North Tees and Hartlepool
NHS Foundation Trust

Director of Infection Prevention and Control Report 2018-2019

Contents

Part 1: Executive Summary

1.1 2018-19 was another busy and challenging year in terms of activity and increased acuity of patients in the Trust and across the whole of the NHS. The risk of infection has remained a priority for action by the Trust Board and our staff. Although we did not achieve the reduction in Clostridium difficile set centrally, our sustained efforts did lead to a reduction in this and several other infections, which is a testament to the efforts of our staff and volunteers. Without their support we would not have been able to achieve the reductions in Clostridium difficile infections, bloodstream infections caused by MRSA,MSSA, E coli and Klebsiella, and achieved the improvements in prevention and management of urinary tract infections seen during our projects facilitated by NHS Improvement

1.2 This report describes the activities we have undertaken to improve and sustain patient, visitor and staff safety across all of our healthcare settings, much of which has been achieved in conjunction with partner organisations.

Julie Lane

Executive Director of Nursing, Patient Safety & Quality/Director of Infection Prevention and Control

Date: May 2019

Part 2: Infection prevention and control arrangements

2.1 The prevention and control of infection is a top priority for the public and our patients. Avoidable infections can be devastating for patients and their families and therefore North Tees and Hartlepool NHS Foundation Trust continues to place this patient safety issue as a priority for action and improvement.

2.2 The Infection Prevention and Control Team (IPCT) provide a service to trust staff across all settings and also support care homes, local hospices, GP practices and an independent hospital through service level agreements and local agreements. We have an experienced team of Infection Prevention and Control (IPC) nurses supported by clerical and surveillance team members, working in close collaboration with Consultant Microbiologists, biomedical scientists the antimicrobial pharmacist and clinical teams across the Trust.

2.3 The Assistant Director of Nursing and Infection Prevention & Control is responsible for leading the IPCT and for providing support to the Director of Infection Prevention and Control (DIPC) who is the Director of Nursing, Patient Safety and Quality. Team meetings take place to discuss performance and clinical issues raised.

2.4 In addition to the Assistant Director the following nurses are employed within the IPCT to cover the service needs of the settings described above.

Infection Prevention Matrons	2.13 WTE
Infection Prevention and Control Nurses	4.0 WTE

2.5 The service is supported by 2.2 WTE clerical and surveillance staff who also provide support to the tissue viability and chaplaincy team.

2.6 Four Consultant Medical Microbiologists play an active role in infection prevention and control with one of them taking on the role of Infection Control Doctor and another being the Trust Antibiotic Lead. Out of hours IPC advice is provided by the on call microbiologist, which is a shared arrangement between two local NHS trusts.

2.7 The DIPC provides a report to each Board of Directors via an Integrated Quality report. A performance report is provided to the monthly Patient Safety and Quality Standards Committee, which is a sub Committee of the Board and is chaired by a Non-Executive director.

2.8 The reporting and governance structure for infection prevention and control can be found at Appendix A.

2.9 The *Health and Social Care Act 2008, Code of Practice on prevention and control of infection and related guidance* (2015) guides the activities carried out by the Infection Prevention and Control Team (IPCT) and is the basis of our annual programme which can be found at Appendix B. A self-assessment to measure adherence to the requirements of the Code of Practice is carried out annually and reported to the Infection Control Committee.

Part 3: Healthcare Associated Infection Surveillance and Performance

3.1 Mandatory Surveillance

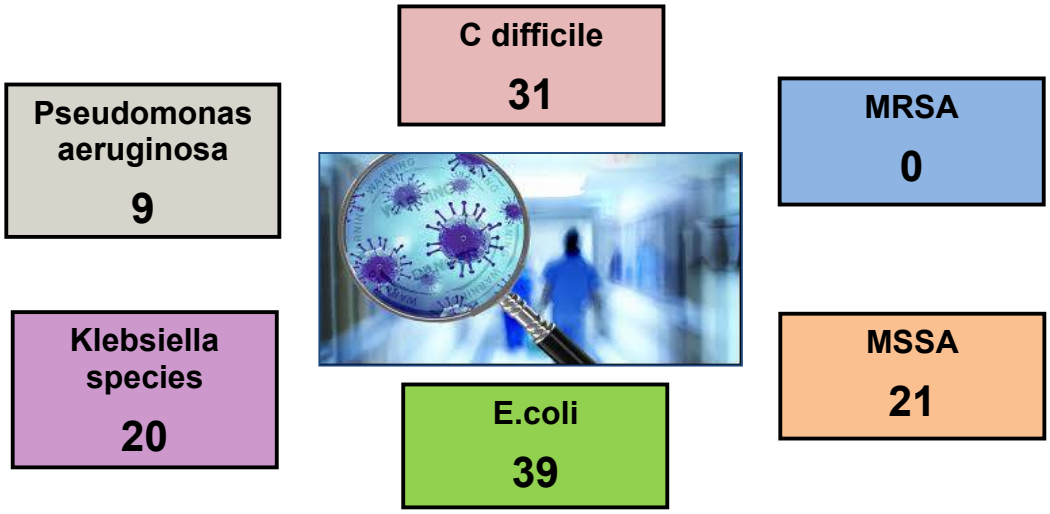
3.1.1 The Trust continues to report on the infections required by the mandatory surveillance programme facilitated by Public Health England:

- Clostridium difficile infection (CDI)
- Methicillin-resistant Staphylococcus aureus (MRSA) blood stream infections (bacteraemia)
- Methicillin-sensitive Staphylococcus aureus (MSSA) bacteraemia
- Escherichia coli (E.coli)
- Klebsiella species (Kleb sp) bacteraemia
- Pseudomonas aeruginosa (Ps a) bacteraemia

3.1.2 National criteria are applied to establish whether cases of these infections are attributable to the Trust (hospital onset). For bacteraemia cases when the sample is taken on the day of admission or the following day it is considered to be community onset but samples taken after that time are considered to be hospital onset. For CDI if the sample is taken on the day of admission or the following two days it is classed as community onset and any samples after that time will be hospital onset. National reduction objectives are set for all trusts. In 2018-19 the Trust had a CDI reduction objective of no more than 12 hospital onset cases, and a zero tolerance of avoidable infections approach is adopted for MRSA bacteraemia. A 10% reduction in hospital onset E coli bacteraemia is also required by the Department of Health for this reporting year. While the other infections do not have national trajectories the Trust sets internal targets based on the performance of the previous year.

3.1.3 In 2016 The Secretary of State for Health announced an ambition to reduce all Gram negative blood stream infections (GNBSI) by 50% by 2021. GNBSI includes E coli, Klebsiella and Pseudomonas aeruginosa bacteraemia and was selected for a reduction objective because these infections form the largest percentage of healthcare associated infections reported. As the overall objective is for commissioners to deliver a collaborative approach between providers, commissioners, local authorities and other partners has been established across Teesside. A shared improvement plan is implemented and monitored by a collaborative committee which reports into the individual organisation governance processes. In our Trust the work of this group is reported to the Infection Control Committee.

Fig 1 Total number of hospital onset infections during 2018-2019.



3.2 Clostridium difficile infection (CDI)

3.2.1 Clostridium difficile is a bacterium that is found in the gut of around 3% of healthy adults. It seldom causes a problem as it is kept under control by the normal bacteria of the intestine. However certain antibiotics can disturb the bacteria of the gut and Clostridium difficile can then multiply and produce toxins which cause symptoms such as diarrhoea.

3.2.2 During 2018-19 the Trust did not achieve the CDI target having reported **31** Trust attributed cases against a trajectory of **12** cases. This is disappointing but not entirely unexpected as the trajectory was challenging as in previous years. However, in this reporting year we have seen an 11.43% improvement compared to the previous year.

3.2.3 We continue to focus our efforts on actions to control and reduce opportunity for infections to spread, whether we treat people in our hospitals, community premises or in their own homes. We have maintained a consistent approach to cleanliness across all areas of our environment. Our commitment to environmental cleanliness has not reduced with the changes to the provision of decontamination services by North Tees and Hartlepool Solutions. The focus on antimicrobial stewardship has continued and the importance of carrying out the fundamental aspects of good infection prevention practice is the basis of all of our work.

3.2.4 The Trust CDI improvement plan has been developed in conjunction with clinical staff and reviewed monthly. Progress against the plan is reported to the Healthcare Associated Infection Operational Group and Infection Control Committee and the document has been regularly shared with commissioners.

Fig 2 Clostridium difficile cases 2013-19

Trust Clostridium difficile cases 2013-19

	Hospital onset	Community onset
2013-14	30	95
2014-15	20	71
2015-16	36	68
2016-17	39	73
2017-18	35	49
2018-19	**31**	**83**

Data obtained from Healthcare Associated Infections (HCAI) data capture system

3.3 Methicillin-resistant Staphylococcus aureus (MRSA) bacteraemia

3.3.1 Staphylococcus aureus is a bacterium commonly found on human skin which can cause infection if there is an opportunity for the bacteria to enter the body. In serious cases it can cause blood stream infection. MRSA is a strain of these bacteria that is resistant to many antibiotics, making it more difficult to treat

3.3.2 Many patients carry MRSA on their skin and this is called colonisation. It is important that we screen some groups of high risk patients when they come into hospital so that we know if they are carrying MRSA. Screening involves a simple skin swab. If positive, we can provide special skin wash and nasal cream that helps to get rid of MRSA. This measure reduces the risk of an infection developing.

3.3.3 In 2018-19 our organisation reported **0** hospital onset MRSA bloodstream infection, which is a significant improvement in performance from the previous year when we reported four cases. There has also been an improvement in the community onset cases with no cases being reported compared to 2 cases in the previous year.

Fig 3 MRSA bacteraemia cases 2013-19

	Hospital onset	Community onset
2013-14	0	4
2014-15	1	2
2015-16	2	3
2016-17	1	2
2017-18	4	2
2018-19	**0**	**0**

Data from Healthcare Associated Infections (HCAI) data capture system

3.4 Methicillin-sensitive Staphylococcus aureus (MSSA) bacteraemia

3.4.1 MSSA is a strain of Staphylococcus Aureus that can be effectively treated with many antibiotics. It can cause infection if there is an opportunity for the bacteria to enter the body and in serious cases it can cause blood stream infection.

3.4.2 In 2018-19 we reported **21** cases of Trust attributed MSSA bacteraemia. This is a 16% improvement on the previous year. Each case is subject to a root cause analysis and the analysis of these investigations has shown that there are no apparent trends in terms of linked cases or frequently seen sources of infection. In many cases the source has been a chest or skin infection which would have been difficult to prevent and a number of these cases classed as hospital onset are as a result of infection already present when the patient was admitted.

3.4.3 However, the Trust recognises that further improvement can be achieved in this infection and increased emphasis on clinical practices continues to be a focus of our work to reduce the number of MSSA bacteraemia. A significant increase in community onset cases was seen this year and will require collaborative work with commissioners to understand the reason for the increase.

Fig 4 MSSA bacteraemia cases 2013-19

	Hospital onset	Community onset
2013-14	13	30
2014-15	18	41
2015-16	24	64
2016-17	21	57
2017-18	25	71
2018-19	**21**	**93**

Data obtained from Healthcare Associated Infections (HCAI) data capture system

3.5 E coli bacteraemia

3.5.1 Escherichia coli is a very common bacterium found in the human gut which can cause serious infections such as blood poisoning.

3.5.2 The numbers of E coli bacteraemia (blood stream infection) reported by the Trust for the year are shown in the table below. As the majority of these cases are those that are identified within the first 48 hours of hospital admission work is required across all healthcare settings to achieve improvements. In 2018-19 a reduction of 9% in hospital onset cases was seen.

3.5.3 Root cause analysis is completed for all cases deemed to have been hospital onset and action plans are developed where issues are identified. In many cases these bloodstream infections are related to urine infections and are thought to be not preventable with only a small

number of cases being in patients with a urinary catheter where there may be potential for improved practices.

Fig 5 E coli bacteraemia cases 2013-19

	Hospital onset	Community onset
2013-14	22	169
2014-15	28	176
2015-16	44	224
2016-17	50	267
2017-18	43	304
2018-19	**39**	**317**

Data obtained from Healthcare Associated Infections (HCAI) data capture system

3.5.4 This year as part of our work to reduce these infections the Trust participated in a national programme to reduce urinary tract infections. Our improvement projects led to a reduction of over 80% in treatment for UTI in a pilot care home and a reduction of 80% in catheter associated infections on a pilot ward. These improvements will form the core of our improvement programme for the 2019-20 reporting year.

3.6 Klebsiella species bacteraemia

3.6.1 Klebsiella species are a type of bacteria that are found everywhere in the environment and also in the human gut, where they do not usually cause disease. These bacteria can cause pneumonia, bloodstream infections, wound and surgical site infections and can be associated with invasive procedures such as venous cannulation or urinary catheterisation

3.6.2 In 2018-19 the Trust reported **20** Klebsiella species bloodstream infections. This is a 31% improvement on the cases reported in the previous year. There is no reduction target associated with this infection currently but the Trust aims for a 10% reduction each year. Enhanced data collection is being carried out on each case to understand if there are any common themes to the infections. This will allow us to target our efforts effectively to reduce the number of cases further in future.

Fig 6 Klebsiella bacteraemia cases 2016-19

	Hospital onset	Community onset
2016-17	22	49
2017-18	29	42
2018-19	**20**	**40**

3.7 Pseudomonas bacteraemia

3.7.1 Pseudomonas aeruginosa is a bacterium often found in soil and ground water. It rarely affects healthy individuals but can cause a wide range of infections particularly in those with a

weakened immune system. Pseudomonas aeruginosa is resistant to many commonly used antibiotics

3.7.2 In 2018-19 the Trust reported **9** trust attributed cases of Pseudomonas aeruginosa bloodstream infections. Disappointingly this represents an 80% increase in this infection although the numbers remain very small. As with Klebsiella there is no national reduction target assigned and enhanced data collection is underway to better understand the sources of these infections

Fig 7 Pseudomonas bacteraemia cases 2016-19

	Hospital onset	Community onset
2016-17	9	9
2017-18	5	19
2018-19	**9**	**20**

3.8 Glycopeptide resistant Enterococcus (GRE)

3.8.1 Enterococci are normally found in the gut and are part of the normal human gut flora. Although a common cause of urinary tract infections they can also cause serious infections such as endocarditis and can be a particular risk to immunocompromised patients.

3.8.2 The number of bacteraemia caused by GRE is low and cases are sporadic however the Trust has seen an increase in the number of other, non-blood culture specimens, being positive for this organism. In 2018-19 we reported **2** GRE bacteraemia cases which is an improvement on 4 cases reported in the previous year.

3.9 Surgical Site Infection

3.9.1 It is a mandatory requirement to conduct surveillance of orthopaedic surgical site infections for a minimum of one quarter in each reporting year, using the Public Health England Surgical Site Surveillance Service. The data collected is forwarded to the service for analysis and reporting.

3.9.2 After a period of no reporting the Trust has recommenced this surveillance with a number of staff undertaking training to provide resilience within the reporting team. It has been agreed that rather than the minimum data collection we will participate in continuous surveillance with a plan to increase the number of procedures included in the programme.

3.9.3 In 2018-19 **zero** surgical site infections were identified as part of this surveillance.

3.10 Influenza

3.10.1 2018-19 saw a seasonal increase in the number of influenza cases seen in the Trust. A small number of patients were treated in the critical care unit. On site testing was carried out to identify positive patients in order to facilitate prompt isolation and control measures.

3.10.2 All staff are encouraged to receive the seasonal influenza vaccination as a means of protecting themselves, their families and our patients. In 2018-19 we saw the percentage of front line staff who received the vaccine increase slightly to **71.7%** thanks to a campaign led by the occupational health department and the use of peer immunisers to support the programme.

3.11 Voluntary Surveillance

3.11.1 In addition to the mandatory surveillance, the infection prevention and control team conducts voluntary surveillance to monitor infections in the Trust. This includes:

- Newly identified MRSA colonisation or infection (samples other than blood cultures)
- 'Alert' organism surveillance – results with a potential infection control significance
- Targeted surveillance – infections seen in specific specialities
- Voluntary reporting of norovirus outbreaks
- Central line related bloodstream infections (Matching Michigan)

3.12 Hand Hygiene

3.12.1 Monthly hand hygiene audits are carried out across the Trust. These are a combination of independent unannounced observations, self-assessment and patient/carer feedback. The results are provided to clinical areas in a monthly RAG report and form part of a safety and quality dashboard where compliance by staff group and ward can be displayed. The overall trust results for the year are displayed below. The Trust target for achievement is 95% and this has been achieved or exceeded every month except July 2018.

Fig 8 Trust wide hand hygiene compliance 2018-19

Month	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
%	98	96	96	94	97	97	97	97	99	96	96	97

3.12.2 The audit results are discussed bimonthly at the HCAI Operational Group Meeting where areas with the lowest scores are invited to present their improvement plans, and quarterly at the Infection Control Committee, where they form part of directorate reports.

3.12.3 We have a network of hand hygiene champions across the Trust with volunteers from all types of staff. These champions play a role in promoting good hand hygiene practice and challenging poor practice if they observe it. Each month they are given a challenge, which could be as simple as talking about hand hygiene at ward meetings or as practical as offering gel to those who are not carrying it.

3.12.4 Each year the Trust participates in events to raise awareness of the importance of hand hygiene for staff and patients, including World Hand Hygiene day which is on 5th May. In 2018 the campaign was around how good hand hygiene can support the reduction of sepsis and our displays were centred around this.

3.12.5 Hand hygiene awareness should start young and we involve children from our paediatric service in awareness campaigns. In 2018-19 the childrens areas undertook their own project to raise awareness of hand hygiene.

3.13 Outbreaks

3.13.1 Each year there are a number of outbreaks which affect patients and staff both in hospital and the community. In 2018-19 there were a significantly lower number of outbreaks with only **2** outbreaks of diarrhoea and/or vomiting and **3** alert situations where a full outbreak is not declared but a number of patients may be monitored for symptoms. The outbreaks reported affected 2 wards with 27 patients and only 3 staff being affected. This represents a reduction on the previous year when 8 outbreaks were reported affecting 69 patients. This reduction was reflected in a lower number of outbreaks reported in local care homes.

3.13.2 An outbreak can have a wider effect than the ward where the affected patients are situated. When a ward is closed it reduces the number of beds available to admit new patients into and can also delay discharges of patients waiting to go into care homes

3.13.3 Increased cleaning is implemented during an outbreak and the ward is 'deep' cleaned before re-opening once the outbreak has been declared closed. This is a very important part of outbreak management and is instrumental in ensuring that there is no recurrence of the outbreak in the same setting.

Part 4: Policies and Audit

4.1 Policies

4.1.1 The Trust has a programme for review and revision of core infection prevention and control policies as required by the Health and Social Care Act 2008 Code of Practice (2015). All policies are available to staff on the Trust intranet site and many are also available to the public on the main internet web page.

4.1.2 A schedule for review and revision of policies forms part of the annual IPC programme (Appendix B). The status of policies can be seen below:

Policy Code	Policy Title	Status
IC1	Outbreak Policy	For review December 2019
IC2	Hand Hygiene Policy	For review June 2019
IC3	Infection Control Policy	For review April 2022
IC5	CJD Policy	Under review
IC6	MRSA Policy	For review April 2022
IC7	Management of Viral Haemorrhagic Fevers incl Ebola Policy	For review Sept 2021
IC11	Tuberculosis Policy	For review May 2021

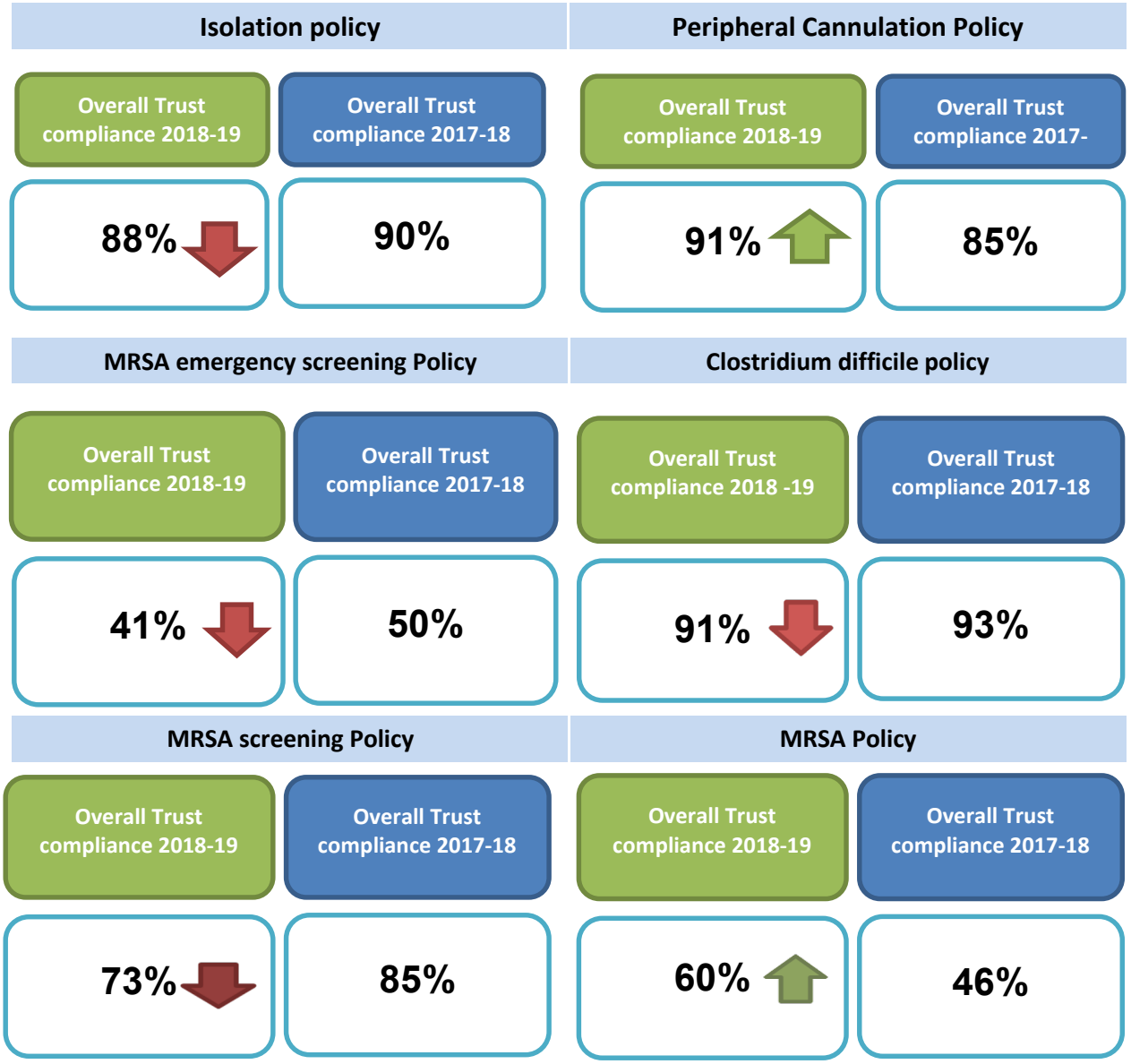
IC12	Local Decontamination of Medical Equipment Policy	For review June 2019
IC14	Clinical Specimen Policy	For review October 2020
IC15	Patient Isolation Policy	For review December 2019
IC17	Standard Precautions Policy	For review February 2021
IC18	Peripheral Cannulation Policy	For review June 2020
IC19	Clostridium difficile Policy	For review April 2021
IC 20	MRSA screening Policy	For review March 2021
IC21	Theatre Policy	For review September 2019
IC22	Management of Patients with Ectoparasitic Infestation Policy	For review December 2019
IC23	Infection Prevention and Control Surveillance Policy	For review April 2020
IC24	Management and Control of CPE Policy	For review August 2020
C56	Antibiotic Strategy	For review April 2021

4.2 Audit programme

4.2.1 An annual programme of audit is agreed as part of the annual IPC programme. The audit programme is a combination of policy audits and general IPC audits carried out as part of an unannounced visit schedule. Audit results are collated and fed back to the clinical area and action plans are requested as appropriate. The audits are presented to the Infection Control Committee and an annual report is produced, summarising all of the audit activity and high level findings.

4.2.2 In summary the audit findings for 2018-19 are as below

Audit	Overall Trust compliance 2018-19	Overall Trust compliance 2017-18
Hand Hygiene	91% ↑	90%
Standard Precautions	88% ↓	90%
Environmental	84% ↑	83%
Uniform	97% ↓	98%
Overall Compliance	90% →	90%



4.2.3 The overall recommendations in the annual audit report were:

- Staff should continue to utilise the audit tools available on the intranet during episodes of increased incidence of infection or as part of good practice measures to ensure high standards of infection prevention and control practice within their clinical areas
- Progress with recommendations and action logs should continue to be monitored using the IPC action tracker, with overdue actions formally presented at the HCAI Operational Group and Infection Control Committee meetings
- Unannounced audits/observations of practice should continue to be carried out by the IPCT with all high risk clinical areas visited at least once a year and more frequently if there is a concern about infection rates in the area or compliance with infection prevention and control policy. Low risk areas continue to have a 2-yearly programme which is more manageable.
- Ward and department managers must ensure results of all audits, along with ward/department actions are shared with ward staff at ward/department meetings and are readily available within their clinical area

Part 5: Training

5.1 A blended approach to training has been applied in the Trust with a mixture of face to face and electronic learning or workbooks being available to staff. The IPC team attend a number of directorate training days to provide training and an opportunity for staff to ask questions.

5.2 In 2018-19 the training introduced as part of a streamlining programme, which means that training is portable between a number of organisations with a standard programme being agreed and delivered, has continued for all Trust staff. Level 1 training for non-clinical staff is required 3 yearly and is available in a number of formats. Level 2 training for clinical staff is required annually, and the existing workbook has been updated to reflect the national programme. This is also able to be used in facilitated sessions.

5.3 In addition to the mandatory training programme the IPC team also facilitate a number of different training sessions including:

- Decontamination of patient equipment
- Clostridium difficile infection
- Error room session where staff have to spot mistakes in a clinical room
- Infection specific sessions delivered in response to an incident or increase in infection

Part 6: Antimicrobial Stewardship

6.1 The audit programme is on-going including the prophylaxis, core and IV audits. A rota for audit technicians has been created. Results for all audits are collated and updated as soon as the data collection process is completed. Current software related issues with the audit dashboard have been resolved through communication with the digital programming team. This should help reduce delays in publishing audit results in the future.

6.2 An antibiotic audit dashboard is utilised and is available to all trust staff via the intranet site. This allows simple and accurate trend reporting to the Infection Control Committee via a RAG rating system to make comparison of results more straightforward

6.3 Audits are reported to the Audit and Clinical Effectiveness Committee twice yearly and discussed at the Trust Antimicrobial Stewardship Committee (TASC) which is attended by clinical staff.

6.4 The Antibiotic Review Kit (ARK) Trial commenced during 2018-19**.** Initial data is promising, 69% of all antibiotics audited were prescribed using the ARK decision tool. representing increasing use of the decision tool as the trial continues. An average of 97% of the audited antibiotic regimens over the 8-week trial period were reviewed at 48-72 hours. This is testament to the trusts adherence to the start smart then focus guidelines for antimicrobial review. The ARK trial has shown a gradual change in the type of action taken on review of empirical antibiotics. We are seeing a larger proportion of reviews where the outcome results

in changing route or switching agent at 72 hours, instead of antibiotics continuing with no change. The main outcome of the trial is to stop unnecessary antibiotic courses early for those infections classified as 'possible' (the patient's illness is most likely non-infective but antibiotics are started as a precaution until a firm diagnosis is made). Unfortunately, during the trial period, the number of antibiotic courses stopped early has been very low (1%). It is clear that the ARK decision tool has begun to change the culture of antibiotic prescribing with regards to:

- Documentation of indication on the trust EPMA system.
- Antimicrobial review at 72 hours.
- Documentation of antibiotic review.

6.5 Through collaboration with the antibiotic lead microbiologist the current antibiotic guidelines will be transferred onto a mobile phone application (app) called 'MicroGuide.' Transferring the information onto this modern format improves the accessibility of the guidelines with the aim of improving antimicrobial stewardship. The app will also provide important dosing information and concise pharmacodynamic interactions to improve patient safety. Once the app is complete, posters with a QR code will be distributed trust wide in order to promote its use. Scanning the QR code on a mobile phone directly from the poster will automatically download the app.

6.6 Antibiotic ward rounds take place daily in critical care and it is hoped that additional wards can be added with the recruitment of new consultant microbiologists. Weekly ward rounds also take place in Haematology and Orthopaedics as well as weekly Multidisciplinary Team review of CDI patients

6.7 The Trust again participated in European Antibiotic Awareness day in November 2018 where staff were encouraged to sign up as antibiotic guardians

6.8 The digital programmes team and pharmacy team are working closely in order to develop the electronic prescribing and medicines administration (EPMA) system within TrakCare. The scope for our EPMA system to improve antimicrobial stewardship through persuasive pop ups and prompts is broad. However, software limitations mean that ideal processes cannot always be achieved. In 2018-19 an 'Antimicrobial review prompt' has been developed which will be added alongside prescribed antibiotics prompting timely review to facilitate good stewardship.

6.9 Order sets for specific indications of empirical antibiotics will be added to the system. This will encourage prescribers to choose appropriate empirical antibiotics according to the trust guidelines. Essentially the guidelines will be incorporated into the TrakCare system. There is a vast amount of data recorded on the TrakCare system each day. It is important that we can extrapolate this data in order to perform clinical audits and review practice. Work is on-going in order to achieve this.

Part 7: Decontamination of the environment and equipment

7.1 Decontamination is a process which removes or destroys infectious agents from furniture or medical equipment. Cleaning is always the first step in this process, which can then be followed by disinfection or sterilisation depending on the circumstances in which the equipment is used.

7.2 In 2018 the decontamination services, including domestic teams and the sterile services department transferred to a limited liability partnership (LLP) NTH Solutions which provides these services to the Trust.

7.3 The sterile services department is responsible for reprocessing reusable medical devices. All processes are fully validated and compliant to national standards HTM 01-01 and ISO 13485:2016 an internally and externally audited process. Disposable items are used wherever this is possible and efficient.

7.4 Decontamination audits are carried out annually in departments where local decontamination takes place and the IPC team are part of the audit team. The results are presented to the Decontamination Group.

7.5 The endoscope decontamination facilities on both sites are validated and compliant with national requirements HTM 01-06 and compliant to ISO 13485:2016. An Authorising Engineer (Decontamination) has validated the annual reports. All endoscopy reprocessing is provided by Decontamination services staff, trained and compliant in line with ISO 13485:2016.

7.6 The provision of cleaning services in hospital and external premises was provided in 2018-19 by a combination of LLP staff and external contractors who cover some community premises. Performance management systems are in place with monitoring staff carrying out checks of the environment and equipment in line with national standards of cleanliness and reporting via the HCAI Operational Group.

7.7 In addition to routine cleaning the Trust provides an enhanced cleaning service via the LLP with a response team and hygienist team responsible for additional cleaning of frequently touched items, deep cleaning, fogging with hydrogen peroxide and use of ultra violet light plus a mattress decontamination service

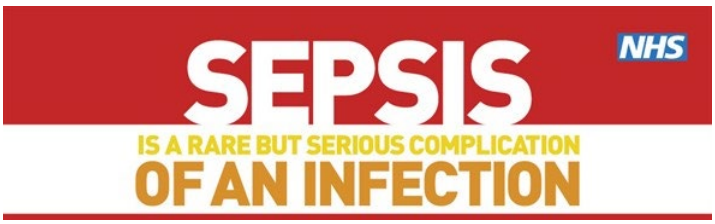
7.8 Unfortunately during 2018-19 a decant programme to facilitate refurbishment, decoration and deep cleaning of ward areas had to be postponed due to the need for intensive cleaning and refurbishment of one ward area following an increase in a particular infection. Reactive cleaning in response to outbreaks and incidents continued throughout the year.

Part 8: Other significant issues

8.1 During 2018-19 we had a continued problem with the number of patients with an emerging infection Carbapenemase producing Enterobacteriaceae (CPE) associated with a high risk unit and an outbreak was declared. This is an infection that is common in some other countries and some parts of England but has not previously been seen in the Trust. Environmental screening showed some potential reservoirs of infection in the environment and some practice improvements were required to address this. Enhanced surveillance and cleaning in the area was implemented and screening of patients to understand the scale of the problem was introduced. After a period with no new cases associated with the unit the outbreak was declared closed in February 2019, however the enhanced cleaning and screening will continue for a minimum of four months.

Part 9: Sepsis

9.1 Sepsis, also known as blood poisoning, is the immune system's overreaction to an infection or injury. Normally the immune system fights infection, but sometimes for reasons that are not yet understood, it attacks the body's own organs and tissues. If not treated sepsis can result in organ failure and death. With early diagnosis it can be successfully treated with antibiotics.



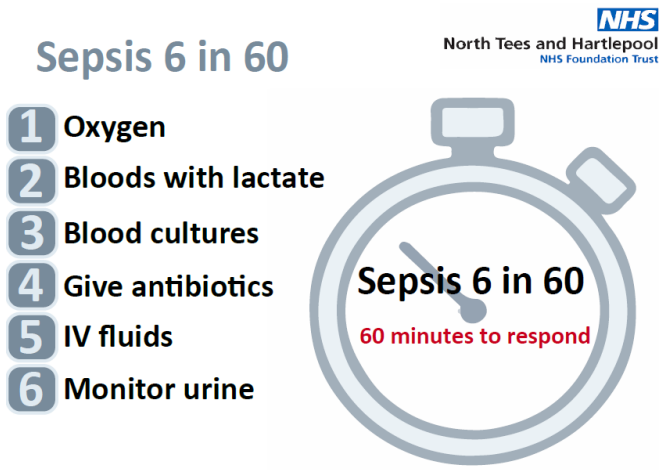
9.2 In 2018-19 the Trust participated in data collection for sepsis as part of the Commissioning for Quality and Innovation (CQUIN) schemes, reviewing records from emergency care and in patient areas to assess compliance with screening processes, timely treatment and appropriate senior review of antibiotics. This information has been used to target education and awareness raising for clinical staff. The compliance data can be seen below

Fig 9 Sepsis screening, treatment and review compliance 2018-19

	Q1	Q2	Q3	Q4
Number of cases reviewed	300	321	304	305
Number eligible for screening	289	296	273	275
screening compliance %	73%	73%	78%	85%
Treatment within 1 hour %	85%	89%	82%	89%
Antibiotic review within 24-72 hours	89%	99%	99%	99%

9.3 Actions taken to improve the recognition and treatment of sepsis include:

- Review of the sepsis screening tool with regional agreement on a standard approach
- Introduction of an electronic observation programme
- Introduction of electronic prescribing and medication administration (EPMA) system which improves accuracy of records and facilitates data collection
- Introduction of the National Early Warning Score (NEWS) 2 observation record, with training to support this
- Changes to the laboratory system to ensure requests for blood cultures now automatically results in a request for lactate level
- Identification of directorate sepsis champions with responsibility for communication, audit and training
- Teaching sessions on sepsis diagnosis and management
- Use of a sepsis reminder as a screensaver on Trust computers (as below)



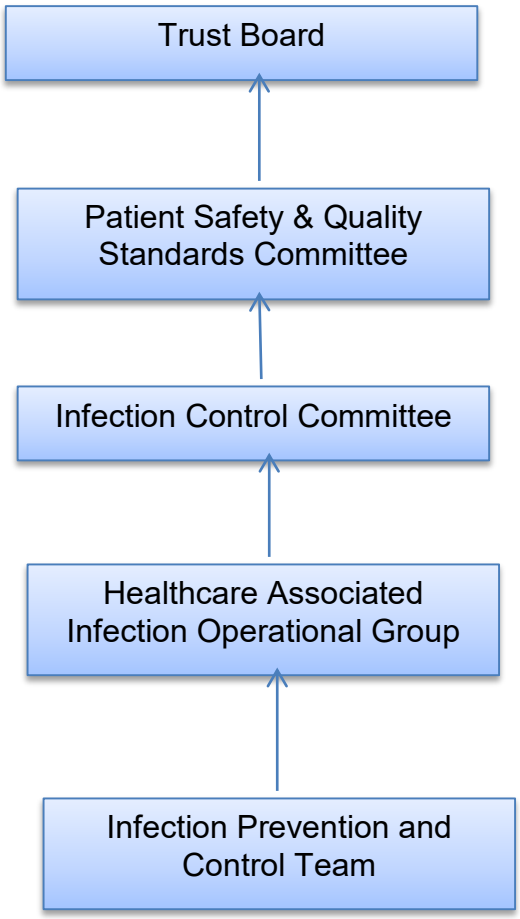
Part 10: Conclusion

10.1 Eliminating avoidable healthcare associated infection has remained a top priority for our staff and patients. In response a robust annual programme has again been implemented. However, a number of risks and challenges exist. In particular, these relate to continuing challenges with achieving the nationally set objectives, challenges with antimicrobial stewardship and the availability of sufficient single rooms to allow Trust policy to be fully implemented

10.2 Where risks are identified these have been added to the Trust risk register and are monitored and managed accordingly and reported into the Infection Control Committee.

10.3 We continuously strive to improve practice and keep our patients as safe as possible and protected from avoidable infections. We will continue to work with partner organisations to take a whole systems approach to infection prevention across all patient pathways. Although we did not achieve the national CDI objective our staff should take pride in the reductions in five of the six infections monitored via mandatory surveillance because it is their efforts which have contributed to these reductions and the associated impact on patient outcomes.

Appendix A


Trust Board
Patient Safety & Quality Standards Committee
Infection Control Committee
Healthcare Associated Infection Operational Group
Infection Prevention and Control Team

Appendix B: Annual IPC programme 2018-19

Health and Social Care Act Criterion 1: **Systems to manage and monitor the prevention and control of infection. These systems use risk assessments and consider the susceptibility of service users and any risks that their environment and other users may pose to them.**			
Action planned		Lead	Target date/ review frequency
1.1	Assess infection prevention and control (IPC) risks, put controls in place to reduce or control these risks and monitor via the Trust risk register.	IP Matron Clinical teams	Quarterly
1.2	Produce an annual IPC report for presentation to the Trust Board and publication on the Trust internet site.	DIPC	From end of March 2019
1.3	Implementation of an IPC cleanliness programme comprising: • Rolling programme of deep cleaning, environmental maintenance and bio-decontamination. • Mattress decontamination programme • Nursing and domestic equipment cleanliness monitoring. • Environmental audits • IPC un-announced visits to clinical areas and community premises. • De-clutter rolling programme	)FM company)))))))) Infection Prevention Matrons/IPCNs IP Matron/FM company	Quarterly
1.4	Review IPC training materials in line with national policy and guidance. Provide a robust programme of IPC training for all staff/volunteers at induction and in response to clusters/outbreaks of infection.	IP Matron	Quarterly
1.5	Develop and carry out an annual IPC audit programme of key IPC policies.	IPCT	Quarterly
1.6	Reports to the Trust board on trend analysis for infections, antimicrobial	DIPC/ AD Nursing & IPC	6 reports per year

	resistance and antimicrobial prescribing and compliance with audit programmes. Review of statistics on incidence of alert organisms, outbreaks and serious untoward incidents.		
1.7	Joint working with other health care workers and health care providers/organisations so that suitable and sufficient information on a service user's infection status is provided upon admission, when patients move between departments and organisations and upon discharge.	IPCT/Care Home IPC Nurse/ SCMs/ Clinical teams	Quarterly
Health and Social Care Act Criterion 2: **Provide and maintain a clean and appropriate environment in managed premises that facilitates the prevention and control of infections.**			
Action planned		Lead	Target date/review frequency
2.1	Monitor cleanliness standards and ensure that the environment is maintained in good physical repair and condition.	SCMs/Ward Matrons/ Domestic Managers/ Monitoring Officers/ AD Decontam	Quarterly
2.2	Attend monthly cleaning standards group meetings and monitor cleaning scores.	IPCT/ SCMs	Quarterly
2.3	Attend and contribute to decontamination group meetings ensuring that decontamination policies are in place and monitored. Assist with decontamination audits.	IPCT/ SCMs IPCT	Quarterly Quarterly
2.4	Attend and contribute to capital meetings as required. Contribute to all Estates Department new build and refurbishment projects in terms of giving IPC advice.	IPCT IPCT	Quarterly Quarterly
2.5	Have systems in place for the safe management of: • hand hygiene • water and air hygiene • pest control • drinkable and non-drinkable water supplies • minimising the risk of Legionella • minimising the risk of pseudomonas	IP Matron) FM)company)))	Quarterly

	• building and refurbishment • planned preventative maintenance • Cleaning services • food service, including food hygiene • laundry arrangements • waste management • decontamination	))))))))))))	
2.6	Approve pre-purchase procurement questionnaires for new equipment.	IP Matron	Quarterly
Health and Social Care Act Criterion 3: **Ensure appropriate antimicrobial use to optimise patient outcomes and to reduce the risk of adverse events and antimicrobial resistance.**			
3.1	Monitor adherence to the principles of Start Smart then Focus in all clinical areas.	Microbiologist / AM Pharmacist	Annually
3.2	Manage the existing antibiotic stewardship programme. Report antimicrobial stewardship activities to the Trust board via ICC	Microbiologist / AM Pharmacist DIPC	Quarterly
3.3	Continue with antibiotic audit programme, providing feedback to CDs, SCMs, Antibiotic Champions and patient safety leads requesting action plans from them as appropriate.	Microbiologist / AM Pharmacist	Annually
3.4	Review antibiotic consumption trends and explore the ability to report local antimicrobial susceptibility data.	Microbiologist / AM Pharmacist	Quarterly
3.5	Provide mandatory core training in prudent antibiotic use to all prescribers.	Microbiologist / AM Pharmacist T&D	Annually
Health and Social Care Act Criterion 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.**			
Action planned		Lead	Target date/review frequency
4.1	Provide accurate and up to date IPC patient and staff information leaflets and awareness posters.	IP Matron	Quarterly
4.2	Provide accurate and up to date information for patients, the public and staff on the Trust website.	IPCT	Quarterly
4.3	Work collaboratively with Healthcare User Group, Healthwatch and Patient Experience Team as required.	IPCT	Quarterly

4.4	Where possible, locally resolve informal complaints about IPC related incidents and investigate IPC related complaints.	IP Matron/ SCMs	Quarterly
4.5	Comply with national mandatory and voluntary surveillance programmes by reporting CDI/iGAS/E-coli, GRE, MRSA, MSSA bacteraemia & Norovirus outbreaks.	AD Nursing & IPC	Quarterly
4.6	Participate in awareness initiatives including: European Antibiotic Awareness Day WHO hand hygiene day World Sepsis day World Antibiotic week International Infection Control Week	IPCT AM Pharmacist Sepsis leads	Quarterly
Health and Social Care Act 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.**			
Action planned		Lead	Target date/review frequency
5.1	Work collaboratively with Public Health England North East in order to manage outbreaks and occurrences of serious infection.	IPCT	Quarterly
5.2	Undertake daily alert and targeted surveillance and act on results accordingly.	IPCT	Quarterly
5.3	Feed back infection rate statistics via the Safety, Quality and Infections Dashboard and to Directorates via performance statistics.	IPCT	Quarterly
5.4	Work collaboratively with Critical Care and NNU staff to use the principles and best practice from the Matching Michigan project to reduce line related bloodstream infections.	IPCT/ Microbiologist	Quarterly
Health and Social Care Act 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.**			
Action planned		Lead	Target date/review frequency
6.1	Include IPC and cleanliness in: • Induction programmes for all staff, including volunteers • Job descriptions of all staff • Annual performance reviews of all relevant staff	IPCT All Managers All Matrons	Quarterly

6.2	Provide staff with training and assessment in IPC procedures prior to them being carried out independently.	IPCT/ Ward Matrons/ Clinical Educators	Quarterly
6.3	Co-ordinate the IPC link worker network and the hand hygiene Champions initiative. Facilitate an annual link worker study day.	IPCNs	Quarterly
6.4	Carry out RCA for MRSA bacteraemias. Initiate/participate in RCA for trust attributed Toxin positive Clostridium difficile cases/ MSSA bacteraemia cases/E coli bacteraemias/Clostridium difficile related death.	IPCT IPCT/Clinical teams	Quarterly
6.6	Provide information on infection prevention and control risks and responsibilities to contractors by written information or face to face session	IPCT	Quarterly
Health and Social Care Act Criterion 7: **Provide or secure adequate isolation facilities.**			
Action planned		Lead	Target date/review frequency
7.1	Work collaboratively with the Estates Dept to increase, where possible, the availability of isolation facilities.	FM company/IPCT	Quarterly
7.2	Undertake risk assessment of patients with infection to ensure optimal use of isolation facilities.	IPCT All Matrons SCMs	Quarterly
7.3	Review the use and availability of isolation facilities as part of winter resilience	IPCT	From November 2018
Health and Social Care Act Criterion 8: **Secure adequate access to laboratory support as appropriate.**			
Action planned		Lead	Target date
8.1	Work collaboratively with the Microbiology Laboratory staff in order to identify any shortfall in resources and escalate appropriately.	Microbiologists	Quarterly
Health and Social Care Act Criterion 9: **Have, and adhere to, policies designed for the individual's care and provider organisations that will help to prevent and control infections.**			

Action planned		Lead	Target date/review frequency
9.1	Review all core IPC clinical policies by their review date. Policies to be available to all staff and the public.	Infection Control Doctor AD Nursing & IPC	Quarterly
9.2	Produce robust action plans in response to audit findings within the given timescale and review action plans to ensure that actions have been completed.	SCMs/ Heads of departments	Quarterly

Health and Social Care Act Criterion 10:

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

Action planned		Lead	Target date/review frequency
10.1	Work collaboratively with the Occupational Health & Wellbeing Department in order to provide optimal advice on infection prevention and control related matters.	IPCT	Quarterly
10.2	Monitor staff compliance with the Accidental exposure to bodily fluids policy and address instances of non-compliance.	SCMs OH&WD H&S	Quarterly
10.3	Risk manage mucous membrane exposure and sharps injuries and incidents.	OH&WD	Quarterly
10.4	Manage cases of occupationally acquired Dermatitis by providing treatment and advice.	OH&WD	Quarterly
10.5	Provide guidance on glove use via the latex policy.	OH&WD	Quarterly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