Board of Directors' Meeting
# 10 June 2021

Agenda item	130/21			
Report	Infection Prevention and Control Annual Report			
Executive Lead	Hayley Flavell, Director of Nursing, Director of Infection Prevention and Control			
	Link to strategic pillar:		**Link to CQC domain:**	
	Our patients and community	√	Safe	√
	Our people		Effective	√
	Our service delivery	√	Caring	√
	Our partners		Responsive	√
	Our governance	√	Well Led	√
	Report recommendations:		**Link to BAF / risk:**	
	For assurance			
	For decision / approval	√	**Link to risk register:**	
	For review / discussion			
	For noting			
	For information			
	For consent			
Presented to:	Quality and Safety Assurance Committee			
Dependent upon (if applicable)**:**	NA			
Executive summary:	This Annual report covers the period 1st April 2020 to 31st March 2021 and has been written in line with the ten criteria outlined in the Health and Social Care Act 2008 Code of Practice in the Prevention and Control of Infection (updated 2015). The biggest challenge for Infection Prevention and Control 2020/2021 was the COVID-19 pandemic. The Annual Report details the IPC response to the pandemic, the actions implemented and monitoring in place and the management of the pandemic and outbreaks seen as part of this. In 2020/2021, the IPC annual report demonstrates our compliance with the Health Act, which encompasses all aspects of infection prevention and control, including management systems, environment, cleaning, training and policies to protect patients and staff. Our current compliance (as of 13/4/21) is very high at 96%. Outstanding issues include lack of an automated surveillance system, which will be implemented in 2021, levels of IPC training at 84%, and low levels of isolation facilities. In relation to Healthcare Associated Infections (HCAI) the Trust performed well in 2020/2021 with a reduction in Clostridium Difficile cases with 30 cases reported compared to 54 in 20219/2020, the Trust also saw a reduction in other HCAI infections with a reduction in MSSA, E.coli, and Klebsiella and pseudomonas bacteraemia. The Trust also completed 97% of the IPC program with a plan			

	to address incomplete tasks will be addressed in the first three months of the 2021/22 programme. Priorities in relation to IPC in 202/2021 are also outlined in the report and include ongoing management of COVID-19, reducing HCAIs and ensuring good compliance with IPC standards
Appendices	

Infection Prevention and Control Annual Report

2020/21
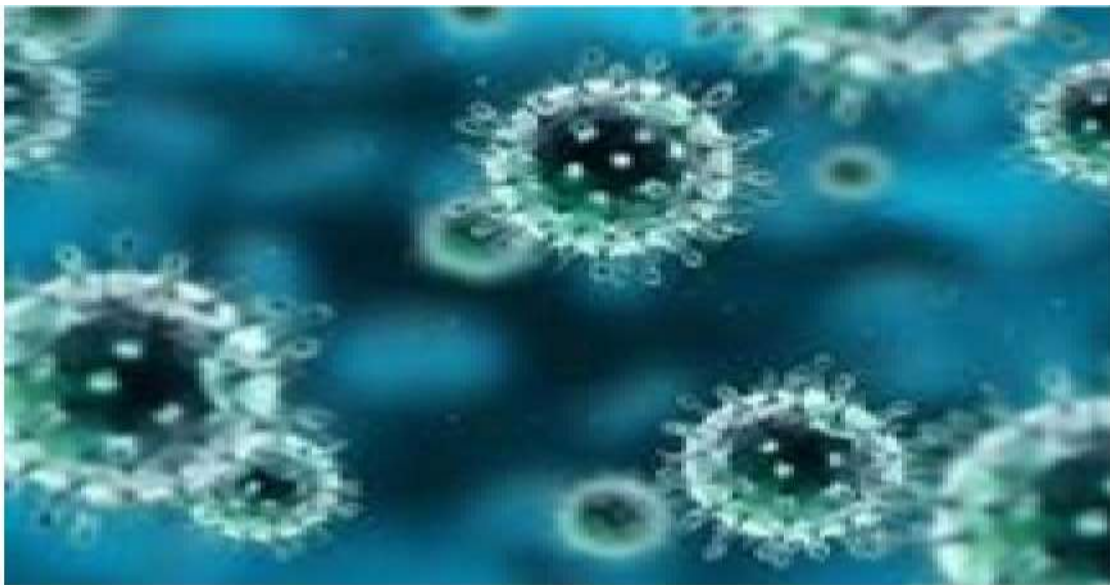
Infection Prevention and Control Team

Shrewsbury & Telford Hospital NHS Trust

May 2021

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Infection Prevention and Control Annual Report 2020-21

This Annual report covers the period 1st April 2020 to 31st March 2021 and has been written in line with the ten criteria outlined in the Health and Social Care Act 2008 Code of Practice in the Prevention and Control of Infection (updated 2015). The ten criteria outlined in the code are used by the Care Quality Commission to judge a registered provider on how it complies with Cleanliness and Infection Prevention & Control requirements detailed in the legislation. It looks at all aspects of IPC, including monitoring and surveillance, environment, cleaning, staff, policies and laboratory provision.

However the biggest challenge for Infection Prevention and Control this year is one that we will continue to face for the next few months at least, the COVID 19 pandemic.

SECTION 1:   KEY ACHIEVEMENTS OF 2020-21

In 2020/2021 the COVID 19 global pandemic was the most significant issue faced in relation to Infection Prevention and Control (IPC) in the Trust and across the NHS. There was a first wave which lasted from April 2020 to August 2020. This was followed by a second wave which impacted across the Trust form the end of September 2020 and continued, though this was abating, at the end of March 2021

- The arrival of the COVID 19 pandemic introduced a new and very significant challenge to all acute services and the NHS as a whole in the UK and to health services internationally. The IPC team was actively involved in planning for patients with COVID- 19 and helping staff with their management. This involved continuous updating and training of staff in line with new guidance being released as knowledge about the virus emerged.

- The IPC team attended daily meetings on control on COVID-19, including placement of patients, advice on ventilation, Personal Protective Equipment (PPE) for different procedures, management of clusters of patients, outbreaks, and additional methods of reducing transmission e.g. improving social distancing of patients by removing beds from bays, using "pop-up" isolation rooms and education of staff

- We owe a huge debt of thanks to the Microbiology Department who worked long hours and overcame many obstacles to rapidly introduce and accelerate testing for COVID-19. A test for COVID-19 was developed very quickly nationally allowing testing at reference laboratories from February 2020. From early March 2020 testing was being done in our own Microbiology Department in the Trust and all symptomatic in-patient admissions were being screened. The range of testing across patient groups, further in-patient screening, electives and the national SIREN study of staff increased exponentially through to September 2020. A range of new testing machines were procured nationally for laboratories to increase testing capability to cope with the volume of testing required. By October 2020 we could give results an average of 6 - 8 hours after arrival in the laboratory.

- By the end of November 2020 rapid testing machines were in place to provide a much reduced turnaround time for some results, with an average of 2.5 to 3.5 hours. Testing processes put in place were for the whole healthcare system (the acute Trust, community Trust, mental health trust and specialist orthopaedic trust within Shropshire). We also supported outbreak testing not only across system partners but also for care homes and prisons and we are part of the SIREN national study on staff (again across the system partners).

- In addition to the polymerase chain reaction (PCR) testing the Trust also implemented antibody testing. Within three weeks of the national announcement a system wide process was put in place for testing including an antibody testing booking line with phlebotomy. A total of 16000 antibody tests were processed between 10th June and 30th September 2020, this included Trust staff but also staff from the Clinical Commissioning Group (CCG), primary care, care homes and domiciliary care staff, pharmacists, teachers, dentists, opticians, fire and police service and funeral directors. This testing remains in place for patients and the SIREN study.

- Due to COVID-19 the Trust was not set formal targets for Clostridium Difficile (C Difficile) for 2020/2021. In agreement with the CCG and Public Health England (PHE) the decision was made to adopt the target from the previous financial year (2019/2020) which was no more than 43 cases in patients over the age of two years. This was achieved with 30 cases, down from 54 cases in 2019/2021.

- The Trust Methicillin-resistant Staphylococcus aureus (MRSA) bacteraemia target is zero. In 2020/21 the Trust reported two cases of MRSA bacteraemia. In one the source was ventilator-associated pneumonia. The other was a collection contaminant. Although we did not achieve the zero cases target we continue to have very low numbers of cases

- Despite the COVID-19 pandemic the trust continued to undertake root cause analysis (RCA) for significant events such as some cases of hospital acquired bacteraemia including C Diff, Escherichia Coli (E.Coli) and Methicillin-susceptible Staphylococcus aureus (MSSA), and MRSA. Medical staff, ward nurses, the IPC team, pharmacy, cleanliness staff and microbiology clinical staff participated in these RCAs.

- The IPC team continue to carry out a large part of its audit programme despite the demands of the COVID-19 pandemic, this included: commode audits, urinary catheter prevalence audits, PPE use, Quality Ward Walks and Exemplar Ward audits

- Our flu vaccine uptake for the 2020/2021 campaign reached 73.5% for frontline healthcare workers. This is above the minimum target of 70% with a total of 4,225 influenza vaccines given to frontline healthcare workers. This was a great achievement, which was prioritised in view of the potential impact of the pandemic and the expected workload of the COVID-19 vaccination programme, and placed the Trust in the median in terms of national performance. A huge degree of thanks and gratitude must be expressed to our Workforce, Infection Control Teams, Occupational Health Provider (TP Health), Trust Staff and all vaccinators across the Trust who jointly contributed towards this achievement.

- The COVID-19 vaccination programme commenced in December 2020. It was undertaken by Shropshire, Telford & Wrekin Sustainability and Transformation Partnership. All front line staff in the Trust (6626 staff) were offered a COVID-19 vaccination. By the end of March 2021 81.96% (5431 staff) had received at least one dose. The vaccination programme was organised on a pan Shropshire basis with our partners in the wider health economy and covered health care workers, carers and the general public. This was a massive operation included staff from all sectors of the health economy and volunteers. It included vaccination centres at both hospital sites.

- In relation to staff training, one of our Band 7 nursing staff is currently completing the Infection Prevention and Control degree at Birmingham City University.

SECTION 2:   Abbreviations

AMR	Anti-Microbial Resistance
ASG	Antimicrobial Stewardship Group
CCG	Clinical commissioning groups
C difficile	*Clostridium difficile*
CCG	Clinical Commissioning Group
CDI	*Clostridium difficile* infection
COVID-19	Coronavirus disease 2019
CQC	Care Quality Commission
CQUIN	Commissioning for Quality and Innovation Payment Framework
DH	Department of Health
DIPC	Director of Infection Prevention & Control
DON	Director of Nursing
E coli	Escherichia coli
ESBL	Extended Spectrum Beta Lactamase
GDH Ag	Glutamate dehydrogenase antigen of *C. difficile*
GRE	Glycopeptide Resistant Enterococcus
GP	General Practitioner
HCAI	Health Care Associated Infection
IM&T	Information & Technology
IPC	Infection Prevention & Control
IPCC	Infection Prevention & Control Committee
IPCN	Infection Prevention & Control Nurse
IPCT	Infection Prevention & Control Team
MGNB	Multi resistant gram negative bacilli
MHRA	Medicines and Healthcare Products Regulatory Agency
MRSA	Meticillin Resistant *staphylococcus aureus*
MSSA	Meticillin Susceptible *staphylococcus aureus*
PCR	Polymerase Chain Reaction
PFI	Private Fund Initiative
PHE	Public Health England
PLACE	Patient-led assessments of the Care environment
PPE	Personal Protective Equipment
RAG	Red, amber, green
RCA	Root Cause Analysis
SaTH	Shrewsbury & Telford Hospitals
SSI	Surgical Site Infection
TWCCG	Telford & Wrekin Clinical Commissioning Group
VNTR	Variable number tandem repeat (a form of DNA typing)

SECTION 3: INTRODUCTION

The Trust recognises that the effective prevention and control of healthcare associated infections (HCAI) is essential to ensure that patients using our services receive safe and effective care. Effective prevention and control must be an integral part of everyday practice and applied consistently to ensure the safety of our patients. In addition, good management and organisational processes are crucial to ensure high standards of infection prevention and control measures are maintained.

This report demonstrates how the Trust has systems in place for compliance with the Health and Social Care Act 2008: Code of Practice for the NHS on the prevention and control of healthcare associated infections and related guidance.

The Trust set out to continue the commitment to improve performance in infection prevention practice. As outlined in the Health and Social Care Act 2008, at the heart of this there are two principles:

- to deliver continuous improvements of care
- it meets the need of the patient

Compliance with the Health Act is judged against 10 criteria which we will look at in detail in the next section.

Criterion	Detail
Criterion 1	There are systems to monitor the prevention and control of infection. These systems use risk assessments & consider the susceptibility of service users and any risks that their environment and other users may pose to them
Criterion 2	Provide and maintain a clean and appropriate environment in managed premises that facilitates the prevention and control of infections
Criterion 3	Ensure appropriate antimicrobial use to optimise patient outcomes and reduce the risk of adverse events and antimicrobial resistance
Criterion 4	Provide suitable accurate information on infectious to service users, their visitors and any person concerned with providing further support or nursing/medical care in a timely fashion
Criterion 5	Ensure prompt identification of people who have or are at risk of developing an infection so that they receive timely and appropriate treatment to reduce the risk of transmitting infection to other people
Criterion 6	Systems to ensure that all care workers (including contractors and volunteers) are aware of and discharge their responsibilities in the process of preventing and controlling infection.
Criterion 7	Provide or secure adequate isolation facilities
Criterion 8	Secure adequate access to laboratory support as appropriate
Criterion 9	Have and adhere to policies, designed for the individual's care and provider organisations, that will help to prevent and control infections
Criterion 10	Providers have a system in place to manage the occupational health needs and obligations of staff in relation to infection

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

Infection Prevention Team

The Infection Prevention and Control Team (IPC) provided IPC advice and support to wards and departments. The team continued to support frontline staff and prioritise urgent IPC issues during winter pressures.

At the Shrewsbury and Telford Hospital NHS Trust (SaTH) the Director of Infection Prevention and Control (IPC) has overall responsibility for the IPC Team; the team is managed by a Lead Nurse Infection Prevention and Control. The structure for Infection Prevention and Control in the Trust is shown in Appendix 1.

A Consultant Microbiologist works for the IPC team part-time as the Infection Prevention and Control Doctor (IPCD). In addition another three consultant microbiologists & two clinical scientists continue to provide support to the IPC Team. Director of Infection Prevention and Control is undertaken by the Director of Nursing.

External reviews

NHSEI/CQC

NHSE/I visited in October 2019 and found that the trust demonstrated a continued focus and energy on Infection Prevention; as a consequence of this visit the NHSE/I Director of IPC 98hey changed the Trust from Red to Green RAG rating for IPC. However this was then downgraded in May 2020 following the Care Quality Commission (CQC) report which suggested there were IPC issues with regards to Hand Hygiene & PPE. This was investigated by the IPC Team it was discovered that a newly appointed non-clinical member of staff had entered a side room without applying hand gel.

University Hospital North Midlands (UHNM)

University Hospital North Midlands (UHNM) provided a supportive peer review of SaTH at the request of Interim Chief Nurse and Interim DIPC at the time. The visit took place in August 2020, and comprised five staff from UHNM (Associate Chief Nurse, Lead IPC Nurse, two Senior IPC Sisters and the Estates Maintenance Manager). The main purpose of the visit was to provide assurance and recommendations on the following:

- Cohorting decisions
- 2m distancing and management of all inpatient and outpatient areas
- Theatre usage and surgical pathways
- Cleanliness schedules
- Environmental / equipment cleanliness
- Estates situation and options
- Personal Protective Equipment (PPE) use

Summary of Overall issues Identified:

The main issues identified by the Peer Visit included: a lack of isolation facilities, loss of bed capacity due to social distancing, environmental damage due to age of building, hand wash sink provision, social distancing issues around nurses stations, clutter in a small number of areas due to limited storage areas, lack of IPC involvement with some Estates services such as Legionella Control, Ventilation and Decontamination.

Summary of Positive Points Noted:

The positive aspects identified by the visit included: compliance with bare below the elbow (BBE) across the Trust was noted to be very good, the Trust IPC Committee appears well organised with a good agenda and robust minutes, governance, structural groups, inter-agency working and response from senior team appeared robust and in line with those established in other NHS Trusts. There were regular meetings of the Trust Decontamination Group and Water Safety Group. The clinical areas were noted to be mostly tidy and there were good personal relationships between IPC and Estates;

Care Quality Commission (CQC) IPC Assessment

The CQC met with and interviewed the team (DIPC, IPC Doctor, Deputy Director of Nursing, and Lead IPC Nurse) in August 2020 in relation to compliance with the Infection Prevention and Control Board Assurance Framework (NHSE/I 2020) which had been issued in May 2020 to all acute providers. The overall summary from the CQC was positive, and the CQC felt assured with the information that was provided. If the CQC felt that the Trust was not compliant with the work on the BAF then they would have arranged to attend the Trust to review. However, this was not deemed to be necessary. The IPC Board Assurance Framework (BAF) is updated by the IPC Team and monitored monthly through the IPC Operational Group and IPC Assurance Committee. Compliance in relation to the IPC BAF has also been reported regularly to the Board throughout 2020/2021.

NHSEI/CCG Visits

The Trust was visited by NHSI & CCG in October 2020, and again by the CCG in November 2020. The visits were to review IPC practices during the COVID-19 outbreaks which occurred at the Trust during the second wave of the pandemic. This was at the request from the Trust. Feedback following both visits was positive and it was felt that the ward managers could demonstrate their understanding of COVID-19 isolation, use of PPE, cohorting and requirements in relation to the swabbing of patients.

Committee Structures and Assurance Processes

The Trust Infection Prevention and Control Assurance Committee is held monthly and is chaired by the Director of Nursing. Each Division is required to report monthly on IPC performance and key actions at the IPC Operational Group chaired by the Deputy Director of Nursing.

Infection Prevention & Control performance, good practice and concerns are raised at the monthly Quality Operational Committee chaired by the Director of Nursing and attended by the Medical Director and Divisional Senior Management Team, an IPC update is also provided monthly to the Quality and Safety Committee, which reports directly to Trust Board and is attended by the Director of Nursing. A monthly IPC report was also presented at Board by the Director of Nursing throughout Quarter 3 and 4 of 2020/2021.

The IPC service is provided through a structured annual programme of work which includes expert advice, audit, teaching, education, surveillance, policy development and review as well as advice and support to staff, patients and visitors. The main objective of the annual programme is to maintain the high standard already achieved and enhance or improve on other key areas. The programme addresses national and local priorities and encompasses all aspects of healthcare provided across the Trust. The annual programme is agreed at the IPC Assurance Committee.

The National COVID-19 pandemic has caused significant pressures to the IPC Team. Significant work has taking place regarding the correct placement of patients during their stay in the Trust. The pandemic has also further highlighted that the Trust has a significant issue with lack of side rooms. During the COVID-19 pandemic the IPC Team has been supported by staff that previously had IPC experience being redeployed to the team.

The committee structure in relation to Infection Prevention and Control reporting are shown in Appendix 2.

Trust Board

The Code of Practice requires that the Trust Board has a collective agreement recognising its responsibilities for Infection Prevention and Control. The Chief Executive has overall responsibility for the control of infection at the Trust, the Trust designated Director of Infection Prevention and Control (DIPC) is undertaken by the Director of Nursing. The DIPC attends Trust Board meetings with detailed updates on infection prevention and control matters.

Quality & Safety Assurance Committee

The Quality & Safety Assurance Committee (QSAC) is a sub-committee of the Trust Board and is the committee with overarching responsibility for managing organisational quality risks. The committee reviews high level performance data in relation to infection prevention and control, monitors compliance with statutory obligations and oversees management of the risks associated with infection prevention and control.

Quality and Safety Assurance Committee (QSAC) is responsible for ensuring that there are processes for ensuring patient safety; and continuous monitoring and improvement in relation to infection prevention. QSAC receives assurance from the IPC Assurance Committee that adequate and effective policies and systems are in place. This assurance is provided through a regular process of reporting. IPC performance is reported monthly through the Integrated Performance Dashboard to QSAC, the IPC team provide a monthly report on surveillance and outbreaks which is reported through to the IPC Assurance Committee and monthly to QSAC via the IPC Update.

Antimicrobial Management Group

The Antimicrobial Stewardship Group (AMG) is a multidisciplinary group responsible for the monitoring and review of good antimicrobial stewardship within the Trust. The AMG reports through to the Drug and Therapeutics Committee and should meet on a bi-monthly basis. The AMG has been working to improve involvement from clinicians and the ability for the meetings to be quorate and beneficial to the organisation. The group drives forward local activities to support the implementation of International and National initiatives on antimicrobial stewardship including Start Smart then Focus and the European Antibiotic Awareness Campaign. The AMG produces and updates local antimicrobial guidelines which take into account local antibiotic resistance patterns; regular auditing of the guidelines; antimicrobial stewardship practice and quality assurance measures; and identifying actions to address poor compliance with guidelines.

Antimicrobial audit results related to compliance with the local antimicrobial guidelines are produced monthly and are reported quarterly to IPC Operational Group and IPC Assurance Committee. The results of these audits are to be included in reports to the Divisions for discussion at Divisional Governance Meetings. There is an escalation process for clinical areas that do not follow clinical guidelines and there is active engagement at Executive level with senior clinicians in specialities with repeated non-compliance. Antibiotic usage information is reviewed to benchmark the Trust against other trusts in the area or of a similar size to identify variation in consumption and stimulate investigation where necessary. The Trust maintains the highest proportion use of World Health Organisation (WHO) 'Access' category antibiotics in the region.

Antimicrobial Pharmacists based on each site provide a point of contact for support and advice for other members of the pharmacy team, clinical teams and microbiology regarding Antimicrobial Stewardship and prescribing.

Decontamination Meetings

The Trust Decontamination Lead is the Associate Director of Estates. The management of Decontamination and compliance falls into three distinct areas: Estates, Decontamination and the Equipment User.

Water Safety Group

The Water Safety group is a sub group of IPC Assurance Committee; the Water Safety Group meets quarterly. It is chaired by the DIPC / Deputy DIPC with multi-disciplinary representation.

Infection Prevention and Control Assurance Committee

The Trust Infection Prevention and Control Committee (IPCC) sat monthly between April 2020 to October 2020 and the following reports were received;

Monthly	Bimonthly
Scheduled Care Group Report	Occupational Health Report
Unscheduled Care Group Report	MRSA Bacteraemia Action Plan
Women and Children's Care Group Report	Quarterly
Support Services Care Group Report	Antimicrobial Stewardship Report
IPC Team Report	IPC Annual Programme Update
Cleanliness Monitoring Report	Water Safety Group Minutes
HCAI Update Report	Health and Safety Update (FFP3 / Sharps)
PHE Update	Decontamination Group Minutes
IPC Policies for approval	HCAI Self-Assessment Update
Annually	
IPC Annual Report for approval	
IPC Annual Programme for approval	

In November 2020 the governance structure for IPC was reviewed by the DIPC and new governance processes put in place. This included a new Infection Prevention and Control Operational Group (IPCOG), which feeds into the new Infection Prevention and Control Assurance Committee (IPCAC) which replaced the IPC Committee. The following papers/updates are received to the IPCOG:

Monthly	Quarterly
Care Group/Divisional Updates	Water Safety Group Update
COVID/Flu Update	Decontamination Group Update
IPC Monthly Report	Antimicrobial Stewardship Report
• IPC Annual Programme Update	Occupational Health Update
• Update on Assurance Visits	**Annually**
• IPC Incident Reports	IPC Annual Programme for approval
IPC Board Assurance Framework	IPC Annual Report
HCAI Self-Assessment Update	**As Required**
Facilities Update (Cleanliness Monitoring)	IPC Policies
Estates Update	
Health and Safety FFP3 Update	
IPC Risk Register	

Groups and Meetings attended by the Infection Prevention Team

Monthly	Quarterly
Infection Prevention and Control Committee	IPC Link Nurse Meetings
Policy Approval Group	Trust Antimicrobial Management Meeting
Devices, Products and Gases Committee	Decontamination Group
Nursing, Midwifery and Allied Health Professionals Meetings	Water Safety Group
Matrons Meetings	LHE IPCN Forum
IPC Operational Group	LHE IPC and Antimicrobial Prescribing Group
Housekeepers Meetings	
Ad-hoc	
C difficile/Ecoli/MSSA RCA Multidisciplinary Reviews	
Post Infection Review Meetings	
Outbreak/Period of Increased Incidence Meetings	
Estates Refurbishment / Planning Meetings	
Site Safety Meetings	

Infection Surveillance (including external targets)

All organisms of IPC significance are monitored by the IPC team. Currently this is a very manual and time consuming process, involving daily lists generated by the Microbiology Department and emailed to the IPC secretaries. This is not a robust process and has proved particularly cumbersome during the COVID-19 pandemic. The Trust has obtained an automated surveillance system (ICNet) which will be implemented in 2021/22. This will be much more efficient in tracking patients and infections and should release time for IPC nurses, secretarial staff and consultant microbiologist staff.

COVID-19

COVID-19 has been very different to anything the IPC team have had to do before and was a massive challenge for the team. However it was an extremely good example of cross-healthcare system working. The IPC team attended multiple meetings about COVID-19 via Microsoft Teams including daily operational meetings both internal to the trust and also with external partners. Other work for the IPC team included:

- Frequent updates of the COVID-19 IPC policies were required as PHE issued new guidance regularly as more information about the virus became available. It was a steep learning curve and initial assumptions had to be corrected e.g. that only symptomatic patients were infectious

- The IPC Team were heavily engaged in PPE training as increased mask glove and gown wearing was introduced to protect staff. Staff also needed advice on social distancing from one another during breaks during which staff were at risk of infecting each other

- The IPC team worked with the operational teams to introduce new Patient Pathways to separate infected, potentially exposed or unknown status patients from negative patients. These had to be changed again as elective activity was reintroduced. They also worked closely with the site management team in placing patients to reduce cross infection

- The IPC team was also involved along with Estates staff in reviewing environmental issues, in particular ventilation.

Up to the end of March 2021 the Trust Microbiology Laboratory had performed almost 128,000 PCR tests. There were 5048 positive test and 515 people in the Trust with COVID- 19 had died. In addition 16,000 antibody tests were performed within a 3 month period and this testing has continued for patients within the Trust and GP practices as well as the nearly 600 SIREN participants (a national research programme for in depth staff testing).

At the beginning of the pandemic there were no formal reporting requirements, but as it evolved, more data was requested. The IPC team monitored all new results in the Trust, (both staff and patients) and reviewed each case for any potential links which could indicate outbreaks.

Results were received multiple times per day. Each time, every patient would be flagged on the patient administration system and their hospital journey reviewed to allow flagging of every patient they would have been in contact with in the 48 hours prior to their result. This facilitated isolation, cohorting and bed management.

There were 49 outbreaks identified in the Trust since April 2020. Every outbreak was investigated fully with the involvement of NHSEI, PHE and CCG, culminating in twice weekly reviews. During the first wave and the start of the second wave, any outbreaks identified had to be reported to NHSEI at a regional level on a daily emailed form. Towards the end of the second wave, NHSEI introduced an electronic reporting system to replace the manual system of reporting outbreaks.

The IPC Team and Microbiology developed an in-house template to capture critical information for each area dealing with an outbreak. This included the number of patients and staff linked to the outbreak; whether patients had been previously identified as contacts; and any potential causes/or contributing factors. This tool was shared around the region by NHSEI as an example of good practice.

When reviewing patients and attributing their infection, PHE provided four classifications:

Day 0-2: Community-Onset (CO)
Day 3-7: Hospital-Onset Indeterminate Healthcare-Associated (HO.iHA)
Day 8-14: Hospital-Onset Probable Healthcare-Associated (HO.pHA)
Day 15+: Hospital-Onset Definite Healthcare-Associated (HO.dHA)

Plastic curtains/screens were introduced in late December 2020 as a further mitigation to reducing the number of patients having significant contact with asymptomatic patients who were later identified as having COVID-19. A high percentage of people in the same bay as an unidentified case were initially contracting COVID-19 infection. Once the screens were introduced, there was a decrease in the number of bay contacts who later tested acquired the infection.

COVID Cases and Key Interventions in SaTH 01.03.20 - 31.03.21

10.01.2020-1st PHE guidance published on Wuhan Novel coronori NS -classified as a disease of high consequence - all patients to be cared for in full PPE

12.02.2020.COVID testing POD opened at PRH

PHE issue first Hospital Outbreak Advice

Staff to wear PPE for all patients • NOT just those who fit COE definitn

I PC team start weekend worldng for 12 weeks

ischarge screening for all patients going to Care Settings starts

Admission screening for all inpatients starts

Staff no longer exempt from being COVID contacts and self isolation

Staff and visitors anywhere in hospital must wear surgkal face mask

r efinitions of apportionment of COVID 19 cases published

Rli ITUs to screen respirator} patents

SATH introduce COVID and COVID contact flag

Day 5-7 swabbing starts

New PH E gu idance issued for remobilisation of services

Redirooms purchased for SATH

SaTH implement PHE IPC Remobilisation guidance

Introduction of Day 3 Swabbing

SaTH commences rollout of medisoreens I dear curtains between bed spaces on key wards

Day 1 3 5 starts

@Day 02 allay 17 °Day 841 110ay 154

Clostridium difficile

Clostridium difficile (C.difficile) is a bacterium found in the gut which can cause diarrhoea after antibiotics. It can rarely cause a severe and life-threatening inflammation of the gut called pseudo-membranous colitis. It forms resistant spores which require very effective cleaning and disinfection to remove them from the environment.

Infection is nearly always preceded by antibiotic treatment but antibiotics may have been stopped up to 6 weeks before the patient presents with symptoms. Although most antibiotics have been implicated, broad-spectrum agents such as cephalosporins, quinolones and carbapenems (e.g. Meropenem) are most likely to cause it as they wipe out the "normal flora" of the gut which usually holds C difficile in check.

The Trust reports all cases of C difficile diagnosed in the hospital laboratory to Public Health England. Prior to April 2019, only cases where the sample was taken later than the third day after admission were considered attributable to the trust. But this definition changed as of April 2019. Our target for C difficile in 2019/20 was no more than 43 trust apportioned cases in patients over the age of 2 years. For the year 2020/2021 the trust did not receive an official target for C. difficile cases because of the COVID-19 pandemic. It was collectively decided at the Infection Prevention and Control Committee meeting that we would continue with a target of no more than 43 for the year 2020/2021unless we are told otherwise from the CCGs about a new SaTH Trust C. difficile target.
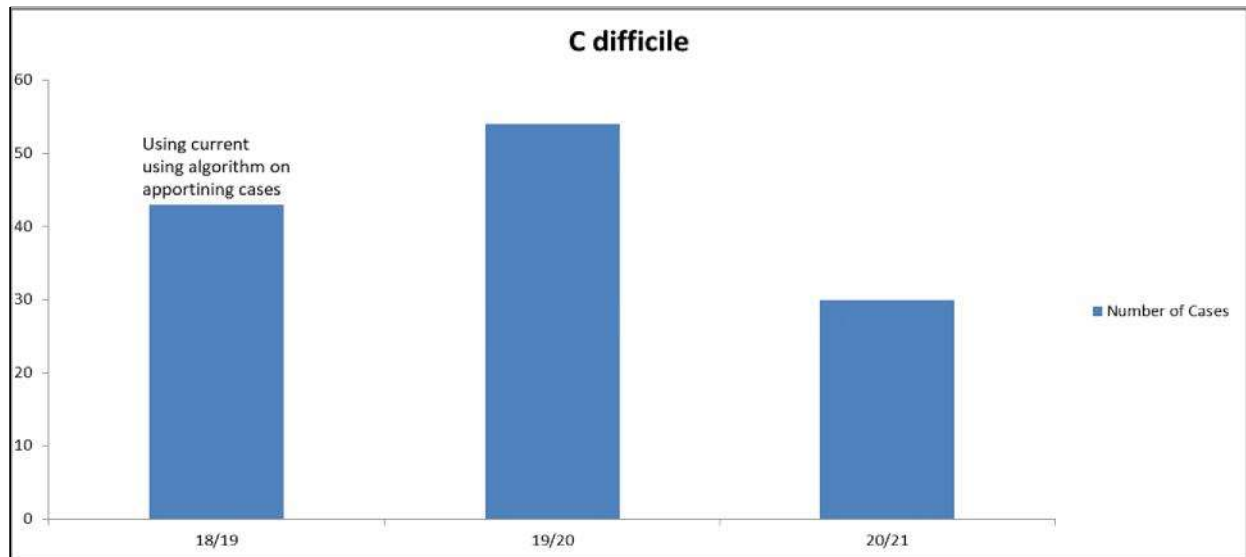
By end of the 2020/2021 (April 2020-March 2021) there were 30 cases apportioned to the Trust, so we have achieved our target of having less than of 43 cases. Moreover this was a marked reduction from the 54 trust apportioned cases in 2019/2020. Of the 30 cases in 2020/21, 20 cases (26 in 2019/20) were Hospital Onset Healthcare Associated i.e. sample taken in hospital more than 2 days after admission; and 10 cases (28 in 2019/20) were Community Onset Healthcare Associated i.e. patients were positive in the community but had been in hospital within the preceding 28 days. The largest reduction in the cases was those that appeared in the community after discharge from hospital.

The Trust continues to review all cases through Root cause analysis (RCA) to identify any potential lapses in care or any common themes that may have contributed to the infection.

The commonest cause of C difficile was antibiotic prescribing, but this was mostly within prescribing guidelines. Preventable causes included:

- In two cases issues with cleanliness noted so cross infection could not be ruled out
- prescribing antibiotics outside of guidelines
- Lack of samples before antibiotics so unable to change to a narrow spectrum agent.
- delay in isolation before a positive result

We are uncertain what impact COVID-19 had on our C difficile figures. Most COVID-19 patients do not require multiple antibiotics and the change in case mix may have affected antibiotic use. However some patients who require intensive care have very long stays and require prolonged courses of antibiotics. The increased cleaning required for COVID-19 may also have impacted.

C difficile

Using current using algorithm on apportining cases

(Bar chart showing Number of Cases: 18/19 ≈ 43, 19/20 ≈ 54, 20/21 = 30)

Clostridium difficile Action Plan

Work continues to reduce the cases of C difficile. This relies upon appropriate antibiotic prescribing and advice, the earliest detection of possible C.difficile case and prompt isolation of patients with diarrhoea. All positive C. difficile stool samples are telephoned to the ward as soon as they are available with advice on the most appropriate antibiotic based on the clinical scenario. These measures are taken into account with environmental cleaning, and good hand hygiene technique and practice will help in reduce cases overall and cross infection. Introduction of Hydrogen Peroxide Vapour and Ultra violet light deep cleaning will also reduce cases.

As from April 2020/21 financial sanctions have been removed from the NHS contract. The Trust however, is still expected to undertake a review of each case to identify whether there is any learning to be shared. We have been advised that targets for this year will be issued in Quarter 2 of 2021/22
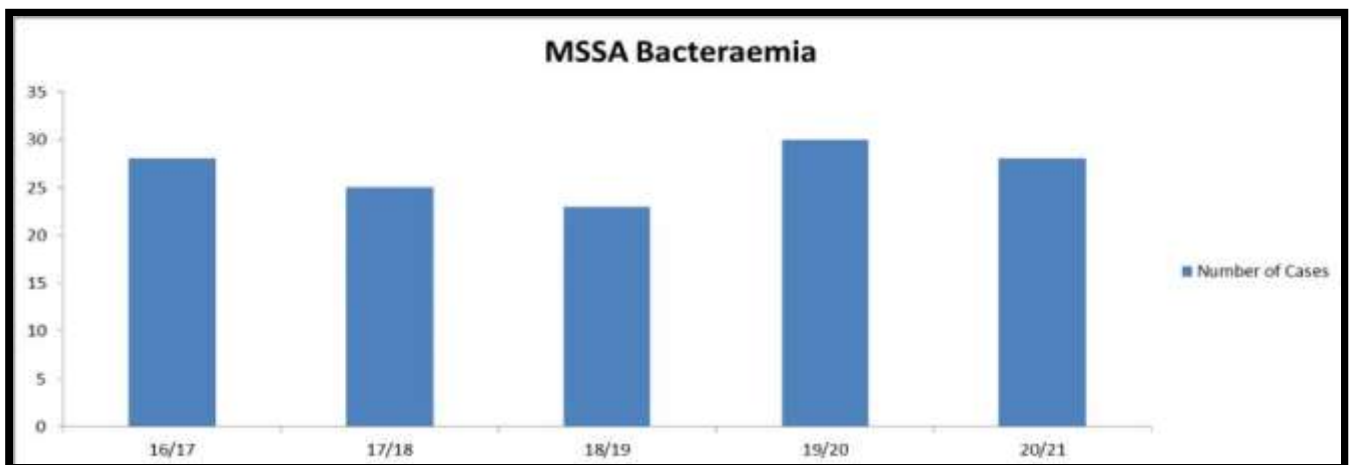
MRSA Bacteraemia

In 2020/21 there were two trust apportioned MRSA (Meticillin Resistant Staphylococcus aureus) bacteraemia cases against a target of zero. Although we did not achieve the target we have again kept our number of cases very low. Historically we peaked at 58 cases in 2003/4 before a national focus on reducing this infection was introduced. One of the two bacteraemia cases from this year was caused by a ventilator-associated pneumonia in the ITU and the second was a collection contaminant so although not a true infection this second case still count in the Trust number of cases because we are trying to reduce false positive results. One further case of MRSA bacteraemia was apportioned to the community. For comparison 2019/20 there was one trust apportioned MRSA bacteraemia case (again the target was zero). The Trust has an MRSA recovery action plan in place which focuses on ensuring staff are competent in taking blood cultures. This is monitored monthly at the IPC Operational Group.
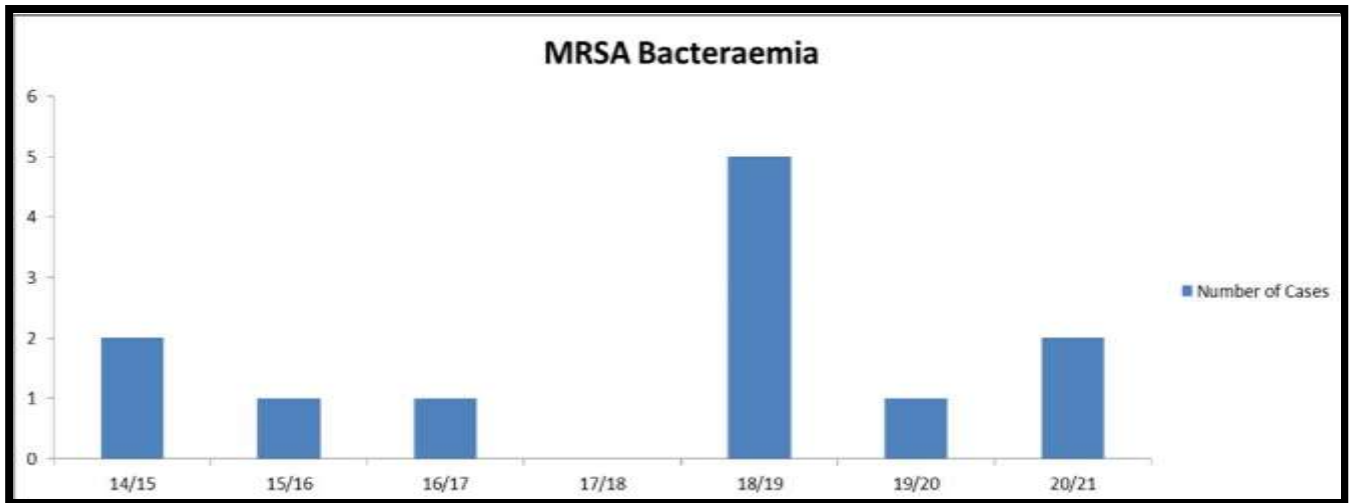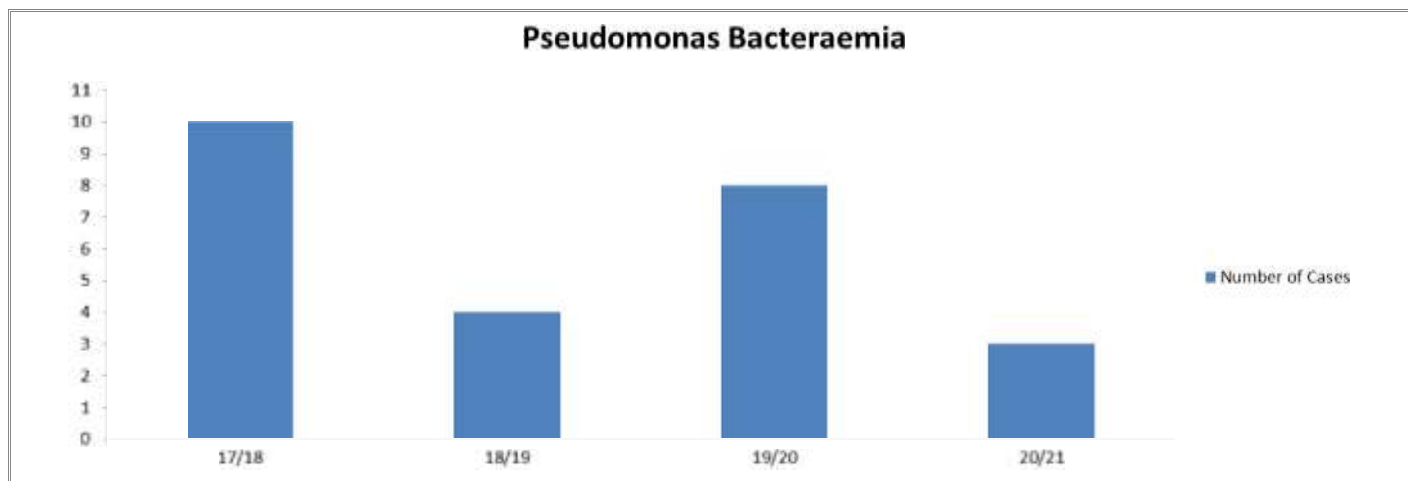
MSSA Bacteraemia

MSSA (methicillin sensitive Staphylococcus aureus) is the much commoner antibiotic sensitive version of Staphylococcus aureus and less likely to be hospital acquired. Twenty eight MSSA bacteraemia cases were apportioned to the Trust for the period 2020/2021. Last year there were 30 trust apportioned cases of MSSA, this is a decrease of two cases. We do not have a formal target for reduction of MSSA bacteraemia cases. The cases of bacteraemia were associated with the following sources of infection: skin and soft tissue infections, septic arthritis, infected haematoma, epidural abscess, prosthetic valve endocarditis, infected biliary stents, cellulitis, peripherally inserted central catheter (PICC) line infection, peripheral cannula, discitis, pyelonephritis. All cases were reviewed and root cause analysis carried out to look for preventable causes when the source of infection was unknown or device related.

**Gram Negative Blood Stream Infections**

In 2020/2021 the Trust had three trust apportioned cases of Pseudomonas aeruginosa, compared with eight cases in 2019/2020. This is a reduction of five cases. The bacteraemia cases were associated with the following sources of infection: one case of neutropenic sepsis, one case where the source of infection could not be established and one PICC line infection.

Pseudomonas Bacteraemia

In 2020/2021 we had 14 trust apportioned Klebsiella bacteraemia cases, compared to 19 the previous year. This is a reduction of five. The cases were associated with the following sources of infection, 4 cases of catheter associated UTIs, 3 cases were intra-abdominal (1 case was post laparotomy), 3 cases were associated with biliary tract, 1 osteomyelitis, 1 source unknown and 2

Klebsiella Bacteraemia
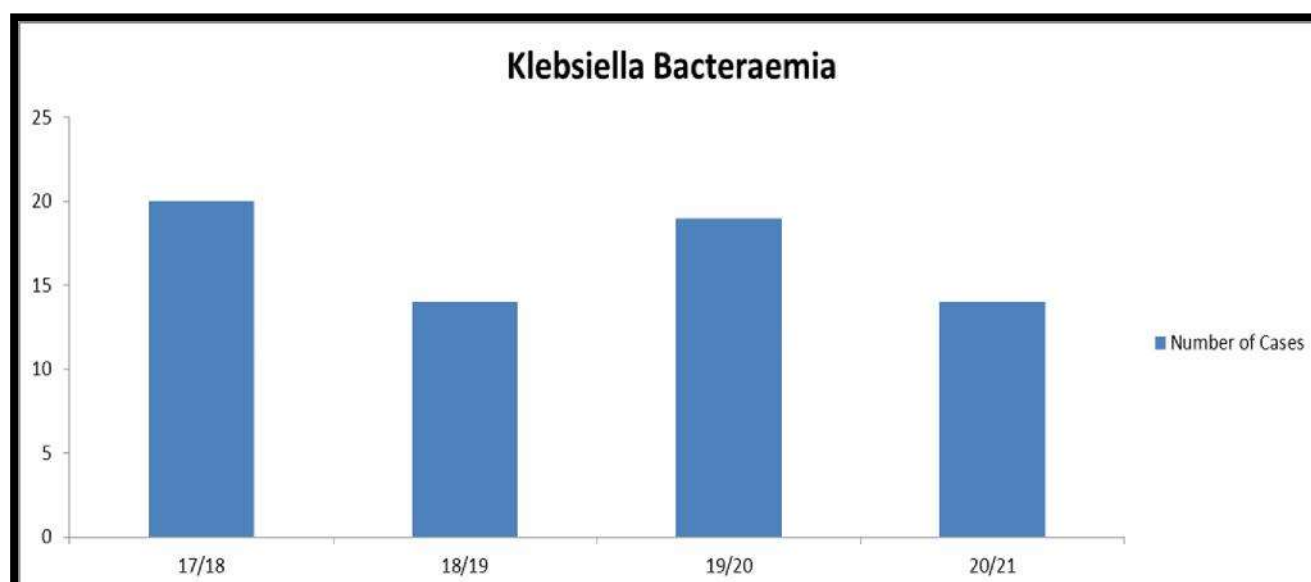
cases of lower respiratory tract infections.

In 2020/2021 we had 36 trust apportioned Escherichia Coli bacteraemia cases, compared to 51 in 2019/2020. This is a reduction of 15 on last year. Of the total 36 cases these can be further subdivided into the following sources of infections. Nine Catheter Associated UTI, 5 urinary tract infections, 8 associated with biliary tract (2 infected stents), 7 abdominal source, 2 neutropenic

sepsis, 1 native hip septic arthritis, 1 perianal abscess, and 3 cases where the source was unknown.
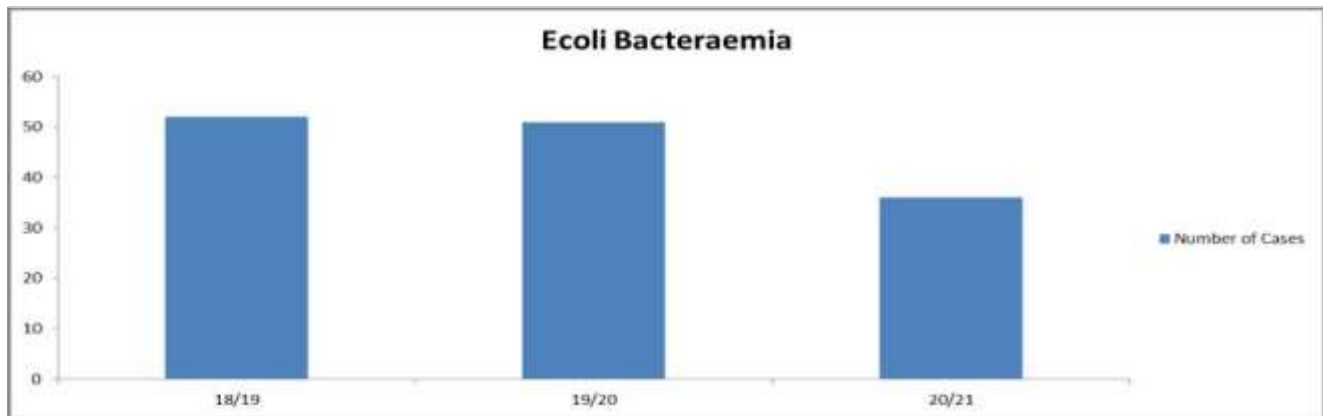
Since 2018/19 there has been a continued focus on using the Health Economy approach to reduce *Escherichia coli* bloodstream infections as they represented 55% of all Gram-negative bloodstream infections nationally.

The Secretary of State for Health launched an important ambition to reduce healthcare associated Gram-negative bloodstream infections (GNBSI) by 50% by 2021 and reduce inappropriate antimicrobial prescribing by 50% by 2021. Gram-negative bloodstream infections are believed to have contributed to approximately 5,500 NHS patient deaths in 2015. We know GNBSI cases can occur in hospitals however, half of all community onset cases have had some healthcare interventions either from Acute, Primary or Community Care. Therefore, a Health economy approach is required to achieve the reductions

Research evidence has established that the most important risk factors for healthcare associated Gram Negative infections are:

- Indwelling vascular access devices (insertion, in situ, or removal)
- Urinary catheterisation (insertion, in situ with or without manipulation, or removal)
- Other devices (insertion, in situ with or without manipulation, or removal)
- Invasive procedures (e.g. endoscopic retrograde cholangio-pancreatography, prostate biopsy, surgery including, but not restricted to, gastrointestinal tract surgery)
- Neutropenia (low white cell count – usually from chemotherapy)
- Antimicrobial therapy within the previous 28 days
- Hospital admission within the previous 28 days.

Due to COVID-19 the LHE Blood stream Infection group was cancelled, hence focus on Device related infections was reviewed internally through the process of RCA meetings for E.coli and MSSA. The Trust also re-established its catheter associated urinary tract infection (CAUTI) group which meet quarterly, and is attended by the IPC team, Microbiology and the urology specialist nurses, with input from the Quality team and Clinical Practice facilitators as required. During this year the CAUTI team have responded to recommendations made in the catheter prevalence audit, and with the involvement of the Quality team have made contributions towards the introduction of the HOUDINI catheter care plan into nursing documentation, have aided in the introduction of catheter care/awareness training to be commenced and provided by the urology nurses and have been able to highlight any areas of good practice or concerns through the clinical governance meetings which the microbiologist attends.

Carbapenemase–Producing Enterobacteriaceae cases (CPE)

CPE are gram negative bacteria which are so resistant to antibiotics that even our last line of defence, carbapenem antibiotics, are ineffective. So it is extremely important to detect patients

with these bacteria and prevent spread through isolation and cleaning. Public Health England published a toolkit for the early detection, management and control of CPE in December 2013. The toolkit provides expert advice on the management of CPE to prevent or reduce the spread of these bacteria into (and within) health care settings, and between health and residential care settings. The Trust has a CPE policy in place. This reflects screening guidance recommended by Public Health England.

In 2020/21, the Trust had no new cases of CPE but there were 4 patients with CPE admitted to the Trust. These were either cases that were previously known or transfers from other hospitals. Last year for comparison there were six cases attributed to the trust.

Audit Programme to Ensure Key Policies are Implemented

The Trust have an IPC programme of audits in place, in order to demonstrate compliance with the Health and Social Care Act: Hygiene Code. The audits are undertaken by both clinical areas and the IPC team, to ensure that areas are consistently complying with evidence based practice and policies.

This year's programme of audit focused more on responding to the COVID-19 outbreaks with audits undertaken across the Trust that have an impact on infection prevention and control practice. This has meant that other audits routinely undertaken during the year were postponed.

All audit results are reported through the IPC Operational Group and Assurance Committee as well as into the post infection reviews. The audits provided a balanced picture of the wards involved.

In response to the audits undertaken, action plans which were devised by where issues highlighted were fed back the Ward Manager/Matron/Head of nursing for the area by IPC.

Audit title	Completed	Details/findings
PPE donning and doffing	Weekly on outbreak areas	As part of the outbreak assurances the IPC team have been completing weekly PPE audits on the Outbreak wards, monitoring staff PPE practice, advising, challenging poor practice and teaching.
Hand Hygiene audits	Weekly on outbreak areas, monthly as part of the Nurse Quality matrix	As part of the outbreak assurances the IPC team have been completing weekly Hand hygiene audits onwards, supporting staff regarding the 5 moments of hand hygiene. Ward managers and matrons are required to complete a monthly quality review of IPC practises on the ward.
Environmental and Quality ward walks	Weekly/ Monthly/ Quarterly	Environmental and Quality Ward Walks (QWW) undertaken to audit the IPC practice and environment. Weekly audits have taken place on outbreak areas for assurances, this is in addition to the daily ward visits the IPC team would complete to support and observe staff practice. Consecutive monthly QWW's on completed in areas that fall below the required 90%, and quarterly are done routinely. The QWW's undertaken by the IPC team are often accompanied by cleanliness team members/Ward Managers, Matrons and Heads of Nursing.
Exemplar Audits	Monthly	Exemplar audits have been undertaken in various clinical areas by the IPC team in conjunction with the quality team. These

		audits are to look at standards and improvements required in clinical areas covering all areas of patient care, safety and management.
Catheter prevalence audit	August 2020	• That documentation and review were not always detailed regarding the patient's catheter and that ongoing communication aids were not always given to the patient. • Prophylactic administration of antibiotics were recorded but it was not clear why given. • Catheter cards were not always given to patients, or that patients did not have them admission from community with a catheter • Based on these findings a new Standard Operating Procedure (SOP), HOUDINI care plans and teaching opportunities have been put into place to improve catheter care, monitoring and documentation.
Commode Audit	Sept 2020	• IPC team to continue auditing commode storage, cleanliness and compliance with guidelines within the environmental audit in the regular Quality Ward Walks and escalate concerns to ward manager and matron. • Ensure the adherence and use of the green labels for all the commodes used within the Trust. • To reinforce to the staff that the use of a detergent wipe AFTER cleaning the commode with chlorine wipes, as this will help prevent damage to the commodes. Ward staff and Managers must ensure that commodes are intact and safe to use. Any equipment non-compliant with safety standards must be condemned and replaced. • Ward/Department managers to ensure Vernacare commodes are replaced. Since the elaboration of this report ward 11 has purchased 2 recent Vernacare commodes that were not included in this audit. • Ward staff and managers should ensure that every clinical area has commode cleaning posters in place.
Use of PPE (Gloves and Aprons) Link Nurses	Feb 2020	Postponed due to COVID-19. Completed in May 2020 through clinical audit – • Completed audit forms were received from a total of 49 of the 78 areas due to carry out the audit, giving a completion rate of 62.8%. • In summary, when asked questions about PPE 94.7% of staff gave answers in line with the national guidance. When observed, 98.6% of staff carried out the correct behaviour in line with the national PPE guidance.

Infection Prevention and Control Quality Ward Walks

The IPC team undertake a Quality Assurance Audit of all areas, most areas are audited routinely every quarter; however areas that have outbreaks or when areas fall below the expected standard of 90% compliance are audited more frequently, often weekly until the outbreak is over or compliance increases sufficiently.

This year the IPC team redeveloped the existing quality ward walk into a 45 point tool providing a more in depth and rounded audit of an area focusing on several areas including hand hygiene and

PPE, cleaning and decontamination, estates and waste, invasive devices and isolation. The audit contains a hand hygiene and PPE audit to be complete by the IPC nurse, this enable the IPC team to validate the hand hygiene and PPE audit undertaken by the departments.

The IPC developed a specific audit tool to use in areas where there are COVID-19 outbreaks to enable the IPC team to provide relevant assurance to the outbreak control team via outbreak meetings.

In the 2020/21 period the IPC team have completed
- 174 routine quality walks
- Weekly quality ward walks in 49 areas due to COVID-19 outbreaks
- Weekly quality ward walks in 13 areas due to outbreaks/Period of increased incidence (PII) of other organisms

Audits of Hand Hygiene Practice

All wards complete an audit of their compliance with hand hygiene monthly and this is recorded on the Nursing Quality Metrics and ward dashboards. Hand hygiene audits are also conducted on the quarterly IPC Quality Ward Walks. In the event of an outbreak, the audit is conducted for, at least, three consecutive weeks as part of the outbreak control measures led by the IPC team. Overall compliance remains over 95%, moving towards 100% by March 2021. In past reports the overall hand hygiene compliance for nurses and HCAs was always above 95% and the doctor's compliance was below this threshold. This year all staff groups remained above 95% compliance (apart from January 2021), which reveals much improvement in this essential infection prevention measure. As a team it is very rewarding to observe that all staff groups are now truly committed in making a change and being compliant to the best of their ability. The hand hygiene practice results are shown in the table below.
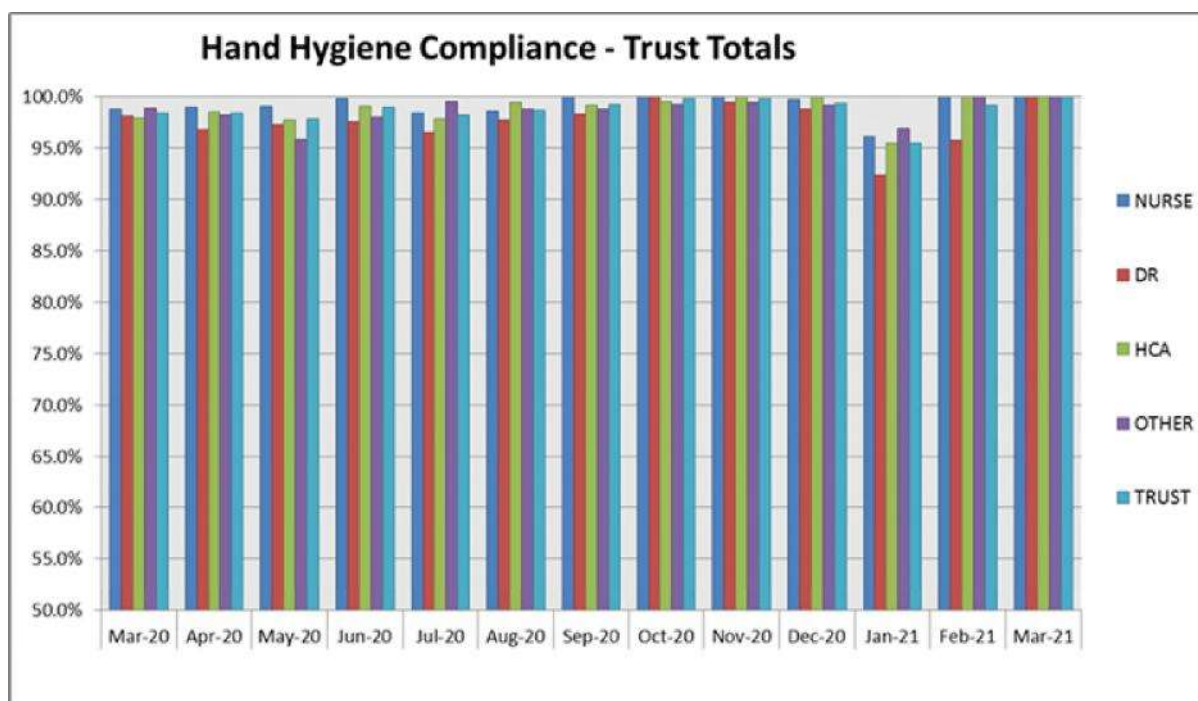
Hand hygiene technique assessments

The Trust Hand Hygiene Policy stipulates that all staff should have their hand hygiene technique assessed within one month of starting their employment and reviewed 3 yearly. It is the responsibility of the Ward Manager and the IPC link nurses to ensure these assessments are carried out.

Last April 2020 this assessment has changed to yearly. Therefore, to cope with the number of staff requiring hand hygiene assessments, the IPC team recruited two HCAs, on a temporary role, to conduct these assessments and ensure the compliance and high standards of care were upheld.

The overall compliance rate for 2020/21 is 91%. This is an improvement regarding last year's 88%. It should be noted that these figures do take into consideration medical staffing.

Historically not all doctors were included in the assessment of hand hygiene technique. Now all junior doctors are assessed when they start in August and senior doctors are required to have a yearly hand hygiene assessment. This has started in April 2020 and they are included in the numbers in the graph below.
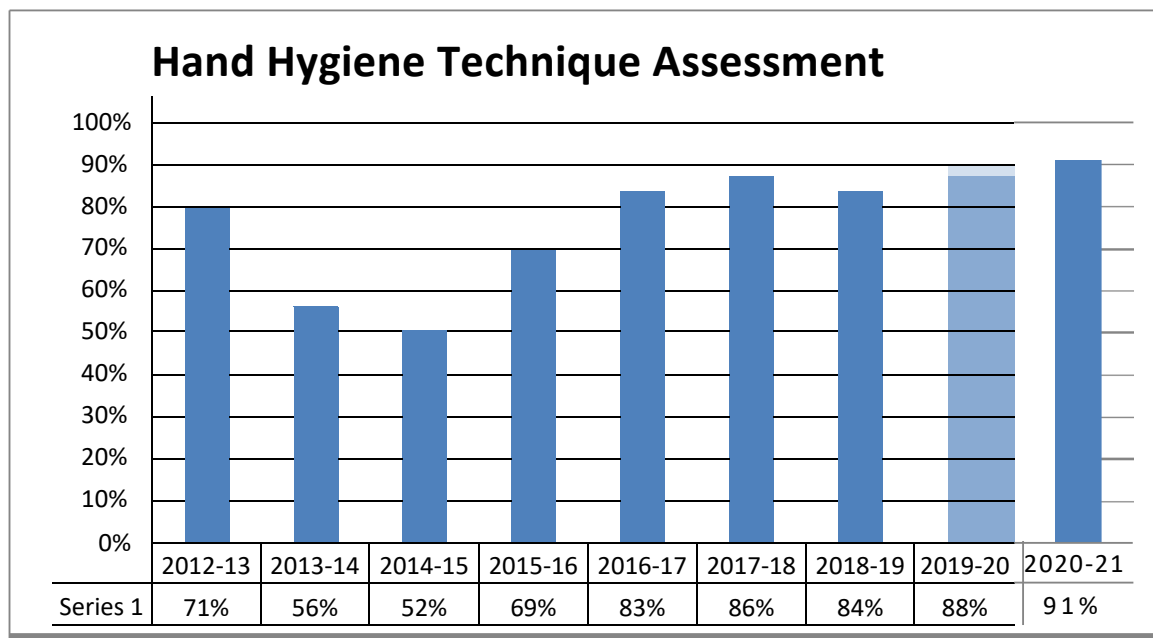
Hand Hygiene Technique Assessment

	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Series 1	71%	56%	52%	69%	83%	86%	84%	88%	91%

Provide and maintain a clean and appropriate environment in managed premises that facilitates the prevention and control of infections

Cleanliness Team

The cleaning provided at SaTH for all clinical and non-clinical areas is completed by the in-house Cleanliness Team. Cleanliness Technicians are responsible for ensuring that cleaning methodologies are rigorously applied and the frequencies are maintained. All cleaning staff play an essential role in ensuring that the Trust reduces hospital acquired infections which helps to promote confidence in patients and visitors.

Monitoring Processes for In-house Cleaning

The Cleanliness Team are committed to ensuring high standards of cleanliness and that these standards are maintained by promptly addressing any shortfalls. The Team work to national targets and local standards which are reflected in the Environmental Audit scores and our Patient-Led assessments of the care environment (PLACE) results. The Trust monitoring team use the MiC4C (credits for cleaning) software which is widely used across the NHS, visible checks of all elements are carried out, the system then generates a report and percentage score, the reports are sent to the Cleanliness Management team, Estates Team, Ward Managers and Matrons for action.

The Senior Cleanliness Manager or Site Cleanliness Managers also participate in any outbreak or periods of increased incidents (PII) meetings, when issues are identified on site.

Scheduled and ad hoc meetings with Infection Prevention, Matrons and clinical colleagues to regularly monitor, review progress and address/resolve any issues are held to ensure that standards and performance target and compliance is met, whilst empowering Nurse Managers to be involved in the monitoring of cleanliness standards.

PLACE Inspection

PLACE assessments were suspended in 2020 due to the risk to Patients Assessors and Staff undertaking the assessments during the COVID-19 pandemic.

Terminal Cleans

All terminal cleans at the Trust are requested via the internal bleep system during Cleanliness Working hours. Any terminal cleans outside of these times are requested via switchboard to an external company. Hydrogen Peroxide decontamination of infected side rooms is requested as per the Cleanliness Team RAG poster

Radiator Cleaning

The Trust has a planned annual programme of radiator cover removal to allow for cleaning.

Criterion 3:

Ensure appropriate antibiotic use to optimise patient outcomes and to reduce the risk of adverse events and antimicrobial resistance.

Antimicrobial Stewardship (AMS)

The Trust antimicrobial management group (AMG) includes representatives from pharmacy, microbiology, nursing and medical staff. This group manages policy with regard to antimicrobial stewardship, formulates policy with regard to antimicrobial stewardship and responds to concerns in this area. The group feeds back actions and concerns via the Drug and Therapeutic committee and reports in to the Infection Prevention and Control Operational Group and through to the IPC Assurance Committee.

The action of AMG continues to be hampered by the lack of attendance of the medical and nursing representatives. This means that the group meetings are often non-quorate. Actions by the group can therefore be difficult to implement. Steps have been made during the previous 12 months to create a more active group with contributions from other local healthcare services with future efforts for a local health economy wide approach to antimicrobial stewardship.

The group undertakes the following actions

- Production of the antibiotic guidelines publishing them both on the trust intranet and the micro guide app
- Yearly update of the antibiotic guidelines
- A regular update of the Trust Antimicrobial Stewardship Policy.
- A rolling Antimicrobial Audit Programme in line with Start Smart then Focus has been in place across the Trust for a number of years.
- Review of guidelines and issue of temporary alternative guidance when certain key antibiotics are unavailable due to global and national shortages.
- The Antimicrobial Guideline App (Micro-guide) for mobile devices continues to be popular with prescribers, facilitating easy access of antimicrobial guidelines at the point of prescribing. Aims for the desktop version of the guidelines to be converted to the Micro-guide app to enable consistency with appearance and allowing for updates to be enabled more quickly and efficiently. The Trust now has both Adult and Paediatric Antibiotic Policies available through Micro-guide.

Undertaking of audits continues to be difficult to achieve without the facility of electronic prescribing however a replacement Antimicrobial Pharmacist was appointed this year and steps are being taken to reintroduce feedback to clinical governance leads. Regular monitoring of prescribing at ward level continues and pharmacist antibiotic related interventions are reviewed each month.

The Antibiotic Pharmacist continues to undertake FY1 junior doctor teaching in August/September for the new intake and attends medical and surgical clinical governance meetings to communicate information where necessary.

The appointment of a Sepsis Nurse has led to positive work surrounding sepsis and areas now have sepsis boxes and drawers or a sepsis trolley to assist in the prompt treatment of those patients suspected of having sepsis. Introduction of the sepsis pathway across the Trust has been a forward step in the management of sepsis and the success of these changes is monitored by the Sepsis Nurses.

In common with other Trusts in the UK, SaTH faced challenges as a result of ongoing shortages or various antimicrobials during the year due to manufacturer's supply problems. The AMG, Microbiology and Pharmacy Departments work collectively to ensure that alternative agents are available for patients in a timely manner.

- Antimicrobial guidelines were reviewed and alternative agents chosen taking into account antimicrobial stewardship and local resistance patterns, benefits and risks of proposed substitute agents, including cost pressure to the Trust as a result of using more expensive alternatives.
- Where necessary, alternative medicines are sourced, purchased and made available in key areas via review of stock lists.
- Information on dosing, administration and side effects of alternatives are communicated to prescribers, nursing staff and pharmacists.
- Antibiotics that are in short supply are restricted to those conditions considered highest priority or were an appropriate alternative is not available.

CQUIN Summary 2020-21

- The CQUIN program has been paused IN 2020/2021 during the COVID-19 pandemic with no submissions required.
- The pharmacy team continue to make interventions relating to inappropriate antibiotic usage with prescribing teams to maintain good antimicrobial stewardship.
- Total antibiotic usage is monitored quarterly and SaTH continues to maintain usage below the England average.

Total antibiotic prescribing DDDs per 1000 admission
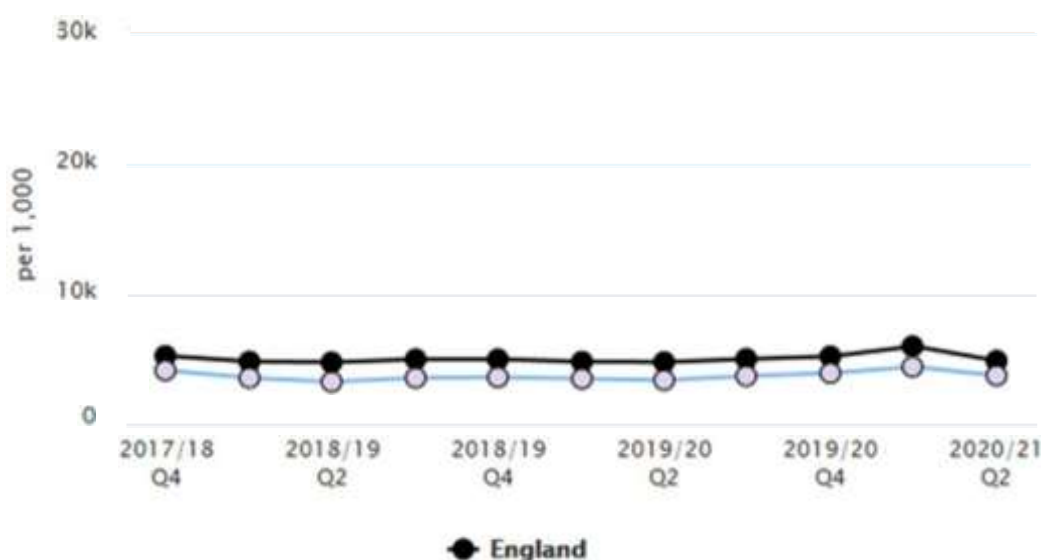
Provide suitable accurate information on infections to service users, their visitors and any person concerned with providing further support or nursing/medical care in a timely fashion.

Communication Programme

The financial year 2020/2021 has been a year like no other within IPC where communication has been a key requirement in the improvement of care, the instigation of IPC initiatives, as well as public information and visitor safety, as with the way we all worked had to change.

The onset of COVID-19 pandemic in early 2020 has meant that the team has encountered a fast and ever changing world of national and regional advice which has had to be shared throughout the trust, often at short notice. The Trust's dedicated Communication Team have been instrumental in assisting with this ensuring the correct media information and production of information has been developed in a timely and informative manner.

Alongside this the IPC team have been part of the daily Trust Silver Command meetings from which the Medical Director, daily messages have been compiled. This message emailed to all SaTH staff includes any updates within the Trust policies/procedures as well as the information regarding PPE supply/COVID numbers within the Trust and general wellbeing advice.

The communications team attend the Microsoft Teams virtual outbreak meetings, especially where these may result in media interest because of the nature or impact of the outbreak. The Communications Team also provides the support and guidance and to prepare proactive and reactive media statements where required.

In the past 12 months the IPC and Communications Teams have worked together to:

- To develop information for patients and staff regarding visiting restrictions and requirements
- To develop eye catching, easy to read, clear instructional PPE guidance which has changed as per PHE guidance throughout the pandemic
- To share COVID updates including policy change/SOP development
- Shared IPC improvement news e.g. the introduction of Redi-rooms and Medi-screens lessons learnt information and hand washing facilities improvements, social distancing and mask adherence communication.
- Update the Trust website and intranet.
- Issue media statements during outbreaks.
- Support the annual flu vaccination campaign

Trust Website and Information Leaflets

A dedicated COVID-19 information page was developed early on in the COVID-19 pandemic and continues to be regularly updated with trust wide communications, COVID-19 policy changes and advice for staff on working through the pandemic, including information for patients and visitors. This included topics such as volunteering, symptoms of COVID-19, how to keep healthy and avoid infection, how to get tested and visiting.

This continues to be updated by the Communications Team with advice from IPC as new information becomes available. The Trust website also promotes the IPC information page for general IPC issues and guidance including link nurse information, information on MRSA, Clostridium *difficile* and other organisms. This is also the media area to review a range of information leaflets on various organisms and access the regularly updated policies and guidance.

Criterion 5:

Ensure prompt identification of people who have or are at risk of developing an infection so that they receive timely and appropriate treatment to reduce the risk of transmitting infection to other people.

Infection Prevention Nurses are alerted of daily laboratory alert organisms.

The Trust has a policy for screening both elective and emergency patients for MRSA and a system is in place for monitoring compliance.

Clinical Portal System / SEMA

The microbiologists work with IPC Team regarding patient alerts. The SEMA system includes alerts for patients with a history or current MRSA, C. difficile*,* PVL-toxin producing *Staphylococcus aureus*, Extended spectrum beta-lactamase (ESBL), Vancomycin resistant enterococcus (VRE) or Carbapenemase producing multi-resistant Gram Negative Bacilli, Flu, and blood borne viruses. COVID-19 cases and contacts were added at the start of the pandemic in 2020. These alerts enable staff on wards and departments to promptly identify patients who have recently had an alert organism identified, allowing wards/departments to isolate in a timely manner, follow-up patients appropriately and to prescribe appropriate empiric antibiotics if antibiotic treatment is indicated. Alerts are automatically added to clinical portal from SEMA to ensure the information is available on all systems used.

Surgical Site Infection Surveillance (SSISS)

Surgical site infection (SSI) is a healthcare-associated infection in which a wound infection occurs following a surgical Procedure. A National Surveillance System was established in England in 1997 through the Public Health England (PHE), targeting different categories of surgical procedures that are relatively common or associated with relatively high risk of infection. Standardised definitions and monitoring systems enable the SSISS national centre to provide high quality comparative data, which is shared between hospitals.

Mandatory surveillance of surgical site infections began in 2004, specifying each Trust should conduct surveillance for at least one orthopaedic surgical category for one period in a financial year. The categories include total hip replacement, total knee replacement, repair of neck of femur, and reduction of long bone fracture. In addition to the orthopaedic surgery surveillance, there are 14 other categories, which can be reported. These are selected by using the 3-year surveillance programme which can be adapted if there are any concerns in a particular area.

The Trust carries out continuous surveillance in total hip replacement and total knee replacement. However due to the COVID-19 pandemic, some elective orthopaedic surgery was transferred to Robert Jones and Agnes Hunt Orthopaedic Hospital (RJAH) from the 24th March 2020, it is expected to return back to the Princess Royal Hospital site in May/June time. The Gynaecology ward staff collect continuous surveillance in abdominal hysterectomy including post discharge.

The team collect local evidence of surgical site wound infections, which develop whilst the patient is in hospital and once discharged home. This continues for 30 days postoperatively, (if an implant is present this can continue up to one year) and is followed up with a patient review using positive microbiology wound swab results, patients readmissions due to wound healing problems, and the review of hospital follow up appointments.

Cases of identified SSIs are reviewed through a Root Cause Analysis (RCA). The definitions for a deep, superficial and organ space infection are described in the SSISS guidelines via PHE. An RCA ensures that a robust process is in place for the identification of any SSI and identifies where improvements can be made in clinical practice. This aids effective and thorough reporting to PHE, as often just one infection can take us above the National Benchmark due to low numbers of surgeries per category.

Summary of Surveillance Carried out at SaTH 2020-21

Type of Surgery	Qtr	No. of Cases	No. Inpatient Readmission Infections (%)	National infection Rate	No. Eligible for post discharge/review	Return rate %	Post Discharge infections
Neck of Femur RSH	3	93	1 (1.1%)	0.9%	91		0
Neck of Femur PRH	3	46	0 (0%)	0.9%	44		0
Vascular RSH	3	61	1 (1.6%)	2.5%	56		1
Abdominal Hysterectomy	3	29	1 (3.4%)	1.2%	29	75.9%	1
Neck of Femur RSH	4						
Neck of Femur PRH	4						
Vascular RSH	4						
Abdominal Hysterectomy	4						

During quarter 3 in repair of neck of femur (NOF) at RSH, we had one infection in 93 operations (1.1%). This took us slightly over the national infection rate of 0.9%. Due to the small numbers involved it helps to gain perspective if we look back at the last 4 quarters in which we participated. We have had three infections in 360 operations; this gives us an infection rate of 0.8%, which is below the national infection rate for this category of surgery.

Vascular surgery: one infection was found in 61 operations (1.6%) which compares well to the national infection rate of 2.5%.

Abdominal hysterectomy: we found one infection in 29 operations (3.4%) which is higher than the national infection rate of 1.2%. Over the last 4 quarters, we had reviewed 134 operations with one surgical wound infection (0.7%), which compares well to the national infection rate.

A review of operations carried out across SaTH from 24/03/2020 until 01/08/2020

During the period when real-time surgical site surveillance was not performed, a retrospect review of five operational procedures was carried out across SaTH. An assessment of each patient was carried out using positive microbiology results, readmission for a wound infection, and follow up of other documentation.

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Abdominal Hysterectomy	3	29	1 (3.4%)	1.2%	29	75.9%	1
Neck of Femur RSH	4						
Neck of Femur PRH	4						
Vascular RSH	4						
Abdominal Hysterectomy	4						

Large bowel: 125 operations were carried out with, 10 infections (five were inpatient infections and five readmissions). The national infection rate recorded for large bowel surgery (January-March 2018) was 8.6%. SaTH infection rate during this period is 8%, which falls below the national average.

Neck of Femur (NOF): all trauma hip fractures were referred to RJAH. Eight of the nine operations were admitted before the lockdown.

Reduction of Long Bone: 30 operations. 26 of these were children and young adults 16 years of age and under, the other four had been admitted prior to lockdown.

Vascular Surgery: all operations were carried out at RSH. The national infection rate for vascular surgery is 2.5%, the infection rate for this period is 4.6% but numbers are small.

Surgical Site Infections in Neck of Femur (NOF) patients

A root cause analysis of five deep surgical wound infections over a five-month period (September 2020 to January 2021) at RSH was carried out. Findings following our investigation included: all patients were frail with a low body weight and high ASA scores indicating that they were all high risk for infection. All patients received appropriate antibiotic prophylaxis and had appropriate skin decontamination in theatre. Different organisms were isolated from their wounds and different surgeons performed the procedures.

Review showed 4 out of 5 patients had a delay of >2 days from admission to operation. This was due to their poor clinical state and that they required optimisation prior to theatre. Theatre 6 was noted to be a common factor. However theatre 6 was found to be up to date with the estates maintenance, (all completed in last 12 months) and an IPC review did not identify any obvious issues. It was noted that Ward 22 Trauma and Orthopaedic Ward (T&O) have had an increase in new staff recently, which has given an influx of junior staff. IPC review of ward 22T&O has improved recently.

Actions following the meeting:

- Improve wound care documentation including dressing changes on ward 22T&O.
- Improve documentation of intra-operative temperatures.
- High Impact Intervention for SSI to be undertaken.
- One Together audit to be undertaken in NOF surgery.

- Continue surgical site surveillance in NOF for 12 months.
- Consultant to report to clinical governance.

Managing Outbreaks of Infection - Responses to Incidents and Outbreaks

The IPC Team are involved in the management of outbreaks, periods of increased incidence and incidents.

The IPC team monitors all alert organisms to identify trends and potential links between cases based on their location. If links are identified, a Period of Increased Incidence (PII) investigation is commenced and a meeting to discuss potential cases is held within 3 working days wherever possible. This is a manual task and completed without the aid of an automatic surveillance system.

In 2020/21 4 PIIs were declared as outbreaks out of a total 13 PII'S investigated. In addition 49 COVID-19 outbreaks were declared during this time frame.

All outbreaks are discussed for the purpose of shared learning and service development through divisional governance meetings. Recurring themes from these investigations are disseminated through the IPC operational and assurance committees. Lessons learnt are shared with the trust and disseminated through communications.

Action plans that are put in place by the ward manager and/or matron are monitored by the IPC team for compliance, once compliance has been demonstrated the action plans are signed off by the lead nurse or Infection Prevention and Control and the Matron or Head of Nursing for the area.

If further PIIs are linked to the same area, previous action plans are revisited.

COVID 19

Month/Year	Ward	Date first case	Number of pts	Number of staff	Total involved
April 2020	S28/Renal	03.04.2020	38	20	58
April 2020	T6	12.04.2020	9	0	9
April 2020	S23	20.04.2020	11	0	11
June 2020	S32	16.06.2021	0	5	5
August 2020	TRadiology	12.08.2020	0	8	8
October 2020	T6	08.10.2020	8	2	10
October 2020	T7	08.10.2020	10	0	10
October 2020	T9	09.10.2020	5	2	7
October 2020	T15	09.10.2020	11	12	23
October 2020	S24	26.10.2020	23	8	31
October 2020	S27	26.10.2020	17	12	29
October 2020	S22SS/F	27.10.2020	5	4	9
October 2020	ResearchNurses	28.10.2020	0	2	2
November 2020	T11	04.11.2020	26	10	36
November 2020	TMaternity Scanning	06.11.2020	0	5	5
November 2020	S32	07.11.2020	0	10	10
November 2020	TPorters	08.11.2020	0	2	2
November 2020	S25	09.11.2020	23	7	30
November 2020	S28	09.11.2020	7	1	8
November 2020	TRenal	09.11.2020	2	0	2
November 2020	SA&E	10.11.2020	0	9	9

November 2020	T4	23.11.2020	5	2	7
November 2020	T10	27.11.2020	2	2	4
December 2020	T8	01.12.2020	5	4	9
December 2020	S26	02.12.2020	37	27	64
December 2020	T9	05.12.2020	50	5	55
December 2020	SEstates	05.12.2020	0	3	3
December 2020	T7	10.12.2020	23	3	26
December 2020	T17	13.12.2020	0	9	9
December 2020	S25	15.12.2020	7	5	12
December 2020	T19	27.12.2020	0	9	9
December 2020	T10	30.12.2020	9	5	14
January 2021	T6	04.01.2021	9	5	14
January 2021	S28	10.01.2021	17	5	22
January 2021	S35	14.01.2021	3	2	5
January 2021	T4	15.01.2021	7	3	10
January 2021	S26	18.01.2021	32	2	34
January 2021	TAMU	20.01.2021	0	4	4
January 2021	SRenal	25.01.2021	0	7	7
January 2021	S24	25.01.2021	34	10	44
January 2021	S22SS	27.01.2021	3	1	4
January 2021	S27	27.01.2021	0	6	6
January 2021	S23	28.01.2021	33	9	42
January 2021	S25	30.01.2021	4	17	21
January 2021	S21	29.01.2021	7	1	8
January 2021	S22TO	30.01.2021	8	4	12
February 2021	T11	16.02.2021	4	1	5
February 2021	T15	18.02.2021	2	0	2
February 2021	T9	22.02.2021	2	0	2
February 2021	S27	22.02.2021	5	0	5

Other Organisms

Month	Ward	Organism	No. of cases	Typing results
May -20	28N	C.diff	2	Different
July- 20	22 T/O	VRE	2	Same
Sept -20	23 O/H	VRE	6	Different
Oct-20	11	C.diff	2	Different
Oct- 20	26	ESBL	4	Different
Dec-20	6	MRSA	2	Same
Dec- 20	8	C.diff	2	Same
Jan-21	23	C.diff	3	Different
Jan - 21	23	VRE	6	Different
Feb -21	T ITU	Pseudomonas	6	Different
March-21	21/ 24 Maternity	Grp B strep	2	Same but not an outbreak
March-21	T ITU	MRSA	2	Different
March -21	28N	VRE	2	Couldn't Type

Seasonal Illnesses

The UK saw an extremely low number of influenza cases during this winter, and therefore SaTH was not affected as in previous years with seasonal influenza. SaTH had no outbreaks caused by Influenza.

There were also no outbreaks caused by Norovirus.

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

At the Trust infection prevention is included in all job descriptions. All clinical staff receive induction and updated training and education in optimum infection prevention and control practices. This is a process that is also aimed at volunteers. There are leaflets for contractors explaining their responsibilities and external work must be signed off by the IPC team with Estates to ensure appropriate cross infection measures are in place, such as, dust control.

Staff Training & Education

The IPC team deliver numerous training sessions year round. These have included programme of mandatory sessions and corporate induction days. The team have also provided bespoke training sessions on wards and departments so staff do not have to leave their working environment to attending sessions.

Staff Group	Infection Prevention & Control	Hand Hygiene Competence
Add Prof Scientific and Technic	96%	82%
Additional Clinical Services	86%	93%
Administrative and Clerical	100%	88%
Allied Health Professionals	81%	91%
Estates and Ancillary	81%	75%
Healthcare Scientists	100%	85%
Nursing and Midwifery Registered	85%	92%
Medical and Dental	78%	75%
Subject Total	**84%**	**88%**

Road Show 2020

The IPC team was not able to carry out a roadshow in 2020 due to the COVID-19 Pandemic. Therefore, visits to wards and departments were avoided to contain the spread of the virus. The IPC team is looking into carrying an interactive and online education action to ensure the contact with staff in all departments.

Infection Prevention and Control Team/Team Development

The Infection Prevention and Control Team found this challenging this year due to the COVID-19 pandemic as most study leave was cancelled. In February 2020 the IPC Team had an initial Team development session with an executive coach and master NLP Practitioner, these sessions will be started again in May 2021 & will cover the following:
- to develop a clear vision for the team over the coming 12 months
- to fully understand the key priorities for the team and what is expected nationally and locally
- to consider how the team works at the moment and this can be maintained/ improved
- to consider how as individuals and a team you continue to influence key stakeholders within the Trust to deliver the priorities
- to identify personal development & growth

One Infection Prevention Nurse has been completing the Infection Prevention Course at Birmingham City University during the pandemic. This has been done remotely.

Criterion 7:

Provide or secure adequate isolation facilities.

The average proportion of single rooms available in NHS acute trusts in England in 2016/17 was 30.2%. The average for single rooms with en-suite was 20.7% (Public Health England).

SaTH are significantly below the national average at 19.1% overall (*including* Women's and Children's) and with only 7.5% en-suite. This significantly impacts the ability to isolate all patients who should be isolated according to national guidelines. Therefore when side room capacity is low a risk assessment is completed for the appropriate allocation.

A risk assessment tool is available to help staff in making these decisions and ensuring that practice is consistent. The IPC team work closely with ward staff and Clinical Site Managers to ensure the most effective use of side rooms according to risk.

The trust has procured 12 Redi-rooms, a mobile "pop up" isolation facility to help facilitate the timely isolation of patients who require it. The Trust have also procured and installed four more permanent rigid plastic Bioquell pods in the Critical care unit at the Royal Shrewsbury Hospital to enable isolation and segregation of patients. A further two pods have are planned for the critical care unit at the Princess Royal Hospital.

Criterion 8:

Secure adequate access to laboratory support as appropriate

Laboratory services for SaTH are located in the purpose built Pathology Laboratory on-site at both sites (Royal Shrewsbury Hospital & Princess Royal Hospital). The Microbiology Laboratory has full Clinical Pathology Accreditation (CPA).

The Infection Prevention Nurses work closely with all Consultant Microbiologists and the Clinical Scientists. Two of the consultant microbiologists have retired this year. The Trust has managed to appoint a consultant clinical scientist to one of these posts and she has been heavily involved in developing the COVID-19 testing in the laboratory. The retired microbiologists are doing some part-time work but we are still one WTE consultant microbiologist short. Attempts to appoint to this post have so far been unsuccessful. This reflects a shortage of consultant microbiologists UK wide. This impacts on the IPC team because the microbiologists are extremely busy and have less time available to assist with IPC.

Despite this the microbiology department were heavily involved in both the laboratory side of developing COVID-19 testing and giving IPC advice and assisting with outbreak management throughout the pandemic. A number of technical staff had to be recruited to assist with COVID-19 testing. The laboratory opening hours were extended from 08.00 - 17.15 to 06.00 – 20.00 seven days a week and on call staff came in to read COVID-19 test results each evening at 10 pm to facilitate rapid reporting of results. One of the Clinical Scientists reported case numbers to the Incident Management Team every morning and evening throughout this period.

Criterion 9:

Have and adhere to policies, designed for the individual's care and provider organisations that help to prevent and control infections

The overarching policies are written in line with the Trust Governance policy which outlines requirements for responsibility, audit and monitoring of policies to provide assurance that policies are being adhered to. Both policy and manual are available for staff to view on the Trust intranet.

The IPC have a rolling programme of policies which require updating each year. In addition policies are updated prior to review date if national guidance changes.

In 2020/21 the team updated the following IPC polices:

- Influenza Seasonal Flu
- Diarrhoea and Vomiting including Norovirus
- COVID 19 – This was updated various times throughout the year in the line with guidelines

An Infection Prevention & Control A-Z of Common Infections is available on the trust's intranet. This significantly enhances the quick location of key infection prevention guidance by our front line staff in regards to infection control common infections. Staff also have a direct link from the intranet to the Royal Marsden polices on nursing procedures.

Criterion 10:

Providers have a system in place to manage the occupational health needs of staff in relation to infection.

The Trust has a contract with TP occupational Health who are contracted to carry out pre placement health assessment and immunisation needs.

TP Occupational Health works alongside the Workforce Team who are responsible for the staff Influenza vaccination program. All front staff are offered influenza vaccination to protect themselves and the patient they look after. The flu vaccination campaign was running from September 2020 to end of February 2021. During this time 73.5% of all patients facing staff was vaccinated.

In 2020/2021 introduction of the COVID-19 vaccination for staff was undertaken by Shropshire, Telford & Wrekin Sustainability and Transformation Partnership. All front line staff (6626 staff) was offered Covid-19 vaccination. As for end of March 2021 81.96% (5431 staff) were immunised with the 1st dose.

Infection Prevention and Control Team & Shropshire Community Trust occupational health were involved in track and trace of COVID-19 positive staff.

SECTION 5: IPC FOCUS FOR 2021 - 2022

Infection Prevention & Control is a priority for The Shrewsbury and Telford Hospital (SaTH). Keeping our patients safe from avoidable harm is everyone's responsibility. Our focus for 2021/22 will be:

- Continuing work related to the COVID-19 pandemic. We will use the newly published NHS IPC Board Assurance Framework to ensure that all guidance and risks relating to this complex problem are addressed and that gaps in compliance are promptly acted on. This will be presented at IPC Operational Group and IPC Assurance Committee. It will also be included in a Quarterly IPC Report to Trust Board.
- Purchasing an automated surveillance system ICNet which will assist us in identifying and acting on clusters of infections including COVID 19, MRSA, ESBL, C diff and other infections
- IPC guidelines for COVID-19 will be updated continuously in line with new guidance from PHE.
- Ongoing training in appropriate use of PPE for COVID-19
- Advising on decontamination of environment and equipment used for COVID-19 patients
- Monitoring of possible health care acquired cases of COVID-19 with rapid action to control possible clusters
- We will also be working with the Trust management teams to increase social distancing for staff and patients and enhance isolation capacity for patients both for patients with infection and those that need to shield against infection.
- We will take part in developing safe systems for restoration of elective activity, to allow this to continue safely while protecting patients from acquiring COVID-19
- We will be involved in planning for further waves of COVID-19 and also controlling possible simultaneous influenza and COVID-19 outbreaks over the winter months
- This will include ensuring a high level of immunisation of staff with influenza vaccine before winter.
- Antimicrobial Resistance, Lower Urinary Tract Infections in Older People
- Continue to address and monitor outstanding estates maintenance work across the Trust
- Reduce the incidence of Clostridium difficile infection in SaTH based on a strong health economy partnership approach including surveillance, implementation of best practice, audit and root cause analysis
- Reduce Blood culture contamination rates

SECTION 6: CONCLUSION

Overall, our success is measured by our compliance with the Health Act, which encompasses all aspects of infection prevention and control, including management systems, environment, cleaning, training and policies to protect patients and staff. Our current compliance (as of 13/4/21) is very high at 96%. Outstanding issues include lack of an automated surveillance system, which we will be getting in 2021, levels of IPC training at 84%, and low levels of isolation facilities.

We have also completed 97% of our IPC program from last year. Incomplete tasks will be addressed in the first three months of the 2021/22 programme.

The COVID-19 pandemic has proved a huge challenge for the NHS but has also shown how well our staff are able to rise to that challenge, with all departments working together flexibly to provide a safe environment for patients and staff while dealing with many more ventilated patients than normal. Restoration of normal services will provide new hurdles and we must also be prepared for further waves. While this will make up a large part of our workload for 2021/22 we also need to ensure that we monitor and reduce other infections and that our staff maintain a high level of compliance with training.

SECTION 7: REFERENCE

Department of Health: The Health and Social Care Act 2008: Code of Practice on the prevention and control of infections and related guidance.

https://www.gov.uk/government/publications/the-health-and-social-care-act-2008-code-of-practice-on-the-prevention-and-control-of-infections-and-related-guidance

Department of Health: Improving outcomes and supporting transparency

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/545605/PHOF_Part_2.pdf

Infection Prevention Society Audit tools. http://www.ips.uk.net/professional-practice/quality-improvement-tools/quality-improvement-tools/

Appendix 1: Infection Prevention and Control Structure

The Shrewsbury and Telford Hospital
NI-IS Trust

Hayley Flavell
Director Infection Prevention and Control

Kara Blackwell
Deputy Director of Nursing

Jennie Dunn
Team Secretary Infection Prevention and Control

Janette Pritchard
Lead Nurse Infection Prevention and Control

Michelle Ellis
Team Secretary Infection Prevention and Control

Kelly Pardy
Specialist Nurse Infection Prevention and Control

Emilia Chrusciel
Specialist Nurse Infection Prevention and Control

Avril O'Gorman
Specialist Nurse Infection Prevention and Control

Marlene Goncalves
Infection Prevention and Control Nurse

Lynn Marston
Infection Prevention and Control Surveillance Nurse

Dr Stephanie Damoa-Siakwan
Lead Consultant Microbiologist

Dr Patricia O'Neill
Consultant Microbiologist (IPC Doctor Bank)

Dr Graham Harvey
Consultant Microbiologist

Dr Michael Brian
Consultant Microbiologist

Dr Meera Challapilia
Medical Registrar Microbiology

Dr Moira Kaye
Consultant Clinical Scientist Microbiology

Yasar Hussain
Clinical Scientist Microbiology

Appendix 2: Infection Prevention and Control Committee (IPCC) Strategic Links

TH Committee Structure (v2 Nov-20)