

Board of Directors Trust Quality & Performance Committee	 Guy's and St Thomas' NHS Foundation Trust
Infection Prevention & Control Annual Report 2017/2018	11th April 2018

This paper is for:	Sponsor:	Dame Eileen Sills, DBE/Dr Nicholas Price – Joint DIPCs		
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Discussion <input checked="" type="checkbox"/>	Reviewed by:	Eileen Sills		
Noting	CEO*			
Information	ED*			
			Board Committee* <input checked="" type="checkbox"/>	Quality & Performance Committee
			TME*	
			Other* <input checked="" type="checkbox"/>	TICDAC

* *Specify*

***NOTE: all data are correct at time of writing (3rd April 2018) but are draft and subject to updating at year end and confirmation from Public Health England.**

1. Summary

- 1.1 The purpose of this report is to provide the Board with information on trust performance and provide assurance that suitable processes are being employed to prevent and control infections. This paper provides the board with an update on the following sections:

Section	Update
1.2	Key points
2	Requests to the Board
3	Actions arising from the previous report
4	Performance against alert organisms and infections, benchmarked against trust and national standards
5	Clinical activity and incidents
6	Viral, including seasonal viral infections
7	Decontamination
8	Surgical Site Infection Surveillance
9	Evelina London Children's Hospital IPC
10	Antimicrobial stewardship
11	Intravenous therapy services, including outpatient parenteral antimicrobial therapy (OPAT)
12	Mandatory training (including hand hygiene)
13	Other relevant points for the board to consider Appendices

1.2 Key Points

- A further circa 25% reduction in reportable *Clostridium difficile* infections, following a 30% reduction in the previous year
- An initial increase in MRSA bacteraemias in Quarter1/2 with no further cases since August 2017
- Implementation of new EPR screening bundles
- Continued reductions in surgical site infections across a range of surgical specialties
- Significant progress but with some challenges with compliance (at time of writing) with the combined national Antimicrobial Resistance/Stewardship and Sepsis CQUIN
- Successful management of a severe Influenza season with limited operational impact despite high numbers of cases presenting
- Low rates for all nationally reportable infections (with the temporary exception of MRSA as above) when compared to the Shelford Group
- An increased and increasing national emphasis throughout 2017/18 on Gram negative bacteraemias; these will be a major focus for 2018/19

2. Requests to the Quality & Performance Committee

2.1 The Committee is asked to note and consider the contents of this report and raise any issues of concern or outline any specific action they request.

2.2 The Committee is asked to confirm the following:

- The reappointment of the Dame Eileen Sills, DBE, Chief Nurse and Dr Nicholas Price as the joint Directors of Infection Prevention and Control.
- Their commitment to ensuring infection prevention and control remains a foremost Trust priority with a commensurate resource to deliver this effectively.

3. Any actions arising from the report for 2015/2016

3.1 The issues raised in the previous annual report have been closed with the exception of:

3.2 *Mycobacterium chimaera* in cardiac heater cooler units: see 7.2 for an update on this ongoing international issue.

4. Performance against specific infections/ alert organisms

4.1 *Clostridium difficile*

4.1.1 The external objective for reportable cases of *C. difficile* (Cdiff) for 2017/18 is 51 cases. Reportable cases are those that are 'toxin positive' (Enzyme-linked Immunoassay or 'EIA' positive) and are identified beyond three days of admission to the organisation (attributed). In addition the Trust must determine and report to the commissioners any reportable cases that are deemed to be due to any 'lapse in care'.

4.1.2 For 2017/18 the Trust has reported 27 cases to Public Health England (PHE). This is a reduction of 25% compared to 2016/17 (36 cases) following a 30% reduction in the previous year and is a significant achievement for the organisation.

4.1.3 A comparison with the Shelford Group of Teaching Foundation Trusts, using a rate based on cases per 100,000 occupied bed days, shows that GSTT has the lowest rate of the ten organisations. The GSTT rate is 8.04 per 100,000 bed days (range 8.04 to 25.48). The next nearest rate to GSTT is 14.36

4.1.4 Figure 1 shows the Trust performance against the objective for 2017/18 compared with 2016/17 and other previous years. (To end Feb 18)

- 4.1.5 Lapses in care are defined by criteria agreed across South London providers and commissioners and are validated by a quarterly meeting of said organisations at which a sample of all reportable cases are discussed and, where necessary challenged. A lapse in care may incur a financial penalty.
- 4.1.6 During 2017/18 the Trust has declared three cases that have been deemed to be 'lapses in care'; all three cases (two in the Haematology/Oncology Directorate and one in surgery) were deemed to be due to inappropriate antibiotic prescribing – these cases have prompted reviews of antibiotic prescribing in these areas. There were no cases of proven transmission of Cdiff between patients (the other criterion for 'Lapse in Care').
- 4.1.7 In one case during 2017/18 Cdiff was cited as a contributory cause of death on a death certificate. This case is still being investigated as to whether there were any opportunities for prevention or any Lapses in Care (as defined) or other deviations from best practice.
- 4.1.8 Data for acquired Cdiff and 'lapses in care' (as defined) by directorate, showing both EIA positive (reportable) and EIA negative (non-reportable) cases by directorate are given in Table 1.

Figure 1: EIA positive *C. difficile* cases 2017/18 compared with 2016/17 and with a linear trajectory to 51 cases. (To end Feb 18)

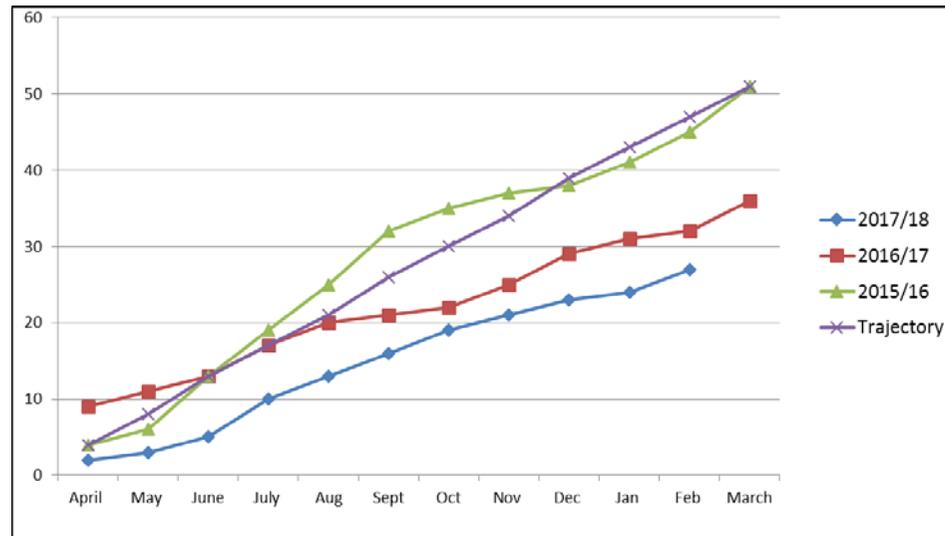


Table 1: Acquired *C. difficile* and ‘lapses in care’ (as defined) by directorate 2017/2018 to end of February 2018.

Figures are: acquired cases (EIA positive reportable acquired cases).

DIRECTORATE	CASES (EIA)	LAPSE IN CARE
ACUTE MEDICINE	16(9)	0
CARDIOVASCULAR	8(5)	0
CHILDREN'S (ELCH)	8(2)	0
PCCP	13(2)	0
TRANSPLANT RENAL AND UROLOGY	10(1)	0
GASTROINTESTINAL MEDICINE AND SURGERY	5(3)	0
ONCOLOGY AND HAEMATOLOGY	10(4)	2(2)
SURGERY	4(1)	1(1)
WOMEN'S SERVICES	3(0)	0
CLIMP	0(0)	0
COMMUNITY ADULTS	2(0)	0
COMMUNITY CHILDREN	0(0)	0
DENTAL	0(0)	0
SPECIALIST AMBULATORY	0(0)	0
MEDICAL SPECIALITIES	0(0)	0
TRUST TOTAL	79(27)	3(3)

4.2 Meticillin Resistant *Staphylococcus aureus* (MRSA) bacteraemia.(bloodstream infections)

4.2.2 NHS England has a zero-tolerance approach to MRSA bacteraemia, therefore the Trust objective is for zero cases assigned to the organisation. Cases are formally assigned to either the healthcare provider, Clinical Commissioning Group (CCG) or to a 'third party'. Any cases assigned to the Trust may incur a financial penalty.

- 4.2.3 A formal Post Infection Review (PIR) is conducted for each case. The outcomes of a PIR are; assignment of the case (as above), a decision on whether the case was 'avoidable' and any lessons learnt for the responsible organisation.
- 4.2.4 At the time of writing the Trust has been formally assigned five cases. At the beginning of the year (April to August 2017) the trust experienced a concerning rise in cases of MRSA bacteraemia, with five trust assigned cases. The cases were unrelated and 2 were deemed to have been unavoidable. In the cases where some degree of avoid-ability was identified actions were taken by the relevant directorates to prevent recurrence. Although the numbers of cases overall was small and the cases were unrelated, this increase prompted a range of trust wide actions, escalated to and agreed by the Trust Management Executive (TME). These actions were reported to the Quality and Performance Committee and are given as Appendix A.
- 4.2.5 At the time of writing, there have been no further trust assigned cases since August 2017. A case has been identified very recently which is still subject to the full Post Infection Review procedure; however it has been provisionally assigned to the patient's home CCG.
- 4.2.6 It is noteworthy that the total number of cases identified for the period 2017/18 to date, including those trust assigned or otherwise assigned is more than double the previous year (15 compared with 7). These are small numbers and should be interpreted with caution but may indicate an epidemiological change which will be monitored.
- 4.2.7 The increased number of cases at the beginning of this financial year means that for the whole year we have the highest rate in the Shelford Group (1.55 per 100,000 occupied bed days, range 0 to 1.55); however we have not had a trust assigned case for seven months at the time of writing.
- 4.3 Meticillin Sensitive *Staphylococcus aureus* (MSSA) bacteraemia
- 4.3.1 Cases of MSSA bacteraemia are reportable to PHE but there is no formal objective for the Trust. The Trust has seen a stable incidence of attributable MSSA bacteraemia in 2017/18 compared with the previous year.

To the end of February 2018 the Trust had a total of 102 cases, of which 25 were attributable. For the same period in the previous reporting year the figures were 86 and 25 respectively.

4.3.2 A comparison with the Shelford Group of Teaching Foundation Trusts, using a rate based on cases per 100,000 occupied bed days, shows that GSTT has the fourth lowest rate of the ten organisations. The GSTT rate is 8.66 per 100,000 bed days (range 7.41 to 18.58).

4.4 Trust Wide acquisition of MRSA

4.4.1 The Trust records any instance of MRSA acquisition in in-patients. This is defined as an individual with a negative admission screen for MRSA who subsequently tests positive on any specimen. Each case is subject to an investigation to identify if any lessons can be learned and applied.

4.4.2 To the end of February 2018 there have been 31 such acquisitions compared with 28 for the same period last year. The differences year on year need to be interpreted with caution as the numbers are very small.

4.5 *Escherichia coli* bacteraemia

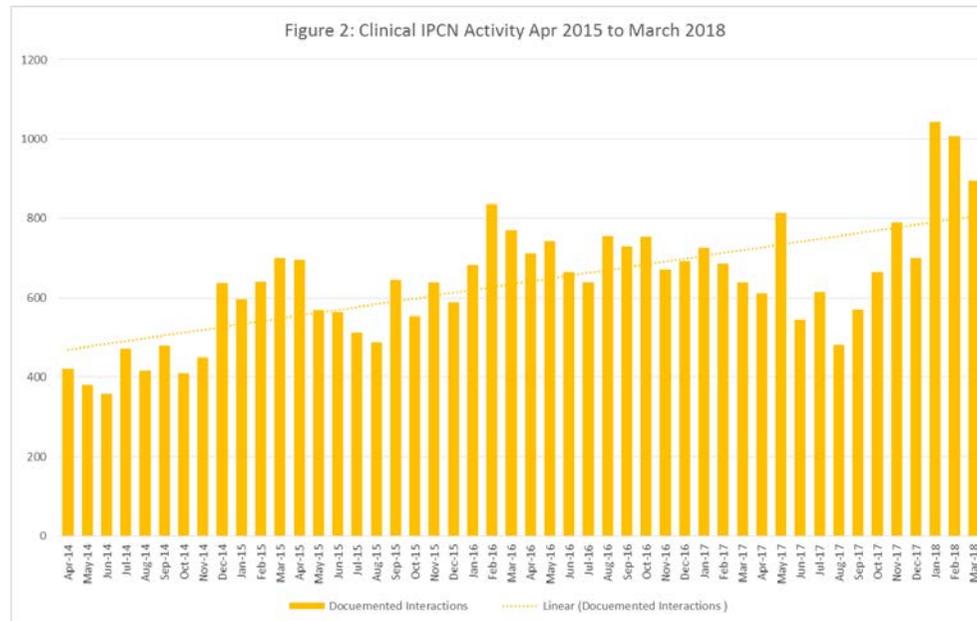
4.5.1 Cases of *E. coli* bacteraemia are reportable to PHE but there is no formal objective for the Trust. Overall the numbers of cases seen have increased in comparison to the previous year. To the end February 2017 there is a total of 267 compared with 229 for the same period in 2016/17.

4.5.2 Public Health England have changed the way in which these cases are assigned to bring them into line with the approach taken for MRSA and MSSA, i.e. pre and post 48 hrs of admission. Based on this new method, to the end of February 2018 there have been 83 'trust assigned' cases. The corresponding figure for the same period in 2016/17 is 61 cases. Data for March are not available at the time of writing. This increase and the increase in total cases given above is a continuation of an increasing national and local trend in these bacteraemia. The Trust Infection Prevention and Control Plan for the forthcoming year will be highly focussed on these and other Gram negative bacteraemia in line with the national priorities for the NHS in England.

- 4.5.3 During 2017/18 we began the formal reporting of bacteraemia caused by *Pseudomonas aeruginosa* and *Klebsiella* species. These results combined with the *E coli* data already described will be the means by which the government 'ambition' to reduce healthcare associated Gram negative bacteraemia by 50% by 2020/2021 will be measured. As this has been the first year of reporting there are no previous year data for comparison. Comparison data will be provided prospectively throughout 2018/19.
- 4.5.4 A comparison with the Shelford Group of Teaching Foundation Trusts, using a rate based on cases per 100,000 occupied bed days, shows that GSTT has the fourth lowest rate of the ten organisations. The GSTT rate is 29.06 per 100,000 bed days (range 19.70 to 34.89).
- 4.6 Carbapenemase Producing Enterobacteriaceae (CPE) and other multi-resistant Gram negative bacteria
 - 4.6.1 The Trust continues to see low number of sporadic cases but no linked clusters or outbreaks of CPE have been identified during 2017/18. Despite this, and because we are aware of other London hospitals with clusters, outbreaks and high levels of CPE, vigilance remains high and data are reported monthly to the Infection Control Committee. In addition CPE will be added to the Infection Prevention Dashboard from April 2018.

5. Clinical activity and incidents

- 5.1 Clinical activity
 - 5.1.1 Infection Prevention and Control Nurse (IPCN) activity as a marker for team activity is shown in Figure 2, including 2014/15 and 15/16 data for comparison. These are crude data based on documented interventions per month but show a trend of an increasing clinical workload over time with some unsurprising evidence of a winter peak.



5.2 Service developments

5.2.1 Community service integration: the infection prevention nursing service provided to the adult community directorate has been strengthened and given increased resilience by means of increased integration into the wider adult infection prevention nursing team. Without diluting the resource dedicated to community services and settings, the team are now working much more collaboratively, for example new and more junior infection prevention colleagues are gaining experience in community settings alongside established more senior staff.

5.2.2 Surgical Site Infection Surveillance resilience: the trust programme of surgical site infection surveillance is highly successful (see section 8) and operates with a very small central resource. The IPC Team identified a risk related to a lack of resilience in this service, i.e. that the clinical nurse specialist is single handed with only support staff working with her. An opportunity arose due to some changes in staffing and the team are in the process, at the time of writing, of recruiting a second qualified member of staff to learn with and work alongside the clinical specialist. This will provide badly needed resilience.

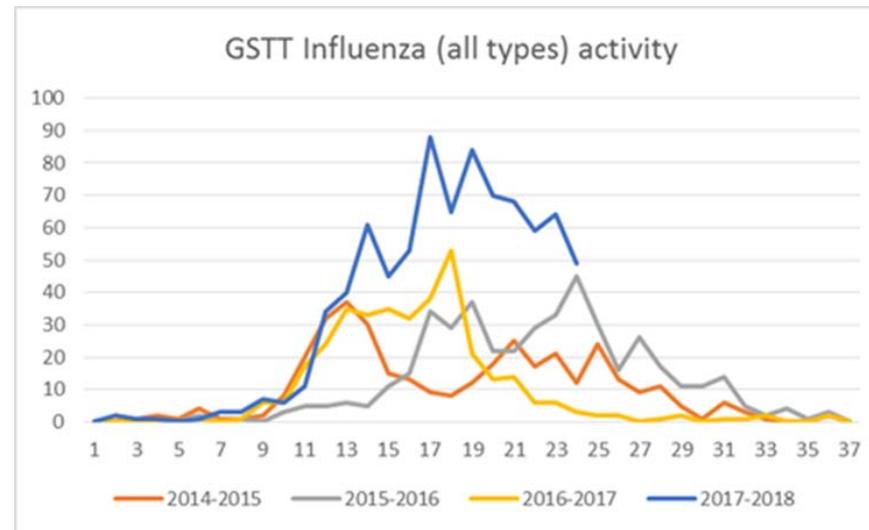
5.3 Incidents

- 5.3.1 Incidents, including Periods of Increased Incidence (PII) of *C. difficile*, exposures to communicable diseases requiring contact tracing, clusters of unusual organisms, decontamination failures and issues that have a significant impact on activity e.g. ward closures are managed and reported to Trust Infection Control Committee (ICC), monthly and Decontamination Assurance Committee (TICDAC) quarterly.
- 5.3.2 In comparison to 2016/17 there have been overall a fewer numbers of incidents; the incidents that have occurred have been well managed and closed as quickly as possible. There have been no incidents of cross infection of *Clostridium difficile* in 2017/18.
- 5.3.3 A rare incident was reported in Quarter 1, related to a duodenoscope in which a small stent was retained in a scope despite the scope undergoing full decontamination processes. The stent was identified during a procedure on a subsequent patient. There was no evidence of harm.
- 5.3.4 An incident in which there was a failure of operating theatre ventilation at Guy's Hospital led to a multi-disciplinary investigation and a range of actions to improve communication between Essentia, Capital Planning, PCCP and the Directorate of Infection. There is no evidence of patient harm from this incident; however it highlighted important lessons for the planning and commissioning process.
- 5.3.5 There was a cluster of MRSA acquisitions on one of the St Thomas' Intensive Care Units in October 2017. A range of investigations and actions were taken and the situation has resolved but vigilance remains high. No Significant clinical harm was identified.
- 5.3.6 The neonatal unit (ELCH) declared a serious incident (SI) in October 2017 when there was a single transmission of *Pseudomonas aeruginosa* between two babies, the SI was declared because the baby in whom transmission occurred, died. It is not possible to state if the relationship between infection and death was causal due to other factors. STEIS reference: 2017/28716.

- 5.3.7 During what has been a much more severe Influenza season than we have experienced for some years, there was one cluster of hospital acquired Influenza cases on a ward at Guy's Hospital. This episode required ward closure to admissions for five days. The index case was not definitively identified but the situation was brought under control with a range of IPC measures. (see also section 6 below).
- 5.3.8 March 2018 has seen a significant increase in the incidence of Measles in South London. This has led to cases being identified in both patients and staff and necessitated large scale contact tracing exercises of both staff and patients and collaboration with colleagues in other trusts and the South London Health Protection Unit (Public Health England). This included a case on our severe respiratory failure unit (ECMO). No secondary patient cases have been identified so far (at time of writing) but 2 AMT staff, 1 relative and 2 GSTT ED staff members contracted measles. Communications have been issued to raise awareness of the risk of Measles in staff, patients and the public visiting our facilities.
- 5.3.9 Urology endoscope incident: It has come to light that a small number of patients have had a post procedure UTI with a Gentamicin and Amikacin resistant *Pseudomonas* having undergone an ureteroscopy at GSTT. The source of the contamination and the exact number of patients who have been affected is still being investigated. All patients who may have been affected are being contacted and followed up. The level of harm to patients is considered low, but investigations are not complete at the time of writing. This has been reported as a serious incident.
- 5.3.10 Mycobacteria contamination of cardiac heater-cooler machines; see Decontamination (7.2).
- 5.3.11 CQC unannounced inspection: The CQC inspection of the inpatient dialysis unit in late March 2018 identified some aspects of IPC practice that require action. The directorate, supported by the Infection Team have agreed a response and an urgent action plan.

- 5.3.12 Further detail on clinical incidents in the Evelina London Children's Hospital (ELCH) are given in section 9 (below).
- 6. Viral, including seasonal viral, infections** (see also section 9 for Evelina London Children's Hospital (ELCH) specific information)
 - 6.1 Influenza: This season has been exceptionally busy. Figure 3 below shows number of Influenza positive patients/week being tested at GSTT/Evelina (starting from beginning of October up until 11/2/2018).
 - 6.1.1 Rapid testing has been used to identify patients with respiratory virus symptoms who can be safely managed out of a side room, reducing pressure on side rooms by 210 side room days (as of Feb. 26th) compared to our standard respiratory virus testing process.
 - 6.1.2 The Trust successfully exceeded its target of vaccinating 75% of front line staff with seasonal Influenza vaccine achieving 79.9%, and vaccinating 1,500 more staff than the previous year

Figure 3: Seasonal Influenza Activity (Whole Trust) beginning of October up until 11/2/2018



6.2 Norovirus: Expected activity has been seen. Cases and clusters have been generally well managed and disruption to services has been minimal. Awareness of the risk of Norovirus has been raised across the Trust as part of seasonal preparedness (see also section 9)

6.3 Hepatitis A: There was a large Pan-London outbreak at the beginning of the year which has now subsided.

7. Decontamination

7.1 Decontamination of medical devices is managed through the Trust Decontamination Committee which reports to TICDAC. The committee reviews both central and local decontamination processes and provides assurance, via TICDAC to the Trust Board regarding compliance with all regulatory requirements.

7.2 Contamination of Heater Cooler devices associated with cardiothoracic surgery

- 7.2.1 The previous annual report described the background to this international phenomenon as well as the Trust's measures to comply with necessary mitigation actions. All of these remain in place and the risk is well controlled. The previously described patient notification exercise has identified no cases to date at GSTT. An engineering solution to the problem has been developed by the manufacturer; however deployment of this solution is not yet completely successful and a dialogue with the manufacturer continues.
- 7.3 A comprehensive rolling-programme of local and central decontamination audits have not revealed any issues of major concern. Non-conformities are recorded on a register and corrective actions monitored. Concerns over torn wraps for surgical trays and with the tracking and tracing of some surgical instruments and trays have been investigated and solutions identified. These issues remain under review by the Trust Decontamination Committee and reported to TICDAC.

8. Surgical Site Infection Surveillance (SSIS)

- 8.1 SSIS continues in 11 clinical specialties;
- 8.1.1 Surgical Site Infection (SSI) incidence remains below those reported nationally for all specialties except gynaecology where the incidence has increased. An increased complexity of cases in gynaecology has been noted – antibiotic prophylaxis compliance is now being reviewed for all 2017 SSI cases.
- 8.1.2 SSI incidence for total knee replacement surgery was above the national average due to increased cases in the early part of 2017; however this rate has since reduced following detailed investigations. An audit to establish practices around preoperative skin decolonisation is currently in progress. Negative pressure therapy dressings for high risk patients are also being considered.
- 8.1.3 There has only been one SSI for paediatric spinal surgery in the last two years. This is a significant achievement.

- 8.1.4 An increased SSI incidence was noted in paediatric cardiac surgery in 2017; most SSIs had *S. aureus* as causative organism. Patient / parent information for preoperative skin decolonisation and postoperative wound care is being updated.
- 8.1.5 A successful C-section data revalidation of existing methods of data collection was completed in Quarter 1 for data collected during January – March 2017 (due to the necessity of 30 day follow up, this could not be reported in the 2016/17 annual report). SSI rates were similar to the previous validated quarter in 2015; negative pressure therapy dressings introduced for high risk patients.
- 8.1.6 Patient information videos with SSI preventative measures were introduced in April 2017 and continue to be promoted.
- 8.1.7 Standardised SSIS wound documentation will be launched in E-noting by April 2018.
- 8.1.8 The Trust progress in SSIS has been recognised locally and nationally
 - 8.1.8.1 Finalist for the Nursing Times Awards in 2017
 - 8.1.8.2 Finalist at the 2017 Kings Health Partners Safety Connections conference poster competition
 - 8.1.8.3 Finalist for the Patient Safety Awards 2017
 - 8.1.8.4 Finalist NICE shared learning awards 2017
 - 8.1.8.5 Posters presented at various national conferences, i.e. Infection Prevention Society, Hospital Infection Society, Patient Safety Congress, Society for Cardiothoracic Surgery conference
 - 8.1.8.6 Work is also being shared with other organisations as requested, GSTT is seen as a leader in this field.
- 8.2 A summary of the SSI incidence for 2009 or start of surveillance for respective directorates versus that in 2016 is shown in table 2 below.

Table 2: SSI Incidence by speciality 2009/start of programme/2016 compared with 2017 & 2018 year to date

Surgical speciality	2009 / start Total annual SSIs (SSI incidence %)	2016 Total SSIs (SSI incidence %)	2017 Total SSIs (SSI incidence %)	2018 Year to date SSIs (SSI incidence %)
All adult cardiac (CABG national average 4.1%)	55 (5.4%) CABG 46 (6.5%)	14 (1.2%) CABG 10 (1.7%)	15 (1.2%) CABG 14 (2.4%)	0
Paediatric cardiac	42 (12.1%)	3 (0.7%)	13 (3%)	0
Vascular surgery (National average = 3.3%)	35 (8.8%)	11 (1.6%)	18 (2.5%)	2 (2%)
Orthopaedics (Hips & knees) (National average 0.7% Hips & 0.6% knees)	18 (2.7%)	5 (0.6%)	4 knees (0.9%) 2 hips (0.5%)	0
Orthopaedics (Fractured Neck of Femur) (National average 1.5%)	3 (4.2%)	1 (0.7%)	2 (1.4%)	0
Adult GI surgery (National average for Large bowel surgery (LB) = 10.8%)	89 (10.4%)	40 (3%)	43 (3.7%) LB 27 (8.9%)	10 (4.6%) LB 4 (6.2%)

Gynaecology surgery (National average for Abdominal hysterectomy (AH) 2.2%)	20 (3.7%)	19 (3.3%)	18 (2.7%) AH 13 (4.4%)	1 (1%)
Paediatric spinal surgery	12 (8.3%)	0 (0%)	1 (0.9%)	0
Paediatric & Neonatal GI	9	10	6	1
C-sections (validated quarters) National average 9.6% from pilot study in 2010)	64 (13.3%)	38 (6.8%)	36 (7.0%)	0 readmissions

9. Evelina London Children's Hospital

- 9.1 Data for the ELCH are included within each section of this report. Further ELCH specific information is given here:
- 9.2 MRSA: There were no healthcare associated MRSA bacteraemias recorded in children at ELCH during Apr17-Mar 18. Nine children had MRSA detected more than two days into their admission or were under care of the renal dialysis team (n = 2). This is an increase compared to previous years which have averaged four acquisitions a year. Detailed investigations have led to changes in practice including in MRSA screening and awareness and practice of standard infection control precautions.
- 9.3 MSSA: There were 11 MSSA bacteraemias detected in children at ELCH (Apr17-Mar 18). Five of those met the Department of Health's criteria for being considered hospital acquired (detected more than 48 hours into admission) this is a very slight reduction compared to the last three years. However one was a post 48 hour blood culture in a child with a known joint infection so did not require a post infection review.

- 9.4 There were 17 cases of *Clostridium difficile* detected in children at ECLH this is a rise from 10 in the previous year.
- 9.4.1 6/17 were detected more than 72 hours into admission compared to 4/10 last year.
- 9.4.2 5/17 were EIA toxin positive (externally reportable to the DH) compared to 1/10 last year. Of the 2/5 that were detected more than 72 hours into admission 2 were also EIA toxin positive.
- 9.4.3 There were no periods of increased incidence or Lapses in care (as defined) within ELCH during 2017/18.
- 9.5 There were a cluster of Group B Streptococcal infections on the Neonatal Unit between December 2016 and June 2017: Five babies were affected by late onset Group B Strep bacteraemia (three of the babies also had relapses). Public Health England supported the Trust Infection Control Investigation Team and specialist typing showed that two babies had very similar types of Group B Strep. A full investigation was undertaken which did not highlight any specific breaches of IPC practice in care. It was noted that as GBS is not a usual organism to cause outbreaks with a point source, there is a scarcity of literature to guide an IPC investigation. There was one further case in August 2017 and this was reviewed by the Microbiology/ Neonatal Team. The child's infection was assessed to be not related to the cluster cases. The incident is closed with prospective surveillance for this organism ongoing.
- 9.6 The Serious Incident related to a transmission of *Pseudomonas aeruginosa* is described in section 5.3.6.
- 9.7 Other clusters of cases and episodes of contact tracing related to: TB, Chicken Pox, Measles and Pertussis have been managed, in collaboration with South London Health Protection Unit where appropriate, using standard methods and approaches. Lessons learnt from these episodes are shared across ELCH.
- 9.8 Neonatal Infection Prevention Group (includes Consultants, junior doctors, nursing, and IPC Team) meets regularly to discuss / address practices, audit results and plan for changes to practices in relation to Infection

Prevention and Control on the Unit with effective communication to staff. Two Neonatal Consultants and junior doctor have also been trained to undertake hand hygiene audits. The NIP group have also invited a former parent who had a child on the Neonatal Unit.

- 9.9 A new Isolation Prioritisation Tool was introduced in April 2017 and has had positive feedback from staff. It was developed to support the Paediatric Nurse Practitioner team and clinical area Nurses in Charge to enable safe decision making where a child presents with a suspected or known infection that is of cross infection concern. There is also information about safe use of Personal Protective Equipment and cleaning. Due to staff changes this is being reissued every few months to capture new staff and staff who are promoted into roles that require them to be nurse in charge.
- 9.10 The Paediatric IPC Team ran a “Love your Lines” day in February with support from the Education Team. It was not as well attended as in previous years but the feedback from staff and students who did attend was that it was useful. The Paediatric IPC Team are now looking at other ways to bring key information and updates to staff. The Neonatal Infection Prevention Group ran the event for two days on the Neonatal Unit and this was a great success.

10. Antimicrobial stewardship

- 10.1 The main focus for the Antimicrobial Stewardship service for 2017-18 has again been ensuring compliance with the national Serious Infections CQUIN, which combined and replaced the two separate CQUINs on Sepsis and Antimicrobial Resistance from the 2016-17 period. The new combined CQUIN requires the organisation to improve its identification and screening of patients at risk of sepsis, ensure timely antimicrobial management of those patients thought to have sepsis, and carry out an antimicrobial review within 72 hours of diagnosis to ensure ongoing appropriateness of therapy. In addition, the AMR/AMS element requires further reductions (between 1-2%) in the overall consumption of antibacterials, with particular focus on consumption of carbapenems and piperacillin-tazobactam (against a baseline performance from 2016). For 2017-18, the CQUIN value is estimated at £1.325 million, but the Directorate of Infection only took over management of the sepsis component of this CQUIN on April 1st 2017 and there were several historical

barriers to prior CQUIN compliance that we have had to understand and engage with, which have impacted on our short-term performance.

At the time of writing, the performance for the combined Serious Infections CQUIN is as follows (Table 3)

Table 3. GSTT Serious Infections CQUIN Performance, up to end of Q3 2017-18

Sepsis						
	Q1 ED	Q1 IP	Q2 ED	Q2 IP	Q3 ED	Q3 IP
Timely recognition	92%	97%	89%	99%	92.5%	100%
Timely treatment	55%	91%	49%	79%	43.4%	90%
72h review	-	100%	-	100%	-	89.4%
AMR/AMS (all expressed as Defined Daily Doses/1000 Admissions)						
	Q1	Q2	Q3	Total		
Total AB consumption (target = 6865.0)	6474.4	6805.4	6984.0	6757.4		
Carbapenem consumption (target = 77.5)	69.3	72.8	76.1	72.8		
Piperacillin-tazobactam consumption (target = 31.8)	20.5	27.7	33.1	27.2		

Green shows compliance with the relevant CQUIN target; Amber is partial compliance and Red is minimal compliance (where the criterion is staged) or non-compliance

- 10.2 There are some issues associated with this data & the results:
 - 10.2.1 Firstly, the main areas of shortfall within sepsis management are within the Emergency Department (ED) around timely treatment. This problem relates to identification of patients for inclusion in this data field. Currently there is no electronic triaging system within ED Resus where the majority of our acutely ill patients with sepsis will be managed. Standard manual audit shows that the management of this cohort of patients is

excellent, with almost all receiving optimal care within the appropriate time frame. However, the CQUIN criteria require that patients are identified through their NEWS score and within Resus there is no easy retrospective method to look back at patients' NEWS scores to allow them to be included in the CQUIN data set. So, our current patient pathway precludes our most appropriate patient cohort from being included in our CQUIN data, which dilutes our data leaving less unwell patients who may be less rapidly managed. From Q1 of 2018-19 there will be an electronic triaging record for patients passing into ED Resus, which will allow us to include this cohort in our submissions for the next financial year & will give us a more appropriate data set, showing true performance in the patients who are most at risk of poor outcomes. Any patients who develop sepsis whilst on one of the acute inpatient wards are identified early in their illness and managed in a timely fashion thereafter, including receiving an appropriate review of antimicrobial therapy with 48-72 hours of diagnosis.

- 10.2.2 Secondly, there is an upward trend in the antibacterial consumption figures from Q1 to Q3. This applies across all three of the consumption metrics and is clearly a concern for our end-of-year position. Work is ongoing to provide more input into individual patient treatment decisions to ensure that therapy is optimised at an early stage and excessive durations of therapy are not employed.
- 10.3 Our well-established monthly audit process continues, now utilising MedChart data to give a broader and deeper coverage of prescriptions (usual monthly prescription coverage is now around 1500-1600 prescriptions versus around 300 prescriptions previously). Since changing the audit methodology to use MedChart data, rather than rely on manual audit, monthly scores have gradually improved and are now back at the levels seen with much smaller datasets (see Table 4).

Table 4. Antimicrobial Monitoring Tool Performance Jan 2016 to Feb 2018

	Q1	Q2	Q3	Q4	Year average
2016	90.3	91.3	91.7	90.3	90.9

2017	82.0	82.7	81.7	87	83.3
2018	89	-	-	-	89.0

- 10.4 We continue to work closely with our CCG colleagues on areas and objectives of shared interest, such as management of E. coli bacteraemia, where we continue to research on causes, influencing factors and ways to improve outcome. We are also leading on improving outpatient prescribing of antimicrobials to both impact on our own Trust consumption, as well as reduce the pressures on primary care antimicrobial prescribing driven by our usage.
- 10.5 The Antimicrobial Stewardship (AMS) service continues to leverage IT developments to improve intelligence around antimicrobial usage and prescribing. Daily review of reports from MedChart have allowed more timely interventions in cases of inappropriate antimicrobial usage, and this work will be finessed moving into 2018-19. More work has been carried out with the E-noting team to look at ways to utilise the E-noting system to track and alert on antimicrobial usage, especially around the need for therapy review at 72h. Work on this had taken place in 2017-18, but there were some issues with data validity and integrity that need to be addressed. These are now resolved, and this will be implemented in the early part of 2018-19.
- 10.6 The AMS service continues its input into the Trust Outpatient Parenteral Antibiotic Therapy (OPAT) services (both adult and increasingly, paediatric), the diabetic foot and vascular graft infection services, and, new for 2017-18, the tuberculosis service (including multidrug/extensively drug-resistant cases and non-tuberculous mycobacteria cases, which have formed an increasing part of the service's workload over the last 12 months). We also are intrinsically involved in the Trust's *Clostridium difficile* response and in the seasonal influenza vaccination programme, both of which have achieved best-ever performances again this year.
- 10.7 As part of the work of the Antimicrobial Stewardship Committee, 19 treatment guidelines have been reviewed during 2017-18; reports have been written for the Medicines Safety Forum concerning 649 antimicrobial-related incidents; 3 new antimicrobials have been introduced into practice, and multiple (>10) antimicrobial supply shortages have been smoothly managed to ensure minimal impact on clinical care. The AMS team

again supported World Antibiotic Week and European Antibiotic Awareness Day in November, with events across all areas of the Trust raising knowledge and awareness of the potential impact of antimicrobial resistance.

- 10.8 Work is ongoing within the Sepsis field, looking at provision of ready-to-use Sepsis boxes, to facilitate rapid management of patients with sepsis; scoping and increasing the education and training component around sepsis across all areas of the Trust; engaging more widely with external colleagues to network, benchmark and identify best practice; and working to drive internal performance up by improving data capture and feedback on individual patient management. All of these initiatives will bear fruit during 2018-19.
- 10.9 In addition to this internal work, members of the AMS team also serve on national bodies, providing input and expertise and helping to steer the AMS agenda, towards optimal care for our patients.

11 Intravenous therapy services, including outpatient parenteral antimicrobial therapy (OPAT)

- 11.1 Intravenous team (IV) activity: Services provided by the IV therapy team include: insertion of cannulae into patients with compromised venous access; supervising the use and management of all intravenous access devices, “rescuing” blocked central venous devices where appropriate and possible, and the insertion of Peripherally Inserted Central Catheters (PICCs) and Midlines, thereby minimising the risk of Catheter Related Blood Stream Infections (CRBSI) for all patients. In addition the team contribute to education and audit related to IV therapy.
- 11.2 Peripherally Inserted Central Catheter (PICC) and ‘midline’ Nurse-led Insertion Service: The Intravenous (IV) Team The nurse-led service continues to be highly successful. The IV Team regularly exceeds its goal of 40 PICC insertions / month with only the most difficult insertions referred to Interventional Radiology. The team is supporting training of the Physicians Assistants in the Intensive Care unit to gain competence in PICC and midline insertion in order to provide an independent service for critically ill patients that require long term access. Patients wait much less time to get an appropriate device in place; greater than 90% of requests are placed within 24 hours, with a very small percentage waiting longer 48 hours. Any delays in insertions have

been largely related to late referrals prior to the weekend or due to clinical conditions that require further investigation. Feedback from patients and colleagues has been fulsome in its praise for the team.

11.3 Audit and Surveillance: A total of 3235 intravenous access devices were audited from April 2017 to the end of February 2018. Overall compliance with evidence based practice remains high overall (Table 5). Documentation remains challenging and the move to e noting documentation of peripheral cannula is not yet fully embedded.

Table 5: IV access device audit results 2017/18

Dressing intact	Date on dressing	No signs of infection
92%	92%	99%

11.4 Outpatient Parenteral Antimicrobial Therapy (OPAT)

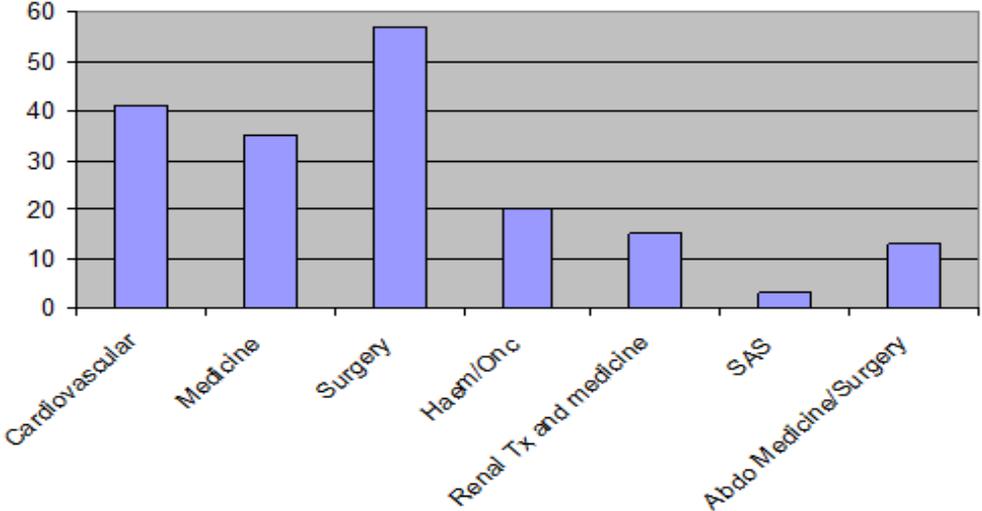
11.4.1 The Outpatient Parenteral Antibiotic Therapy service activity has remained stable. A total of 3737 bed days were saved equating to 191 patient episodes through OPAT in 2017/18 compared to 4152 days and 184 patient episodes in the comparable period the year before. Patients are managed from a range of specialties and directorates (Figure 4)

11.3.1 Of these 191 patients, 156 (82%) had an outcome of ‘success’, 13 (7%) ‘partial success’ and 7 (4%) ‘failure of OPAT’ (national definitions available on request) a further 15 (7%) had an indeterminate outcome.

11.3.2 The GSTT community and hospital IV nurse specialist continues to support OPAT and IV practice in the community. A total of 67 district nurses in Lambeth and Southwark have been deemed competent and signed

off for IVAD care and management as per Trust guidance. This role also provides support for troubleshooting of complications of IVADs and community staff have contact details of the team member should support be required at short notice (Monday – Friday). Staff in the community are being trained in the removal of PICCs and thus far 33 staff have been trained and competency assessed to do this.

Figure 4 OPAT Patients seen, by specialty



12 Mandatory Training

12.1 There is no significant change in compliance which remains below objective across the majority of the organisation. The Trust Statutory and Mandatory Training Group are aware of this issue which is not limited to IPC. Current levels of compliance are given in Appendix B.

13 Other relevant points for the Board to consider

13.1 Achievements and challenges from the 2017/18 IPC work plan – these are reviewed as Appendix C.

Appendices:

- A. TME communication to Directorate Management Teams re: MRSA bacteraemia cases (September 2017)
- B. IPC Mandatory training compliance
- C. Achievements and challenges from the 2017/18 IPC work plan

Appendix A: TME communication to Directorate Management Teams re: MRSA bacteraemia cases (September 2017)

Dear colleagues

Over a decade ago, the Trust had the worst MRSA bacteraemia performance in the NHS with 2-3 cases per week. However, multiple interventions and innovative strategies successfully turned this around, to the credit of everyone in the organisation. The Trust currently has one of the best infection control records and is widely regarded as a national exemplar in this area. However, whilst, the Trust has achieved 6 MRSA bacteraemia cases or fewer per annum in the last 5 years, performance has deteriorated sharply this year: with 6 months of the year remaining we have had 6 cases attributable to the Trust.

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Number of GSTT attributable cases	0	6	4	2	4	5 to date

These cases have been spread across different parts of the organisation with two connected to renal dialysis. Lapses in IV device management and documentation have been identified in the majority of the cases. This situation was discussed at TME last week and unanimous support was given to the following 4 key actions:

- 1) Urgent implementation of a mandatory system of electronic “prescription” and continuing care documentation for all IV devices. This is in order to standardise practice across clinical areas and provide requisite assurance of high quality care and close monitoring. A parallel system for those areas using paper documentation will need to be employed temporarily.

2) Standardisation of training and competency assessment for IV device insertion and management using Aseptic Non Touch Technique (ANTT). This will be led by the Trust Wide IV Line Governance Group, chaired by Dr Anna Goodman. Each Directorate will nominate a suitable senior representative.

3) TME is committed to the practice of conducting a review of any MRSA bacteraemia case where root cause analysis concludes lessons should be learnt and remedial actions taken. In most instances, this will involve the responsible consultant, senior nurse for the clinical area and senior members of the Directorate Management Team.

4) Infection control is the responsibility of every member of staff. Directorates will promote local ownership of MRSA prevention by regular review of audit and performance data and prioritising: (1) IV device management/documentation and (2) compliance with the Trust MRSA pathway.

Infection Control looks forward to engaging with Directorate Management Teams in order to support your efforts to rapidly implement these approaches and working together to protect patients.

Appendix B: IPC Mandatory Training Compliance

WIRED updated with staff in post and training data as at Tuesday, March 27, 2018

Directorate	Staff Count	Compliant	% Target = 95.00
Chief Nurse	135	108	80.00
Chief Nurse	135	108	80.00
Chief Operating Officer	72	53	73.61
Inpatient Services	72	53	73.61
Clinical Services	7718	5544	71.83
Acute Medicine	796	601	75.50
Cancer Strategy	4	4	100.00
Cardiovascular Services	437	274	62.70
Clinical Imaging & Med Physics	403	286	70.97
Community Adults	620	432	69.68
Dental Services	386	330	85.49
Gastrointestinal Medicine & Surgery	293	214	73.04
Medical Specialties	368	284	77.17
Oncology & Haematology	746	514	68.90
PCCP	1387	999	72.03
Pharmacy	237	198	83.54
Specialist Ambulatory Services	419	281	67.06
Surgery	229	167	72.93
Therapies	437	349	79.86

Transplant, Renal and Urology	415	270	65.06
Women's Services	540	341	63.15
Commercial	20	14	70.00
Commercial	20	14	70.00
Essentia	785	702	89.43
Central Services	66	57	86.36
Essentia Community Services	69	60	86.96
Guys Site Services	182	171	93.96
Security and Site Services	99	89	89.90
STH Site Services	369	325	88.08
Evelina London Children's Healthcare	1699	1247	73.40
Evelina Central, R&D and Charity	63	48	76.19
Evelina Community Services	478	353	73.85
Evelina Medicine & Neonatology	754	554	73.47
Evelina Surgery & PICU	404	292	72.28
Medical Director	133	102	76.69
Medical Director	17	9	52.94
R&D NIHR	116	93	80.17
Workforce	69	58	84.06
Human Resources	30	28	93.33
Occupational Health	32	26	81.25
Training and Education	7	4	57.14
TOTAL	10635	7829	73.62

Appendix C: Achievements and challenges from the 2017/18 IPC work plan (excluding antimicrobial stewardship and Sepsis– see main report) – note; does not include all aspects of activity or ‘business as usual’

Work Plan Element	Achievements	Challenges	Future plans
<p>Healthcare Associated Bacteraemia (HAB)</p>	<p>Agreement (but not yet implementation) to use Medchart for Cannula documentation.</p> <p>Low rates of all reportable bacteraemias (with the temporary exception of MRSA) in Shelford comparison.</p> <p>Review of PIR process for all <i>S. aureus</i> bacteraemia to go live April 18.</p> <p>Successful pilot of Gram negative bacteraemia data feedback.</p> <p>Point prevalence surveillance of urinary catheters/CAUTI and E noting compliance.</p> <p>CAUTI group audit of urosepsis with consequent quality improvement work in both acute and community settings.</p>	<p>Some staffing issues have hampered IV team work plan development, leading to a year of consolidation and ‘steady state’, thus a revised ANTT process remains a challenge to implement.</p> <p>PICC line with ECG guidance needs capital investment.</p>	<p>ANTT new implementation plan.</p> <p>Roll out Gram negative bacteraemia data feedback to directorates with highest burden.</p> <p>Further development of CAUTI surveillance and E noting catheter compliance measurement.</p> <p>Comprehensive CAUTI group work plan for 2018/19 to include implementation of nurse-led catheter removal, UTI checklist and UTI pathway.</p>

<p>Supporting Safe Practices</p>	<p>Below national average rates of SSI across the majority of specialties under review.</p> <p>Only one SSI in paediatric spinal surgery in two years.</p> <p>Recognised as a national leader in SSI surveillance and improvement.</p> <p>Excellent response to a severe influenza season with limited operational impact despite high numbers of cases presenting.</p> <p>Circa 25% reduction in reportable <i>Clostridium difficile</i>.</p> <p>Agreed implementation of E noting SSI documentation.</p>		
<p>Team Fit for the Future 2017 and beyond</p>	<p>Publications/Presentations nationally and internationally.</p> <p>Established SSI resilience post and succession planning</p> <p>Engaged in several IPC research and improvement projects</p>	<p>Some long term sickness issues (now largely resolved) have impacted on some areas of work plan (see IV team above).</p>	<p>Full team collaborative programme of CPD</p>

	Continued to develop training posts and succession planning		
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