Enclosure 6

NHS
Somerset
NHS Foundation Trust

INFECTION PREVENTION AND CONTROL

DIRECTOR OF INFECTION PREVENTION AND CONTROL

ANNUAL REPORT

April 2020 - March 2021

outstanding care
listening and leading
working together

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June 2021

Enclosure 6

DIPC Annual Report 2020 / 2021

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EXECUTIVE SUMMARY

- There were 3 Trust attributed Methicillin Resistant *Staphylococcus aureus* (MRSA) bloodstream infections in 2020/21, compared to none the previous year. Following review of the cases, no lapses in care that may have contributed to the infection were identified.
- There were 32 hospital onset healthcare associated cases of *Clostridioides difficile* infection compared to 13 cases in the previous year. In addition, there were 15 community onset cases where the patient had an overnight stay in the Trust in the preceding 28-days. Overall, this was a 51% increase in Trust attributed cases, in part due to antibiotic usage during the COVID-19 pandemic. Key areas for improvement include antimicrobial prescribing, hand hygiene and environmental cleanliness.
- There were 18 Trust attributed Methicillin Sensitive *Staphylococcus aureus* (MSSA) bloodstream infections which was the same as the previous year. Following review, improvement is required around care and management of peripheral vascular devices.
- There were 41 Trust attributed E.coli bloodstream infections, compared to 42 in the previous year. Work continues to focus on reducing infections related to a urinary tract infection, particularly those associated with indwelling urinary catheters.
- The number of patients found to have carriage or infection with a Multi-Resistant Gram-negative organism (MRGNO) remains stable, with 149 identified compared to 169 in the previous year.
- A Trust screening programme for patients assessed as at risk of Carbapenemase Producing Enterobacteriaceae continued in 2020/21. Two cases were identified compared to four in the previous year
- There were no norovirus outbreaks and no inpatients with influenza in the Trust this winter.
- There were 1153 inpatients with PCR confirmed COVID-19 in the Trust between March 2020 to March 2021. The majority were community onset cases. Around 16% were Trust attributed which is lower than national estimates of 20-25%.
- There were 37 confirmed outbreaks of COVID-19 in the Trust between March 2020 and March 2021. In line with national guidelines, admissions and transfers were restricted in affected areas.
- Three categories of Surgical Site Infection Surveillance were included in the 2020/21 programme; total knee replacement, total hip replacement and spinal surgery. However, this was suspended between September 2020 and March 2021 due to COVID-19 pressures.
- Hand Hygiene Trust wide compliance remained good at 95%.
- 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. A new audit was implemented this year, 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 2021/22 was approved by the Infection Prevention and Control Committee in March 2021.

1 INTRODUCTION

In April 2020, Taunton and Somerset NHS Foundation Trust and Somerset Partnership Trust merged resulting in Somerset Foundation Trust. This is the first annual report from the new organisation. 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 2020/21 and progress against performance targets
- Infection Prevention and Control activities undertaken in 2020/21 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.

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	2.5 sessions
– Lead Nurse IP&CT	1.0 wte
– Deputy Lead nurse IP&CT	1.0 wte
– Senior Infection Control Nurses (Band 7)	3.0 wte
– Infection Control Nurses (Band 6)	5.2 wte
– Project officer / PA to the team (Band 5)	1.0 wte
– Administration Officer (Band 4)	0.6 wte
– Administration Officer (Band 3)	1.0 wte
– Surgical Site Infection Surveillance Support worker (Band 3)	0.3 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
- Somerset CCG IP&C Assurance Committee
- Trust Waste Group
- Ventilation Group (sub-group of IP&C Committee)

- Water Safety Group (sub-group of IP&C Committee)

2.4 Reporting Arrangements

The DIPC is accountable directly to the Chief Executive who is a member of 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, E.coli, *Clostridioides difficile* objectives and actions taken in response to HCAI or related incidents in the Trust.

In 2020/21 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 HCAIs 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 (9 out of the usual 12) and any issues from the sub-group specialties were managed outside of meetings.

2.5 IP&C Annual Programme of Work

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 HCAI STATISTICS AND SURVEILLANCE

3.1 Annual HCAI Surveillance Programme

The Infection Prevention and Control Team complete a comprehensive 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) bloodstream infections and *Clostridioides difficile* Infections (CDIs) to the Department of Health via the HCAI Data Capture system, hosted by Public Health England. From April 2017, the requirement to also report Klebsiella and Pseudomonas aeruginosa bloodstream infections was included.

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 3rd day or later following the admission date which is counted as day one.

3.2.1 Methicillin Resistant *Staphylococcus aureus (MRSA)* BSIs

There were 3 Trust attributed MRSA BSI cases in 2020/21, compared to 0 in the previous year. Post infection reviews concluded that there were no lapses in care that could have contributed to the cases.

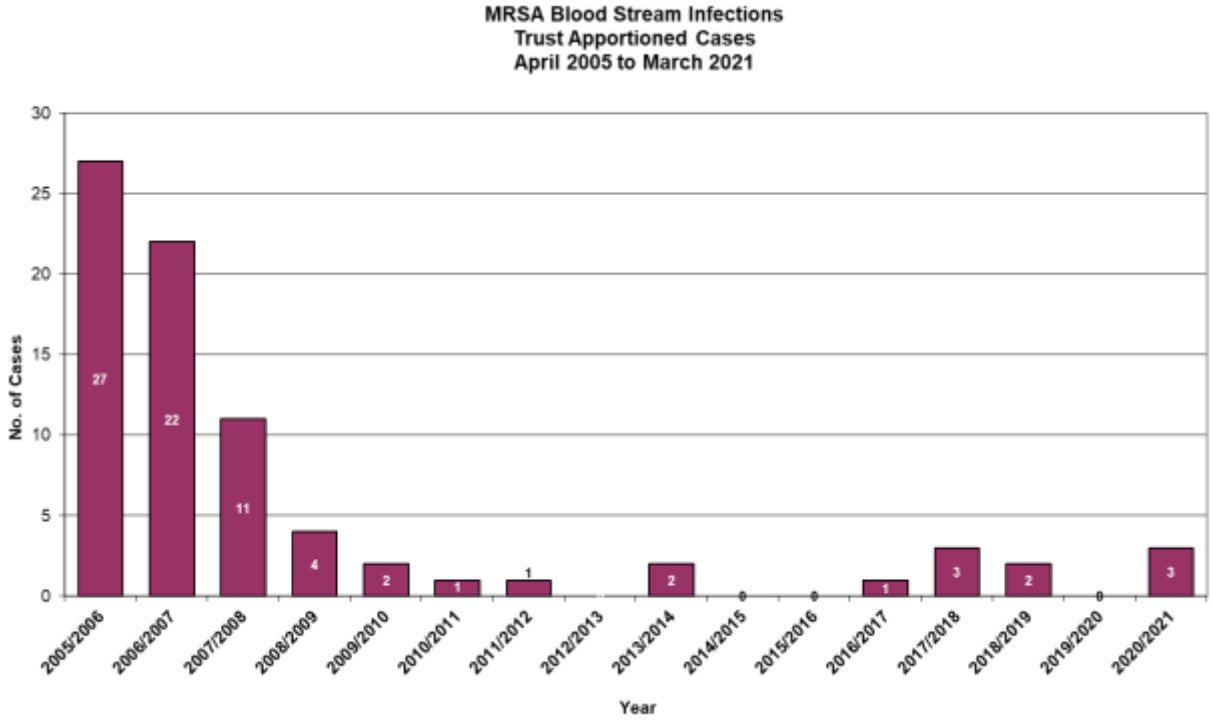

Figure 1 - Number of Trust attributed MRSA BSIs per year April 2005 to March 2021

3.2.2 Methicillin Sensitive *Staphylococcus aureus* (MSSA) BSIs

In 2020/21 the Trust had 18 Trust attributed MSSA bloodstream infection cases, equating to a rate of 7.03 per 100,000 bed days. Whilst absolute numbers of cases remained the same, this was a reduction in rate from the previous year which was 10.47 per 100,000 bed days.

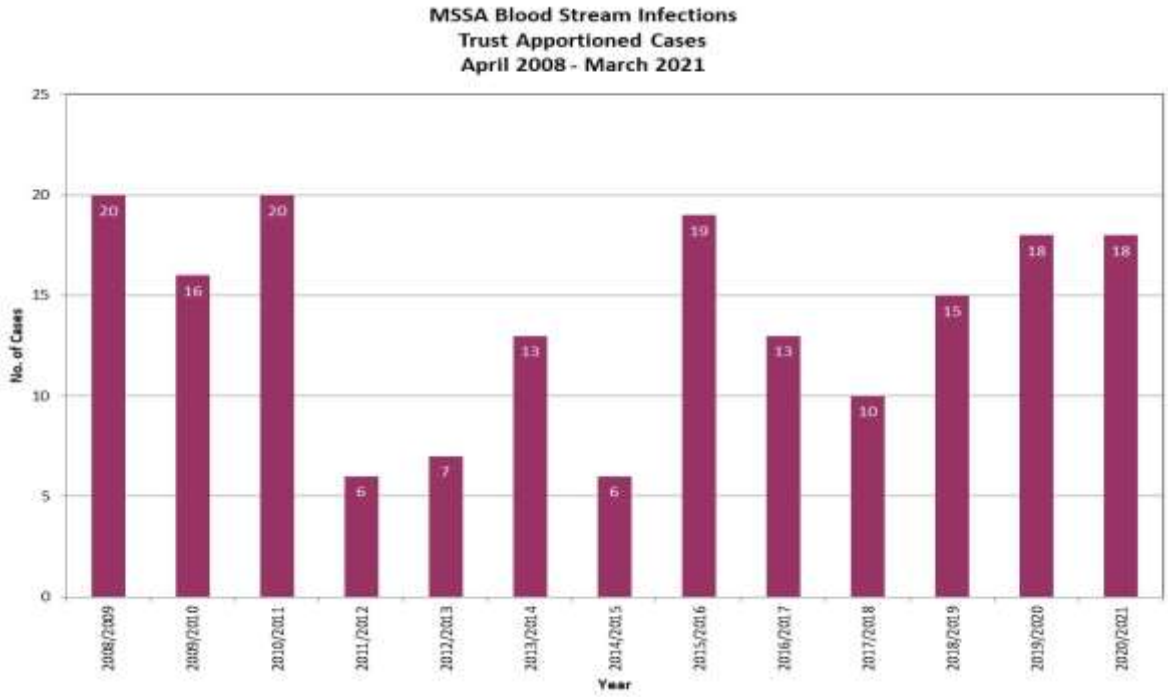

Figure 2 – Number of Trust assigned MSSA BSIs April 2008 to March 2021

The sources of the 18 infections were diverse and occurred in different wards and Directorates. However, a third of cases 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 two of the cases; both linked to peripheral vascular cannula care. In response to this an improvement group has been established.

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 2020/21 the Trust had 32 Hospital Onset Healthcare Associated cases (HOHAs) where the specimen was taken on day 3 or later following admission, which equates to a rate of 10.94 cases per 100,000 bed days. This is a significant increase from the previous year when the rate was only 6.8 cases per 100,000 bed days. In addition, since April 2019 it has been a requirement to monitor 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. There were 15 COHA cases in 2020/21. This brings the total of Trust attributed cases for 2020/21 to 47 which is a 51% increase on the previous year.

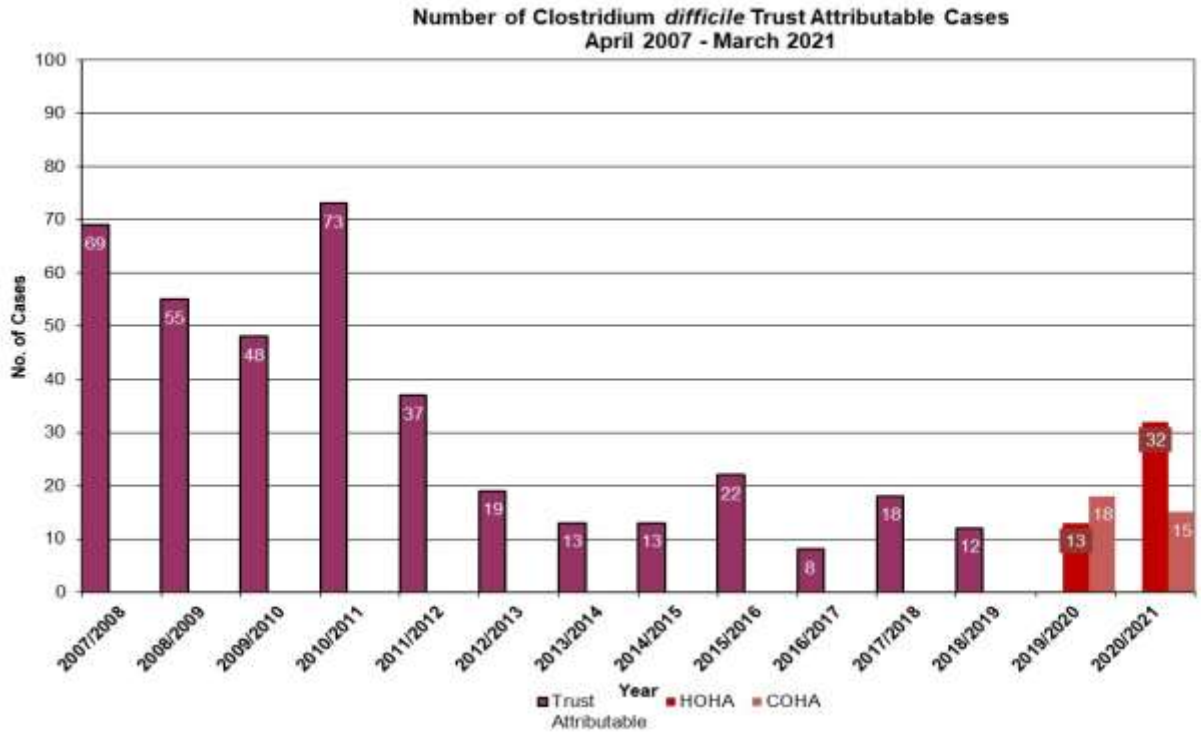

Figure 3 – Number of Trust attributed CDI cases April 2007 to March 2021

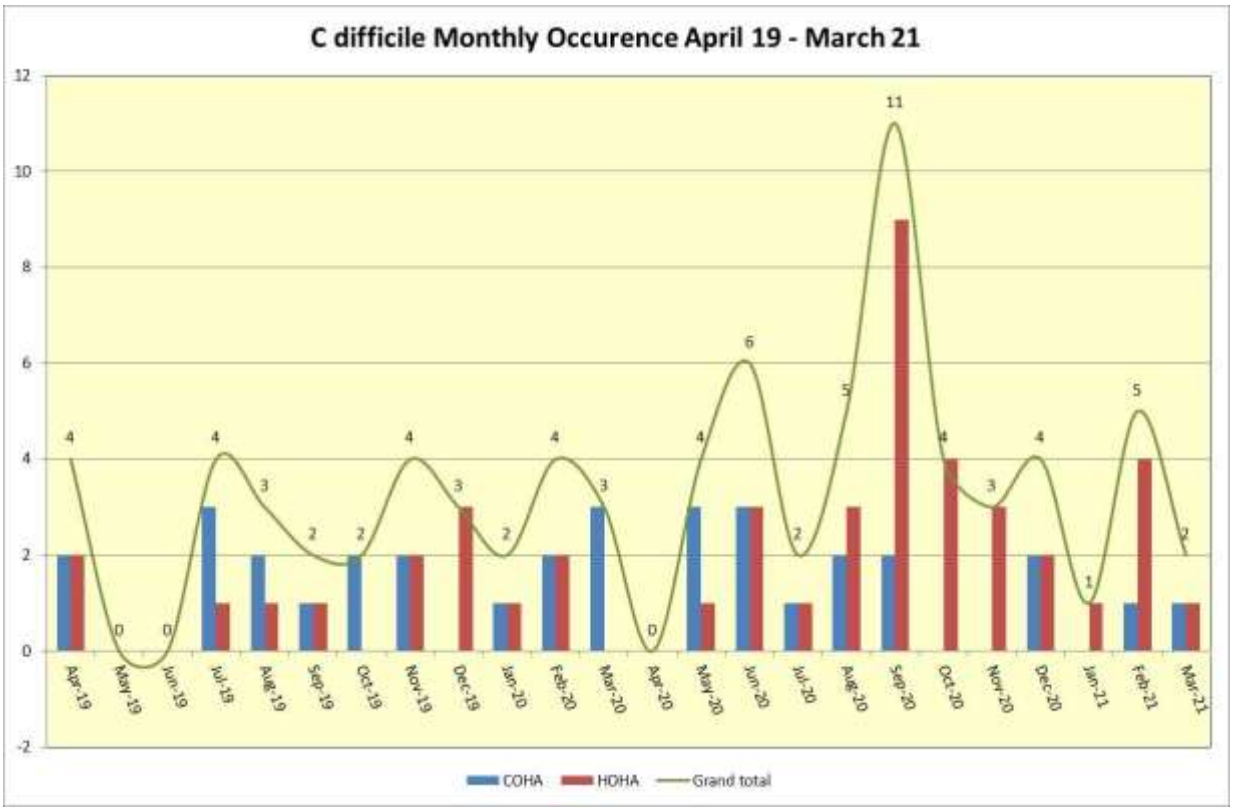

Figure 4 – Monthly occurrence of CDI April 2019 to March 2021

Figure 4 shows the monthly incidence of CDI in the Trust since April 2019 and depicts a spike in cases during September 2020. The reason for this is not clear but may in part be due to increased use of broad-spectrum antibiotics that were used to treat pneumonia in COVID-19 patients in the first wave of the pandemic. As understanding of the disease increased, treatment was adjusted, reducing the use of these antibiotics to usual 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. The reviews have identified that most of the cases have occurred due to antibiotic pressure. In 13 of the 47 cases, lapses in care relating to antibiotic prescribing, hand hygiene and environmental cleanliness were identified that could have contributed to the case. In response to an increased incidence this year, an improvement group was set up and actions implemented including:

- Use of procalcitonin in critical care patients as a biomarker to help differentiate bacterial infections from viral and therefore reduce unnecessary antibiotics
- CDI ward rounds reinstated (on hold during the pandemic)
- More in-depth review of antibiotic usage for each CDI case
- Extension of the service for Hydrogen Peroxide Vapour machines for deep cleaning side rooms when patients with C diff are discharged
- Improved assessment of patients stool history on admission so that patients with diarrhoea are isolated promptly, and specimens sent

- Continued focus on improving hand hygiene compliance

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 were three PIIs 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 in any of these PIIs.

3.4 *Escherichia coli* (*E. coli*) BSIs

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. E. coli is one such organism and accounts for 55% of gram negative blood stream infections. The majority occur in the community, and the Trust is working closely with its community and hospital partners to reduce these infections.

In the period covered by this report there were a total of 278 E. coli bloodstream infections. Of these, 237 patients were admitted with the infection (occurred in the community) and 41 were Trust attributable, where the specimen was taken on day 2 or later from admission. This equates to a rate of 15.63 Trust attributed cases per 100,000 bed days, a decrease from the previous year when the rate was 21.4 cases.

The most common source of the 41 infections was a urinary tract infection (19 cases). Post infection reviews of the cases identified learning in 5 cases, and 4 of these related to sub-optimal urinary catheter management.

Indwelling urinary catheters increase the risk of a urinary tract infection. With urine being the most common source for E. coli blood stream infection, an improvement initiative continues in the Trust to ensure these devices are only inserted when clinically necessary and removed as soon as no longer required.

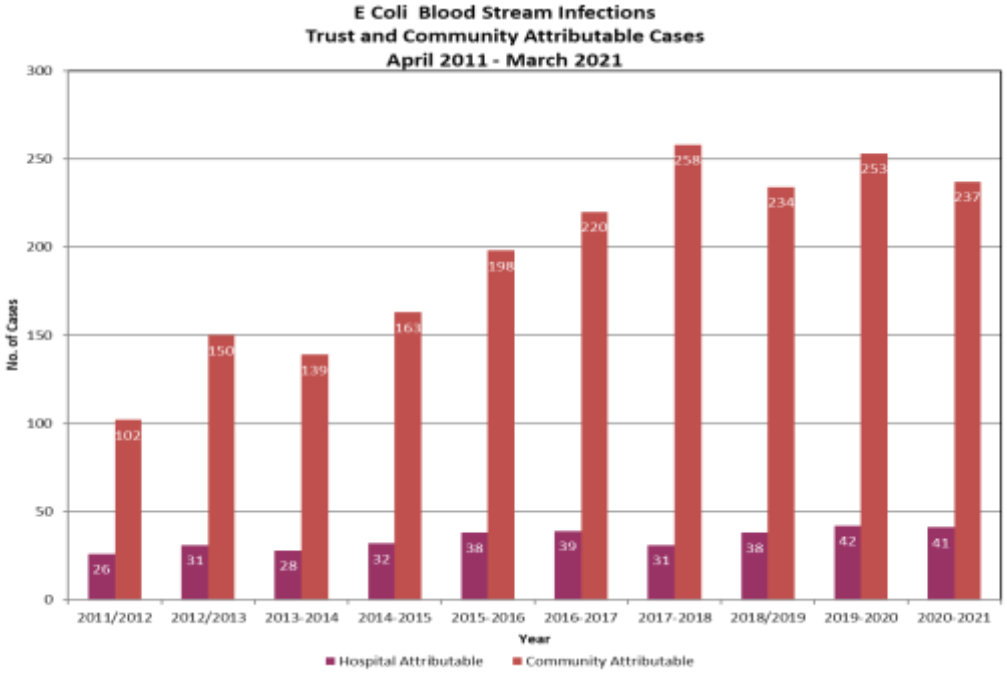

Figure 5 – Number of Trust and Community Attributable E Coli BSI cases April 2011 to March 2021

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 2020/21 there were no cases identified in the Trust.

3.6 Multi Resistant Gram-Negative Organisms Including Carbapenemase-Producing Enterobacteriaceae (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.

In the period covered by this report there were a total of 149 MRGNOs isolated, compared to 169 in the previous year. The graph below shows the number of patients identified with MRGNOs in the Trust since April 2018 and their antibiotic resistance grading.

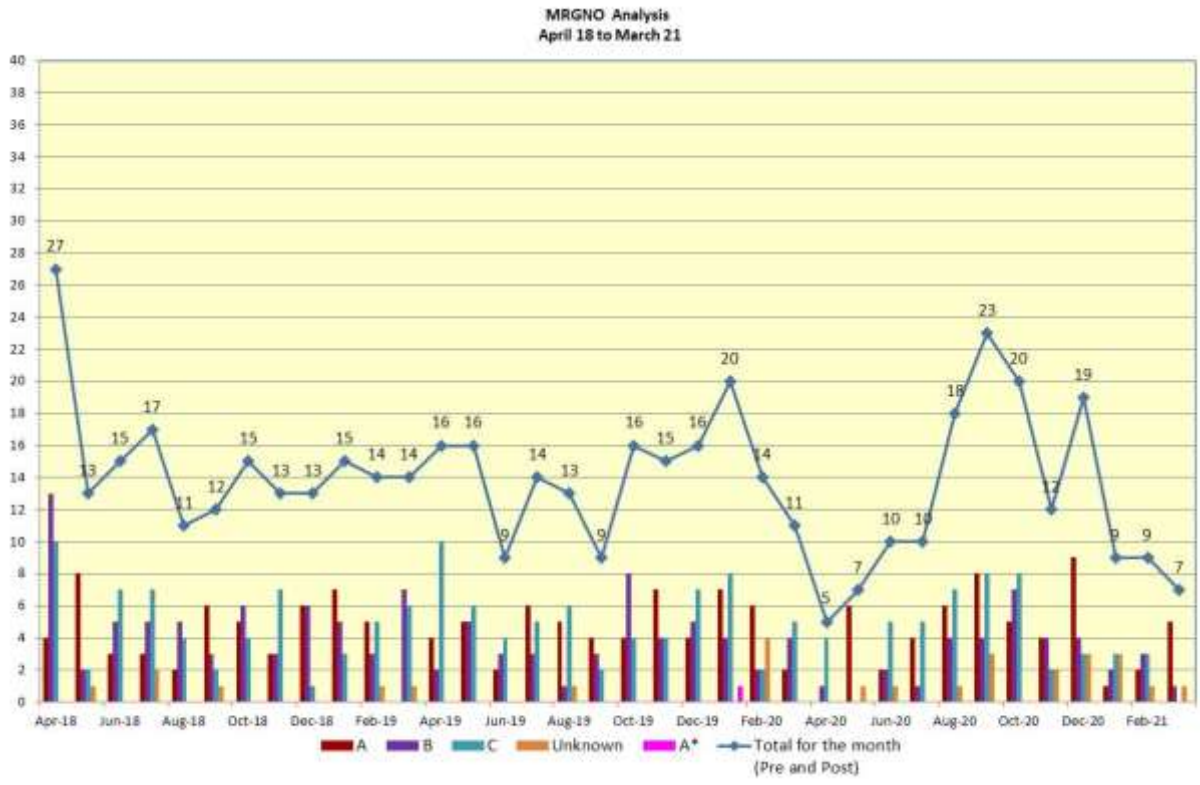

Figure 6 – Gram Negative Organisms per Month according to Antimicrobial Resistance Grading April 18 – March 21

Carbapenemase Producing Enterobacteriaceae (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, North West 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 2020/21 two patients with CPE were identified from the screening programme in Critical Care and strict infection control precautions were put in place to reduce the risk of transmission to other patients.

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 Public Health England in Colindale.

The Infection Prevention & Control Team 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 this year SSI surveillance was suspended from October 2020, therefore the data presented is between April and September 2020.

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 was one infection identified, giving an annual incidence rate of 0.85%. The Trust cumulative rate between October 2015 and September 2020 is also 0.85%. This is slightly higher that the national benchmark rate of infection reported to PHE over the last 5 years of 0.5%.

b) **Total Hip Replacements –** In the period covered by this report there was one infection identified, giving an annual incidence rate of 1.27%. The Trust cumulative rate between October 2015 and September 2020 is 0.63% which is slightly higher than the national benchmark rate of infection reported to PHE over the last 5 years of 0.5%.

c) **Spinal Surgery –** In the period covered by this report there were no spinal infections, giving a cumulative rate between April 2012 and September 2020 of 1.21%. This is slightly below the national benchmark rate of infection reported to PHE over the last 5 years of 1.5%.

3.8 MRSA Screening

In line with Department of Health (DH) guidance, a risk-based approach to MRSA screening is in place. The Trust screens all adult emergency admissions and those patients undergoing high risk elective procedures such as vascular or orthopaedic surgery. Long stay patients are also screened every 28 days. The average monthly MRSA screening compliance from available data was as follows:

- Emergency MRSA screening – 96%
- Elective MRSA Screening – 84%

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 often have to be closed to new admissions until the outbreak is brought under control, and this can cause major operational disruption to the hospital. In 2020/21 there were no 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 no cases of influenza in the Trust during the period of this report.

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 attributed to trusts depending on the time frame between the first positive specimen and admission date:

- **Community** onset, positive specimen date ≤ 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 March 2020 and March 2021 there were a total of 1152 inpatients with PCR COVID-19 across the Trust. Cases were managed in line with Public Health England COVID-19: infection prevention and control guidance. Any patients admitted with suspected or confirmed COVID-19 were either isolated in single rooms or in a designated area of the intensive care unit if they required critical care. Strict infection control precautions including hand hygiene, appropriate PPE and environmental cleaning were instigated.

Over the whole of the period, most cases were community onset with only around 16% being Trust attributed which is lower than the national levels which were estimated to be between 20-25%. The pandemic affected the Trust in two waves, with the bigger impact seen in wave two.

Wave One
March to September 2020, during which there were a total of 330 PCR confirmed cases of COVID admitted to the Trust. Of these a total of 38 were Trust attributed cases (11% of overall cases admitted). The peak occurred in May 2020 where the maximum number of patients at any one time was 50 (44 on the acute site).

There was a 7-week period of no cases and only 3 cases were admitted in September 2020.

Wave Two

September 2020 to March 2021, during which there were a total of 823 PCR confirmed cases of COVID admitted to the Trust. Of these a total of 150 were Trust attributed cases (18%) of overall cases. The peak occurred in January 2021 where the maximum number of inpatient cases at any one time was 149 (117 on acute site). The highest number of new inpatient cases in a 24-hour period was 35 which occurred on the 13th January 2020 (See figures 6 and 7).

	Wave 1	Wave 2	Total
Total inpatients	330	823	1153
Community case	273	622	895
Indeterminate case	19	51	70
Trust apportioned	38 Probable (12) Definite (26)	150 Probable (52) Definite (98)	188 Probable (64) Definite (124)

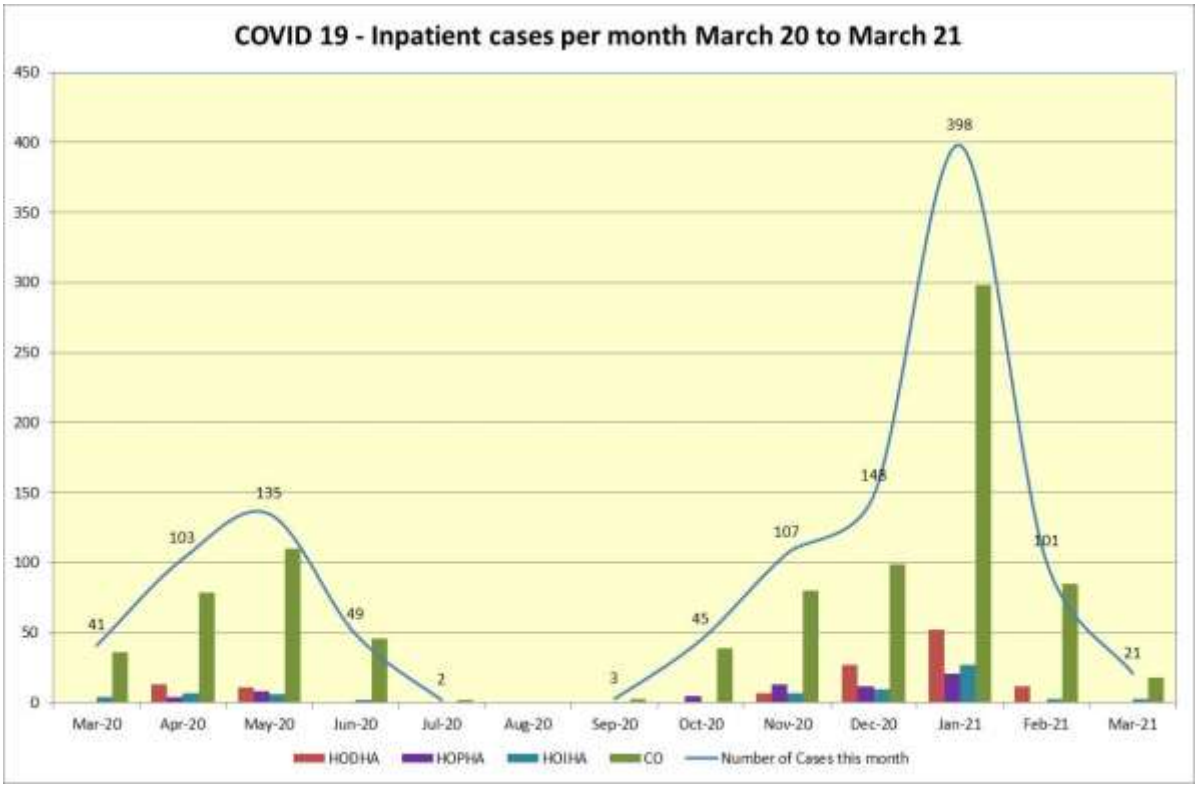

Figure 6 – COVID-19 Inpatient Cases per month March 20 – March 21

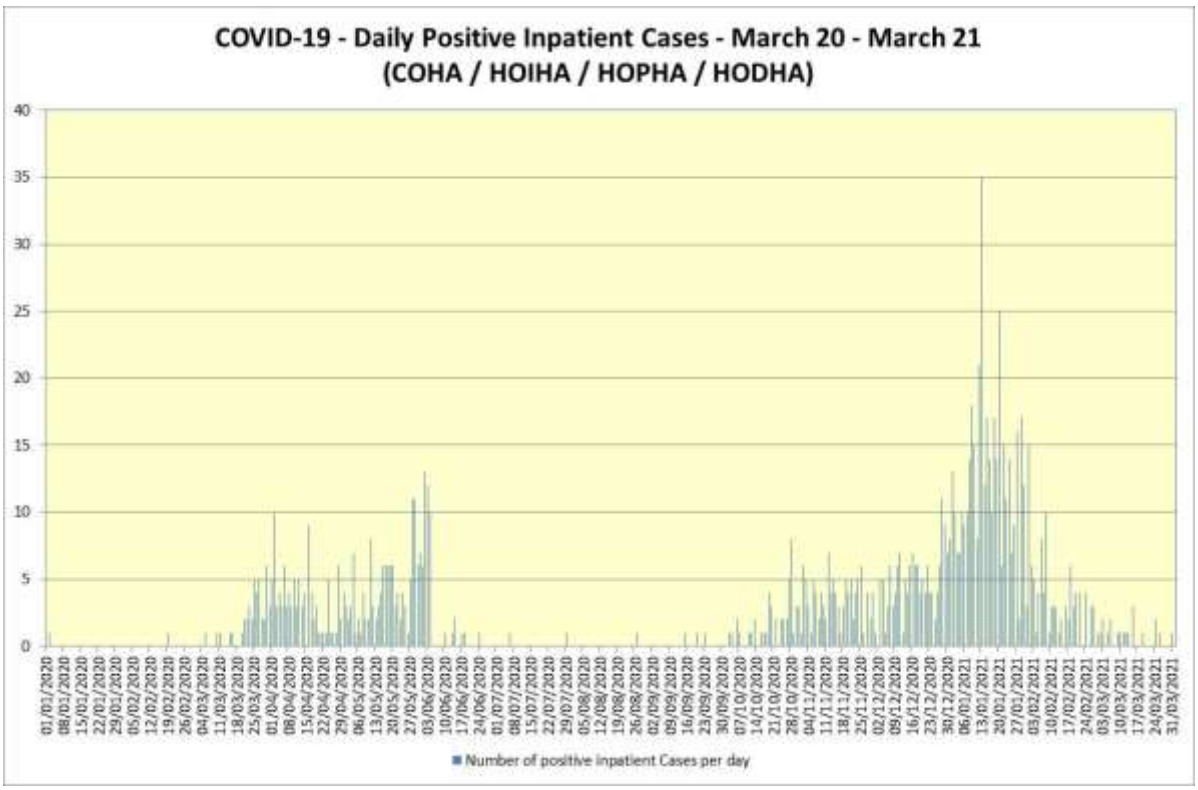

Figure 7 – COVID 19 - Daily Number of Positive Inpatient COVID-19 Cases – March 2020 – March 21

4.3.1 COVID-19 Outbreaks

Between March 2020 and March 2021, there were 37 outbreaks of COVID-19 in the Trust. Outbreaks were managed in line with the Trust Management of COVID-19, Standard Operating Procedure, and the South West Regional Healthcare Setting Outbreak Framework. Key controls included isolation of all confirmed cases and closing the ward to new admissions. In the affected wards patients and staff underwent extra asymptomatic testing to rapidly identify new admissions and reduce further transmission. Restrictions were lifted on wards when there had been no new cases / exposure on the ward for 14 days and a deep clean of the area undertaken.

Around 230 patients were affected and 331 staff cases. Restrictions were in place for a total of 624 days with over 5000 bed days lost.

Post outbreak reviews have been completed. Due to the long incubation period of COVID-19 it was difficult to identify the source of the outbreaks or some of the index cases with any real certainty. However, in around half of the outbreaks the index case likely acquired COVID-19 in hospital from a source that was not identifiable.

The graph in figure 8 shows the number of wards closed per day due to COVID-19 for the period March 20 to March 21.

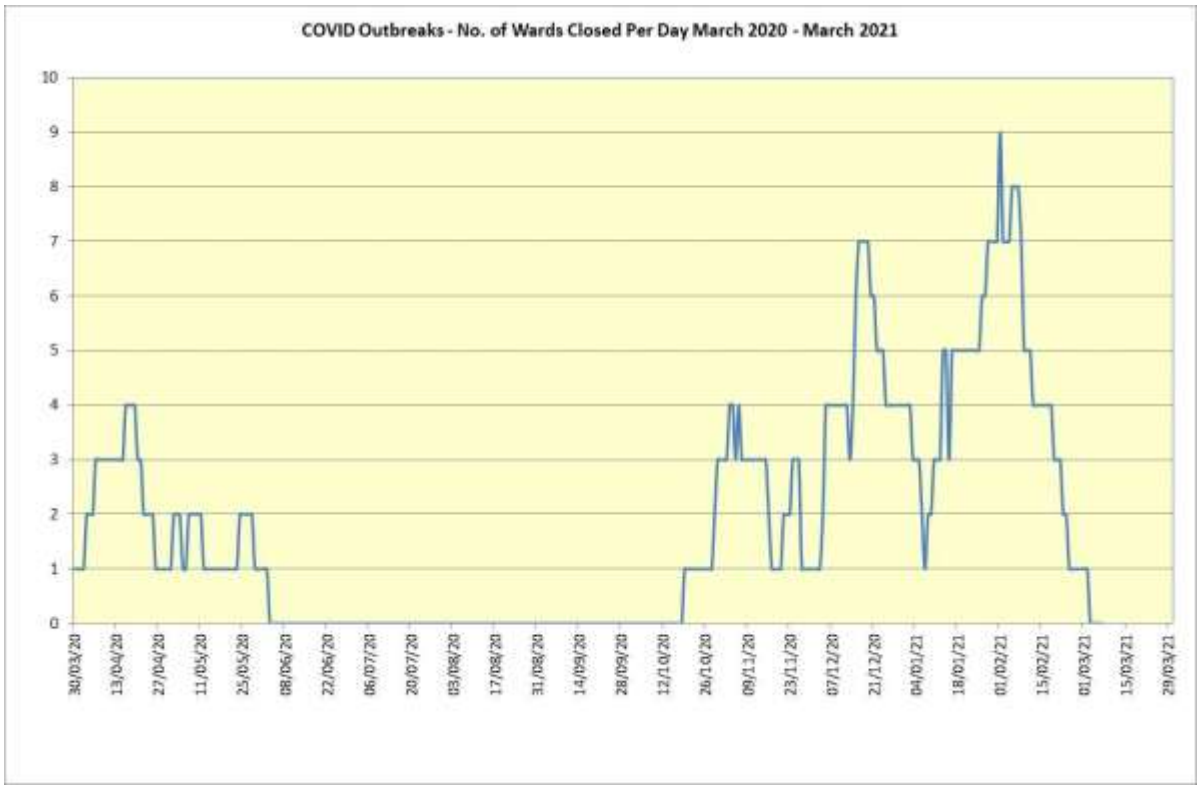

Figure 8 – COVID-19 Outbreaks – No of Wards Closed Per Day

5 HAND HYGIENE AND ASEPTIC PROTOCOLS

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 95%.

The IP&C Team carried out validation audits quarterly in areas that consistently reported high compliance levels. The average compliance for validation audits for the year was 88% compared to 83% in the previous year. Results are reported to the wards, Matrons and Directorate Management teams for action as appropriate.

5.2 Aseptic Protocols

Adherence to aseptic technique when accessing a susceptible site (an area on the body that is more vulnerable to infection such as the site of insertion of a vascular device, or when the integrity of the skin is breached), is essential to prevent infection.

The principles of asepsis are detailed in the Aseptic Technique Policy and include procedural examples for carrying out an aseptic non touch technique (ANTT) for wound care, peripheral venepuncture, phlebotomy, and indwelling urinary catheterisation. The Vascular Access Devices policy details the procedures for the insertion and ongoing care of peripheral and central vascular catheters.

Nursing staff who perform wound care are required to undertake a competency assessment. ANTT Competency assessments are also included within vascular access device and urethral catheterisation training.

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 have the opportunity to be vaccinated. In the winter of 2020/21, the Trust held a number of influenza vaccination clinics, and all clinical areas had two members of staff trained to deliver the vaccine to their colleagues.

This programme was successful in vaccinating 70% of staff, which was an increase from the previous year when 61% of staff were vaccinated.

With the advent of COVID-19, it is more important than ever that staff are protected against influenza and the ambition for 2021/22 is to increase the vaccination rate of healthcare workers to at least 75%.

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.

At the time of writing, the programme was successful in vaccinating over 90% of staff with one dose of the vaccine and over 80% have received both doses. The programme continues in line with the national COVID-19 vaccination campaign.

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 Antimicrobial Stewardship Group (sub-group of the Drug and Therapeutics Committee).

8.1 Membership of the group also includes:

- Lead Antimicrobial Pharmacist (Chair)
- Consultant Microbiologist Antimicrobial Prescribing Lead
- Director for Infection Prevention and Control
- A senior clinician representing each Directorate
- Senior nurse
- IP&C Nurse
- CCG prescribing advisor
- MPH antimicrobial pharmacists and consultant microbiologists
- Pharmacist from Somerset partnership

- Antimicrobial pharmacist from Yeovil District hospital

The group's role is to:

- Align antimicrobial stewardship at MPH 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 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 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, 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 Healthcare 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 the following new or revised IP&C polices / guidelines were completed:

- Infection Control Management of TB in Hospital

- COVID-19 Outbreak Management, Standard Operating Procedure

- Meningococcal Disease

- Hand Hygiene Policy

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
- Antimicrobial Compliance 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. A new audit assessing PPE compliance was introduced this year, in response to COVID-19 requirements. Due to COVID-19 pressures IP&C Performance Reports were not produced every month during the period of this report.

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 continues 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 2021 was 82%.

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. 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. In 2020/21, educational whole day meetings were 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.

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. During the period of this report an ultraviolet decontamination machine was purchased allowing the department to move from a manual to a fully 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 is responsible for the cleaning and decontamination of other non-critical medical equipment. Monthly auditing is undertaken at Ward level, overall compliance in 2020/21 was 94%.

13 CLEANING SERVICES

13.1 Management Arrangements

The Cleaning Service is managed centrally on the acute site by Facilities 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 Hotel Services Team. This is supported by the Facilities Team who collates the Cleanliness audit results and provides procedural documentation, training and support.

Following the New National Cleaning Standards, all cleaning processes will be reviewed across the organisation to ensure they meet the requirements of the standard and are standardised where appropriate.

13.2 Monitoring Arrangements

During 2020/21 we have been working with MICAD to implement the cleanliness auditing software across the merged organisation. This will enable a consistent approach across both the acute and community sites.

Audit results have improved during 2020/21 across the organisation which is testament to the hard work the cleaning services have delivered particularly throughout the COVID pandemic.

The release of the New National Cleaning Standards will mean changes across the cleaning service will need to be implemented. Updates on progress with the implementation will be reported through the Cleaning Standards Group and IP&C.

13.3 Budget Allocation

The cleaning budget is managed by Head of Cleaning Services for the Estates and Facilities Directorate.

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 2020/21 we completed the deep clean programme as planned and due to COVID we undertook a further 76 deep cleans during this period.

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 as requested.

During 2020/21 we have experienced some issues with using the HPV where despite covering detectors and sealing doors / windows, the machine has triggered fire alarms. As a result we are working with the Fire Advisor and Trinity (Fire Service Contractor) to install systems which allow us to switch detectors to heat only in the area being fogged. This has been successfully implemented within the Beacon Centre.

This will enable us to undertake additional HPV cleaning in areas that have proved problematic such as Jubilee Wards.

14 WATER SAFETY

The most significant infectious risks from the water supply are infections caused by legionella pneumophilia 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.

14.1 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, in order 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.

14.2 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.

14.3 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. 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. In 2020/21 there were 2 key area of concern:

- 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.

Areas in the Trust with specialist ventilation systems are currently:

- 5 General theatres
- 3 Head and neck theatres
- 3 Orthopaedic theatres
- 4 Day-surgery theatres
- 3 procedure rooms in Endoscopy
- 2 cardiac catheterisation laboratories and 1 pacing room
- 1 maternity theatre
- Isolation rooms

During 2020 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

Three of the 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. A new Day Surgery unit is currently under construction which will provide an ophthalmic theatre suite.

b) Cardiac Catheterisation Lab

All three procedure rooms in this department fall below the required standards of ventilation. A risk assessment has been undertaken and controls to reduce the risk are in in place. Refurbishments are in progress which will include new air handling units for all the procedure rooms.

c) General Theatres

Although the 5 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 is currently under refurbishment and is being converted into an inpatient critical care unit. 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 sustaining the reductions we have made in healthcare associated infection over recent years and ensuring the highest standards of infection control practice are delivered throughout the hospital.

Key ambitions for 2021/22:

- 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 have zero MRSA blood stream infections.
- To achieve the *Clostridioides difficile* objective of no more than 24 hospital assigned cases in the year. Reduce the number of avoidable *Clostridioides difficile* cases.
- Achieve an internal target of no more than 15 Trust assigned MSSA blood stream infections
- To improve the care and management of peripheral vascular catheters in the Trust
- 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 implement a local development programme for new IP&C nurses
- To complete the upgrading of the Clinical Surveillance Platform for infection control (ICNet NG).

The IP&C annual programme of work for 2021/22 was agreed by the Infection Prevention & Control Committee in March 2021 and submitted to the Governance Committee. Progress against the plan will be monitored by the IP&CC and an annual report submitted to the Quality and Assurance Committee.

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