

Director of Infection Prevention and Control Annual Report 2019/2020



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Introduction from the Director of Infection Prevention and Control

Infection prevention and control (IPC) is fundamental in improving the safety and quality of care provided to patients. Healthcare Associated Infection (HCAI) can cause significant harm to those infected. As a result, IPC remains a key priority for the Royal Orthopaedic Hospital NHS Foundation Trust (ROH).

I am proud to be able to present the Director of Infection Prevention and Control's annual report for 2019/2020

The NHS continues to experience unprecedented challenge clinically, operationally, and economically. However, our staff have sustained a culture of continuous improvement which is both patient-centered and safety-focused. Our vision is to constantly provide the highest possible standards of care across our healthcare economy.

The Trust recognises that the effective prevention and control of HCAIs is essential to ensure that patients using services at ROH 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 (see table of criteria on following page). The IPC agenda has continued to be strengthened with a highly visible and flexible Infection Prevention Team (Infection Prevention Nurses, Surgical Site Infection HCA and an administrator)

The development of our IPC nurses is in line with the national core competency framework, developed by the Infection Prevention Society and endorsed by the Department of Health (2011).

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 (updated 2015), at the heart of this law there are two principles:

To deliver continuous improvements of care and that it meets the need of the patient. With this in mind patient safety remains the number one priority for the Trust. Infection Prevention is one of the key elements to ensure ROH has a safe environment and practice which is reflected in the Trust's vision, values and objectives with milestones turning the vision into a reality.

Improvements in health and care are linked and the NHS and its public, private, and voluntary sector partners can only provide the best and most effective service for patients and public when we work together to achieve their objectives.

This report summarises the combined activities, commitment and hard work of the IPC Team, Board colleagues, all staff, governors and volunteers across ROH, Clinical Commissioning Groups (CCG) and Public Health England (PHE) in relation to the prevention of avoidable HCAIs.

Garry Marsh

Director of Nursing and Governance / Director of Infection Prevention and Control

Hygiene Code Criteria and Contents of report

1. 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.
 - a. **The Director of Infection Prevention and Control**
 - b. **The Infection Prevention and Control Team**
 - c. **Committee Structures and Assurance Processes**
 - d. **Trust Board**
 - e. **Quality and Safety Committee**
 - f. **Infection Prevention and Control Committee**
 - g. **Surveillance of Healthcare Associated Infection (HCAI)**
 - h. **Methicillin resistant staphylococcus aureus blood stream infections (MRSA)**
 - i. **Methicillin-sensitive staphylococcus aureus blood stream infections (MSSA)**
 - j. **Clostridium Difficile Infection (CDI)**
 - k. **ROH CDI Action Plan**
 - l. **Gram negative – bloodstream infections – Escherichia coli (E-coli)**
 - m. **Vancomycin/glycopeptides resistant enterococci (vre/gre)**
 - n. **Carbapenemase producing enterobacteriaceae (cpe)**
 - o. **Tuberculosis (tb)**
 - p. **Norovirus outbreaks**
 - q. **Covid-19**
 - r. **Audit programme to ensure key policies are implemented**
 - s. **Audits of hand hygiene practice**
 - t. **Staff information and training**
 - u. **Seasonal Staff Influenza Vaccination Campaign**
 - v. **IPC Link Workers**
2. Provide and maintain a clean and appropriate environment in managed premises that facilitates the prevention and control of infection
 - 2.1 Providing a clean safe environment**
 - 2.2 Water Systems Management**
 - 2.3 Management of Decontamination**
3. Ensure appropriate antibiotic use to optimise patient outcomes and to reduce the risk of adverse events and antimicrobial resistance
4. 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
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
 - 5.1 Surgical Site Infection (SSI)**
6. Systems to ensure that all care workers (including contractors and volunteers) are aware of the discharge of and discharge their responsibilities in the process of preventing and controlling infection
7. Provide or secure adequate isolation facilities
8. Secure adequate access to laboratory support as appropriate
9. Have and adhere to policies, designed for the individual's care and provider organisations that help to prevent and control infections

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

COVID-19 and this data

It is clear that the global pandemic of COVID-19 is having an effect on the number of cases reported to the surveillance of BSI and CDI. From an analysis of voluntary microbiology surveillance, there has also been a reduction in the number of cases of other bloodstream infections, not only those covered by the mandatory surveillance. In response to the pandemic, many elective procedures in hospitals were cancelled. Hospital patient populations changed dramatically in their composition; in order for us to understand the true incidence rate of infections, we will need to consider closely these changes.

Compliance criterion 1

- 1. 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.**

1a) The Director of Infection Prevention and Control

The Director of Infection Prevention and Control (DIPC) is a role (whether by that name or another) required by all registered NHS care providers under current legislation (The Health and Social Care Act 2008). The DIPC will have the executive authority and responsibility for ensuring strategies are implemented to prevent avoidable HCAs at all levels in the organisation.

The DIPC will be the public face of IPC and will be responsible for the Trust's annual report, providing details on the organisations IPC programme and publication of HCAI data for the organisation. The DIPC will offer commitment to quality and patient safety, good communication and reporting channels and access to people with expert prevention and control advice. At the ROH the Director of Nursing and Governance holds the role of DIPC.

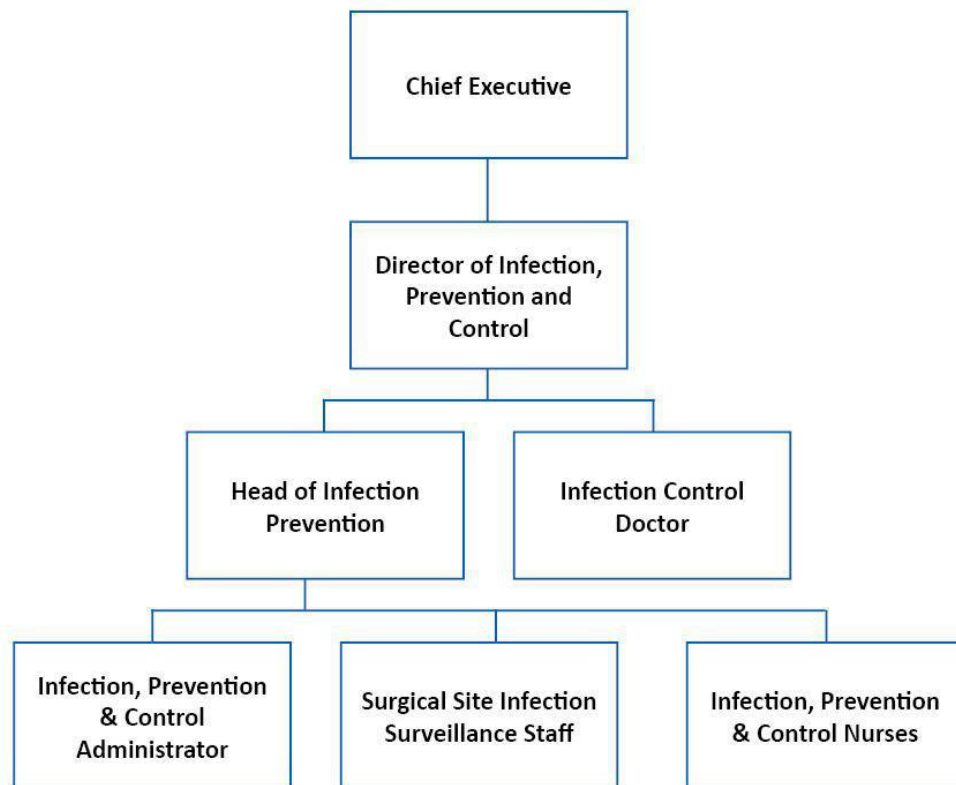
1b) The Infection Prevention and Control Team

The IPC Team is led by the Matron for IPC and is supported by Infection Prevention Nurse Specialists, Surgical Site Surveillance Health Care Assistant and an Administrator.

The IPC service is provided through a structured annual programme of works which includes expert advice, education, audit, policy development and review and service development. The Trust has 24 hour access to expert Consultant Microbiology advice and support via a Service Level Agreement (SLA) with the University Hospital Birmingham (UHB).

The DIPC has overall responsibility for the IPC Team that works collaboratively alongside the front-line clinical leaders at the Trust.

IPC Team Structure



1c) Committee Structures and Assurance Processes



1d) Trust Board

The Code of Practice requires that the Trust Board has a collective agreement recognising its responsibilities for IPC. The Chief Executive (CE) has overall responsibility for the control of infection at ROH. IPC matters.

1e) Quality and Safety Committee

The Quality and Safety Committee (QSC), chaired by a Non - Executive Director (NED), is a sub-committee of the Trust Board which meets monthly is responsible for ensuring that there are processes for ensuring patient safety and continuous monitoring and improvement in relation to IPC. The QSC receives assurance from the IPCC that adequate and effective policies, processes and systems are in place. This assurance is provided through a regular process of reporting. The IPC Team provide a monthly report on surveillance and outbreaks within the Quality Account.

1f) Infection Prevention and Control Committee

IPCC, chaired by the DIPC, provides direct assurance to the DIPC. The main objective of the IPCC is to provide a strategic drive in ensuring improved performance in relation to HCAs.

1g) Surveillance of Healthcare Associated Infection (HCAI)

Surveillance is undertaken on a number of alert organisms and mandatory reporting to PHE is undertaken. Performance is monitored by Birmingham and Solihull Clinical Commissioning Group (CCG). Overall performance at ROH is excellent.

1h) Meticillin resistant staphylococcus aureus blood stream infections

S. aureus is an organism harmlessly carried by around 30% of the healthy population. Its importance is that it is a leading cause of surgical site infection (post operative wound infection).

Infection associated with indwelling medical devices, particularly intravascular devices, is a major cause of morbidity and occasionally, mortality. The risk of prosthetic joint infection and other orthopaedic implants is a particular concern in the patient population that ROH treats.

MRSA is a type of staph aureus that is resistant to the most commonly used group of antibiotics for perioperative prophylaxis i.e. prevention of post operative wound infection. It is less commonly carried than the more sensitive strains.

ROH continues to mitigate the risk of MRSA infection by active pre admission screening and isolation of colonized patients, in keeping with national guidance. Screening results also enables effective use of appropriate prophylactic antibiotics in colonized patients.

The ROH IPC also comply with national guidance to reduce the risk of blood stream infection. Low rates of blood stream infection therefore offer assurance of:

- Effective screening strategies

- Management and care of devices
- Antibiotic prophylaxis
- Compliance with national guidance

For the period covered by this report there have been zero cases of MRSA bacteraemia at ROH which is the same compared to the previous year;

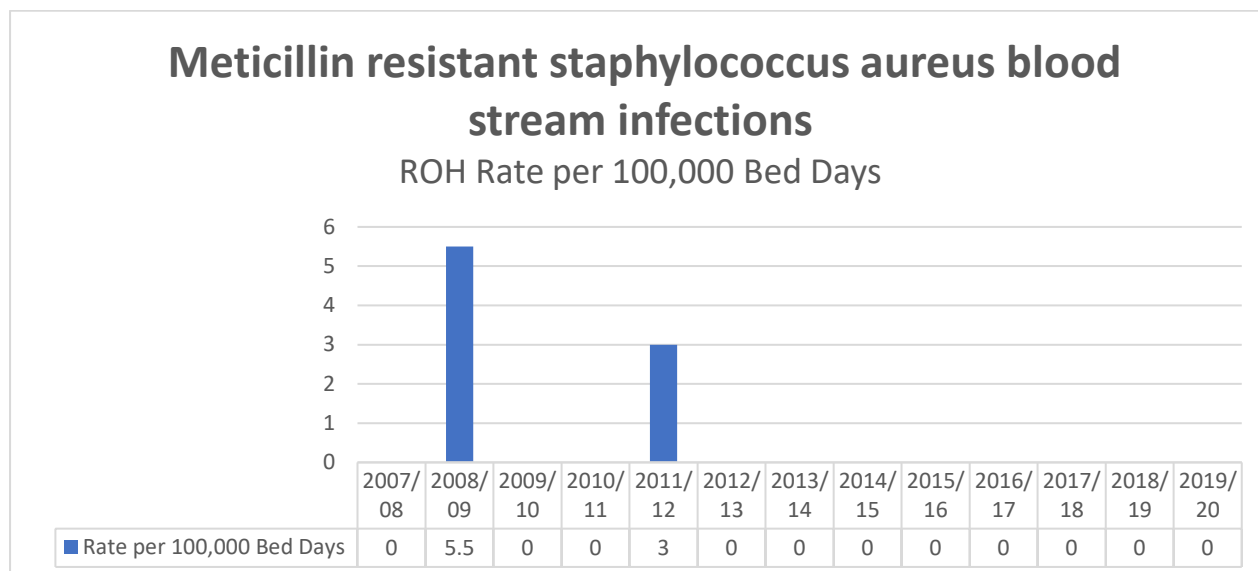
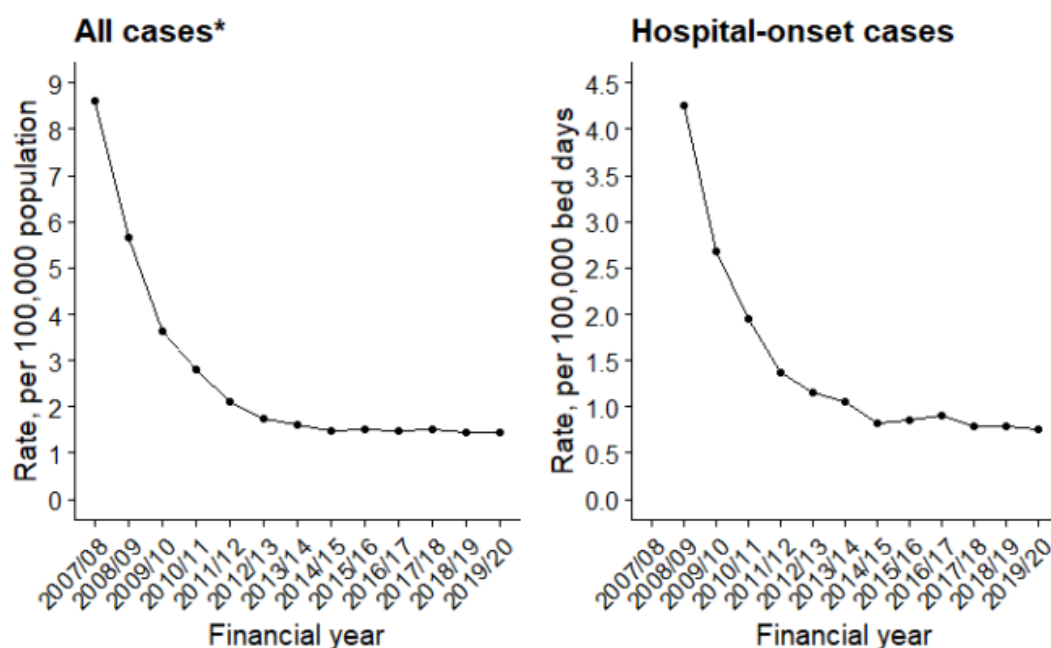


Figure 16: Trends in the all case and hospital-onset rate of MRSA bacteraemia, England: 2007/08 to 2019/20



Epidemiological analyses of *Staphylococcus aureus* bacteraemia data

There has been a considerable decrease in the incidence rate of all reported MRSA bacteraemia since the enhanced mandatory surveillance of MRSA bacteraemia began in April 2007 (figures 4a, table S4a). The incidence rate of all reported cases fell by 85% from 10.2 cases per 100,000 population April to June 2007 to 1.5 cases per 100,000 in January to March 2014. The rate has subsequently decreased to 1.4 cases per 100,000 population between January to March 2014 and January to March 2020. A similar trend was observed with the incidence rate of hospital-onset cases (figures 4b, table S4a). There was a steep decrease of 79% from 4.9 cases per 100,000 bed-days in April to June 2008 to 1.0 January to March 2014. Subsequently, between January to March 2014 and January to March 2020, the rate decreased to 0.8 cases per 100,000 bed-days. Comparing the most recent quarter (January to March 2020) to the same period in the previous year (January to March 2019) shows an 11.7% increase in the count of all reported cases from 179 to 200, while the incidence rate increased 11.7% from 1.3 to 1.4 cases per 100,000 population. The count of hospital-onset MRSA bacteraemia cases increased 21.7% from 60 to 73 which corresponds to an increase in the incidence rate of 21.7% from 0.7 to 0.8 per 100,000 bed-days. Community-onset MRSA bacteraemia cases increased 6.7% from 119 to 127, while the community-onset incidence rate remained steady at 0.9 cases per 100,000 population.

A total of 13,007 *Staphylococcus aureus* bacteraemia cases were reported to PHE in 2019/20 through both the meticillin resistant *S. aureus* (MRSA) bacteraemia and meticillin-susceptible *S. aureus* (MSSA) bacteraemia surveillance schemes. This represents a 0.8% increase in the numbers of bacteraemias caused by *S. aureus* from 2018/19 ($n = 12,903$) and a 31.6% increase from 2011/12 ($n = 9,883$) when MSSA reporting was made mandatory. In 2019/20, 6.3% ($n = 814$) of *S. aureus* bacteraemia reports were caused by MRSA. This is a decrease from 2011/12, when 11.3% ($n = 1,116$) of reports were caused by MRSA and a 0.9% increase from 2018/19 when 807 infections were caused by MRSA. At its peak (2007/2008) MRSA bacteraemias accounted for approximately 40% of all *S. aureus* bacteraemia cases in England (Johnson AP 2005).

1i) Meticillin-sensitive staphylococcus aureus blood stream infections

Meticillin-sensitive *Staphylococcus aureus* is a type of bacterium which lives harmlessly on the skin and in the noses, in about one third of people. People who have MSSA on their bodies or in their noses are said to be colonised.

MSSA colonisation usually causes them no problems, but can cause an infection when it gets the opportunity to enter the body. This is more likely to happen in people who are already unwell. MSSA can cause local infections such as abscesses or boils and it can infect any wound that has caused a break in the skin e.g. grazes, surgical wounds. MSSA can cause serious infections called septicaemia (blood poisoning) where it gets into the bloodstream.

Following a Secretary of State announcement on 5 October 2010, there was a mandatory requirement for all NHS acute trusts to report MSSA bacteraemia. This applied to all cases diagnosed after 1 January 2011.

Epidemiological analyses of Methicillin-Sensitive Staphylococcus aureus (MSSA)

Rates of Methicillin-Sensitive Staphylococcus aureus (MSSA) bacteraemia continued to increase moderately from 2011/12 when the surveillance was introduced. The rate increased marginally from 21.6 cases per 100,000 population in 2018/19 to 21.8 per 100,000 population in 2019/20. In contrast to MSSA, rates of MRSA bacteraemia and CDI have remained low in comparison to rates at their peak, at 1.5 and 23.5 per 100,000 population, respectively in 2019/20. However, for 2019/2020 CDI saw an 11% increase on the previous year, this may have reflected an unusually low year in 2018/19 rather than the beginning of a rising trend in 2019/20.

A total of 12,193 cases of MSSA bacteraemia were reported by NHS acute Trusts in England between 1 April 2019 and 31 March 2020. This is an increase of 0.8% from 2018/19 (n = 12,096), and an increase of 39.1% from 2011/12 (n = 8,767). Figure 20 shows the trends in rates of MSSA cases for all cases and hospital-onset cases from 2011/12 to 2019/20. The rate of all MSSA cases per 100,000 population, per year, has risen from 16.4 in 2011/12 to 21.8 in 2019/20.

MSSA blood stream infections cases continue to be monitored by ROH. Currently this data collection is part of national surveillance only. In total this year there has been 1 hospital associated case(post-48 hours after admission) reported and 1 pre - 48hour case reported

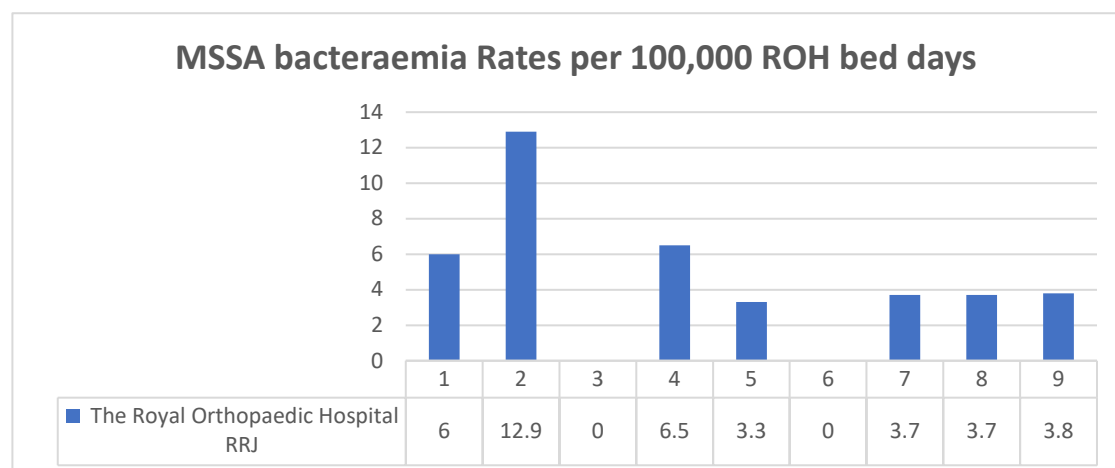
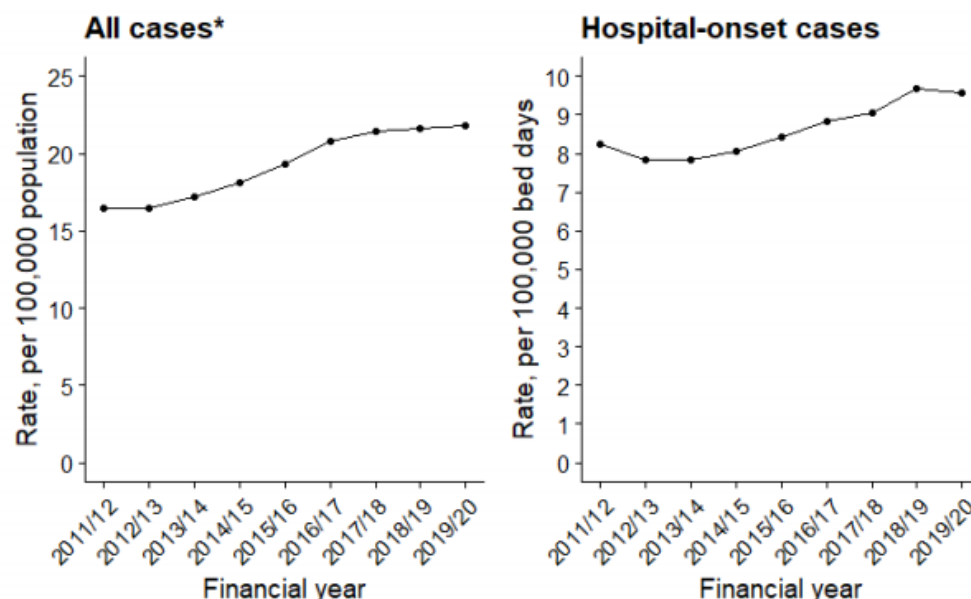


Figure 20: Trends in the rate of MSSA bacteraemia, England: 2011/12 to 2019/20



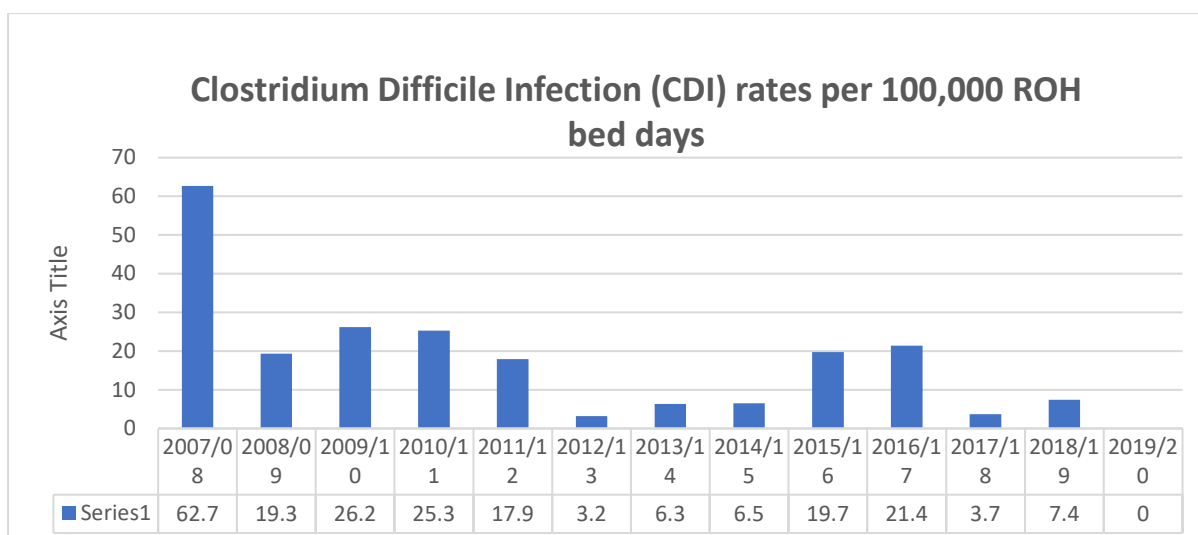
1j) Clostridium Difficile Infection (CDI)

Up to and including 2018/19, NHS organisations have continued to be required to demonstrate year on year reductions in Clostridium difficile Infection (CDI) cases. However, as published data shows, the rate of improvement for CDI has slowed over recent years. Infection prevention and control experts from within the NHS and from Public Health England advise that this is likely to be due to a combination of factors, including the biology and epidemiology of the Clostridium difficile (CD) organism.

There are indications that, for some organisations at least, the level of CDIs may be approaching their irreducible minimum level at which these infections will occur regardless of the quality of care provided. This can occur due to the fact that some people carry CD in their bowel and will develop symptoms due to their underlying clinical conditions or as a consequence of the antibiotics they have to take. Put simply, some infections are a consequence of factors outside the control of the NHS organisation that detected the infection.

Cases of CDI that are considered to have been acquired in that the Trust are defined as sample taken “on or after 48 hours of admission”.

No case was apportioned to the ROH in 2019/2020.

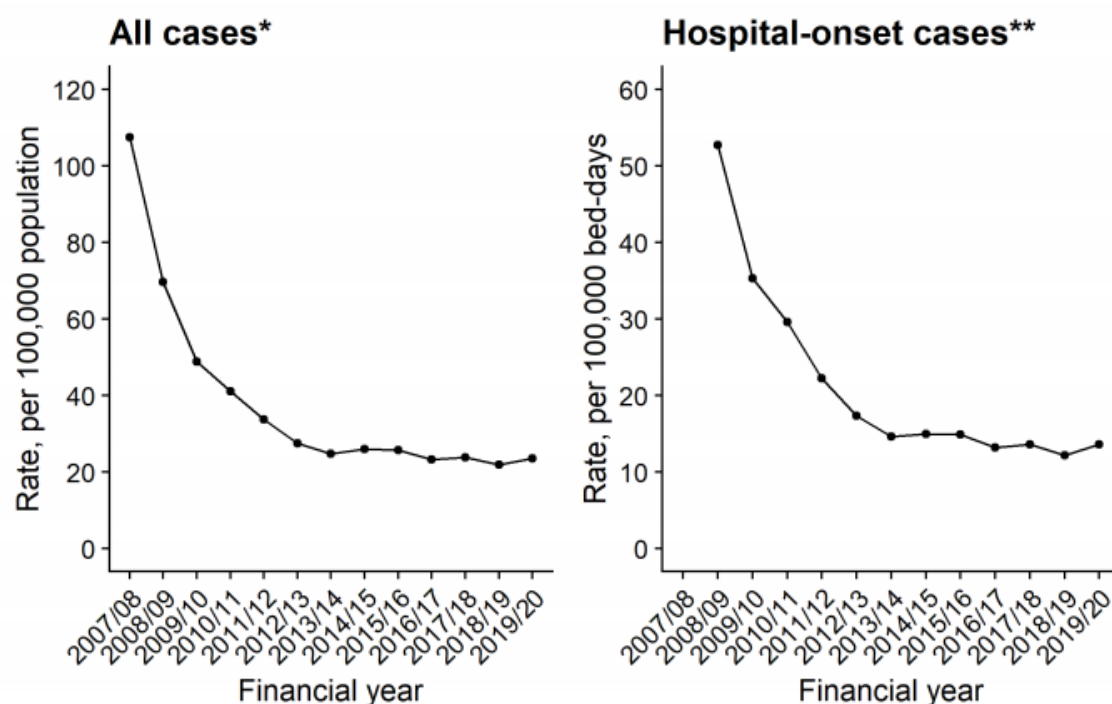


Epidemiological analyses of *Clostridium difficile* infection data (England)

A total of 13,177 cases of *Clostridioides difficile* infection were reported by NHS trusts in England between 1 April 2019 and 31 March 2020. This is a small increase of 7.4% from 2018/19 (n = 12,274), and a decrease of 76.3% from 2007/08 (n = 55,498). Figure 17 shows the trends in rates of CDI cases for all cases and hospital-onset cases from 2007/08 to 2019/20. The rate of all CDI cases per 100,000 population, per year has fallen from 107.6 in 2007/08 to 23.5 in 2019/20.

Between 2007/08 and 2012/13 rates of CDI fell rapidly. Since 2012/13 there has been a fluctuation around the same rate. The rapid decline in the rate of all cases of CDI has been mirrored in hospital-onset cases, except for the most recent year which saw a substantial increase in rate on the preceding year. However, the decline in community-onset cases has not been so rapid and community-onset cases now constitute 64.3% of cases. Many of the interventions aimed at the reduction of CDI rates were targeted at the hospital setting, which likely explains the greater reduction in hospital-onset cases compared to community-onset cases. However, the division of cases into hospital-onset and community-onset cases does not account for the effect of any prior admissions to hospital which could increase the risk of CDI. For this reason, and to better align CDI surveillance in England with that performed by ECDC and CDC, reporting of information on prior trust exposure was introduced in April 2017.

Figure 24: Trends in the rate of *C. difficile* infection, England: 2007/08 to 2019/20



* Mid-year population estimates for 2019/20 were not available at time of publication and so population data for 2018/19 were used as a proxy.

1k) ROH CDI Action Plan

Preventing and controlling the spread of CDI is a vital part of the Trust's quality and safety agenda by a multifaceted approach and the proactive element of early recognition and isolation of CDI toxin positive cases and of those cases that are CDI carriers (PCR positive).

In all cases control measures are instigated immediately, and RCA's are reviewed. Each inpatient is reviewed by the IPC nurse regularly. In cases of Bone Infection Service (BIS) patients, they form part of the weekly multi-disciplinary review where the patients' case is discussed including antibiotics and where necessary feedback to ward doctors. All HCAI CDI cases are subject to a post infection review and each case is discussed with the Lead IPC Nurse at Birmingham and Solihull Clinical Commissioning Group (BSolCCG) to determine the avoidability (lapses in care) with feedback given to IPCC and relevant Divisions. The Divisions action Duty of Candor where necessary.

ROH closely monitors periods of increased incidents (PII) of patients with evidence of toxigenic *Clostridium Difficile* in any ward or area. The definition of a PII is 2 or more patients identified with evidence of toxigenic *Clostridium Difficile* within a period of 28 days and associated with stay in the same ward or area. Should this occur samples are obtained and submitted to Public Health England for ribotyping. Samples with the same ribotype are then examined further variable number tandem repeat (VNTR). This helps to identify wards or areas where patient to patient transmission is likely to have occurred, with enhanced focus on control measures, with decanting and deep-cleaning of the patient areas if necessary.

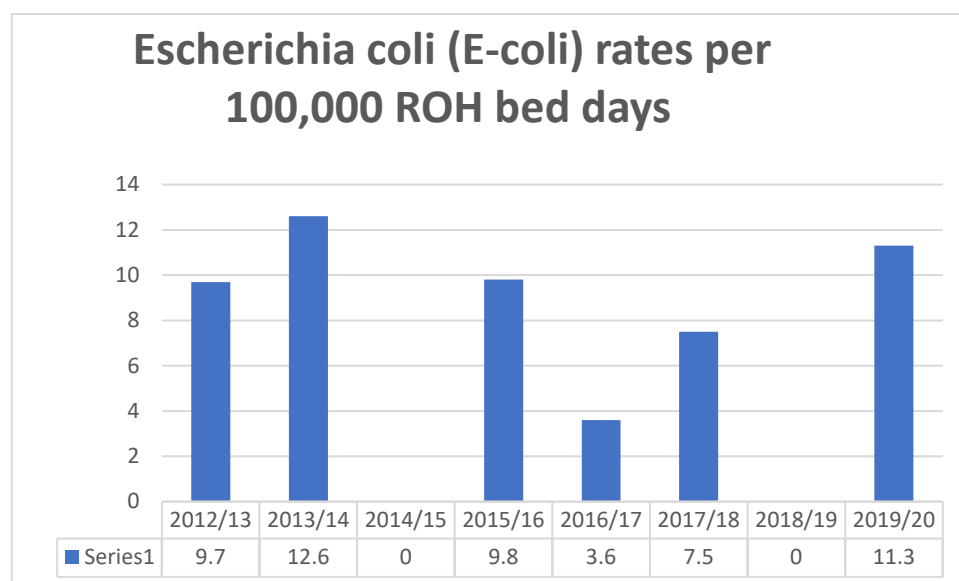
1l) Gram negative – bloodstream infections – Escherichia coli (E-coli)

Gram negatives (GN) are a group of organisms that form part of the normal gut flora. They are particularly associated with urinary tract infection (UTI) which may also lead to blood stream infection (BSI). This risk may be increased by inappropriate care and use of urinary catheters. The very nature of orthopaedic surgery entails use of urinary catheters and therefore the stringent management of catheters is paramount to clean safe care. E-Coli is the most commonly seen representative in this group.

Escherichia coli (E. coli) bacteria are frequently found in the intestines of humans and animals. There are many different types of E. coli, and while some live in the intestine quite harmlessly, others may cause a variety of diseases. The bacterium is found in faeces and can survive in the environment. E. coli bacteria can cause a range of infections including urinary tract infection, cystitis (infection of the bladder), and intestinal infection. E. coli BSI may be caused by primary infections spreading to the blood.

The Secretary of State for Health, (2017) launched an ambition to reduce healthcare associated GN bloodstream infections (BSIs) by 50% by 2021. Gram-negative BSIs are believed to have contributed to 5,500 NHS patient deaths in 2015. The initial focus to support this ambition is on E-coli BSI reduction. Enhanced surveillance of E. coli BSI has been mandatory for NHS acute trusts since June 2011 and is reported monthly to PHE.

Three cases were apportioned to the Trust in 2019/2020.



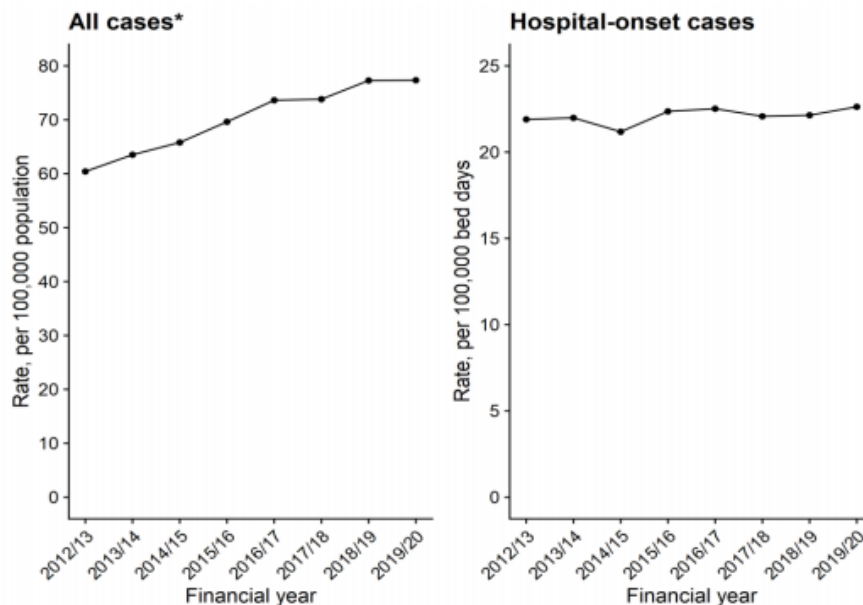
Epidemiological analyses of Gram- negative bacteraemia data (England)

E. coli bacteraemia

A total of 43,294 cases of E. coli bacteraemia were reported by NHS trusts in England between 1 April 2019 and 31 March 2020. Of the 43,294 E. coli cases, 7,812 (18.0%) were hospital-onset. The total number of cases reported in 2019/20 is broadly similar to 2018/19 (n = 43,262), and an increase of 34.0% from 2012/13 (n = 32,309). Figure 1 shows the trends in the rates of E. coli cases

from 2012/13 to 2019/20. The rate of total *E. coli* cases per 100,000 population has risen from 60.4 in 2012/13 to 77.3 in 2019/20 (Table 1).

Figure 1: Trends in the rate of *E. coli* bacteraemia in England: 2012/13 to 2019/20



*2019/20 population data were not available at time of preparation and 2018/19 population data were used in place.

1m) Vancomycin/glycopeptides resistant enterococci (vre/gre)

Enterococci are part of the normal bowel flora and can cause urinary tract and blood stream infections.

VRE/GRE may be found in the healthy population thought to reflect inappropriate use of antibiotics in farming.

Mandatory surveillance was discontinued in 2013.

For the period covered in this report there have been zero cases of GRE at ROH which is the same compared to the previous year.

1n) Carbapenemase producing enterobacteriaceae (cpe)

These are a sub-set of gram negatives (see above section) which are particularly resistant to antibiotics. They are seen commonly in the Indian subcontinent and in some Medeteranean countries which have historically had a poor record on antimicrobial stewardship and IPC.

There is an increasing concern nationally about their spread in healthcare.

PHE published a toolkit in 2013 to control the spread in healthcare and onwards in the community. ROH adhere to the toolkit.

For the period covered in this report there have been zero cases of CPE at ROH which is the same compared to the previous year.

1o) Tuberculosis (tb)

Tuberculosis (TB) is an infection caused by a bacterium belonging to the *Mycobacterium tuberculosis* complex. TB is a notifiable disease in the UK. Suspected and confirmed diseases must be notified within three working days. It is a serious disease that can affect most organs but often presents as a lung infection. In the context of ROH practice it can also cause joint, bone and spinal infection. For the period covered in this report ROH had zero cases of TB infection.

1p) Norovirus outbreaks

Norovirus causes diarrhea and is highly infectious. The virus is easily transmitted through contact with infected individuals from one person to another or from their environment through contamination. In hospital this environmental risk is considerable and outbreaks are common. Management therefore relies on prompt recognition of symptoms, robust isolation and IPC procedures as well as fastidious environmental cleaning. For the period covered in this report ROH had no confirmed cases of Norovirus.

1q) Covid-19

The novel respiratory coronavirus SARS-CoV-2 which causes Coronavirus Disease 2019 (COVID-19) emerged in Wuhan, China in December 2019. The first cases in the UK were confirmed in late January 2020. COVID-19 surveillance in the UK has been on-going since January 2020. The work of the IPC team was significantly impacted by the COVID-19 pandemic from mid-January 2020, initially with the management of potential cases of SARS-CoV-2 infection as a high consequence infectious disease (HCID), and then as significant numbers of cases were managed in the Trust in March 2020 onwards.

1r) Audit programme to ensure key policies are implemented

The ROH has a programme of audits in place undertaken by both clinical areas and the IPC Team to provide assurance around practice and consistent compliance with evidence-based practice and policies. Where a period of increased incidence occurs / risks are identified the IPC Team undertake additional audits in accordance with risk requirement. Action plans are devised by areas where issues are highlighted and these are managed and monitored within the divisions and escalated to IPCC and upwardly reported through the robust ROH Governance structure.

1s) Audits of hand hygiene practice

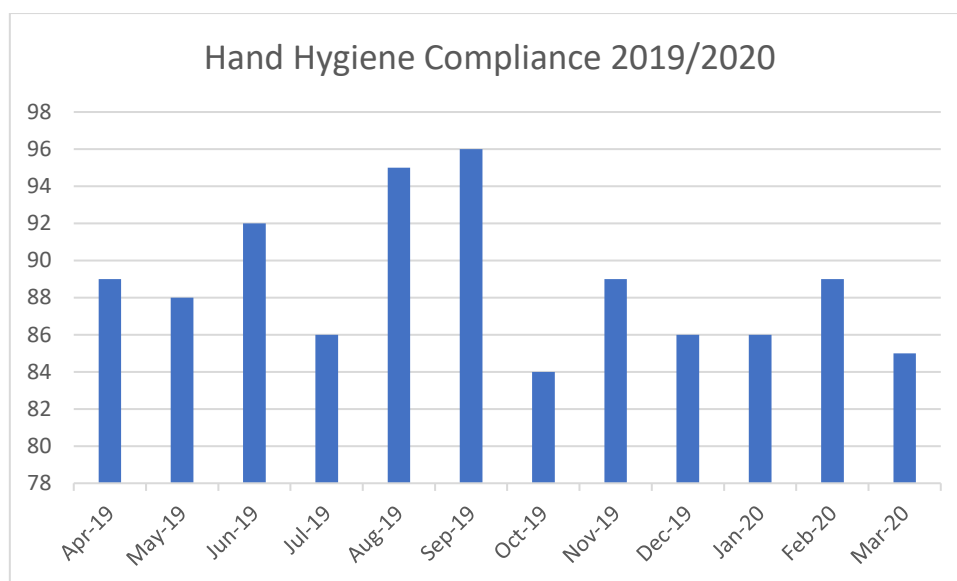
Hand hygiene continues to be included in the audit programme. The IPC Link Nurses perform 'Glow & Tell' training and assessments on hand hygiene within their areas.

Hand hygiene is audited across all wards and departments, on a monthly basis, following the WHO 5 Moments of Hand Hygiene.

The Trust continues to focus on four main components:

Alcohol hand rubs at point of care prominently positioned by each patient so that hands can be cleaned before and after care within the patient's view.

Audit of hand washing practice at least monthly.



Patients are encouraged to challenge staff if they have any doubts about hand hygiene and in cases of repeated non-compliance, escalation of concerns.

Raised awareness of hand hygiene and the 'Bare below the elbow' dress code

Your 5 Moments for Hand Hygiene



1t) Staff information and training

- The IPC Team has provided mandatory hand hygiene training for all ROH employees through induction days, mandatory study days, and ward-based enhanced training.
- The IPC Team facilitate bi-monthly meetings for infection prevention link staff (from each ward and department)
- The IPC Team facilitate an annual study day for all interested employees from ROH.
- Grab Packs for hand hygiene, Influenza, MRSA, personal protective equipment and CPE have been developed and implemented across ROH to support staff with effective application from theory to practice within their areas of work.
- A bespoke hand hygiene training session has been developed for estates and facilities which will be implemented in 2019/20.
- The IPC Team continues to work collaboratively with suppliers and Estates and Facilities teams to ensure that infection risk is considered and managed when commissioning works, new equipment or processes.
- ROH hand hygiene provider, DEB UK, have standardized products, posters, dispensers across the Trust and continue to provide training and audit at operational level for all clinical areas.
- The induction IPC training package was updated to reflect the requirements of new employees to ROH.
- Communication of key messages via a number of media including social networks.
- The World Health Organisation (WHO) 'Five Moments of Hand Hygiene' is in use across ROH with the support from Communications. This campaign continues to be communicated both internally and externally with the support from social media.
- Additional on-going infection prevention surveillance and support continues across ROH with daily infection prevention visits to high risk areas.
- Bespoke infection prevention training has been developed, in line with HBN 00-09, for all preferred contractors coming into ROH.
- The IPC Team continue to work with clinical staff and support clinical site managers with safe bed utilisation.
- The IPC Team facilitated the national antibiotic awareness and hand hygiene days across ROH, this is in addition to promotional activities that they have supported throughout the year.

1u) Seasonal Staff Influenza Vaccination Campaign

The seasonal influenza staff vaccination campaign is well established at ROH. The campaign officially commenced on 1st October 2019 with a wealth of information available to staff on the Trust intranet, information boards across the site and locally based influenza champions. The uptake for 2019/2020 was 63%



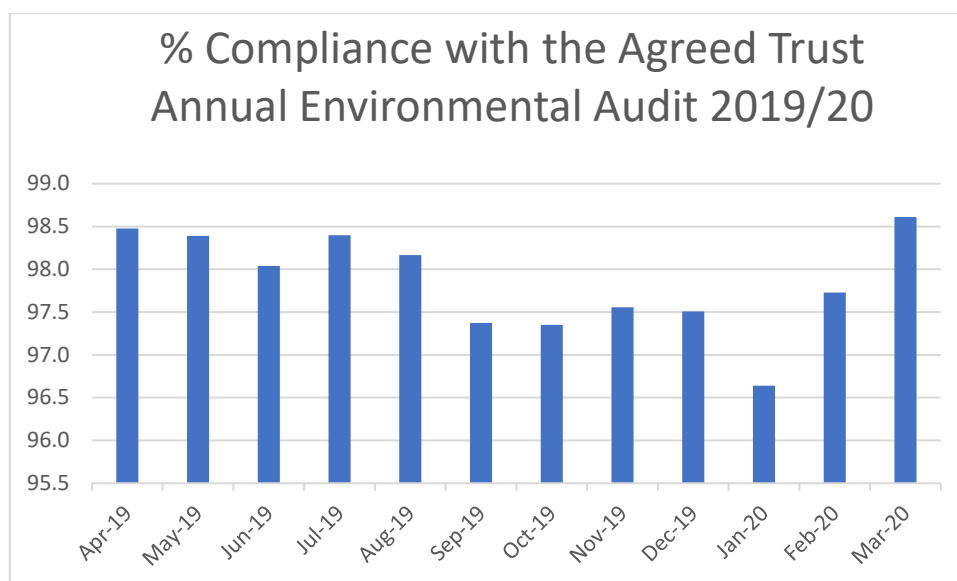
1v) IPC Link Workers

ROH, within each clinical area, has in place dedicated IPC Link Workers these include registered nurses, healthcare assistants and allied health care professionals. . These staff are supported by the IPC Team and attend bi-monthly meetings alongside education / study days to support them in their roles. They provide advice, support, education and training to operational staff as well as monitoring compliance with the IPC agenda.

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

2.1 Providing a clean safe environment

- There is a designated Facilities Manager for cleaning services that are managed in house.
- The IPC Team support ROH bed management / clinical staff to ensure efficient / appropriate bed utilisation
- IPC Team are involved in capital planning schemes to support the needs of IP across ROH in refurbishments and new builds.
- The IPC Team oversees assurance of standards and reduction of risk in partnership with divisional management teams through audit, monitoring of standards, and shared learning.
- ROH use Bioquell (hydrogen peroxide vapour), a specialised decontamination method, for the removal of environmental contaminants to ensure a safe, clean environment.
- Domestic staff continue to provide cover in all patient areas from 6am until 9pm. (Monday – Friday) and 8.30am – 7pm (weekends and bank holidays).
- Training for domestic staff continues to be provided by British Institute for Cleaning Standards and is refreshed annually.
- Head of Infection Prevention meets, on a monthly basis with Head of Estates / Facilities to review cleanliness standards and any issues identified by monthly audits. Issues are discussed at IPOG and escalated, as required to IPCC.
- ROH contract out to an accredited facility for decontamination services.
- ROH theatres have a schedule of annual shutdown for general maintenance and cleaning.
- ROH participate in the annual Patient Led Assessments of The Care Environment (PLACE).



ROH has been exceeding the threshold of 95% set by the Commissioners in 2019/20.

2.2 Water Systems Management

- Following the Department of Health publication, 'Water sources and potential *Pseudomonas aeruginosa* contamination of taps and water systems: advice for augmented care units' (2012), ROH test and monitor waters from augmented care areas. Additional areas are tested if there was a clinical suspicion that waters may have been linked to a patient's infection or colonisation. The Consultant Microbiologists support this management process and provide advice / support as required.
- ROH Water Safety Group, which includes a dedicated Authorised Engineer for waters, is responsible for the oversight of water safety and continue to meet on a bi-monthly basis.
- The Water Safety group is a sub group of IPCC and reports directly to IPCC. The group is chaired by the Head of Estates.
- Estates and Facilities, Consultant Microbiologists, and the IPC Team support the water management process across ROH.

2.3 Management of Decontamination

The management and compliance currently falls into three distinct areas;

- Estates – for medical device reprocessing equipment / scheduled maintenance where required
- Infection Prevention – for monitoring / audit of compliance of medical devices with Trust Policies.
- User – to comply with Trust Policies and to ensure that decontamination of equipment is fit for use and subject to periodic testing and maintenance as advised by the manufacturer / contractual agreement.

- No local decontamination is undertaken on site – ROH contract out to BBraun, accredited decontamination service, for full management of surgical instrumentation.

A planned programme of maintenance and refurbishment of all theatres at the ROH occurred on the Friday 19th April, 2019 with re-commencement of surgery on Monday 29th April, 2019.

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

The Antimicrobial Stewardship (AMS) Group formed in 2017/18 and has produced an Antimicrobial Stewardship Strategy to outline the roles and responsibilities of all members of staff within the Trust at tackling Antimicrobial Resistance. Consumption of antibiotics is monitored by the Chief Pharmacist and analysed for trends by the Lead Antimicrobial Pharmacist. A number of audits have been completed to assess appropriateness of antimicrobial usage and also the review of antimicrobial antibiotics used within the Trust. This is reported to the Drugs and Therapeutics Committee (DTC) and IPCC and any areas of concern addressed with Microbiologists.

The antimicrobial guidelines were updated by the Lead Antimicrobial Pharmacist and Microbiologists at the University of Hospitals Birmingham Trust. These were uploaded to the Trust's intranet and launched within the Trust; a summary card was produced to improve staff awareness and compliance with the guidelines. The current deteriorating/septic patient policy is in process of being updated and has been renamed as the Policy for the Escalation of the Deteriorating adult. This contains the new updates to the early warning scoring system, NEWS2, which has been adopted in all areas across the Trust, excluding Paediatrics.

4. 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

- The Trust has a dedicated communication team. In cases of outbreaks where there may be interest from the media, the Communications Team are invited to meetings and their support and guidance on preparing Press statements is sought.
- The IPC Team work collaboratively with ROH Communications team who support dissemination of IPC communications both internally and externally as required.
- The IPC Team meet monthly to update each other on areas of work and plan ahead.
- The IPC Team provide a quarterly news letter across the Trust.
- All wards / departments have an IPC information board for patients / visitors which is updated monthly.
- IPC information stalls are used across site quarterly with time specific information for staff, patients and visitors to the Trust.

- All Infection Prevention Nurses undergo an annual appraisal.
- The IPC Team utilise social media that enables communication internally and externally with the public and other organisations. This has proved beneficial with sharing of best practice and communicating to a wider health economy.
- The ROH Weekly Message from the CEO supports and cascades messages from the IPC Team across the organization and gives prominence to Executive leadership and support of IPC activities, supporting “Board to Ward”.
- The IPC Team have dedicated space on the Trust Intranet and on the Trust Internet site.
- The Trust Intranet promotes infection prevention issues and guides users to information on MRSA, Clostridium Difficile and other organisms.

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

5.1 Surgical Site Infection (SSI)

Surgical Site Infections are a particularly important Healthcare-associated Infection (HCAI) because they can increase a patient’s length of stay in hospital and “are associated with considerable morbidity and it has been reported that over one-third of postoperative deaths are related, at least in part, to SSI.

However, it is important to recognise that SSIs can range from a relatively trivial wound discharge with no other complications to a life- threatening condition” National Institute for Health and Clinical excellence (NICE) (2008)³.

Guidelines for the prevention of SSI were issued by NICE in the UK, updated in 2013, and accompanied by a High Impact Intervention (HII) from the Department of Health. These guidelines are outlined in the following table.

Period	Action	Evidence	Introduced at ROHFT
Pre-operative	Showering	+ / -	x
	S.aureus decolonisation	+ / -	✓
Peri-operative	Antibiotic prophylaxis	+	✓
	Skin preparation	+	✓
	No shaving with razors	+	✓
	Theatre environment/procedures	+	✓
	Surgical technique	+	✓
	Normothermia	+	In part - ongoing
	Glucose control	+	✓
Post-operative	Wound management	+ / -	✓
	Surveillance and feedback of rates	+	✓

Many of these actions are in place, with the addition of others exceeding the National Guidance, at ROH. ROH have in place an established wound care helpline that can offer the patient an appointment at the SSI clinic, on the same day, should it be required. This allows the review of patients by specialist staff allowing rapid treatment / admission where required avoiding visits to the GP and unnecessary prescribing of antibiotics.

Mandatory surveillance of infections, in the following procedures, started in April 2004 specifying that each trust should conduct surveillance for at least 1 orthopaedic category for 1 period in the financial year. This surveillance helps hospitals, in England, to review or change practice as necessary.

- hip replacement
- knee replacement
- repair of neck of femur
- reduction of long bone fracture

Primary arthroplasty surgery is constantly reviewed and monitored as part of the SSI surveillance programme at ROH. SSI surveillance is routinely carried out according to Public Health England protocol at the point of discharge from hospital and at 30 days post primary hip and knee replacement surgery and has received close attention since 2009 when the 30 day surveillance was introduced.

The data presented below is a combination of Mandatory surveillance data for Surgical Site Infections identified following hip and knee replacement surgery carried out and wider analysis surgical site infections in other specialties where it is available. In addition to this there is also in-house surveillance scheme conducted by the IPC Team, which looks at a number of other areas of interest. This enables the team to gain an informed understanding of SSI across all divisions and the potential for them to have longstanding implications for patients and significant financial implications for the Trust.

SSI Rate	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Hips	3.5%	3.8%	2.9%	2.0%	1.0%	1.5%	1.2%	2.4%	1.4%	2.3%	2.2%
Knees	6.7%	5.8%	6.9%	4.4%	2.6%	2.9%	1.8%	2.3%	2.0%	3.2%	2.0%
No. of SSI	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019

Hips	37	44	33	26	13	21	15	31	17	11	24
Knees	65	52	61	41	23	25	17	23	21	14	21
No. of procedures	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Hips	1063	1144	1153	1274	1240	1371	1261	1271	1189	487	1075
Knees	974	896	880	932	887	875	956	992	1071	433	1028

During 2018 we did not participate in all four quarters, hence the lower number of procedures in comparison to other years.

The number of SSI's also include patient reported infections. However, it is important to note that National Benchmarks do not take into account patient reported infections, only those detected as an inpatient/at readmission.

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

At ROH infection prevention is everyone's responsibility and is included in all job descriptions.

All clinical staff receive training and education in optimum infection prevention practices during induction and mandatory training and Link Workers teaching sessions. Additional bespoke training is provided to wards and departments as necessary and in response to shared learning.

7. Provide or secure adequate isolation facilities

Isolation Rooms

Wards

39 isolation rooms with en-suites.

3 isolation rooms without en-suite.

HDU

2 Adult Side Rooms without en-suites.

2 paediatric isolation rooms with en-suite.

Isolation room numbers have been sufficient to meet the needs of safe clean service provision over 2019/20.

8. Secure adequate access to laboratory support as appropriate

Laboratory services for ROH are outsourced, located in the purpose-built Pathology Laboratory at University Hospitals Birmingham. The Microbiology Laboratory has full (UKAS) accreditation ISO Standard 15189. ROH has electronic access to results to facilitate patient care.

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

All IPC policies, procedures and manuals are available for staff to view on the Trust Intranet. There is a formal Governance structure in place for reviewing and ratifying such documents within the Trust and Clinical Governance has produced a directory of documents alerting when policies are due for update. Policies are also updated prior to review date if guidance is updated.

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

All job descriptions include infection prevention responsibility and this message is reiterated during mandatory training. The IPC Team participates in mandatory updates for all staff groups (clinical and non-clinical). A representative from the Occupational Health Service is a member of the IPCC.

Occupational Health services are provided to staff via an SLA with the University Hospitals Birmingham (UHB). Occupational Health staff travel from UHB to ROH to provide one session (1 day) per week to support the Occupational Health requirements.

Summary

2019-2020 has been a busy and challenging year for ROH staff and for the IPC Team. I am delighted in the number of infection prevention improvements that continue to improve the patients' experience and strengthen patient safety processes and standards.

These improvements demonstrate ROH's commitment to harm free care and reduction in avoidable health-care associated infections. Performance on mandatory surveillance is exemplary compared to national data, perhaps reflecting the elective nature of our work, but there is no room for complacency. CQUIN performance shows engagement and again we have achieved our targets. Together with our staff, governors and volunteers we have created vision and values which clearly state where we are going and how, as a team, we will behave towards each other, our patients, and partners.

Infection prevention and control is the responsibility of all of us and is fundamental when delivering the vision and values of ROH. By incorporating the principles of infection prevention into routine daily clinical practice, patient safety can be enhanced and the risk of patients acquiring an infection during episodes of health care can be minimised. Our staff demonstrate through practice that they care about patient safety. We should all be proud of the reductions made in harms, including reductions in hospital-associated infections.

Giving the Covid-19 Pandemic declared in March 2020, 2020-21 will be one of the most challenging years for ROH and the NHS with Infection prevention and control playing the vital role of maintaining services at the ROH and ensuring our patients are safe.

