Kingston Hospital NHS
NHS Foundation Trust

Trust Board	**Item: Annual Report Infection Prevention & Control.**
Date: 24/05/2017	**Enclosure:**

Purpose of the Report:

The Trust Board are provided with the Annual Report of Infection Prevention & Control 2016/17 in order to:

- Provide assurance of the Trusts compliance with the Health and Social Care Act 2008 (DH, 2015) during 2016/17.
- To keep the Trust Board informed of Infection Prevention & Control performance over the year. This is in addition to the key infection control performance measures which are reported through the Trust governance framework at each Trust Board meeting.
- To highlight the aspects of good performance in the previous year, with regards to infection control and areas for further improvement.

To highlight the key areas of focus for 2017/18.

For: Information ✓☐ Assurance ✓☐ Discussion and input ☐ Decision/approval ☐

Sponsor (Executive Lead):	Duncan Burton Director of Nursing and Patient Experience Director of infection Prevention & Control (DIPC)
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Risk Implications – Link to Assurance Framework or Corporate Risk Register:	Assurance Framework
Legal / Regulatory / Reputation Implications:	Health and Social Care Act 2008 (DH, 2015)

Link to Relevant CQC Domain:
Safe✓☐ Effective ☐ Caring ☐ Responsive ☐ Well Led ✓☐

Link to Relevant Corporate Objective:	Corporate Objective 1
Document Previously Considered By:	Infection Prevention & Control Group 11/04/17

Recommendations:
Board members are requested to **note** the content of the report and **priority areas** for the coming year.

Kingston Hospital NHS
NHS Foundation Trust

ANNUAL REPORT

INFECTION PREVENTION & CONTROL
2016 / 2017

CONTENTS

1.0 Executive Summary

1.1 Introduction and Purpose

The Trust has a statutory responsibility to be compliant with the Health and Social Care Act 2008 (DH, 2015). A requirement of this Act is for the Board of Directors to receive an annual report from the Director of Infection Prevention and Control (DIPC). This report details Infection Prevention and Control Team (IPCT) activity from April 2016 to March 2017, with an assessment of performance against national targets for the year.

Key Points:

- There were three Trust-apportioned Meticillin-resistant Staphylococcus aureus (MRSA) bacteraemia cases reported against the national zero tolerance. Learning points from associated Post Infection Review (PIR) are being progressed.
- There were 17 Trust-apportioned *Clostridium difficile* toxin (CDT) positive cases this year, one of which was classed as a 'lapse in care' out of the ceiling target of nine lapses in care. This is an improvement from last year's 19 cases and three lapses in care.
- There were five Trust-apportioned Meticillin-sensitive Staphylococcus aureus (MSSA) bacteraemia cases against no national target. This is a reduction from the eight reported cases last year.
- There were 11 Trust apportioned *E.coli* bacteraemia cases demonstrating a decrease from the 20 reported cases last year. The team commenced PIR on Trust cases in July 2016 and formulated an action plan in response to the ambition set out by Public Health England and NHS Improvement (2017) to halve healthcare associated Gram-negative blood stream infections by March 2021.
- There was an overall decrease in numbers of Vancomycin-resistant enterococci (VRE) from 80 cases last year to 39 cases this year. Of the 39 cases this year 17 were in the Intensive Care Unit (ITU), a decrease from the 25 reported last year. It is acknowledged that screening of all patients admitted to ITU finished in September 2015.
- There was a continuation of the previous year's Norovirus outbreak which commenced in February 2016 and lasted until June 2016. There were 23 confirmed cases of Norovirus occurring between April and June 2016. The second outbreak commenced in November 2016 and consisted of 75 cases, bringing the total for the year to 98 cases. The outbreak ended mid-March 2017.
- There were 98 confirmed cases of influenza this year mostly occurring from January to March 2017. Roughly 71% of the positive cases were tested within the first three days of admission, indicating admission into the Trust with influenza.
- The Trust has moved closer to becoming fully compliant with The Health and Social Care Act 2008 (DH, 2015). Nine out of ten criteria have been self-assessed as 'met' with the remaining one assessed as 'mostly met' and related to risk assessment of infectious status (MRSA screening).
- Hand hygiene and bare below the elbow compliance was audited monthly by infection control link practitioners. The monthly percentage of hand hygiene compliance for the year has increased from 83% in April 2016 to 96% in March 2017. Action plans have been completed.
- The Trust participated in the mandatory three-month orthopaedic surgical site infection surveillance system (SSISS). Results have not yet been released.
- The Trust participated in the National Point Prevalence Survey, which took place over three weeks in October 2016. Results will be available on the 27th April 2017, following the Healthcare Infection Society (HIS) Spring Meeting.

2.0 Infection Prevention & Control Arrangements

2.1 Infection Prevention & Control Team (IPCT)

Table 1 The IPCT

Fran Brooke-Pearce	Lead CNS Infection Prevention & Control (CNS IP&C)	1.0 WTE
Shona Ross	Lead CNS Infection Prevention & Control (CNS IP&C)	1.0 WTE*
Vicky Wells	Infection Control Nurse	0.8 WTE
Elli Demertzi	Consultant Microbiologist/ Infection Control Doctor	3 PAs

*This post was not filled from February to August 2016 due to vacancy followed by withdrawal of appointed replacement.

2.2 Infection Prevention & Control Group (IPCG)

The IPCG is chaired by the DIPC. Each quarter, the IPCT produce a report.

Table 2 Attendance at the IPCG - Terms of Reference Requirements

Required	**19.04.16**	**19.07.16**	**18.10.16**	**10.01.17**
Director of Nursing/ DIPC (chair)	Present	Apologies	Apologies	Present
Deputy Director of Nursing	Present	Present	Apologies	Present
Head of Nursing	Present	Present	Apologies	Apologies
Consultant Microbiologist/ Infection Control Doctor	Present	Apologies	Present	Present
CNSs Infection Prevention & Control	Present	Present	Present	Present
Infection Control Nurse	Present	Present	Present	Apologies
Public Health England representative	Present	Present	Present	Present
Facilities Manager/ Estates Manager/ ISS Manager	Present	Present	Present	Present
Health & Safety Adviser	Present	Present	Present	Apologies
Clinical Audit Representative	Absent	Absent	Absent	Present
Occupational Health Representative	Absent	Apologies	Apologies	Present
Matron (one to attend to represent matrons group)	Present	Present	Apologies	Present
Antibiotic Pharmacist	Absent*	Absent	Apologies	Absent
Decontamination Manager	Absent**	Absent	Apologies	Absent
South London CSU Infection Control Specialist Nurse	Present	Apologies	Apologies	Apologies

*****Maternity Leave
** Not in post

2.3 Reporting line to the Trust Board

The IPCT reports directly to the Director of Infection Prevention and Control (DIPC), who is the Trust Director of Nursing and Patient Experience. The DIPC meets regularly with the Chief Executive, chairs the IPCG meetings and is a member of the Clinical Quality Improvement Committee (CQIC), Quality Assurance Committee (QAC) and Serious Incident Group (SIG). The IPCT provides quarterly exception reports for the CQIC meetings and reports for Quality Assurance Group when required. This year an IPCT Lead attended QAC and CQIC to update the groups, as well as presenting to the Clinical Quality Review Group (CQRG) on the Trust's preparation for the new *E.coli* Bacteraemia target.

2.4 IPCT Liaison with Service Lines

Representatives from the Service Lines attend the IPCG meetings and report back at Service Line meetings.

2.5 Antibiotic Prescribing and Stewardship
The Antibiotic Management Group (established in February 2013) continues to promote excellence in antimicrobial prescribing. This group reports to the IPCG and also to the Drugs and Therapeutics Group.

Work this year has focused on:

- Working towards the new antibiotic stewardship CQUINs. The two parts comprised (a) Empiric review of antibiotic prescriptions within 72 hours and (b) reduction in antibiotic consumption with a total financial value of £480k. The Trust successfully negotiated an amended part (b) of 'appropriate use of broad spectrum antibiotics' instead of 'reduction in antibiotic consumption'. Both CQUIN targets were met for all quarters this year.
- Reviewing and updating Trust Antibiotic Guidelines.
- Reviewing new antimicrobial agents and agreeing strategies for their use in the Trust.
- Overseeing the rollout, conduct and reporting of the monthly antibiotic prescribing audits across the Trust based on 'the Start Smart and Focus' approach, with feedback to individual consultant groups and CQIC. Risk assessments of antibiotic audits have demonstrated an improvement from 12 (red) in Quarter One to six (amber) in Quarter Three.
- Developed and implemented an education and training program for junior doctors, pharmacists and nurses.
- Reviewed incident reports related to antimicrobial use.
- Working closely with primary care pharmacists to update both Richmond and Kingston GP group antimicrobial prescribing guidelines.
- A priority for next year is to have a whole time equivalent antibiotic pharmacist in place to aid the Trust antibiotic stewardship and CQUIN work.

2.6 Collaborative working with Community Services/ Service Level Agreements
The IPCT continue to work with the community in the following ways:

- The Consultant Microbiologists provide Infection Control cover for Your Healthcare (Kingston), Hounslow & Richmond Community Healthcare Alliance & Royal Hospital for Neuro-disability, Putney.
- The IPCT provide infection control advice and training for Princess Alice Hospice in Esher, and complete an annual infection control audit.
- The IPCT have a service level agreement in place with BMI Coombe wing (on site)
- The IPCT liaise with the community Infection Control Nurses when required.
- The IPCT liaise with Public Health England / South London Health Protection Team and NHS South East commissioning Support Unit when required.

2.7 Decontamination Group
The IPCT attend quarterly Decontamination Group meetings. The aim of the group is to ensure that equipment used for patient care is decontaminated safely, effectively and in accordance with published standards. The Decontamination Group is accountable to the Health and Safety Committee.

3.0 Targets and outcomes
3.1 The Health and Social Care Act 2008 (DH 2015) provides Trusts with a code of practice for the prevention and control of healthcare associated infections (HCAI's) and makes clear their statutory responsibilities. Each Trust is expected to have sufficient systems in place to apply evidence-based protocols and to comply with the relevant provisions of the Act so as to minimise risk of infection to patients, staff and visitors. One criterion out of 10 is currently considered to be 'mostly met' and this area is related to risk assessment of infection, specifically MRSA screening (see Section 5.1.1).

3.2 Health Assure, which recorded the monitoring of compliance with The Health and Social Care Act, 2008 (DH, 2015) has now been removed from the Trust. The IPCT are currently considering other options for this work to continue.

4.0 Mandatory Reporting of Healthcare Associated Infections (HCAI)
Over the past year the Trust Business Intelligence Team (BIT), following sign off by the DIPC, reported the following HCAI statistics to Public Health England:

- Meticillin-resistant *Staphylococcus aureus* (MRSA) bacteraemia rates.
- Meticillin-sensitive *Staphylococcus aureus* (MSSA) bacteraemia rates
- *Clostridium difficile* infection rates.
- *E coli* bacteraemia rates.

Mandatory HCAI surveillance results have been reported via the quarterly report to IPCG and CQIC, and to the Trust Board by the DIPC.

The Trust is currently installing an infection control software package called ACME in order to provide a more robust system of infection control surveillance.

The Trust also reports Serious Incidents (SI) related to Infection Control and outbreaks of infection, although none of the infections in 2016/17 met the SI criteria.

5.0 Reportable Healthcare Associated Infections

5.1 Meticillin-resistant *Staphylococcus aureus* (MRSA) bacteraemia

The total number of Trust-apportioned MRSA bacteraemia (blood stream infection) cases for the year was three against a ceiling target of zero. Cases are deemed Trust-apportioned if the blood cultures are taken on or after the third day of admission. The Trust is ensuring that learning from each Post Infection Review (PIR) is taking place.

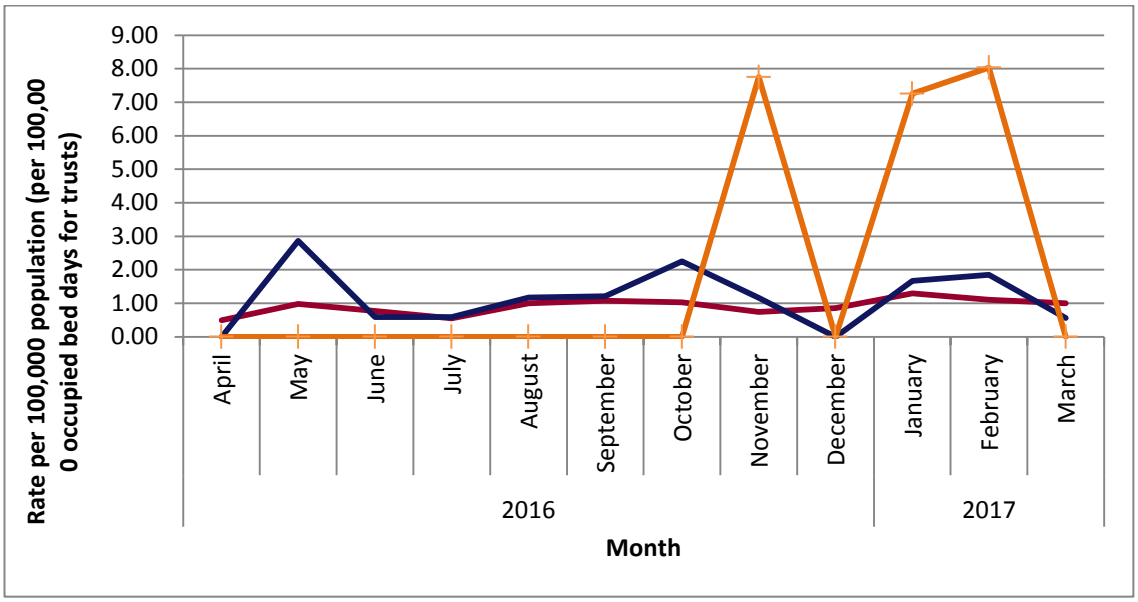
Case 1 – the patient was previously MRSA positive and admitted into a bay but not screened despite being flagged for MRSA on the Care Record Service (CRS). During the patient's previous admissions no decolonisation had been given. The patient had many intravenous (IV) lines, where it was noted that documentation was sub-optimal. The source of infection was not found and the patient was treated and recovered. There were three learning points – screening, decolonisation and documentation of IV line care, and these aspects are currently being targeted.

Case 2 – the patient was transferred from another hospital and was screened on admission to the ward, however the screen was never processed or found. The patient was screened on admission to the Intensive Care Unit and the screen and blood cultures, taken at the same time, were MRSA positive. The learning point taken forward from this case is to ensure MRSA screening results are followed up, in order to ensure prompt decolonisation should the patient be colonised with MRSA.

Case 3 – this patient had chronic discoid eczema with chronic irritation of the skin. The patient was screened on admission as per policy and found to be MRSA positive. Decolonisation protocol was completed twice after the second screen proved positive again. After becoming unwell a septic screen was performed which identified MRSA bacteraemia. Initially, clinical signs demonstrated chest sepsis and antibiotics were commenced for pneumonia. It is therefore considered that this case was unavoidable. Hand hygiene and documentation of intravenous line care were learning points for this case.

Themes from each of the PIR's demonstrate gaps in MRSA screening and documentation, and intravenous line care documentation. Due to the number of cases this year and the identified gaps an action plan has been developed and is in place (Appendix 1).

Graph 1 National and regional MRSA bacteraemia rates including Kingston Hospital NHS Foundation Trust (Public Health England, 2017)



This graph demonstrates KHT rate per 100,000 bed days against England and South London Acute Trust rates.

Key

Kingston Hospital NHS Foundation Trust
South London (acute trust rate)
England (acute trust rate)

5.1.1 MRSA Screening and Decolonisation

The ward level MRSA screening report has been rewritten to address a number of issues, such as removing system-generated MRSA screens, which obscures compliance results. The compliance is now being monitored for specific services, and results will be available following a comparison of the MRSA Screening Compliance Report against a second Point Prevalence Survey, which is due to be conducted in September 2017 (see below).

To assess compliance with the Trust MRSA screening & decolonisation guideline, an audit was completed on 39 patients admitted to AAU in one week in December 2016. Key findings were as follows:

- 72% of patients were managed in accordance with Trust guidance;
- Three patients were screened who did not require screening;
- Six patients who did require screening were not screened;
- There were no patients who required decolonisation therapy;
- Information gathered from CRS by the Business Intelligence Team inaccurately reported the MRSA screening status for 13 patients.

A Trust-wide point prevalence survey was completed on all patients admitted on one day in February 2017 (27th); n=123.

- 83% of patients were managed in accordance with Trust guidance;
- There were no patients screened who did not meet the screening criteria;
- One patient was screened >24 hours after admission, which may have been due to the automatic CRS order for an MRSA screen to be taken on admission;
- There were no patients who required decolonisation.

The point prevalence survey demonstrated an increase in compliance with Trust guidance of 11% from the December audit.

It is anticipated that MRSA screening & decolonisation compliance will improve further when the action plan (Appendix 1) has been fully implemented, and the aforementioned CRS issues are resolved. As

stated previously a second point prevalence survey will be completed in September 2017 for comparison.

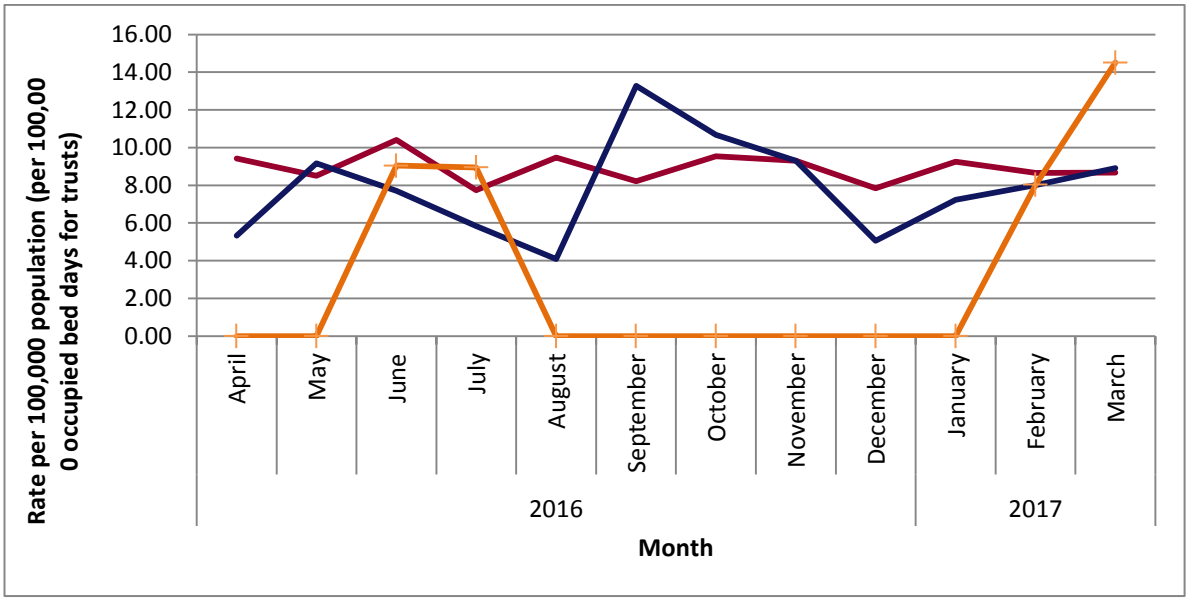
5.2 Meticillin-sensitive *Staphylococcus aureus* (MSSA) bacteraemia

Five Trust-apportioned MSSA bacteraemia cases were reported this year compared to eight last year. There is no national benchmark or annual threshold set for MSSA bacteraemia rates however the Trust aims to have less than one per month. The Trust carries out PIR on these cases where required in order to aid learning.

PIR's demonstrated that two were possibly from old cannula sites, and one was line related. Following guidance from Epic (Loveday *et al* 2014) cannulae can now stay in for up to 7 days and this is now Trust policy. This is something that the Trust is closely monitoring. The line related case was inserted with appropriate aseptic technique and had been Visual Infusion Phlebitis (VIP) scored appropriately and was therefore deemed unavoidable. The other cases are currently being investigated.

All cases generated action plans which were discussed at Service Line Review and Serious Incident Group, in order to ensure learning.

Graph 2 National and regional MSSA bacteraemia rates including Kingston Hospital NHS Foundation Trust (Public Health England, 2017)



This graph demonstrates KHT rate per 100,000 bed days against England and South London Acute Trust rates.

Key

Kingston Hospital NHS Foundation Trust
South West London (acute trust rate)
England (acute trust rate)

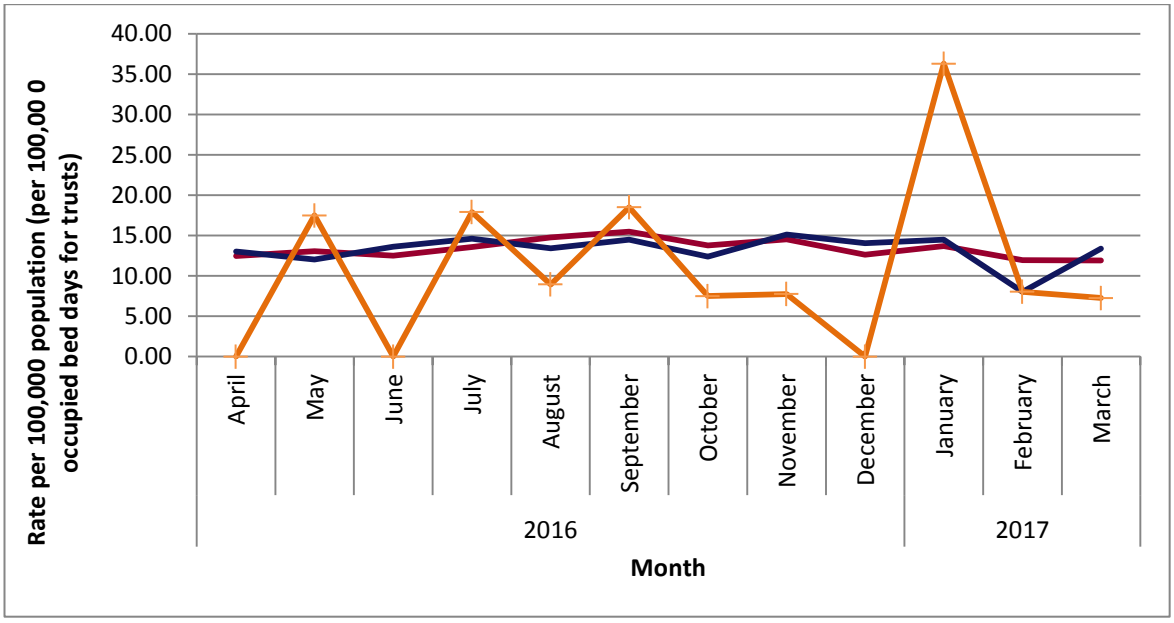
5.3 *Clostridium difficile* Toxin (CDT)

There were 17 Trust-apportioned CDT positive cases in total this year, compared to 19 last year. Cases are deemed Trust-apportioned if the infection is diagnosed from a sample taken on or after the fourth day of admission. However, cases are only counted if a lapse in care is identified, and the Trust was allowed nine lapses in care this year. There was one lapse in care this year compared to three last year as assessed by the South East London Commissioning Support Unit Infection Control Nurse Specialist.

Post Infection Review (PIR) was completed and the lapse in care was due to antibiotic prescribing which did not follow Trust policy or have a discussion with the Consultant Microbiologist. Cases have been presented to Service Line Review meetings and Serious Incident Group in order to facilitate learning.

The trajectory for next year remains at nine lapses in care however the definition has changed slightly which may have an impact on the numbers reported as a lapse in care. 'A lapse in care would be identified by evidence that the relevant provider did not follow policies and procedures consistent with local guidance, written in line with national guidance and standards' and 'it must be noted that lack of compliance with any one of these elements would not in itself indicate that the infection was definitely caused by the provider organisation, only that best practice was not followed at all times' (NHS Improvement 2017a).

Graph 3 *Clostridium difficile* toxin infection rates, London, England and Kingston Hospital NHS Foundation Trust (Public Health England, 2017)



This graph demonstrates KHT rate per 100,000 bed days against England and South London Acute Trust rates.

Key

Kingston Hospital NHS Foundation Trust
South West London (acute trust rate)
England (acute trust rate)

5.4 *Escherichia coli* (*E.coli*) bacteraemia

Public Health England alongside the UK Sepsis Trust (2016) and NHS Improvement (2017b) has set an ambition to halve healthcare associated Gram-negative blood stream infections by March 2021. NHS Trusts will be expected to report cases of bloodstream infections due to *Pseudomonas aeruginosa* and *Klebsiella* spp in addition to *E. coli* bacteraemia reporting already in place.

The Trust reported a total of 168 *E.coli* bacteraemia cases this year. Of that number only 11 were Trust apportioned which is a decrease from 20 Trust apportioned cases reported last year. From July 2016 the IPCT commenced PIR for each case of Trust apportioned *E. coli* bacteraemia, with clinical teams taking this over from January 2017. From the completed PIR's the causes were noted to be urosepsis; septic arthritis; peritonitis. Documentation of line insertion and care has been highlighted and is an area that the Trust is already currently focusing on.

The Trust has previously set a local target of two Trust-apportioned cases per month, using an interim formula based on the one currently used for MRSA bacteraemia apportionment (i.e. infection on or after the 3rd day of admission). PHE have recently confirmed that this process is to be officially used, and that individual Trust ceiling targets will be set in due course. *E.coli* will be added to the Trust Integrated Board Performance Report for 2017/18. The IPCT have already set out an action plan for achieving reductions (Appendix 2).

6.0 Outbreaks and Incidents

6.1 Vancomycin-resistant enterococci (VRE)

During 2016 – 2017 there were a total of 39 VRE cases with 17 in the Intensive Care Unit (ITU). This is a reduction on last year when there were 80 VRE cases in total with 25 cases in ITU. Screening of all patients admitted to ITU was discontinued in September 2015 following advice from PHE.

Typing continues to be carried out on a number of cases and on the wards no correlation between typing results was identified. Typing results for ITU where available are demonstrated in the following table.

Table 3 ITU VRE typing

Typing	Number of cases
SGEO07EC-15	5
SGEO07EC-24	3
SGEO07EC-25	1
SGEO07EC-13	1
Unique	3

Work continued to monitor and reduce rates. A meeting took place in April 2016 between the Microbiology and Anaesthetic Consultants, ITU Matron and CNS Infection Control Specialist. Theatre 7 was investigated as it was noted that five of the VRE positive surgical patients in the previous quarter had been there. Peter Hoffman, Consultant Clinical Scientist and environmental adviser at Public Health England, was invited to visit theatre 7 and ITU. Minimal concerns were noted and an action plan was completed, consisting of looking at aspects of equipment and environmental cleaning; intravenous device care; hand hygiene compliance and antibiotic use. The IPCT also carried out an environmental audit in the theatre department, generating a report and actions, which were completed. There have been no further concerns.

6.2 Norovirus

There were a total of 98 confirmed cases of Norovirus from April 2016 – March 2017, compared to 61 last year. This includes 23 cases that occurred between April 2016 and June 2016, which was a continuation of the previous year's outbreak. The second outbreak commenced in November 2016 and consisted of 76 cases. This year, it was noted that patients were staying positive for longer. Patients' with confirmed or suspected Norovirus were isolated in side rooms or cohorted in bays. Hospital wide emails were sent reminding staff about the importance of optimal infection control practices, including hand hygiene and equipment cleaning, as well as keeping clinical areas clutter free to allow effective cleaning by ISS. Ward sisters and the pharmacy lead were reminded to monitor laxative use in those with diarrhoea. Norovirus was discussed at the Trust outbreak meetings. Enhanced cleaning was put into place. Daily communications were maintained via email to key staff within the Trust, Public Health England and the South East Commissioning Support Unit. The IPCT attended bed meetings where possible. Local outbreak meetings were convened when necessary and chaired by the Director of Nursing and Patient Experience. PHE were asked to join one outbreak meeting to confirm all actions that the Trust was taking were optimal and this was confirmed. The outbreak ended during mid-March 2017.

6.3 Influenza

There were 98 confirmed cases of influenza this year with most occurring from January to March 2017. Most cases were Influenza A, with nine cases of Influenza B and six cases of Parainfluenza. Roughly 71% of the positive cases were tested and found positive to influenza within the first three days of admission, indicating admission into the Trust with influenza. The Trust Respiratory Tract Infection Guidelines were revisited and clear guidance was disseminated via hospital wide emails and in the form of posters for relevant areas. Hospital wide emails were sent regarding Influenza management and taking of urgent swabs. All cases and contacts of cases were treated with Tamiflu where appropriate and isolated accordingly. Enhanced cleaning was put into place. Trust outbreak meetings

were held where actions were discussed. PHE and the CSU were kept informed throughout the outbreak, which came to an end during mid-March 2017.

In addition, the Trust telephone message for the public was changed to address diarrhoea and vomiting and Influenza. Signage was placed at the main entrances into the Trust. Cohorting guidelines for Influenza and Norovirus cases were discussed with the Advanced Site Practitioners and guidelines provided in writing. Advice was provided on non-urgent diagnostic testing and restrictions for infection control.

6.4 Carbapenemase-producing enterobacteriaceae (CPE)

In January 2017, a patient who was originally reported and 'flagged' on Care Record Service (CRS) as *Klebsiella pneumoniae* Extended Spectrum β lactamase producing bacteria (ESBL) positive in her urine was identified as CPE positive. The original ESBL 'flag' had a comment added to denote the CPE status. Weekly CPE screening was implemented for the patient and staff members were advised on the importance of strict adherence to isolation precautions. CRS notes were 'flagged' regarding exposure and admission screening for the 18 contacts. The two remaining in-patient contacts were screened for CPE and found to be negative. One patient was transferred to another Trust where the infection control team were notified. The other 15 contacts had been discharged to their own homes. Teddington Memorial Hospital, where the patient was transferred to, were informed of her CPE status.

In March 2017 the patient was readmitted to the Trust, but not initially isolated due to the CRS 'flag' not being clear - it was thought that she had an ESBL producer in her urine. The patient was catheterised, and as such was risk assessed as a lower priority for a single room than other patients on the ward at that time. She was isolated when the issue was identified and staff were advised on isolation precautions. Three patients contacts were identified, all had gone home. Their notes were flagged as above. The ESBL' flag' on CRS was removed and a CPE 'flag' was added to the original case.

6.5 Measles

In April 2016 an in-patient in Hamble ward was found to have measles. This was a late diagnosis as dermatology had initially diagnosed a severe drug reaction. The patient had been admitted with the rash. There were 24 patient contacts, and those discharged received a letter regarding the contact. GP's were also informed by letter. Patients remaining in the Trust had their immunity checked and staff members with direct contact were advised accordingly. In May 2016 a patient who had been admitted to AAU and Hardy ward was also found to have measles. Thirteen patients were followed up in this case.

New measles guidelines were produced and are now available on the Trust intranet. Measles posters were displayed in A&E, AAU and in staff rooms in clinical areas. Messages alerting staff regarding patients with a rash and the risk of measles were also sent to staff via team brief and hospital wide emails.

6.6 Pertussis

In July 2016 a midwife was found to have whooping cough (Pertussis) whilst she had been working in the Transitional Care ward in the Maternity Department. The IPCT liaised with PHE and an incident meeting was held. A total of 39 letters were sent to patient contacts and their GP's in the areas where the midwife had worked. Staff contacts were followed up by the Occupational Health and Wellbeing Department.

6.7 Group A Streptococcus (GAS)

In July 2016 a child with ß Haemolytic Streptococcus Group A bacteraemia was seen in paediatric A&E, Sunshine & Dolphin. PHE were notified and contact tracing was completed with 16 letters sent to the parents of the exposed patients and their GP's. Occupational Health & Wellbeing were involved in following up the 20 members of staff exposed.

A patient admitted to AAU in August 2016 tested positive for Group A Streptococci. Four patients were exposed in AAU and as they were still in-patients their Consultants were informed. Notes were added to their CRS medical notes.

In February 2017, a patient on Cambridge ward was found to have ß-haemolytic Streptococcus Group A in a wound. The patient had been isolated throughout and there were no patients exposed. Occupational Health & Wellbeing were informed for staff follow up.

In March 2017 there was a patient in AAU found to have invasive group A strep. This patient had been moved to a side room prior to the result but had been in a bay for a short time. Contacts were traced and patients still in the hospital had a note regarding the contact added to their medical notes and their Consultants' were verbally informed. Two discharged patients were sent letters, with their GP's copied in.

6.8 Chicken pox and Shingles

There were six cases of Chickenpox this year, three on Dolphin ward, and one each on AAU, Astor and Blyth wards. Staff contacts were referred to Occupational Health and Wellbeing. Patient contacts were traced and followed up and a number of letters were sent to all patient contacts from A&E and those exposed and already discharged from the affected wards.

In August 2016 a (non-clinical) staff member on Sunshine ward was diagnosed with shingles. She was sent home and advised not to return to work for five days. Occupational Health and Wellbeing considered the risk of transmission to other staff to be negligible. She had had no patient contact and no further action was required.

7.0 Surveillance

7.1 Surgical Site Infection Surveillance Service (SSISS)

The IPCT participated in the mandatory three month orthopaedic SSISS from September to December 2016. Results have not yet been released.

7.2 National Point Prevalence Survey

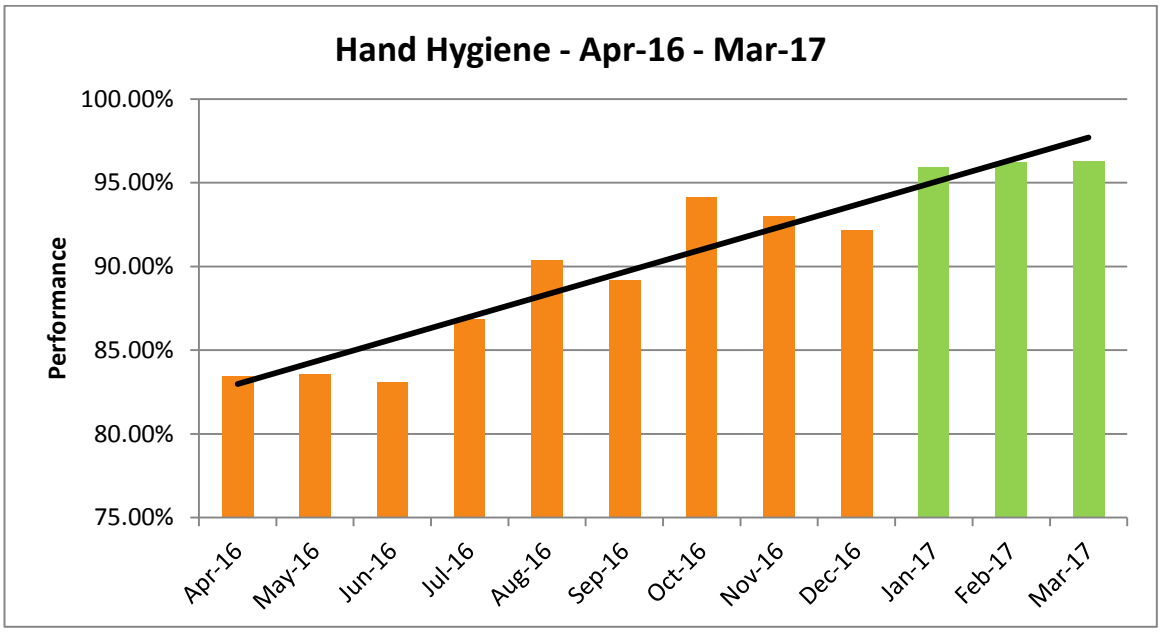
During October 2016 the IPCT and Antibiotic Pharmacists took part in the National Point Prevalence Survey of Healthcare-associated Infections and Antimicrobial Use in Acute Care Hospitals. This involved auditing in-patients that fitted the criteria (476 in total, including babies) over a period of two weeks and using the web-based data entry system. Results will be ready this spring and will enable the Trust to compare antibiotic usage and rates of Healthcare Associated Infection with other Trusts nationally.

8.0 Hand Hygiene Compliance

8.1 Hand Hygiene Audits

Hand hygiene audits have been carried out by the infection control link practitioners on a monthly basis with scores published on the Nursing and Midwifery Quality Scorecard, service line score cards and the Trust Clinical Quality Report. The hand hygiene compliance target remains at 95%. There has been a steady increase in hand hygiene compliance scores over the latter part of the year from 83% in June 2016 to 96% in March 2017. A Hand Hygiene Action Plan has been completed in response to sub-optimal scores (Appendix 3).

Graph 4- Hand Hygiene Compliance Audits 2016-17



The Trust hired a hand hygiene training unit called the SureWash for a few months, which raises the profile of hand hygiene as well as training staff the correct hand hygiene technique and includes a quiz on hand hygiene for staff. The unit spent four days in each ward.

Between 29.06.16 and 03.10.16 SureWash was used 3333 times by 668 staff:

- 3020 assessments were completed by 511 staff and 336 people passed (65%)
- 313 quizzes were completed by 157 staff and 112 people passed (71%)
- Qualified nurses, nursing assistants and student nurses were the highest user groups with a total of 2,003 interactions (1838 assessments and 165 questionnaires)
- All other roles had 1330 interactions (1182 assessments and 148 questionnaires)
- The SureWash was used more frequently during the day (2237 interactions between 08:00 – 20:00) than at night (1096 interactions from 20:00 – 08:00)
- The steps in the hand hygiene technique achieving the highest scores were ‘palm to palm’ and ‘palm to palm with fingers interlaced’ (73-88% compliance)
- The steps in the hand hygiene technique achieving the lowest scores were ‘thumbs’, ‘wrists’ and ‘fingertips into palms’ (42-55% compliance). These results are consistent with national findings (RCN, 2015).

This month (April 2017) has seen the introduction of the new Infection Control Core Elements Audit Tool which encompasses a wider range of hand hygiene activity including training, education, promotion, patient hand hygiene and a simpler method of hand hygiene auditing. This tool was piloted in a number of clinical areas and shared with the Infection Control Link Practitioner group prior to Trust wide use.

8.2 Bare below the elbow (BBE)

The Trust continues to monitor compliance with the Department of Health (DH) initiative ‘Bare below the elbow’ with all staff working in clinical areas. Compliance is monitored during hand hygiene audits, with results displayed on the Nursing and Midwifery Quality Scorecard and discussed at Service Line Review meetings. Staff are advised to escalate poor compliance to the DIPC, Clinical Director and/ or the Medical Director where BBE continues to be a challenge. Poor practice is challenged when observed.

9.0 Asepsis and Intravenous Line Care

9.1 Asepsis

The IPCT have continued to carry out asepsis training on the Trust clinical skills day, which is provided to all new Trust employees. Parts of the process of asepsis are monitored via the DH Saving Lives initiative (see below).

9.2 Intravenous (IV) Line Care

As outlined previously in section 5.1 and 5.2 a number of initiatives have been set up recently with regards to the prevention of IV line infection. PIR of all bacteraemia cases monitor the use of IV devices including care and documentation. The Trust has introduced the Chlorhexidine infused 'Biopatch' for all adult patients requiring a long IV line (i.e. central line). This initiative has included specific ward based training on IV line insertion and care, and VIP scoring. Induction training includes the expectations regarding IV line care linked to Trust guidelines. The sending of key messages to staff regarding the care of IV lines is included in the MRSA action plan (Appendix 1). An audit of IV lines is currently being planned for ITU and AAU.

9.3 Reducing Catheter Associated Urinary Tract Infections (CAUTI)

The Trust participated in the South London Health Innovation Network programme for reducing catheter associated urinary tract infections in 2015 to 2016. The IPCT developed Trust Urinary Catheter Guidelines and worked with the urology nurses in trialling catheter care equipment (including fixation devices) in order to streamline equipment with other Trusts and the community. However, due to IPCT staffing reduction from February – August 2016 the team were unable to continue with this work over that period. Since January 2017 work for the CAUTI project has resumed and is being passed to the Urology Nurses, as the work now being carried out largely falls under their remit. The *E.coli* bacteraemia Trust Action Plan and associated PIR of all Trust apportioned cases, will ensure that urinary catheter care is investigated for these cases and the IPCT plan to provide support to the community teams where necessary.

10.0 Saving Lives Initiative

The Infection Control Link Practitioners continue to carry out monthly audits from the DH 'Saving Lives' programme. This includes auditing hand hygiene, peripheral line insertion and care, urinary catheter insertion and care and isolation practices. Aspects of the Saving Lives audit scores can be viewed on Nursing and Midwifery Quality Scorecard and are disseminated to the divisions via the Infection Control Quarterly Report.

11.0 Care of the Environment

11.1 Trust Cleaning Services

ISS Mediclean continue to use a microfibre cleaning system, supplemented with Chlorclean (a chlorine-based detergent) for isolation rooms and in outbreak situations. Cleaning scores are routinely recorded as a quality indicator.

Trust Curtain Changing guidelines are in place, with curtains dated when changed. The schedule for the rolling programme is available in each ward area as are the dates of any ad-hoc curtain changes requested by staff.

Infection Control training is given to all ISS Mediclean staff on induction by an external company.

ISS Mediclean have provided extra cleaning as requested during the outbreaks of Norovirus and Influenza this year.

11.2 Equipment Cleaning

The IPCT and Head of Nursing have been carrying out equipment cleanliness scores and results have been disappointing in some areas. Overall scores for February 2017 were 51.3% and in March 2017 scores had increased to 73.5% (Appendix 4). Auditing will continue by the IPCT and Head of Nursing on a monthly basis. Scores are fed back verbally immediately to the nurse in charge and staff on the wards and also by email to senior nurses and matrons. In addition, since March 2017, Link Practitioners have been charged with carrying out monthly equipment audits to ensure that standards

improve. Scores will now be reported back to the Link Practitioner meetings each quarter, with expected action plans in place where results are sub-standard.

11.3 Assessments of the Care Environment (ACE)
The IPCT participate in ACE with the matrons as well as representatives from the works department, ISS, health and safety and waste departments on a planned fortnightly basis, monitoring cleanliness and the fabric of the building on a rolling programme.

11.4 PLACE Inspections
The annual Patient Led Assessment of the Environment (PLACE) inspection of the hospital site this year achieved an overall score of 96.3% for cleanliness. In addition, two mini PLACE assessments on 16th March 2017 achieved the following scores for cleanliness and hand hygiene:

- Bronte ward 90%
- Blyth ward 94%.

This is an improvement on last year's scores which demonstrated a score of 95% for cleanliness and hand hygiene and mini PLACE assessments of 81% and 84%.

Action plans were put into place where necessary and monitored via the PLACE Steering Group.

11.5 IPCT Audits
The IPCT have audited the environment of a number of clinical areas this year:

- Cleaners cupboards, December 2016 – January 2017
- Main Theatres, 18.05.16
- Radiology Department, 09.03.17
- Albany Unit Manual Pre-Cleaning of Cystoscopes, 15.08.16
- Sunshine Ward Hand hygiene facilities 30.11.16
- Raynes Park Health Centre 17.11.16
- A&E 09.06.16.

Reports with clear actions have been supplied to the clinical area managers, ISS manager and works department.

11.6 New Builds / Refurbishments
The IPCT have participated in new builds and refurbishments for:

- Maternity
- Radiology
- Clinical Decisions Unit, A&E.

12.0 Infection Control Staff Training
Face to face training sessions for new staff on induction were attended by Infection Control. Annual infection control update training continued to be delivered by on-line booklets. Asepsis has been covered by the IPCT on clinical skills training days. Infection Control classroom based training is delivered to new band 2 and band 5 nurses. The team continue to support training for volunteers. Additional training has been supplied when requested.

13.0 Policy Review
There are 70 Infection Control policies/ procedures/ guidelines available on the Trust intranet. All have been updated this year as required and ratified through the Infection Control Group. Compliance is monitored against some via the DH Saving lives initiative and audit project work.

14.0 Further Infection Prevention & Control Initiatives
14.1 Link Practitioners
The Trust currently has Infection Control Link Practitioners in each clinical area. This person is allocated one day every two months specifically for infection control responsibilities including carrying out the Saving Lives audits. Quarterly study days, in which the Link Practitioner business meeting is incorporated, have continued this year.

14.2 Infection Prevention & Control Information for Patients, Relatives and Visitors

Infection Prevention & Control is included on the Trust website for patients, relatives and visitors. Included on the website are leaflets on MRSA, Norovirus and *Clostridium difficile* as well as information sheets on reducing the risk of infection whilst in hospital, respiratory syncytial virus (RSV) and diarrhoea and vomiting. Bedside leaflets have been developed by the Head of Nursing for Emergency Services and Medicine and these include information on infection control and patient hand hygiene. Patient amenity packs (including patient hand wipes, ear plugs and slipper socks) have also been developed and launched. The Trust is currently monitoring the use of these packs.

15.0 Summary and Conclusion

Over the past year the Trust has:

- Reported three cases of MRSA bacteraemia against the zero trajectory. The Trust has recognised some gaps with MRSA screening since the DH policy change in 2016 and is working to rectify this, as well as intravenous line care documentation.
- Reported 17 cases of *Clostridium difficile* toxin with only one lapse in care out of the allowed nine. This is a reduction from the 19 reported cases and three lapses in care last year.
- Continued to report MSSA bacteraemia rates and achieved the Trust aim to have less than one per month with five cases this year, a reduction from the eight reported last year.
- Continued to report *E. coli* bacteraemia cases, having had 168 cases overall with 11 being Trust apportioned (a reduction from the 20 reported last year). The Trust already has an action plan in place in response to the ambition from Public Health England and the UK Sepsis Trust (2016) and NHS Improvement (2017b) to halve healthcare associated Gram-negative blood stream infections by March 2021.
- Reported and managed 98 confirmed cases of Norovirus in two outbreaks, one which continued from the previous year into June 2016, and one that commenced in November 2016 and lasted until March 2017.
- Reported 98 confirmed cases of influenza this quarter, with 71% of the positive cases being tested within three days of admission, indicating that a higher number of cases had influenza on admission to the Trust. The Trust revisited and developed new clear Respiratory Tract Infection Guidelines.
- Reported a total of 39 VRE cases with 17 in the Intensive Care Unit (ITU) demonstrating a reduction on last year from 80 VRE cases in total with 25 cases in ITU. It is acknowledged that screening of all patients admitted into ITU finished in September 2015.
- Managed a number of other infection control outbreaks / incidents such as CPE, Group A Streptococci, pertussis, chicken pox and shingles.
- Demonstrated improved compliance with the Health and Social Care Act 2008 (2015), with only one criterion out of 10 currently considered to be 'mostly met'. This is related to MRSA screening which currently has increased focus within the Trust.
- Observed improved hand hygiene scores from 83% in June 2016 to 96% in March 2017.
- Developed an improved hand hygiene audit tool, which has been trialled and has commenced Trust wide in April 2017.
- Worked towards reducing intravenous line infections and continued to teach asepsis on the Clinical Skills training day.
- Continued to embed optimal antibiotic prescribing practice into the Trust.
- Participated in the National Point Prevalence Survey for Healthcare Associated Infections and Antimicrobial use.
- Prioritised the achievement of the new antibiotic stewardship CQUINs within the work of the Antibiotic Management Group with both CQUIN targets met for all quarters this year.

16.0 Recommendations / Priorities for 2017/2018

- To meet targets set by the DH by remaining below the *Clostridium difficile* threshold of nine cases (related to lapses in care), considering that a lapse in care is now described as 'evidence that the provider did not follow policies and procedures consistent with local guidance and standards' rather than a direct cause of the infection.
- To aim for zero MRSA bacteraemia cases. Ensure completion of the current MRSA Action Plan and continually monitor for further required actions.

- Continue to work towards monitoring and achieving MRSA screening and decolonisation requirements, working with the Business Intelligence Team to create robust screening reporting methods and therefore demonstrating full compliance with the Health and Social Care Act 2008 (2015).
- Continue with on-going work to ensure the best care of intravenous lines in order to prevent infections, including carrying out an IV line infection audit in ITU and AAU.
- Follow actions from the Trust *E.coli* Bacteraemia Action Plan in order to achieve the ambition to halve healthcare associated Gram-negative blood stream infections by March 2021, and respond to guidance for other gram negative infections as set out by PHE this year. Provide support to community teams in the achievement of this goal where necessary.
- Monitor the new Infection Control Core Elements (hand hygiene) Audit Tool and endeavour to maintain the improved hand hygiene compliance scores observed this year.
- Maintain established monitoring of VRE case numbers, particularly in the Intensive Care Unit, so that increased alerts can be promptly managed.
- Continue to ensure that optimal infection control practices are in place, and to manage infection outbreaks and incidents efficiently in order to keep our patients as safe as possible whilst maintaining hospital functioning.
- Demonstrate enhanced equipment cleaning score audits.
- Continue to survey surgical site infection as part of the Surgical Site Infection Surveillance Service.
- To implement the ACME infection control software system, and deliver benefits of introduction.
- Continue to provide infection control training.
- A priority for next year is to have a whole time equivalent antibiotic pharmacist in place to aid the Trust antibiotic stewardship and CQUIN work. (Duncan – at the moment the post is part time share with ITU – the new one starting in May is to cover maternity leave so we will still be half antibiotic and half ITU. Pharmacy is looking for extra funding through the CQUIN route).
- To continue to refurbish and develop the built environment in accordance with published standards.

17.0 References, sources and further reading

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Appendix 1 MRSA Bacteraemia Action Plan January 2017

Action		Responsible	Deadline
1.	Add slide to education centre TV on MRSA screening, decolonisation and IV line care	SR/ DN	17.02.17
2.	Add pop-up message to all Trust PCs on MRSA screening, decolonisation and IV line care	SR/ Comms	17.02.17
3.	Add information on MRSA screening & decolonisation to the Big 4 messages	SR/ DB	17.02.17
4.	Send screen shots to JW of CRS issues	SR	14.02.17
5.	Finalise AAU MRSA screening and decolonisation audit and share results	SR	28.02.17
6.	Undertake an audit of IV line care in AAU & ITU	FBP	28.02.17
7.	Send letters to all Medical staff to raise awareness of MRSA screening, decolonisation and IV line care	ED/ JW	17.02.17
8.	MRSA screening, decolonisation and IV line care message to be sent out with staff payslips end March	SR/ DB	31.03.17
9.	MRSA screening, decolonisation and IV line care message to go in Team Brief	DB/ comms	10.03.17
10.	MRSA screening, decolonisation and IV line care message to go in CEO weekly email. *Decision taken not to pursue.*	DB/ SR	24.02.17
11.	MRSA screening, decolonisation and IV line care message to be discussed at Band 7's meeting	DB	17.02.17
12.	MRSA screening, decolonisation and IV line care message to be discussed at Matrons meeting	DB	17.02.17
13.	Presentation on MRSA screening, decolonisation and IV line care message at Grand Round	SR/ ED	13.03.17
14.	Update information on MRSA screening, decolonisation and IV line care in mandatory training booklet	SR/ DN	17.02.17
15.	Ascertain if any additional information is needed for the PDN workbook on IV line care	FBP	28.02.17
16.	Update information in Junior Docs training programme to include MRSA screening, decolonisation and IV line care	SR/ DN	17.02.17
17.	Provision of training on Biopatch, VIP scores, IV dressings and line care by company rep	FBP	In progress
18.	Infection control link practitioner meeting on March 3rd to focus on MRSA screening & decolonisation, IV line care and documentation	SR/ VW/ FBP	03.03.17
19.	Complete an MRSA screening & decolonisation point prevalence audit	SR	28.02.17
20.	ICLP support for IPCT	DB	17.02.17

Key: In progress | Completed | Overdue

Appendix 2 E.coli Bacteraemia Action Plan January 2017

THEME	ACTION	TIMESCALE	PROGRESS UPDATE	STATUS
Post Infection Review (PIR)	PIR on all Trust apportioned cases.	Jul 2016	Commenced and completed by IPCT.	
	PIR to be completed by Clinicians and reported through Service Line meetings and SIG to facilitate learning.	Jan 2017	Email sent to Clinicians in December 2016 to inform them of the new requirement, process commenced January 2017.	
	Link with Audit and Quality Improvement Team.	Feb 2017	To commence with all future cases.	
No Catheter No CAUTI* Group	Set up meetings and ensure good representation.	Feb 2017	These meetings were suspended last year due to IPCT staffing levels. First meeting set up for 09.02.17, with representation from clinicians, urologists, nursing staff, PDN's, CCG representatives, community nurses, business intelligence etc. to resume previous work. It has been agreed that the urology nurses will now progress this further.	
	Audit / surveillance	Feb 2017	Point Prevalence completed 2015.	
	Urinary Catheter guidelines.	Jul 2016	New guidelines produced by IPCT with Urology and PDN approval July 2016.	
	Streamline urinary catheter products.	Apr 2017	New products were trialled last year in some clinical areas. Liaison with the Rep and Procurement to re-start by Urology team.	
	Urinary catheter training – liaison with PDN's.	Feb 2017	PDN's currently carry out urinary catheter training / competency assessment.	
Reporting	Continue PHE monthly reporting of cases. Continue reporting to quarterly Infection Control Group.	On-going	Monthly reporting of E coli numbers to PHE by DON. Trust apportioned cases and themes reported in the Infection Control Quarterly Report.	
Antimicrobial stewardship	Antimicrobial Stewardship Committee to continue to report through the Drugs and Therapeutics Group and Infection Control Group. Antimicrobial/sepsis CQUIN.	On-going	In place. The Group seeks to ensure appropriate antibiotic prescribing using measures such as audit, training and policy update. Antibiotics audits feedback is sent back to all Directorates and the Medical Director.	

			CQUIN results are reported to PHE every quarter by Pharmacy. Participation in the Point prevalence survey of healthcare associated infections, antimicrobial use and antimicrobial stewardship in England - October 2016 - results pending.	
Hand Hygiene	Trust wide hand hygiene action plan to continue. Implement new hand hygiene audit system.	On-going	Hand hygiene compliance has risen from 83% July 2016 to 96% in January 2017. New system is commencing in April 2017.	
IV line care	Monitor all PIR's to ensure that intravenous lines are not causing bloodstream infections. Ensure use of the new 'Biopatch' for preventing line infections.		Trust Intravenous Devices policy produced in 2014, updated in 2017. Biopatch (for preventing infection) attachment on all long lines continues and is audited frequently, alongside training by the company.	

Key

In progress	Completed	Overdue

Appendix 3

Hand Hygiene Action Plan 2016 - 2017

THEME	ACTION	LEAD	TIMESCALE	PROGRESS UPDATE	STATUS
Training	Rent the 'Surewash' – a mobile hand hygiene training and assessment unit for 3 months to raise awareness	FBP / SG	Jul – Sep 2016	Completed. To repeat in 2017.	
	Request the return to face to face IC mandatory corporate induction training	FBP	August 2016	Completed.	
	Ongoing link practitioner update and training to ensure correct auditing an feedback at the time of the audit	IPCT	June 2016	ICN working with Link Practitioners. Matrons / band 7's to join auditors.	
Awareness	Produce new Trust posters – e.g. eyes watching you in staff areas	IPCT / Comms	June 2016	Completed.	
	Hand Hygiene Awareness week in July 2016	IPCT	July 2016	Completed.	
	Information for staff regarding correct glove use - posters	IPCT	June 2016	Completed.	
	Send Hospital wide emails about hand hygiene	IPCT	On-going	Completed.	
Product availability	Ensure 'tottles' are on the top up list Charge Link practitioners with ensuring products for hand hygiene are available at all times.	FBP IPCT	May 2016	Completed.	
Audit process	To change the hand hygiene auditing process, guided by UCLH new system, in order to produce more robust auditing.	IPCT	April 2017	New system includes training, awareness and observation. Trialled January 2017 and commenced Trust wide April 17.	
Patient Hand Hygiene	Source and supple patient hand wipes for bed bound patients / hand out of wipes at mealtimes	FBP / BC/ BS / DB	August 2016	Completed, patient wipes have become part of a pack for patients including slipper socks and ear plugs. A single wipe is to be placed on meal trays from December 2016 (single wipes removed due to patient difficulty in opening them).	

Key In progress | Completed | Overdue

Appendix 4 Clinical Equipment Cleaning Scores

Ward / Clinical Area	21/02/17	22/03/17
A&E (adult)		
Alex		
Astor		
Blyth		
Kennet		
Bronte		
Derwent		
Hardy		
Hamble		
Keats		
A&E (Paeds)		
AAU		
Cambridge		
Canbury		
Isabella		

RAG Rating
Red < 70%
Amber 70 – 90%
Green >90%

Appendix 5 Glossary of terms

Asepsis - the prevention of microbial contamination of living tissue/fluid or sterile materials by excluding, removing or killing micro-organisms.

Aseptic non-touch technique (ANTT) - a specific nationally recognised (used by 60% of NHS organisations) method used to prevent contamination of susceptible sites.

Bacteraemia – the presence of micro-organisms in the bloodstream.

Blood cultures - a laboratory test to check for bacteria or other microorganisms in a blood sample.

Blood stream infection - the presence of microbes in the blood with significant clinical consequences (e.g. fever, chills, and hypotension)

Carbapenemase-producing Enterobacteriaceae - Enterobacteriaceae are a large family of bacteria that live harmlessly in the gut of all humans and animals however, they can cause opportunistic infections. Carbapenem antibiotics are a powerful group of antibiotics. Rapid spread of carbapenem-resistant bacteria has the potential to pose an increasing threat to public health.

***Clostridium difficile* -** is an organism that lives in the gut that sometimes produces a toxin which causes colitis.

Decolonisation protocol – topical treatments given to patients with MRSA skin carriage, consisting of cream in the nose and a skin wash.

E.coli – (Escherichia coli) form part of the normal intestinal microflora in humans and warm-blooded animals with some strains having the ability to cause disease in humans. These diseases include food poisoning, e.g. E. coli O157, or infections outside the intestinal tract such as urinary tract infections (UTIs), and bacteraemia. E. coli are also becoming an important reservoir of extended-spectrum beta-lactamases (ESBLs).

Group A Streptococcus - (GAS; Streptococcus pyogenes) is a bacterium which can colonise the throat, skin and anogenital tract. It causes a diverse range of skin, soft tissue and respiratory tract infections. GAS can occasionally cause infections that are extremely severe, such as necrotising fasciitis.

Healthcare associated infection (HCAI) - any infection that develops as a result of receiving healthcare treatment.

Influenza- a respiratory illness associated with infection by influenza virus. Symptoms frequently include headache, fever, cough, sore throat, aching muscles and joints.

Intravenous cannula- a device inserted into the vein for giving medications or fluids.

Measles – a common and highly infectious childhood illness that may affect any age group. Early symptoms include the onset of fever, malaise (aches and pains), coryza (head cold), conjunctivitis (red eyes) and cough. It is vaccine preventable.

Meticillin sensitive *Staphylococcus aureus* (MSSA) - *Staphylococcus aureus* is a bacterium that commonly colonises human skin and mucosa e.g. inside the nose, without causing any problems. However, the bacterium is capable of causing infections, i.e. in a wound or the blood stream.

Meticillin resistant *Staphylococcus aureus* (MRSA) - strains of *Staphylococcus aureus* that are resistant to many of the antibiotics commonly used to treat infections. Some strains are more likely to cause an infection than others i.e. they are more virulent.

Norovirus - the most common cause of infectious gastroenteritis (diarrhoea and vomiting) in England and Wales. The Illness is generally mild and people usually recover fully within 2-3 days.

Outbreak - two or more epidemiologically linked cases of infection caused by the same micro-organism in place and / or time.

Pertussis – whooping cough is a respiratory infection. Usually consists of at least 21 days of coughing with associated whoops, and culture confirmation.

Surveillance – the systematic observation of the occurrence of disease in a population with analysis and dissemination of the results.

Vancomycin resistant enterococci (VRE) Enterococci are Gram-positive bacteria that are naturally present in the intestinal tract of all people. Vancomycin is an antibiotic to which some strains of enterococci have become resistant. The resistant strains are referred to as VRE.

Visual Infusion Phlebitis score - a standardised approach to monitoring intravenous catheter sites. Phlebitis is inflammation of the wall of a vein which can be caused by a number of things, including intravenous devices.