic groups within the Trust.

## **8.2 Antibiotic Stewardship and Monitoring - Antimicrobial Consumption of all Systemic Antibiotics and Specific High-Risk Agents.**

Over the period of this report, the COVID-19 pandemic and unprecedented hospital activity has resulted in an altered way of working for many teams across the Trust. This has resulted in more remote working and less face-to-face ward rounds. Additionally, ongoing significant staffing shortages in the microbiology and pharmacy teams has challenged the delivery and maintenance of the AMS service across the Trust. Unfortunately, this has had an adverse impact on antimicrobial stewardship resulting in a reduced service however, where feasible, alternative virtual methods of delivering AMS have been employed. Despite this, specialist antimicrobial advice has still been available to clinical teams when needed and monitoring continues.

Input from either the Lead for Antimicrobial Prescribing or a Consultant Medical Microbiologist continued for post infection reviews of cases of Health care-associated infections as necessary, to improve future practice.

## **9 IP&C POLICIES**

The IP&C team have a programme of at least 3 yearly reviews of Infection Prevention and Control policies and guidelines to ensure they are up to date and based on latest evidence. In the period covered by this report, thirteen IP&C policies / guidelines were reviewed and updated.

The Trust's IP&C policies and guidelines are available to staff via the Trust intranet and on the IP&C website. Compliance with policies is audited as part of the IP&C team annual work programme.

## **10 IP&C AUDIT PROGRAMME**

The IP&C Annual Programme of work sets out the Trust's IP&C audit plan for the year, to ensure key policies and practices are being monitored and implemented appropriately. This programme includes both Directorate Led and IP&C Team led audits.

### **10.1 Directorate Led IP&C Audits**

Audits carried out monthly for the period covered by this report included:

- Hand Hygiene audits
- Environmental Cleanliness audits
- Decontamination of Equipment audits
- Personal Protective Equipment (PPE) audits
- MRSA Screening Compliance

Monthly Directorate IP&C performance reports detailing infection rates and audit results are compiled by the IP&C Team for each of the Directorates; exceptions and remedial actions are monitored via the Directorate governance structure and reported to the Infection Control Committee.

### **10.2 IP&C Team Audits**

In addition to the monthly Directorate audit programme, the IP&C team carry out an annual programme of Trust wide audits. These are reported to the IP&CC and actions are agreed in response to findings.

## **11 EDUCATION AND TRAINING**

Education and training continue to be an important part of the work of the IP&C team. It is a mandatory requirement that all staff receive an infection control update every 3 years. Directorate Managers receive regular compliance reports and are responsible for addressing individual areas of non-compliance.

Clinical staff undertake their mandatory update via the Trust's online Infection Prevention and Control update training programme. The overall compliance rate with mandatory infection control update training as of March 2022 was 92%.

### **11.1 Infection Control Link Practitioners**

An active infection control link practitioner group is run by the IP&C team. There are currently over 100 members with representation from all clinical areas. Many are nurses or midwives, but there are also other allied healthcare professionals such as physiotherapists and radiographers in the role.

IP&C link practitioners are key personnel in the Trust to champion good infection control in their wards and departments and assist the IP&C team in promoting best practice. Normally, link group meetings are held three times a year and include an educational session and dissemination of new infection control policies and guidelines. Meetings provide a forum for clinical staff to discuss infection control issues, share best practice and then feedback to staff in their areas. Link Practitioners also carry out specific IP&C audits in their areas, including hand hygiene and decontamination of equipment audits. However, in 2021/22, educational whole day meetings remained suspended due to COVID-19 restrictions.

## **12 DECONTAMINATION**

Effective decontamination of hospital equipment and reusable medical devices is critical in reducing the risk of hospital associated infections. The Trust has a Decontamination group which is a sub-group of the Infection Prevention and Control Committee. The group is responsible for ensuring decontamination processes meet the statutory and regulatory requirements. During the period of this report the Trust has been without a Decontamination Lead following the retirement of the previous post holder (the DIPC held this responsibility while the formal post was empty). In addition, COVID pressures has meant the group have been unable to meet. Finding a replacement has been challenging but the Lead Nurse for IPC has undertaken the required training and assessment to complete this role and under their guidance the group will be reformed and re-commence with the ambition of moving to a joint meeting with YDH during

Despite the group not meeting any issues were dealt with outside of the meeting and all audits and reassurance were checked. The lack of formal decontamination lead was on the IPC risk register with the mitigation of the DIPC holding the role with the IPC lead nurse active to ensure all standards were met and auditing remained compliant.

### **12.1 Facilities**

The Trust has a dedicated Sterile Services Department (SSD) which complies with national decontamination standards and guidelines and is based on the Musgrove Park Hospital (MPH) site in Taunton providing steam sterilization and low temperature sterilization. Decontamination of flexible endoscopes is undertaken in SSD and in two Endoscopy Units based on the main MPH site and at Bridgwater Hospital. In addition, there are processes in place for the local decontamination of nasendoscopes, transoesophageal echocardiography probes and transvaginal probes.

### **12.2 Audit and Monitoring Arrangements**

Compliance requirements are governed by several pieces of guidance or directives including:

- Medical Devices Directive
- HTM 01-01 – Decontamination of Surgical Instruments
- HTM 01-06 – Management & Decontamination of Flexible Endoscopes

#### **a) Sterile Services Department**

Construction of a new SSD unit is in place which will replace the current unit on the acute Musgrove Park Hospital site. The annual audit by the external notified body is on hold until 2022 when the new build is completed. In the interim, internal audits will be completed. Whilst SSD is not accredited, any equipment loaned to external sites that are not affiliated with the Trust must be reprocessed before use.

External assessments by the Authorised Engineer for Decontamination continue, to ensure compliancy and validation of washer disinfectors and sterilisers.

#### **b) Endoscopy**

Decontamination of flexible endoscopes is undertaken in the Endoscopy Units on the main site (Musgrove Park Hospital), SSD and at Bridgwater Hospital. External inspections and annual validations are undertaken.

#### **c) Local Decontamination**

Across the Trust there are some medical devices that cannot be centrally decontaminated either because they are not suitable for Steam Sterilisation, Low Temperature Sterilisation or because limited numbers of equipment mean rapid turnaround times are required to meet patient capacity. There are three pieces of equipment where local decontamination methods have been reviewed and currently agreed via the Decontamination Group:

- **Transoesophageal Echocardiographic (TOE) probes** – Due to limited numbers of TOE probes in the system, decontamination is undertaken within the Cardiology department. This is delivered via an Ultraviolet decontamination machine which has been fully operational since the summer of 2019. This enables rapid, high-level disinfection via an automated process. This process is subject to external annual validation and therefore fully meets compliance with HTM 01-06.
- **Nasendoscopes** – This equipment is used in several sites across the Trust. Due to geographical location of some of the scopes it is not yet possible to have a fully automated service across the whole Trust. Therefore, for some sites local decontamination using manual, high-level disinfection systems, in line with basic requirements of HTM 01-06 is in place. The main users of nasendoscopes are the Outpatient Department on the acute site at Musgrove Park Hospital. Due to high numbers of nasendoscope procedures in the department, decontamination is undertaken within the outpatient department. This is delivered via an ultraviolet decontamination machine. This enables rapid, high-level disinfection via an automated process. This process is subject to external annual validation and therefore fully meets compliance with HTM 01-06.
- **Transvaginal (TV) probes** – There are insufficient numbers of TV probes to meet capacity demands therefore currently they are locally decontaminated using a manual high-level disinfection process, in line with the basic requirements of HTM 01-06.

#### **d) Other Hospital Equipment**

Each ward and clinical department are responsible for the cleaning and decontamination of other non-critical medical equipment. Monthly auditing is undertaken at Ward level, overall compliance in 2021/22 was 94%.

## **13 CLEANING SERVICES**

### **13.1 Management Arrangements**

The Cleaning Service is managed centrally on the acute site by Facilities Directorate and by the clinical teams across the community sites. Some elements of the service are contracted out.

Whilst cleaning is not directly managed by facilities across the community, Matrons or Unit Managers are responsible for managing the cleaning through the Facilities Team. This is supported by the Facilities Manager and Deputy Facilities Manager based within the community setting. They collate the Cleanliness audit results and provides up to date procedural documentation, training, and support.

### **13.2 Monitoring Arrangements**

The Trust has a Cleaning Standards group which reports to the Integrated Quality Assurance Board. In addition, this group provides an assurance report quarterly to the Infection Control committee. The group is responsible for ensuring the Trust meets the required standards of environmental cleanliness.

During 2021/22 the group has been working with MICAD, the new supplier of cleanliness auditing software for the Trust. This work is to ensure implementation of the software across the merged organisation. This will enable a consistent approach across both the acute and community sites.

This work has involved re-aligning the software to mirror the new national cleaning standards. Whilst this is now functioning well for the community setting, we are having some problems with the software in the acute setting. This hasn't prevented us from following the audit programme and we are hoping to have this resolved as quickly as possible.

Following departmental audits if the score is amber a local action plan is implemented to address the failures. If we have 2 consecutive amber scores in the same area, a further action plan is developed, implemented, and signed off at the Cleaning Standards Group (CSG).

Following departmental audits if the score is red an action plan is developed, implemented, and signed off by the CSG.

### **13.3 Budget Allocation**

The Deputy Head of Facilities is responsible for effective management of the cleanliness budget. During the year where extra environmental cleaning has been required due to covid this funding has been allocated on top of the normal budget.

### **13.4 Patient Led Assessment of the Care Environment (PLACE) Assessments**

Due to the COVID-19 pandemic no PLACE assessments were undertaken in the Acute and Community setting.

### **13.5 User Satisfaction**

User satisfaction is via the exit cards at ward level and through the Patient Advice and Liaison Service (PALS) in non-wards, which is reported to the Cleaning Standards Group. Cleanliness of the ward environment is also monitored by routine surveys carried out by hospital volunteers who ask patients set questions about their experience in hospital. There is also now a Friends and Family questionnaire.

### **13.6 Deep Cleaning Programme**

During 2021/22 we undertook 37 full deep cleans which include, patient bays, side rooms, communal areas and patient and staff rest rooms. These were planned as part of a deep clean programme.

In addition to the annual deep clean we completed 197 partial deep cleans which varies from patient bays to half the ward which includes communal areas following closure due to COVID.

### **13.7 Hydrogen Peroxide Vapour (HPV) Cleaning**

HPV machines are used within the organisation following a discharge of a patient with *Clostridioides difficile* at the request of the ward / supervisor or Infection Control. They can also be used to supplement the deep cleaning of wards and equipment, or any other requests agreed with the IP&C Team. We are training more staff to use the HPV so that we can increase the usage.

During 2021/22 we completed 47 HPV requests, however the use of HPV has been challenging due to the significantly increased activity within the acute setting which has been further compounded by COVID. This has resulted in the cleaning team being stood down when preparing to use the HPV because the bed space is needed urgently. When this happens the cleaning team undertake a double clean of the area.

At the end of March 2022, we were able to procure two High Intensity UV-C cleaning units, that will enhance cleaning procedures across the trust. We have had 12 cleaning team members trained to use them and working in collaboration with the IP&C team we will identify how they will be used going forward.

## **14 WATER SAFETY**

### **14.1 Water Safety Group**

The Trust has a Water Safety Group, chaired by the Responsible Person for Water (Head of Estates) which meets 4 times a year which was achieved over the period of this report. The function of this group includes monitoring the performance of the water systems in the Trust and progress against the water safety plan. Remedial actions taken in response to any positive testing results are also reviewed, to ensure appropriate actions have been taken.

The group reports to the Infection Prevention and Control Committee to give assurance that appropriate controls to ensure water safety are in place and report on remedial actions taken where compliance had fallen below the acceptable standard.

The most significant infectious risks from the water supply are infections caused by legionella pneumophila or pseudomonas aeruginosa bacteria. Both can cause serious respiratory infections, with immunocompromised and ventilated patients being particularly at risk.

Legionella is most likely to proliferate in water systems where the temperature is between 20 to 50 degrees centigrade. Pseudomonas is found in water and moist environments and may proliferate in sink and shower traps.

### **14.2 Responsible Person for Water**

The responsible person for water in the Trust is the Strategic Head of Estates, who has overall responsibility for the development and implementation of Legionella and Pseudomonas aeruginosa prevention and control procedures, to comply with all appropriate legislation, regulations, and standards.

A Water Safety Risk assessment is carried out annually by an external independent water safety consultant, to help formulate a Water Safety plan.

### **14.3 Controls Procedures and Testing**

The primary method of controlling legionella in the Trust is to monitor and keep domestic cold-water temperatures below 20 degrees centigrade and domestic hot water temperatures above 55 degrees centigrade. These temperatures should be achieved within two minutes when drawing water from the cold and one minute of drawing water from the hot outlets.

To help reduce the risk of pseudomonas, controls are in place in high-risk areas to ensure that dirty water is not disposed of down hand wash sinks, and sinks are cleaned in such a way as to avoid contaminating taps from the sink traps (top-down approach). In addition, all underused outlets are flushed regularly to ensure a sufficient water flow through the system.

Water outlets in augmented areas (Intensive Therapy Unit, High Dependency Units, Neonatal Unit, Haematology and Oncology wards) and in areas where temperature monitoring indicates the controls are out of range, are routinely tested for legionella. In addition, all outlets in augmented care areas are tested for pseudomonas every 6 months.

If legionella or pseudomonas is detected, appropriate remedial actions are undertaken in line with Trust policy. This includes the immediate installation of a point of use HEPA filter or taking the outlet out of use; a review of the installation including identification of any potential dead legs and flexible hoses; and cleaning and disinfecting the system until two negative results are achieved.

### **14.4 Areas of concern**

During the period of this report there were two key areas of concern that were escalated to the Infection control committee:

- The failure of thermal balancing valves controlling the circulation of hot water in the Jubilee building. A design Consultant is developing a design solution which will be funded via the backlog capital maintenance programme. Point of use filters are deployed where thermal control has failed.
- Legionella testing of water outlets in Beacon centre was introduced following limited assurance of compliance from the incumbent facilities provider of the PFI building. Where positive results were identified point of use filters were deployed.

## **15 VENTILATION**

The purpose of Specialist Healthcare Ventilation systems is to protect patients from surgical site and other infections. They are used in operating theatres, procedure rooms and isolation rooms. Trusts should comply with Health Technical memorandum 03-01 – Specialised Ventilation for Healthcare Premises 2007. Compliance requires annual inspection and validation to ensure the system is performing to the required standard. Testing of ventilation systems is a specialist job and is currently completed by AirisQ (Independent Air Quality Consultants) on behalf of Estates.

The Trust has a Ventilation Safety Group which reports to both the Infection Control committee and The Safety Environment Advisory Group. The group meets quarterly and is responsible for monitoring the results of the annual validation testing and ensuring appropriate action is taken. The group provides assurance reports to the Infection Control committee relating to areas with specialist ventilation systems which are currently:

- 4 General theatres
- 3 Head and neck theatres
- 3 Orthopaedic theatres

- 3 Day-surgery theatres
- 2 Ophthalmic Theatre Suites (Day Case suites)
- 3 procedure rooms in Endoscopy
- 3 cardiac catheterisation laboratories
- 1 maternity theatre
- Isolation rooms

During 2021 all the annual testing was completed, results reviewed, and actions taken as required. Most areas met the required ventilation standard except for:

**a) Day Surgery Centre**

The three theatres in the day surgery unit did not meet the conventional theatre ventilation standards. A risk assessment has been undertaken and controls to reduce the risk are in place.

**b) General Theatres**

Although the 4 general theatres all met the required ventilation standard, the air handling units have well exceeded their usual life expectancy. One of the theatres has been decommissioned and was converted into an inpatient critical care pod. In terms of the other theatres, a new Surgical centre is planned for the Trust which will include a total of 8 new theatres.

## **16 INFECTION PREVENTION AND CONTROL PLAN AND AMBITIONS FOR 2021/22**

Infection Prevention and Control remains a high priority in the Trust, and we are committed to reducing healthcare associated infections and ensuring the highest standards of infection control practice are delivered throughout the hospital.

Key ambitions for 2022/23:

- To ensure local COVID-19 infection prevention and control policies and guidance continue to reflect any changes in national guidance or restrictions
- To support the Trust in the restoration of other services alongside COVID-19 requirements
- To review the Post Infection Review process in line with the NHS Patient Safety Incident Response Framework
- To have zero MRSA blood stream infections.
- To achieve the *Clostridioides difficile* objective of no more than 41 hospital assigned cases in the year. Reduce the number of avoidable *Clostridioides difficile* cases.
- To continue to work in partnership with community colleagues to reduce the number of both hospital and community onset E coli blood stream infections, including focused work on reducing the prevalence of indwelling urinary catheters in the Trust



- Implement a comprehensive winter awareness campaign to include recognition and infection control management of patients with influenza or norovirus.
- Continue to monitor the number of surgical site infections in total knee and hip replacements and spinal surgery.
- Continuing to deliver a comprehensive programme of surveillance, IP&C audit, education and policy review and development.
- To relaunch the Link Practitioner role
- To complete the upgrading of the Clinical Surveillance Platform for infection control (ICNet NG).

The IP&C annual programme of work for 2022/23 was agreed by the Infection Prevention & Control Committee in May 2022 and submitted to the Quality and Governance Committee. Progress against the plan will be monitored by the IP&CC and an annual report submitted to the Quality and Governance Committee.

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