# Infection Prevention & Control Annual Report

**Public Board Meeting**  
**Thursday, 29 November 2018**

<table>
<thead>
<tr>
<th>Presented for:</th>
<th>Information</th>
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<tbody>
<tr>
<td>Presented by:</td>
<td>Dr Yvette Oade, Chief Medical Officer and Director of Infection Prevention and Control</td>
</tr>
<tr>
<td>Lead Author:</td>
<td>Dr Tim Collyns, Lead Infection Control Doctor</td>
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<td>Previous Committees:</td>
<td>Infection Prevention and Control Committee Quality Assurance Committee</td>
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## Trust Goals

<table>
<thead>
<tr>
<th>Goal</th>
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<tbody>
<tr>
<td>The best for patient safety, quality and experience</td>
<td>✓</td>
</tr>
<tr>
<td>The best place to work</td>
<td></td>
</tr>
<tr>
<td>A centre for excellence for research, education and innovation</td>
<td></td>
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<tr>
<td>Seamless integrated care across organisational boundaries</td>
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<td>Financial sustainability</td>
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## Key points

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
<th>Type</th>
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<tbody>
<tr>
<td>1.</td>
<td>To inform the Board of the achievements in 2017-18 and the challenges and opportunities for 2018-19</td>
<td>Information</td>
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<tr>
<td>2.</td>
<td>To comply with the Health and Social Care Act 2008: Code of Practice on the prevention and control of infections and related guidance.</td>
<td>Governance</td>
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1 SUMMARY

The prevention and control of infection continues to be a high priority for the Trust. There is a strong commitment throughout the organisation to prevent all avoidable healthcare associated infections (HCAIs).

2017-18 was a challenging year for LTHT with prolonged periods of very high patient bed-occupancy rates throughout the whole year, which although similar to recent years the winter was even more challenging with many additional patients and a high rate of influenza.

This year, we achieved a significant fall in the number of patients who suffered a meticillin-resistant Staphylococcus aureus (MRSA) bacteraemia which were judged as being associated with the care they had received from LTHT, to five along with one which was considered a contaminant, which is the lowest recorded number of MRSA bacteraemia in LTHT since the national mandatory reporting system was introduced in 2001\(^1\).

However, in contrast to last year, there was a rise in the number of our patients who were diagnosed with Clostridium difficile infection (CDI) with a total of 124 compared to 115 in the previous year, This was above the nationally set target for the Trust of no more than 119 cases\(^1\). However over a third of cases, following root cause analysis were adjudged, in agreement with our commissioners, as being unavoidable and associated with no “lapse” whilst the patient was under the care of LTHT. The rise in CDI cases was also mirrored nationally.

Our Trust-wide, multi-disciplinary, HCAI Faculty met frequently throughout this year, to work with pilot wards, testing interventions to reduce bloodstream infections (BSIs) and review the results. This has now led to the production of an HCA Blood Stream Infection Quality Improvement bundle, which has five key interventions, which will be evaluated in a range of clinical areas in 2018-9.

2 PERFORMANCE IN 2017-18

MRSA bacteraemia

Mandatory MRSA bacteraemia (blood stream infection) surveillance has been undertaken since April 2001 by all NHS Trusts in England. As an organisation we have a zero-tolerance approach to avoidable hospital associated infections and, as with every NHS Acute Trust, we had a contractual objective in 2017-18, of zero cases of MRSA bacteraemia. LTHT data for each quarter since Q1 2009-10 are shown in Figure 1.
In 2017-18, we recorded six cases including one determined as a contaminant. This is half the number of cases recorded in the previous year of eleven including one contaminant, and also less than the year prior to that of seven including one contaminant. It was the lowest number of MRSA BSIs associated with LTHT since the introduction of mandatory reporting in 2001. Our local reduction in 2017-8 was also seen nationally in England for cases assigned to acute hospital trusts, although less than that achieved by LTHT, at under 10%. For 2017-8, this has meant we have improved our position in comparison with our peers, and moved closer to the overall average amongst acute trusts, as illustrated in figures 2 and 3. However, it is readily acknowledged throughout LTHT that this still represents six too many patients with positive blood cultures for MRSA. Each case was investigated by an internal Root Cause Analysis (RCA) meeting, followed by a Post-Infection Review (PIR) with our commissioners in accordance with national requirements. We then held a subsequent meeting chaired by the Director of Infection Prevention & Control (DIPC) with the relevant clinical and senior management team(s), to ensure lessons are learnt and shared Trust-wide as appropriate. Such “lessons learnt” also informed the revision of our local IPC MRSA guidance, issued in December 2017.

A massive reduction in the burden of MRSA bloodstream infections in LTHT, as in other acute hospital trusts, has been achieved over the past decade, as is demonstrated in figure 4. However as this chart demonstrates, the reduction has recently plateaued - albeit at a much lower rate. This is one of the reasons why we now have our Trust-wide multi-disciplinary HCAI Faculty in place, whose aim is to prevent all avoidable BSIs by certain key pathogens, which are associated with care in LTHT including MRSA by the end of 2020.
Some areas have successfully achieved zero MRSA BSIs for prolonged periods, such as Chapel Allerton Hospital Ward C03, which has gone over 3000 days without, and was awarded a celebratory certificate by our Chief Medical Officer, whilst the whole of the Oncology CSU has gone over three years.

**Clostridium difficile infection**

The total number of *C. difficile* infection (CDI) cases with an “onset” within LTHT in 2017-18 was 124, compared to 115 in 2016-7 and 139 in 2015-6. A rise in the number of CDI cases with a “hospital onset” in 2017-8, compared to that of 2016-7, has also been recorded nationally. *C. difficile* is endemic in the wider environment, and there remains a nationally-determined process whereby Acute Trusts may record specific cases of CDI as being “unavoidable” and associated with no lapse in care provided by them with the explicit agreement of the relevant external commissioners. In Leeds, we have a well-established internal and external review process. As in recent years, a third of “our” CDI cases have been confirmed as having no lapse” identifiable in the care provided by LTHT following a review by an external panel set up by our commissioners.

Figure 5 demonstrates the improvements that have been made by the whole organisation over the past few years in reducing the number of patients who suffer this very debilitating infection. In January 2018, LTHT went 19 days between cases - the “longest period” ever recorded in LTHT since at least mandatory surveillance of *C difficile* was introduced. Some specific areas, such as Adult Critical Care, Children and Trauma related services, made significant improvements this last year, notably the latter reducing CDI by two thirds.

As outlined in the last two IPC Annual Reports, various developments have been made to prevent potentially avoidable CDI cases in LTHT, and improve the pathway for those patients who are diagnosed with *C difficile*. With the support of the Leeds Improvement Method programme (LIM), this work has continued; and the work was showcased at the Nursing, Midwifery and Allied Health Professionals Conference, in June 2017; and presented at a Trust-wide Report Out session in January 2018. By standardising the IPN work and careful time observation; one
hundred and eighty minutes per day of unnecessary walking and waiting has been saved – which time has then been more productively invested in improving the individual care that our patients receive. In further recognition, our IPC team has now been short-listed for the accolade of Nursing Times IPC Team of the Year.

**MSSA bacteraemias:** Similar to MRSA, meticillin-susceptible *S. aureus* bacteraemias are subject to national mandatory reporting, although there is currently no specific annual target for individual acute hospital trusts. Recently, the rate of MSSA bacteraemias has been rising nationally, both for “all” cases and for those with a “hospital onset”, and LTHT is no exception to this trend. In 2017-8, there were 82 MSSA bacteraemias amongst patients who had been in an LTHT hospital for more than two days, (figure 6), compared to 75 in 2016-7 and 67 in 2015-6. *S aureus* has been described as the “prince of pathogens” due to its virulence; and, reducing all BSIs due to *S. aureus* within LTHT, both meticillin susceptible and resistant strains, is a key target of our HCAI Faculty.

**Gram-negative blood stream infections** In marked contrast to the reductions achieved nationally for MRSA BSIs and CDIs, there has been a recent unrelenting rise in BSIs due to certain Gram-negative bacteria, such as *Escherichia coli*, *Klebsiella* species and *Pseudomonas aeruginosa*. In recognition of this, there is now a national ambition to reduce BSIs due to *E coli* throughout the “whole health economy”; as well as specifically healthcare-associated BSIs by these bacteria by 50% by March 2021. Mandatory surveillance of bacteraemias with *Klebsiella* species and *Pseudomonas aeruginosa* was introduced in April 2017; in addition to those of *E coli*, which has been in place since June 2011. In 2017-8, there were 185 cases of *E coli* BSIs with an LTHT hospital onset, compared to 195 for 2016-7; a reduction of over 5%. For the same period, there were 46 BSIs with *Klebsiella* species and 44 with *Pseudomonas aeruginosa* - see Figure 7. This group of organisms, along with MSSA and MRSA, constitute the group of pathogens that are the primary target of our HCAI faculty, with BSIs now being monitored weekly not only at an LTHT-wide level, but also at Clinical Service Unit (CSU) and individual ward levels. Figure 7 also illustrates that the majority of such Gram negative BSIs, notably those of *E coli*, have a community onset, with 437 such *E coli* BSIs for 2017-8; similar to MSSA, where over two-thirds (173) diagnosed in Leeds in 2017-8 had a community onset.
Tuberculosis (TB).

Patients with active TB are predominantly managed as out-patients. 69 cases of TB in Leeds residents were notified between 1st April 2017 and 31st March 2018, 32 being pulmonary and 37 being extra-pulmonary (provisional figures courtesy of Public Health England); a further reduction on last year, when 76 were notified. LTHT has robust guidelines in place to try to avert any onward transmission within LTHT, thereby protecting our patients and staff; which are above and beyond those currently recommended nationally. There were no cases of known transmission of TB within LTHT during 2017-18, to date.

LTHT personnel continue to contribute to improving the diagnosis, management, and control of TB within Yorkshire and beyond.

3 OUTBREAKS AND OTHER COMMUNICABLE DISEASE INCIDENTS

One of the main roles of the IPC Team is the prevention and management of outbreaks of infection. There were 148 reported potential or confirmed incidents of viral gastroenteritis and a further 15 outbreaks investigated during 2017-18.

Viral gastroenteritis (VG)

The number of VG incidents reported across LTHT in 2017-18 was 148 which, whilst higher than the year before when it was 132, is still consistent with the recent downward trend - having been 157 in 2015-6, 172 in 2014-15, 209 in 2013-14 and 343 in 2012-13. Early recognition by clinical staff of potential viral gastroenteritis patients, with support from IPC for prompt closure of bays ensures less impact on the overall delivery of a high-quality clinical service by the Trust, supporting the operational delivery of services and improving the overall patient experience. The number of identified delayed discharges has recently shown a slight rise at 46 in 2017-18, compared to 44 in 2016-17, 40 in 2015-16 and 38 but remains at a noticeably lower figure than recorded in previous years - 2013-14 (128), 2012-13 (178), and 2011-12 (251).

The Infection Prevention and Control Nurses (IPCNs) continued to provide seven day working from November 2017 to May 2018 to coincide with the peak season for Norovirus. Between 9am and 5pm on these days IPCNs visited affected wards to assess the ongoing situation provide side room risk assessments and, with Consultant Microbiologist support, were able to give further advice to ward staff and Clinical Site Managers about outbreak management , safe placement of patients and the status of affected wards. Further reductions in incident duration and delayed discharges supports the utility of this approach and the success of clinical teams in limiting the transmission of VG in wards.

C difficile

Six “outbreaks” of Clostridium difficile were declared in LTHT in 2017-8, on the basis of patients’ isolates having the same ribotype, consistent with transmission of the organism within LTHT; or due to a temporal cluster of CDI cases in a specific location - albeit with differing ribotypes suggesting no direct linkage. The outbreaks declared due to the same ribotype each involved a pair of patients. The clusters incorporating different ribotypes illustrated the importance of controlling common precipitating factors; such as by ensuring antibiotic use is always appropriate, notably in patients who are more susceptible to developing the disease, such as the elderly.
Other Organisms:

Measles.

There has been a marked rise in cases of measles, both in England and continental Europe, in 2017-8. In the autumn of 2017, there were a number of confirmed cases in Leeds residents; and a multi-agency team was set up by PHE, to manage the incident, in which LTHT worked closely. Unsurprisingly, in view of the very contagious nature of this virus in unimmunised individuals, there was potentially some ongoing transmission, albeit limited, when patients presented to LTHT, notably the paediatric assessment areas. An “outbreak” within LTHT was also declared, to ensure all appropriate measures could be instituted rapidly to prevent further spread, and working closely with the relevant clinical teams and Occupational Health the outbreak within LTHT was closed after a month; with the wider incident in Leeds closed in the Spring of 2018.

Influenza

The 2017-8 season witnessed a “moderate to high” level of influenza activity in the United Kingdom, with co-circulation of Influenza B and A(H3) strains. This increased activity was replicated locally in LTHT, certainly when compared to the previous year, as illustrated in Figure 8.

However, for this season, in collaboration with the Emergency and Specialty Medicine (ESM) CSU, point of care testing (POCT) was in place on the St James’ Hospital site. This helped raise awareness and greatly assisted in ensuring that patients could be appropriately placed with appropriate IPC precautions in place to prevent further transmission; and also the converse – such that any patient movement restrictions can be swiftly lifted in response to negative results. As detailed below, and as in previous years; LTHT, led by Occupational Health, ran one of the most effective ‘flu vaccination campaigns in terms of percentage of healthcare staff vaccinated, in the country. However, it has been accepted nationally that using a seasonal quadrivalent vaccine for healthcare workers rather than the traditional trivalent vaccine issued, would be beneficial, and will be used in the vaccination programme for 2018/19.

Bordetella pertussis (Whooping cough):

Two cases were diagnosed in healthcare workers, involved in the care of susceptible patients. A number of actions were instituted to protect these patients and our staff. Two further cases in associated healthcare workers were diagnosed retrospectively on the basis of positive serology; however there was no evidence of any transmission to our patients.
**Pneumocystis jirovecii**
This is an organism which can cause pneumonia, notably in patients who are immuno-suppressed, such as post solid organ transplant. There was a temporal cluster of cases diagnosed with this infection in renal transplant recipients in the autumn of 2017. On detailed investigation, it was identified that potentially there had been transmission within the renal out-patient clinic. Additional measures were instituted to prevent any further transmission, and protect this susceptible cohort of patients.

**Streptococcus pyogenes**
Our Maternity unit had two cases of post-natal infections with *Streptococcus pyogenes* which had the same *emm* type, suggesting there had potentially been cross-transmission. Steps were taken to raise staff awareness of this pathogen, and ensure appropriate preventative actions always instituted to eliminate such potential transmission routes.

**Scabies**
There were two cases diagnosed in healthcare workers involved in the care of a patient who, in retrospect, had been admitted with scabies onto their unit. Appropriate prophylactic measures were instituted amongst the other patients and healthcare workers and no further cases were identified.

**Hepatitis B virus (HBV)**
A previous acquired HBV infection reactivated in one patient upon receipt of immuno-suppressive therapy for an underlying malignancy. The patient had also required renal dialysis. A number of interventions were instituted to prevent any transmission of this virus to other dialysis patients and from the results of the associated enhanced surveillance, have so far done so successfully.

One unit reported and investigated an outbreak involving the multi-resistant bacterium, vancomycin-resistant enterococcus (VRE).

### 4 SURVEILLANCE

In 2017, a different national initiative for SSI surveillance was launched, under the “Getting it Right First Time” umbrella. This involves 13 different surgical specialties; and the prospective capture of data is primarily done by trainees in the relevant areas themselves. LTHT participated in this exciting project, and the results are awaited from the national coordinators. In addition, for April - June 2017, infection rates post abdominal hysterectomies, vascular surgery and limb amputations were surveyed using the Public Health England data capture system. Infection rates post repair of fractured neck of femur were also determined for each quarter, and ranged from 0.6 to 2.8%.

There is an on-going programme of surveillance of catheter-related bloodstream infections (CRBSI), for various specific units, such as Critical Care (Adults and Paediatrics), Neonatal, and Paediatric Haemato-Oncology This ongoing surveillance, and sharing monthly data with the relevant practitioners, helps drive continuing improvements in our delivery of healthcare in such key areas, and ensures that we can learn rapidly and adapt from the experiences of our patients.
**Neonatal: CRBSIs: no confirmed CRBSI from August 2017 to March 2018**

![Neonatal Critical Care (L43/J01)](image)

**Paediatric Oncology CRBSI’s: no confirmed CRBSI’s from Dec 2017 to March 2018**

![LTHT All Paediatric Oncology](image)
5. ANTIMICROBIAL STEWARDSHIP

Antimicrobial stewardship (AMS) is ensuring the best outcomes for patients with infections whilst minimising patient harm (e.g. *C. difficile* infection) and antimicrobial resistance.

**Antibiotic shortages**
A global shortage of our most commonly used antibiotics has been the major challenge for the antimicrobial stewardship programme (ASP) this year. Our first line choice antibiotic for serious infections, piperacillin-tazobactam was not available for three months from April 2017. This produced a domino effect of shortages with alternative antibiotics during the year. Much of the ASP’s work has been to ensure that guidelines have been kept up to date to reflect the antibiotics available to ensure patients received the best treatment for their infections.

**Improving the outcome of patients with serious infection CQUIN**
Due to the shortages, we only managed to achieve the piperacillin-tazobactam element of the antibiotic reduction targets. It required us to reduce antibiotic prescribing levels by 2% less per admission compared to the baseline year FY13-14 for combined in-patient and out-patient antibiotics, and individually for piperacillin-tazobactam (most commonly used IV broad spectrum antibiotic) and carbapenems (last-line antibiotics). We needed to replace piperacillin-tazobactam with a combination of other antibiotics or with carbapenems. We did achieve the target in all four quarters for the 48-72 hour (or day 3) of a documented review of empiric IV antibiotics. The commissioners did award the full amount of CQUIN based on the extenuating circumstances.

The roll out of electronic prescribing to all adult areas improved many elements of patient safety, including prescribing in drug allergy. The default IV antibiotic duration needed to be increased from 3 to 5 days to avoid antibiotics stopping prematurely over a weekend. This did not assist in reducing antibiotic consumption.

**Infection Treatment & Prophylaxis Guidelines**
LTHT has the most comprehensive suite of over 120 guidelines in the UK. These are the mainstay of our stewardship programme as unlike most other acute trusts App based guidelines which are simple treatment lists, these evidence based “pathways” cover diagnosis, investigations and treatment. Keeping these up to date to reflect latest evidence and user feedback is a major work programme, including embedding infection treatments into the eMeds prescribing protocols.

**Antimicrobial stewardship rounds**
The Trust undertakes sixty AMS rounds per week to optimise the treatment of patients with infections. This includes changing therapy, switching IV antibiotics to oral and stopping treatment when necessary. This is an important role as up to 1 in 5 patients are harmed in hospitals through antibiotic use. Evidence shows that switching IV antibiotics to oral shortens patient stay by up to six days, saves £32 per patient and reduces nursing workload by 70 minutes per day, as well as decreasing HCAI such as *C. difficile* and *S. aureus* bacteraemia.

A quality improvement project developed an IV antibiotic review tool for use within the PPM+ system to ensure a comprehensive review takes place.
Corporate Informatics developed a report to highlight patients on antibiotics and which infection they are being treated for. This allows better targeting of patients for input.

The adult CIVAS programme has been targeting patients who would be appropriate for treatment with IV antibiotics at home. They treated 239 of the 399 patients referred into the service. It saved 4740 bed-days last year (13 beds per day or 20 days per patient on average). 1039 bed days were avoided admissions through direct referral into the scheme. An expansion of CIVAS into paediatrics and more referrals through the adults service could help achieve reduced A&E waiting times.

**Audit & feedback**

Antimicrobial guidelines should be available for all treatment and prophylaxis of surgical and other procedures.

For prophylaxis, they should include options for patients with penicillin allergy and MRSA colonisation. Where antibiotics are needed for a surgical or other procedure, they should be prescribed on the patient’s drug chart with and given within 60 minutes of knife to skin, tourniquet insertion or procedure. The guidelines should be followed or a clear reason documented for variation.

For treatment, the Public Health England Antimicrobial Stewardship Guidelines “Start Smart then Focus” recommend that a number of audits which we have merged into a single antimicrobial treatment tool: namely, cultures sent before antibiotics started, guidelines followed (dose, frequency and duration), indication and duration on the chart, results acted on within 24 hours, a day 3 occurred and the outcomes.

<table>
<thead>
<tr>
<th>N = 38 specialties required to undertake the audit</th>
<th>2017-8</th>
<th>2016-7</th>
<th>2015-6</th>
<th>2014-5</th>
<th>2013-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allergy box fully completed*</td>
<td>98%</td>
<td>91%</td>
<td>93%</td>
<td>95%</td>
<td>88%</td>
</tr>
<tr>
<td>MRSA screen positive*</td>
<td>7%</td>
<td>10%</td>
<td>3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Penicillin (or other antibiotic) allergy*</td>
<td>25%</td>
<td>18%</td>
<td>19%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nature of allergy listed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>86%</td>
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**Infection treatment audit**

This is the first year that all specialties were asked to do a treatment audit.

<table>
<thead>
<tr>
<th>Based on 28 audits and 266 patients in 2017-8</th>
<th>2017-8 Q1</th>
<th>2015-6 Q2</th>
<th>2016-7 Q1</th>
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</thead>
<tbody>
<tr>
<td>Recommended cultures sent before starting antibiotics</td>
<td>69%</td>
<td>86%</td>
<td>72%</td>
</tr>
<tr>
<td>Correct empiric antibiotic used</td>
<td>90%</td>
<td>89%</td>
<td>88%</td>
</tr>
<tr>
<td>Correct antibiotic dose and frequency selected</td>
<td></td>
<td>87%</td>
<td>97%</td>
</tr>
<tr>
<td>Correct route selected</td>
<td>98%</td>
<td>97%</td>
<td>98%</td>
</tr>
<tr>
<td>Indication written on the drug chart or eMeds</td>
<td>93%</td>
<td>79%</td>
<td>95%</td>
</tr>
<tr>
<td>Indication listed in the LHP Antimicrobial guidelines</td>
<td>83%</td>
<td>92%</td>
<td>92%</td>
</tr>
<tr>
<td>Duration or review date written on the drug chart</td>
<td>85%</td>
<td>77%</td>
<td>86%</td>
</tr>
<tr>
<td>Duration or review date in line with the guideline</td>
<td>65%</td>
<td>90%</td>
<td>66%</td>
</tr>
<tr>
<td>Cultures acted upon within 24 hours</td>
<td>45%</td>
<td>50%</td>
<td>83%</td>
</tr>
<tr>
<td>Micro results documented in the medical notes</td>
<td>41%</td>
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<td></td>
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</table>
Practice was generally good but there is much work to be done ensuring blood cultures are sent and any results acted on within 24 hours. Leeds had the 4th lowest day 3 review switch rate in English hospitals from empiric IV antibiotics in 2016-7. Not sending blood cultures makes it more difficult to undertake a comprehensive day 3 review. There needs to be better documentation of results and future infection treatment plan in the medical notes. There was improvement on indication on the drug chart, but correct duration fell probably related to default on eMeds of three days UNLESS prescribing from protocol is selected, when the correct duration is set. The use of the IV to oral switching tool in three-quarters of patients is promising as this is linked to shorter lengths of stay.

**Surgical prophylaxis audit**

Three specialties undertook this audit. There were significant improvements this year. Antibiotic written on the drug chart and the indication both improved. Guideline compliance documentation of the antibiotic being administered within 60 minutes before knife to skin or tourniquet application and compliance to guideline was much better.

<table>
<thead>
<tr>
<th>Based on 3 audits and 30 patients in 2017-8</th>
<th>2013-4 Q2+Q4</th>
<th>2014-5 Q2</th>
<th>2015-6 Q2</th>
<th>2016-7 Q1</th>
<th>2017-8 Q1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antibiotic given within 60 minutes of incision or tourniquet (documentation of time given)</td>
<td>57%</td>
<td>64%</td>
<td>60% (35% unknown)</td>
<td>75% (13% unknown)</td>
<td>67% (33% unknown)</td>
</tr>
<tr>
<td>Antibiotic prescribed on drug chart</td>
<td>49%</td>
<td>64%</td>
<td>51%</td>
<td>59%</td>
<td>73%</td>
</tr>
<tr>
<td>Antibiotic only prescribed on anaesthetic chart</td>
<td>50%</td>
<td>38%</td>
<td>49%</td>
<td>41%</td>
<td>25%</td>
</tr>
<tr>
<td>Indication written on drug chart</td>
<td>26%</td>
<td>41%</td>
<td>41%</td>
<td>46%</td>
<td>53%</td>
</tr>
<tr>
<td>Guideline compliance</td>
<td>88%</td>
<td>85%</td>
<td>75%</td>
<td>89%</td>
<td>87%</td>
</tr>
<tr>
<td>Overall compliance to standard</td>
<td>62%</td>
<td>60%</td>
<td>55%</td>
<td>70%</td>
<td>80%</td>
</tr>
</tbody>
</table>

**Education and training**

Delays in the national roll out of the Health Education England modules on antibiotic prescribing led to us still using existing internal updates incorporated into the existing HCAI mandatory learning.
Working with other partners
LTHT has been working throughout the year with other providers, commissioners and Leeds City Council on AMS to implement the new NICE AMS guideline for changing patient and public behaviour.
LTHT continues to working with other Trusts in our STP area and West Yorkshire to share best practice on improving antibiotic prescribing.

6. ENVIRONMENT

We continue to monitor and demonstrate compliance with the National cleaning standards (PAS 5748). Additional environmental decontamination methods continue with the use of hydrogen peroxide vapourisation technology (HPV) for both planned whole ward decontamination and side room discharge cleans.
Along with the HPV on transfer or discharge of a case of *Clostridium difficile* disease, the rolling programme saw 8 areas undergo HPV.

7. DECONTAMINATION

The Director of Estates and Facilities is the decontamination lead for the Trust at senior management level. In 2017 the Trust appointed a senior decontamination manager to oversee and support the compliant delivery of decontamination across the organisation.

The senior decontamination manager has been supported in developing a strategic plan to provide assurance in relation to decontamination practices and key responsibilities as laid down in current guidance documents. The plan focusses on a number of key areas including ensuring decontamination is carried out in suitable environments, in compliance with manufacturers decontamination guidance and by staff who have the necessary competencies and understanding of the process.

The following decontamination policy and procedure documents have also been updated to reflect recent changes to guidance and standards:

- Procedures for the decontamination of re-useable medical devices and other hospital equipment (excluding endoscopy)
- Procedure for the decontamination of endoscopes

The Trust has developed a strategy to centralise endoscope decontamination on each of the main sites and in October 2017 the first of the hubs was opened at St James’. The purpose of the hub is to provide a centralised ISO accredited decontamination service for all flexible endoscopes used in SJUH under the management of the senior decontamination manager and staffed by dedicated decontamination operatives.

LTHT continues to work in collaboration with Bradford and Calderdale & Huddersfield for procuring an outsourced service for the decontamination of surgical instruments. The service is provided by Bbraun from a purpose built, centralised facility based at Pudsey which is accredited by the MHRA to the required ISO standard to provide a commercial service to the 3 partner Trusts.
8. IPC ORGANISATION AND MANAGEMENT

The Executive leadership continued to remain the same during 2017-18.

**Staffing Developments**

The senior leaders of the LTHT Infection Prevention and Control team also remained unchanged in 2017 - 18; namely Gillian Hodgson as Nurse Consultant / Head of Nursing, Louise Lowry as Matron, IPC, and Dr Tim Collyns, Consultant Microbiologist, as Lead Infection Control Doctor. Louise has successfully completed her “Lean for Leaders” course run by the Kaizen Promotion Office in conjunction with the Virginia Mason Institute in Seattle; while Tim Collyns and Yvette Reece our IPC business manager are close to finishing theirs. Louise was seconded for a period of four months to Emergency Speciality Medicine, during which time, Charlie Lobley, Band 7 Infection Prevention and Control Nurse in LTHT, was Matron [12th March 2018]. As might be expected, there were some changes of personnel in the team of Bands 5, 6 and 7 Infection Prevention and Control Nurses; and Administrative support staff. We successfully recruited to our vacant senior IPN Band 7 position within the team, along with team members having the opportunity to gain experience by moving into acting up positions both in the team and Trust wide. We are very excited to introduce two new roles within the administrative arm of infection prevention and control, that of business administrative apprentice, welcome to Josh Archer, and new PA role, Jill Laws.

**IPC Assurance**

The performance of LTHT in respect of IPC is reviewed at the regular meetings of the wider Infection Prevention Control Team, attended by the IPC Leadership Team, Infection Prevention Nurses, other Microbiologists, and Antimicrobial Pharmacists; as well as at the Trust-wide HCAI Action Team meetings, chaired by DIPC. The action plans are developed by consulting with the CSU triumvirate team, incorporating lessons learnt from HCAI incident investigations, including any actions identified from external agencies and incorporating areas for development identified following a self-assessment against the Health and Social Care Act 2008; Code of Practice on the prevention and control of infections and related guidance. In 2017-8, potential strategies to reduce HCAIs in LTHT, notably bacteraemias, are also overseen by our Trust-wide, multi-disciplinary, multi-grade, HCAI Faculty, as outlined previously.

The Infection Prevention and Control Committee (IPCC) contributes to, and oversees the Trust HCAI plans. The Trust HCAI plans are shared with all the CSU/CSL teams and used by them as a basis for developing CSU specific HCAI actions. The IPC Head of Nursing also meets with the CSU Heads of Nursing as required to assist with progress.

Each CSU attends the IPCC annually and by exception to present assurance of compliance/performance against their CSU specific HCAI action plan.

**Policies and guidelines**

The IPC team continued to review and revise the Trust’s IPC policies / clinical guidelines during 2017-18 in line with their review dates. This included the IPC guidance regarding MRSA and Infections that require source isolation, in response to national publications.
Guidance regarding respiratory infections has also been reviewed, including the use of personal protective equipment.

**Root cause analyses (RCA) and Post-Infection Review.**

Any LTHT-attributable case of *S aureus* bacteraemia (MRSA and MSSA) or *C difficile* infection has a subsequent RCA investigation to uncover what happened and why; and then local specific action plans are developed to prevent such infections in the future. Depending on the organism and investigation findings, some of these RCAs are then reviewed with the clinical director and head of nursing of the relevant CSU in meetings chaired by the DIPC or deputy DIPC. Where appropriate, the RCA findings will then also be discussed with representative(s) of our commissioners.

The key findings of the RCAs related to these infections are also reviewed at dedicated weekly (sometimes fortnightly) IPCT meetings. This is to ensure that any “lessons learnt” can be disseminated rapidly Trust-wide.

If there is a sharps injury incident involving someone who is positive for one or more of the “blood borne viruses”, HIV and Hepatitis B or C, then an RCA is again carried out by the unit involved, in conjunction with LTHT Health and Safety, and IPC. This is to identify why the incident occurred and what actions should be implemented to prevent such an occurrence in the future. The findings of these RCAs are reviewed at the quarterly meetings of the Inoculation Injury and Sharps Safety Group, chaired by the LICD. When appropriate, such findings have been fed back to the relevant manufacturer to promote an improved design.

**9. TRAINING AND EDUCATION**

The IPC team continue to support the CSUs’ delivery of mandatory training in IPC. We have sustained the recent improvements in the number of our staff completing IPC mandatory training (See Table).

As part of the implementation of new/revised policies, guidelines and procedures, the IPC team delivered a focussed programme of education to all clinical areas. In certain areas, this has included further improvements to the recently revised MRSA guidelines in LTHT on the basis of trialling the proposed new pathways for specific patients, and then collating feedback, in a series of Plan, Do, Study, Act (PDSA) cycles. A similar exercise, led by IPC Matron Louise Lowry, was undertaken with respect to peripheral venous cannulae, and revising the Visual Infusion Phlebitis (VIP) scoring system used. We also took part in a regular programme of training for new starters and in response to ad hoc requests for new medical and nursing staff outside of the regular timetabled sessions.
Agenda Item: 12.8 (Blue box)

### Start the Week (Oct 2017) - LIM: reducing staff mandatory training time.

The HoN/NC IPC also led the delivery of a training programme on IPC at the Leeds Beckett University for students undertaking graduate and post-graduate training in healthcare. Training is also a key feature of our regular programme of IPC campaigns as detailed below.

### 10. CAMPAIGNS AND FURTHER ACHIEVEMENTS

As in previous years, the IPC team were involved in a number of innovative campaigns to prevent infections and improve their management during 2017-18.

To promote our service we engaged in the “team of the week” to introduce our new team members and the developments within the delivery of our service.

As part of a continuous programme to include children in the fight against infection and encourage hand hygiene, a competition was held where patients from Leeds Children’s Hospital were asked to design covers for the soap and hand sanitiser dispensers. There were many fantastic entries, but after a tough decision, the two winners chosen by senior representatives from the Children’s hospital were - Amy Hinchliffe and Jessica Itzinger. The dispenser covers have now been installed in Children’s Hospital.

<table>
<thead>
<tr>
<th>Training Subject</th>
<th>Staff Group</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPC Mandatory/Priority</td>
<td>All Staff</td>
<td>Monthly</td>
</tr>
<tr>
<td>Fit Testing</td>
<td>All Staff</td>
<td>Bi-Weekly</td>
</tr>
<tr>
<td>As part of Introduction to Professional Practice</td>
<td>All ward managers</td>
<td>Monthly</td>
</tr>
<tr>
<td>As part of Corporate Induction</td>
<td>New starters</td>
<td>Weekly</td>
</tr>
</tbody>
</table>

Hand hygiene Day, May 2017, Leeds Dental Institute Reception competition

Learning points May 2017
World Sepsis Day, September 2017

Twitter for CDI: “Yes You Can” campaign.

In October 2017, IPCT launched a campaign on social media to answer some frequently asked corrections & bust some myths, using the common answer of Yes You Can!

In association with the renewed impetus in tackling LTHT-associated BSIs, overseen by our HCAI Faculty, IPC has also been celebrating the achievements of wards which have sustained periods without such BSIs. Quality Improvement certificates are presented, and the news is shared Trust-wide. For instance, certificates were awarded to the two main adult haematology wards, J88 and J89, for going 181 days and 249 days respectively without a single MSSA bacteraemia in their highly susceptible patients. This in conjunction with the CSU as a whole having gone over three years without an MRSA bacteraemia.
**To access the links in this document go to Intranet homepage - Influenza - IPC to see digital version**

**Remember, Remember Think Influenza - Staff vaccination promotion / rates.**

It has been a brilliant start to our October flu campaign. In the first 4 days, 2611 of you have been vaccinated, smashing all previous records!

The annual influenza vaccination campaign is run primarily by the Trust’s Occupational Health department. For the 2017/8 winter period, 10352 front-line staff (80.8%) were vaccinated; with 2611 staff being vaccinated in the first four days alone. Similar to at least the last two years, LTHT vaccinated the greatest number of frontline healthcare workers in any Trust in the country:

11. CHALLENGES AND OPPORTUNITIES FOR 2018-19

The reduction of HCAI remains a priority for the Trust Board and the organisation as a whole.

The national ‘Zero Tolerance’ approach to MRSA bacteraemias remains in place and we are firmly committed to achieving this. There is also now the national ambition to reduce healthcare associated Gram-negative bloodstream infections by 50% by March 2021. These are undoubtedly challenging goals however they are mirrored in the stated aims of our local HCAI Faculty, which are to reduce by 75% avoidable LTHT-associated bloodstream infections due to the five categories of MRSA, MSSA, Escherichia coli, Klebsiella species and Pseudomonas aeruginosa by the end of 2018, and by 100% by the end of 2020. An HCAI Bundle has been developed by our Faculty, in conjunction with enthusiastic clinical areas, which consists of five key interventions. These interventions are now being trialled on certain wards in each bed-holding CSU, where their impact in reducing such BSIs is being monitored.
The Trust’s national CDI objective for 2018-19 is one less than in 2017-18, being 118. However, our ambition is to prevent all “avoidable” cases of this infection, associated with LTHT. There remains the post-infection review process whereby commissioners can formally agree with us that there were no significant “lapses in care” during a patient’s pathway in LTHT.

There will continue to be an emphasis on the interventions that have been shown to work in preventing any / all HCAIs; though we must remain mindful that the patient is always placed at the centre of what we do; and that the benefit of any intervention outweighs any potential adverse consequence.

Ensuring the equipment we use on our patients, and the environments we work in, are safe and free of infection is also of paramount importance. This year, in conjunction with our Estates colleagues, we are introducing a new specific IT system to record, report and monitor the results we obtain from relevant water samples.

The rising prevalence of pathogenic bacteria with the ability to resist multiple different classes of antibiotics, is an ongoing world-wide phenomenon. We need to continue to protect the therapies that we have now so that they will continue to be effective for our future patients. This means that we need to ensure patients receive the most appropriate antibiotic for their clinical condition at the time - i.e. not only “starting smart” but also that we then “focus” subsequently. The ongoing national CQUIN for Severe Infections in 2018-19, continues to promote a judicious approach to antibiotic use and will assist us in this endeavour.

We will also be prepared for any new or rare infection that may present to one of our hospitals, such as Middle East Respiratory Syndrome (MERS), caused by the MERS-Coronovirus; so that we can meet any challenge to our patients and staff and continue to deliver best IPC practice in the Leeds Way.

References


Report compiled by Tim Collyns, Lead Doctor for Infection Prevention and Control, with contributions gratefully received from many members of the IPC Team, including Philip Howard, Consultant Antimicrobial Pharmacist, Sylvia Chegra Decontamination Lead and the Pharmacy Infection Team.

September 2018