St George's Healthcare NHS
NHS Trust

Annual Report of the Infection Control Team

2013 – 2014

Contents

Summary

This report summarises the activities of the Infection Control Team at St George's Healthcare Trust during the financial year 2013-14. The report also describes the Infection Control Programme for the forthcoming year 2014-15.

This report considers hospital & community infection prevention and control as integrated functions.

The year 2013/14 was a year of mixed fortunes.

We successfully reduced our rates of *C. difficile* to below the nationally threshold of 45 coming in at 30 cases for the year. This number represents a significant improvement on the 62 cases in 2012/13, a 53% reduction.

MRSA bacteraemia numbers were an improvement on the preceding year but still above what we aspire to. There were 6 cases assigned as bacteraemias to the trust and one assigned as a contaminant, as opposed to 9 bacteraemias the preceding year. 2 of these cases were definitely avoidable, 2 cases were indeterminate and 2 cases were unavoidable.

Legionella once again raised its head at St Georges with another hospital acquired case. A new trust estates team is in place and there is now a comprehensive, structured, proactive plan in place and action underway to reduce and eventually eliminate water risks within the hospital.

The infection prevention and control team has successfully introduced an infection control software package following the allocation of significant funding from the Trust. This allows the team to have real time information on alert organisms and monitoring of patients which leads to more efficient working.

A concerted effort was made this year to improve consultant involvement in infection control and root cause analysis. This has met with mixed success and the Trust will continue to encourage consultant engagement.

The year 2014/15 will again be challenging. Our *C. difficile* threshold has been reduced to 40 cases a year, an 11% reduction. The rise of the multi drug resistant gram negative organisms including carbapenemase producing enterobacteriacae (CPE) present new challenges in both treatment and infection control especially around resource allocation following the introduction of the CPE toolkit by Public Health England.

Surgical site infection surveillance (SSIS) has come to the fore with the publication of NICE guidance. The trust aims to significantly increase SSIS in the forthcoming year.

I would like to thank all the members of the infection prevention and control team, the link nurses, the infection control consultant champions and all those involved in infection control for their hard work.

Matthew Laundy
Consultant Medical Microbiologist and Infection Control Doctor
7th August 2014

Organisation & Management of Infection Control in the Trust

Infection Control within the Trust

A key part of the Trust's strategy is to emphasise that Infection Control is the responsibility of all Trust staff, not just the Infection Control Team. Thus, all staff are accountable for their actions with regard to infection control through their medical, nursing, therapy and managerial lines of responsibility. Infection Control remains a standing agenda item for divisional clinical governance meetings.

The Trust as a whole is committed to participation in the DH Saving Lives Initiative and, like other Trusts, participates in the DH mandatory reporting schemes for MRSA, MSSA and E coli bacteraemia, *Clostridium difficile* infection, Glycopeptide-resistant enterococcal bacteraemia and Surgical Site Infection Surveillance (orthopaedics).

The Team:

It is the IC Team's responsibility to provide the Trust with relevant specialist guidance and advice at every level, from senior management down to individual staff members. The team sits within the Microbiology Department, within the Pathology Care Group and the Diagnostics Directorate and Women's & Children's Division. The Infection Control Team have direct access to the Chief Nurse and Director of Operations, who is also the Director of Infection Prevention and Control via regular scheduled meeting and ad-hoc discussions as required. Its specific activities include:

On-going support and advice for clinical staff – regular clinical site visits, dealing with problems, outbreaks & incidents
Education of all staff groups
Drawing up policies and guidance documents (The Infection Control Manual)
Clinical and environmental audit
Surveillance of healthcare associated infection, including participation in mandatory DH surveillance schemes
Antibiotic Stewardship ward rounds conducted by the Consultant Medical Microbiologists and antimicrobial pharmacists.

During the year 2013/14 the team consisted of:

• Professor Alison Robertson	Director of Infection Prevention & Control, & Chairman of the Infection Control Committee (now retired)
• Dr Matthew Laundy	Lead Infection Control Doctor (Hospital)
• Dr Peter Riley	Deputy Infection Control Doctor (Hospital)
• Dr Jayshree Dave	Lead Infection Control Doctor (Community)
• Hasan Al-Ghusein	Information Analyst
• Ruth Law	Lead Infection Control Nurse
• Selma Mehdi	Lead Infection Control Nurse

• Jane Callaway	Senior Infection Control Nurse
• Juliana Kotey	Infection Control Nurse
• Kristina Hager	Infection Control Nurse
• Amelia Floresca	Infection Control Nurse
• Martha Ugwu	Infection Control Nurse (now left the trust)
• Pam Bridle	Infection Control Nurse (Locum)
• Pius Akubue	Infection Control Nurse (now left the trust)
• Elia Vitale	Audit and Surveillance Nurse (now left the trust)
• Helen Graham	PA/Office manager

Infection Control Link Nurses

There are approximately 170 Infection Control Link Nurses in the Trust.
Link Nurse meetings are held 4 time a year with 2 master classes and 2 study days. There has been good attendance, engagement & participation in the infection control agenda.

Infection Control Link Consultants

The Infection Control Link Consultant acts as a role model and proponent of best practice in hospital infection control. They act as a conduit for communication between the infection control team and hospital clinical staff. In addition, these consultants provide clinical input to infection control discussions, initiatives and policy setting initiatives.

Infection Control Link Consultants are:

Dr. Catherine Cosgrove	Consultant Physician in Acute Medicine & Infectious Diseases
Mr. Yemi Pearce	Consultant Orthopaedic Surgeon
Dr. Katja Doerholt	Consultant Paediatric Infectious Diseases
Mr. Austin Ugwumadu	Consultant Surgeon Obstetrics & Gynaecology
Dr. Platon Razis	Consultant Anaesthetist - Neurosciences
Dr Harold Low	Consultant Physician – Community Services
Ms Deborah Dawson	Nurse Consultant - Intensive Care Units
Mr Aziz Momin	Consultant Cardiothoracic Surgeon
Dr Raj Sharma	Consultant Cardiologist

Governance of the Infection Control Team

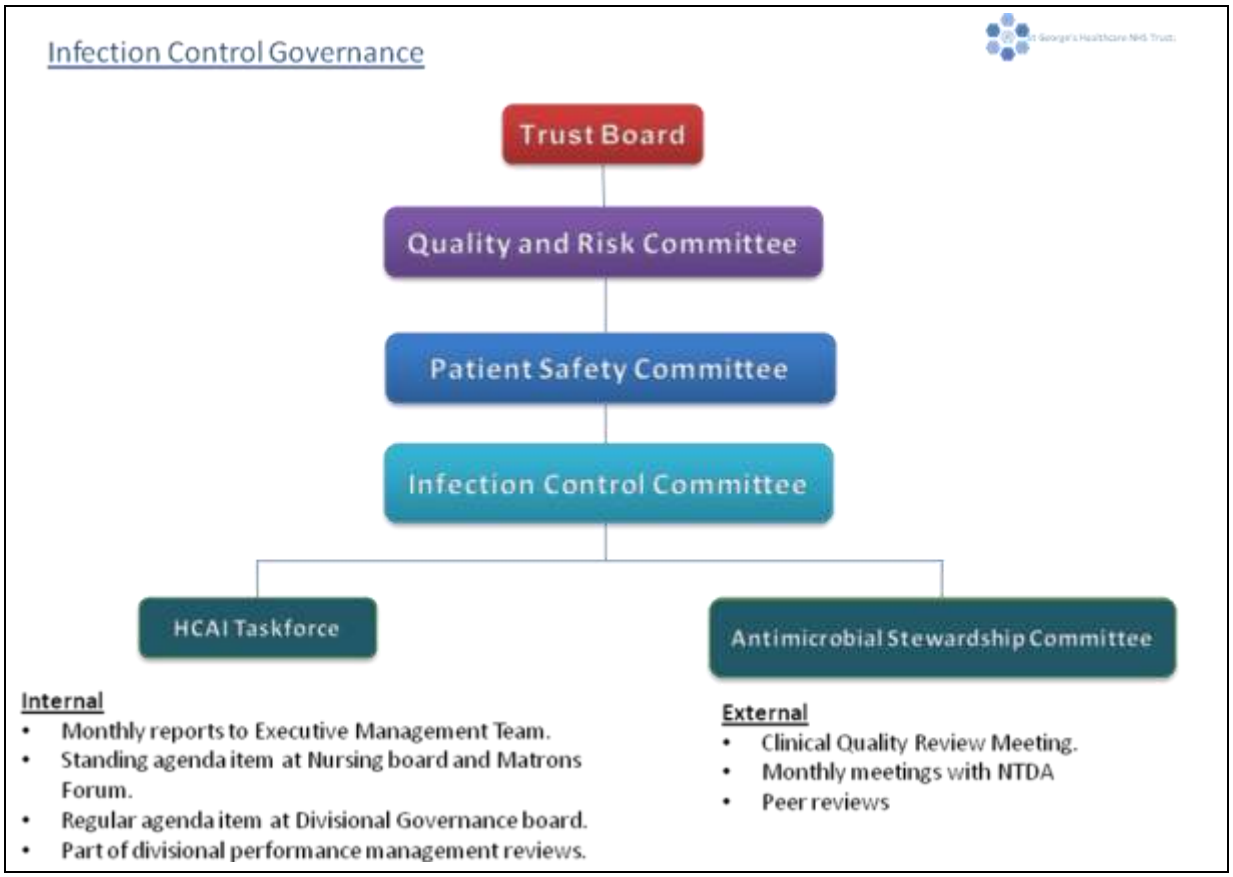


Figure 1 Infection Control Governance Structure

The work of the Infection Control Team is overseen by the Infection Control Committee (ICC), chaired by the Director of Infection Prevention and Control (DIPC), with a membership representing the whole Trust, with representation from the Health Protection Unit (HPU). The ICC meets every two months. The ICC defines the infection control strategy for the Trust and reports in turn to the Trust's Patient Safety Committee.

The Healthcare Associated Infections Task Force meets every two weeks and is also chaired by the DIPC. This is operational group, which is attended by representatives from all clinical divisions, focuses on bringing about rapid interventions aimed at control of health care associated infections. It is also attended by the infection control lead for the South London commissioning support unit.

Infection Control Allies and Collaborators

Lead Consultant for Antibiotic Stewardship

Dr Matthew Laundy

Antibiotics and Infection Management Pharmacist

Laura Whitney – Consultant Pharmacist

Venous Access Team

Headed by Jackie Nicholson Consultant Nurse

The Antibiotic Stewardship and Venous Access Teams while separately managed to the ICT, are both involved in areas that are key to achieving better infection control, and both also attend the Infection Control Committee and work closely with the ICT as appropriate.

Environmental Hygiene

Jenni Doman

Diagnostic Microbiology

Dr Tim Planche
Dr Sarah Furrows (Kingston hospital, for QMH)

Organisation and Management Community Services Division

There is a single, integrated infection control team within the Trust. Currently there is one programme activity for a community infection control doctor and 1 WTE infection control nurse.

Mandatory Surveillance of Healthcare-Associated Infection:

Trusts are required to participate in six mandatory reporting schemes;

1. MRSA bacteraemia
2. MSSA bacteraemia
3. *Clostridium difficile* infection
4. Glycopeptide-resistant enterococcal bacteraemia
5. E coli bacteraemia
6. Surgical Site Infection Surveillance

(1) MRSA Bacteraemia

Since April 1st 2001 all NHS Trusts have been obliged to report the number of episodes of bacteraemia (bloodstream infection) with MRSA. Blood cultures are categorised into community acquired, blood cultures that are positive within 48 hours of admission or hospital-acquired blood cultures that are positive after 48 hours following admission. This system is relatively crude and does not always accurately classify the bacteraemia, however it is systematic and reproducible.

In line with the government thresholds St George's has reduced the number of MRSA bacteraemias from 8 in 2008 until 2011/12 when there was one case. in 2012/13 we had 9 cases of bacteraemia. Line care was identified as a major issue and a number of interventions were detailed in last year's annual report.

The process of apportioning and ascribing MRSA bacteraemias to trust was changed and all MRSA bacteraemias are initially apportioned to the organisation based on the timing of the positive blood culture The MRSA bacteraemia then undergoes a post infection review (PIR) process, the results of which are submitted to Public Health England. The bacteraemia is then assigned to the organisation deemed to be appropriate. Disagreements are dealt with by an appeals process. Despite the threshold being zero **avoidable** there is no official process to label an episode avoidable or not.

The figure for 2013/14 improved on the 2012/13 figure although not to the extent we would have hoped. There were 6 bacteraemias assigned to the trust and one contaminant/transient bacteraemia. Contaminants are ascribed to the organisation taking the blood culture even though it is not a bacteraemia.

An analysis of the six bacteraemias is below.

Patient	Ward	Admission Screen Completed	MRSA Positive on Admission	Decolonisation	Patient Factors	Intravenous Line	Other Factors	Root Cause	Avoidable?
1	Benjamin Weir	Yes	No – but was previously	Yes – given as previous MRSA	Admitted for elective TURP. Massive introperative MI. Required angiogram and stenting.	Documentation of insertion and some surveillance. Not complete. No evidence of line infection.	Didn't receive appropriate MRSA prophylactic antibiotics as admission screen negative. However timing unlikely to be intra-operative infection.	Not clear – possibly related to coronary angiogram and stenting	Not clear
2	Buckland	Yes – but not on previous admission	Yes, but not on previous admission.	No	ESKD on haemodialysis, Type II DM PVD and CCF. General decline over past 12 months. Diabetic foot ulcers Very poor prognosis. Decision to palliative care only prior to results	Tesio line. Unable to form a fistula and previous failed brachio-axillary graft.		Tesio line infection with terminal underlying condition. Blood cultures should not have been taken.	Tesio line infection possibly. General deteriorati on.
3	CTICU/ Cheselden	Yes	Yes	Yes	Extensive leg ulcers Sacral Wounds Above knee amputation Atrial Fibrillation Hypertension Above knee amputation 9/8/13 Spent months in a Jamaican Hospital	PICC line inserted.		Extensive surgical wounds, pressure sores and venous ulcers.	No
4	Holdworth HDU	Yes	Yes	Yes	Major Trauma – pelvic and femoral fractures. Extensive orthopaedic surgery – long duration and large wounds.	Multiple attempts at line insertion by ambulance staff at the site.	Didn't receive appropriate prophylaxis for MRSA as MRSA status not known at the time.	Not clear – either introperative infection or cannala site in a patient with polytrauma and already MRSA colonised.	No
5	Amyand	Yes	Yes	Inconsistent application. Not always	Learning difficulties Malnutrition secondary to difficulty in swallowing.	PICC line inserted. For feeding. Patient constantly pulling at	Decisions around palliation had been made and were	Line infection in complex patient.	Yes

				given	Large hiatus hernia NJ fed.	line. Line noted to be blocked with erythema and swelling. Not removed by team. Documentation inconsistent	dependent on outcome of interventions. Decision to withdraw had not been made.		
6	Trevor Howell	Yes but not on first admission.	Yes on 29th	No – as no screening	Diffuse large B cell lymphoma Admitted for chemo as not coping at home.	tender, red and swollen right wrist and pus at site of previous cannulae.		Line infection – line care and documentation .	Yes

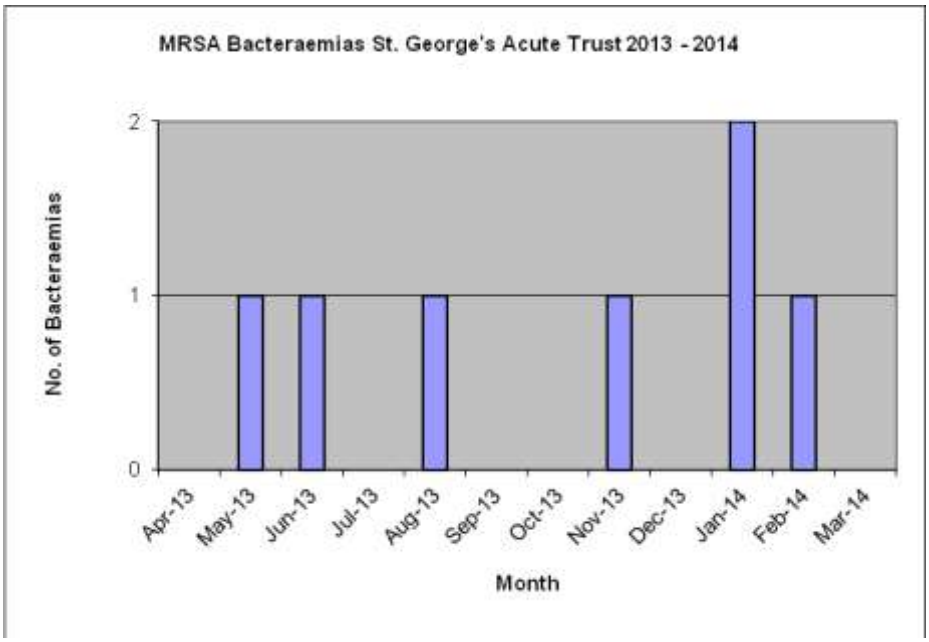


Figure 2 MRSA Bacteraemias Acute Trust 2013 -2014 by month.

Table 1: Summary of Hospital Acquired MRSA Bacteramia RCA Findings (Six cases) for 2013-14

Vascular line care	2
Surgical Site Infection	1
Underlying Patient Condition	3

Following on from the lessons learnt from the root cause analyses the following actions were undertaken.

1. The trust introduced a peripheral cannulation pack to improve good practice. This pack included all equipment needed for safe cannulation including an 2% chlorhexidine in alcohol applicator and a compliance sticker to be included in the patients notes.
2. The peripheral cannulation monitoring form was introduced.
3. A blood culture pack was introduced. This included all equipment required to take blood cultures safely and without contamination.
4. The FRED training and awareness campaign was continued.
5. A trust wide audits was undertaken reviewing practice against policy were repeated 6 monthly . Those areas where the management of intravenous lines is not to the required standard will be required to take prompt remedial action.
6. IV ward rounds to regularly monitor line care are being undertaken weekly jointly with the venous access team. There is immediate feedback to the wards at the time of the ward round and a more formal report later on actions taken.

The thresholds for 2014/15 remain at zero avoidable MRSA bacteraemias permissible. A new post infection review process has been implemented.

(2) MSSA Bacteraemia

From 1st January 2011, the Trust has been required to report all cases of Methicillin susceptible *Staphylococcus aureus* (MSSA) bacteraemia using similar criteria and mechanisms as employed for MRSA. There are no national thresholds for MSSA bacteraemia at present.

There were 80 cases of MSSA bacteraemia in 2013/14 with 29 of these ascribed to the acute trust.

(3) *Clostridium difficile*

Clostridium difficile infection is a major cause of antibiotic-associated diarrhoea, and became widespread in UK hospitals in the late 1990s with significant increases in numbers of patients being infected. In response to this the Government announced in October 2007 a plan to reduce the number of *C difficile* infections nationally by 30% by the end of the calendar year 2010-11. The baseline that this reduction was applied to was the number of "attributable" cases in the financial year 2007-8.

The 30% reduction was for the total number of cases nationally. Some Trusts already had low levels before the start of the programme in 2008-09; thus the reductions were applied differentially. That is, historically good performing Trusts only need to make a 10% improvement, whereas others with higher baselines needed to make improvements of greater than 30%. St George's was one of the latter

St George's significantly improved its *C. difficile* rate during these years.

The trust was successful in reducing its C. difficile numbers down to 30 from 62 cases the previous year. This was well below our threshold of 45 cases for the year.
The reduction in C. diff cases was in response to a whole bundle of measures introduced.

These included

1) Introduction of a diarrhoea review form to ensure that all cases of diarrhoea are clinically assessed prior to sending specimen.
2) A fact finding visit to Southampton University Hospital NHS trust. While much was similar in practice, lessons were learnt including:
    a. antibiotic policies – specifically the control on the use of co-amoxiclav (Augmentin)
    b. Use of informatics to support rapid dissemination of information to the Trust, clinical teams and IC team.
    c. Efficient and rapid isolation.

    Further our discussions revealed that Southampton does not report all *C. difficile* toxin positive tests, but only those thought to be clinically significant. This is with the agreement of the then SHA & PCT and now with the CCG's. A discussion was held with our local commissioners to investigate whether St Georges could take this approach but this was rejected. It was agreed to identify those cases not thought to be clinically significant and these would be considered if any financial penalty was to be applied.

3) A process of improving consultant engagement in root cause analysis and antimicrobial stewardship.

The thresholds for 2104/15 are even more stringent, set at 40 cases for the year.

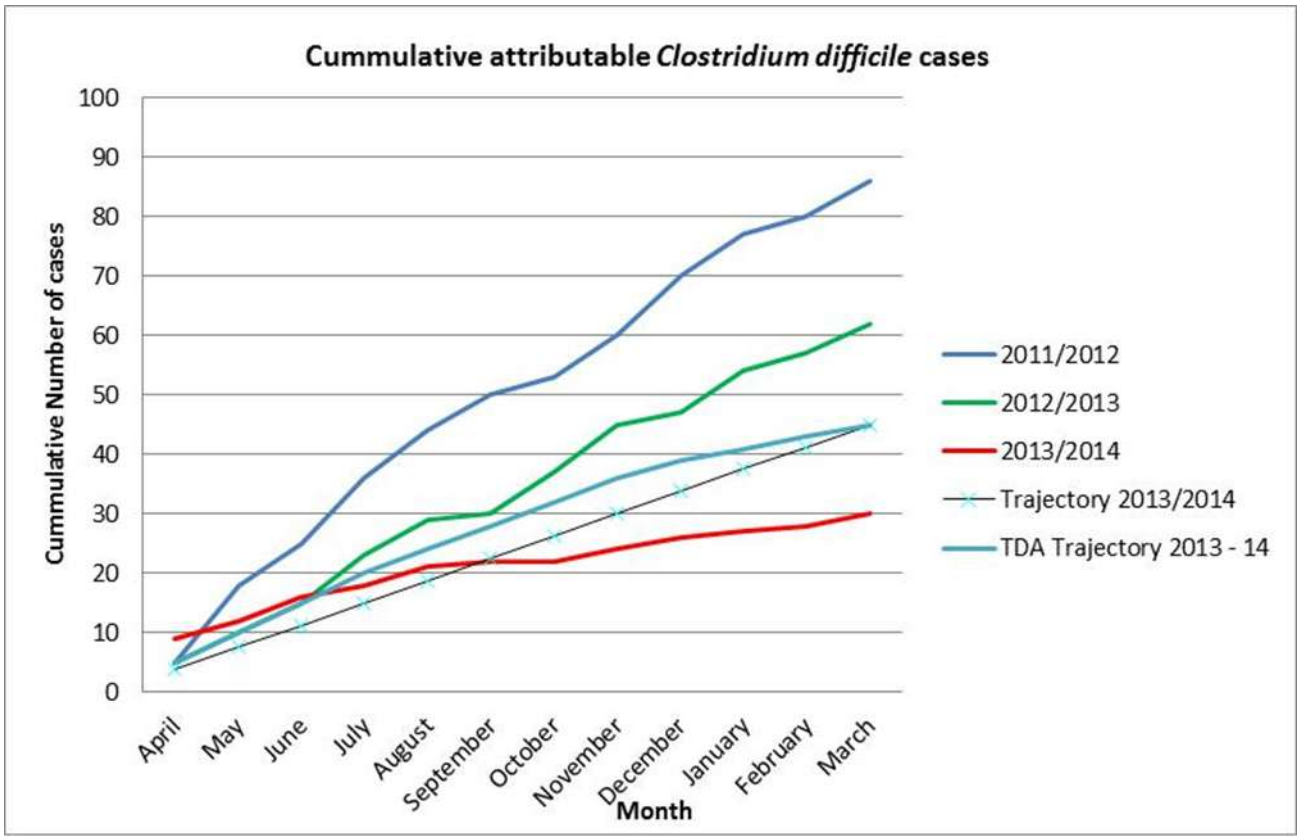


Figure 3 Cummulative C. difficile toxin positive tests for 2011/12, 2012/13, 2013/14 and the different trajectories.

(4) Glycopeptide resistant enterococcal bacteraemia

This reporting scheme started on 1st October 2003 and data have been published annually for all hospitals up to 30th September 2011, for a year running from October to September. St George's figures are illustrated in table 3 below. Figures for the part surveillance year October 2013 to March 2014 (inclusive) are also shown. There are no national thresholds.

Table 2: Annual numbers of GRE bacteraemias at St George's Hospital

Year	Number of patients
October 03 to September 04	11
October 04 to September 05	6
October 05 to September 06	11
October 06 to September 07	13
October 07 to September 08	9

October 08 to September 09	5
October 09 to September 10	3
October 10 to September 11	4
October 11 to September 12	13
October 12 to September	11
October 13 to March 14 (Part year)	4

(5) E coli Bacteraemia

All Trusts are required to report cases of E coli bacteraemia using similar mechanisms as for MRSA and MSSA bacteraemia. Surveillance began in June 2011. There were 234 cases in 2013/14. 65 cases of these cases came from the trust and 169 community onset. This was against 209 cases for 2012/13 (50 trust and 158 community onset)

Typically, community acquired E coli bacteraemia results from abdominal, biliary or urinary tract sepsis. Hospital acquired cases of E coli bacteraemia are often associated with urinary catheter infections. There are no national thresholds, nor does the national reporting system differentiate between trust onset and community onset.

(6) Surgical Site Infection Surveillance

St. George's Healthcare NHS Trust increased the number of Surgical Site Infection Surveillance modules carried out during 2013 - 14.

It is mandatory for any hospital that performs orthopaedic surgery to complete one module of the nationally organised surgical site infection surveillance service per year. The Surgical Site Infection Service (SSIS) is organised by the Public Health England. Hospitals record data using a set of standard criteria. Infection rates are calculated on the basis of data collected during the patient's admission and include a post-discharge surveillance period that can be up to a year from the procedure date if the patient has received a prosthetic implant. This means trusts can monitor their performance against previous results and other hospitals.

Two mandatory orthopaedic modules conducted in Quarter 4 (October to December 2013) and Quarter 1 (January – March 2014) involved surveillance of infections following repair of neck of femur. The table below shows the number of operations and infections for the 3 month period and details of the modules for the last 4 years.

Fractured Neck of Femur

Table 3: Trends in rates of SSI by surveillance period at your hospital

*All SSI = Inpatient & readmission, post-discharge confirmed and patient reported

Year and Period	No. operations	Surgical Site Infection					
		Inpatient & readmission		Post discharge confirmed		All SSI*	
		No.	%	No.	%	No.	%
2011 Q2	52	1	1.9%	0	0.0%	1	1.9%
2012 Q4	44	2	4.5%	0	0.0%	2	4.5%
2013 Q4	86	1	1.2%	0	0.0%	1	1.2%
2014 Q1	61	0	0.0%	0	0.0%	0	0.0%

Source: Surveillance of Surgical Site Infections in NHS Hospitals in England 2011/2012 Health Protection Agency London 2014

During Quarter 4 there were 86 operations performed with one surgical wound infections, which correspond to an infection rate of 1.2%. This figure is within acceptable limits when compared with other hospitals. A total of 61 operations were performed during Quarter 2, there were no surgical wound infections during this period.

The IPC team conducted three surveillance module for infections following coronary artery bypass graft operations during 2012 -2013. The modules were conducted in Quarter 3 (July – September 2013, Quarter 4 October –December 2013 and Quarter 1 (January to March 2014) and the results can be seen in the table below (table 4).

Coronary Artery Bypass Grafts

Table 4: Trends in rates of SSI by surveillance period at your hospital

*All SSI = Inpatient & readmission, post-discharge confirmed and patient reported

Year and Period	No. operations	Surgical Site Infection					
		Inpatient & readmission		Post discharge confirmed		All SSI*	
		No.	%	No	%	No.	%
2012 Q2	163	8	4.9%	0	0.0%	8	4.9%
2013 Q3	168	18	10.7%	0	0.0%	18	10.7%
2013 Q4	161	23	14.3%	0	0.0%	23	14.3%
2014 Q1	141	8	5.7%	0	0.0%	8	5.7%

In Quarter 3, 168 operations performed resulting in eighteen surgical wound infections, which correspond to an infection rate of 10.7%, which is in above the national average of 5.8%. In Quarter 4, 161 operations were carried out, the infection rate for this quarter was again above the national average at 14.3%.

A number of measures were put in place to reduce the high infection rate. These included:

- Analysis of the cases. This did not reveal any obvious common cause such as surgeon, surgical assistants, theatres or pre-existing conditions. There was some trend towards the relation being with longer surgery although this is not unexpected.
- Establishment of a cardiothoracic infection committee consisting of cardiothoracic surgeons, cardiothoracic nurses, theatre staff, infection prevention and control team, the audit and surveillance nurse and consultant microbiologist.
- Establishment of a no touch rule for wounds and dressings for the first 3 days and trial of clear dressing to allow inspection of the wound.
- Introduction of "cough locks" to prevent wound mechanical dehiscence.
- Introduction of measures to reduce inappropriate traffic through theatres.

In Quarter 1, 141 operations were performed with eight identified surgical site infections, a rate of 5.7% in line with the national infection rate. Surveillance of CABG surgery is now being undertaken by the cardiothoracic team themselves with support from infection control.

In 2013 -2014 a new module, Spinal Surgery was undertaken in Quarter 1 (January – March 2014). The total number of operations performed was 226 and 3 surgical site infection were detected, an infection rate of 1.3% this is in line with the national percentage.

Spinal Surgery

Table 5: Trends in rates of SSI by surveillance period at your hospital
***All SSI = Inpatient & readmission, post-discharge confirmed and patient reported**

Year and Period	No. operations	Surgical Site Infection					
		Inpatient & readmission		Post discharge confirmed		All SSI*	
		No.	%	No.	%	No.	%
2014 Q1	226	3	1.3%	0	0.0%	3	1.3%

The results of this surveillance of post-operative infections only represent a fraction of all surgical procedures conducted in the Trust. Further modules covering other surgical procedures are available and an interest in SSI Surveillance has been shown by other surgical teams. In order to follow up this interest, further resources would be needed to expand the service as surveillance is very time consuming. The infection control team is investigating freeing up some resources by better use of electronic data collection. The trust's infection control annual programme for 2013-14 sets out priorities & strategies for the coming year. This programme includes plans to participate in all mandatory and selected optional SSIS modules.

The trust executive management team has accepted in principle that surgical site surveillance at St Georges must be expanded especially following the introduction of the NICE quality standards QS47 which requires providers to undertake SSI surveillance and

for commissioners to ensure this is performed when commissioning services from providers. A business case is being drawn up at the present.

Mandatory Surveillance Community Services Division

MRSA Bacteraemia

There was 1 case of MRSA bacteraemia amongst inpatients at Queen Mary's hospital, or the Jones Unit (HMPW).

MSSA Bacteraemia

There were no cases of MSSA Bacteraemia at Queen Mary's hospital, or the Jones Unit (HMPW).

Clostridium difficile

There were no *Clostridium difficile* cases for CSW bed-based services.

E. coli Bacteraemia

There was 1 case of E. coli bacteraemia at Queen Mary's Hospital in Feb 2014.

Alert Organism Surveillance

MRSA acquisitions

The Infection Prevention and Control (IPC) team record all new MRSA acquisitions in the trust i.e. MRSA grown from clinical samples other than blood cultures, including screening swabs. The following criteria are used to decide whether MRSA was acquired in the trust.

Acquired in the trust

- Newly positive specimen in an inpatient known to be MRSA negative on admission.
- Newly positive specimen on admission from a patient known to have been a patient in the trust in the preceding year.
- Newly positive specimen in a patient who has been admitted for greater than 48 hours.

Not acquired in the trust

- Newly MRSA positive in a swab taken less than 48 hours after admission and no admission to the trust in the preceding year.

The acquisitions are shown below for the year 2013/14.

Table 6: Monthly MRSA Acquisitions

Number of Monthly MRSA Acquisitions	
Month	**No. of Acquisitions**
Apr-13	21
May-13	26
Jun-13	04
Jul-13	12
Aug-13	08
Sep-13	06
Oct-13	11
Nov-13	14
Dec-13	09
Jan-14	09
Feb-14	09
Mar-14	05

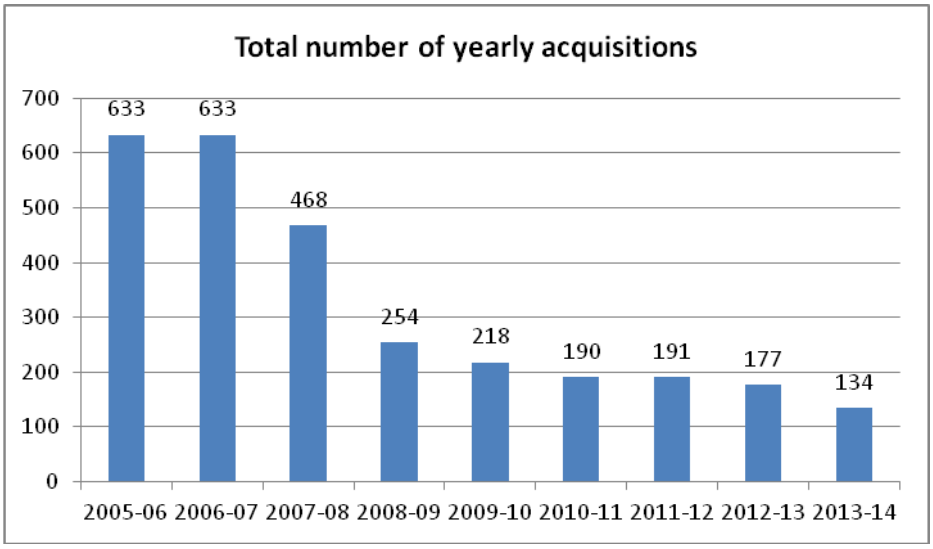


Figure 4 Total number of yearly MRSA acquisitions.

Table 7: Total number of acquisitions and percentage fall for successive years from 2005-06.

Year	Total acquisitions	Percentage fall
2005-06	633	
2006-07	633	0%
2007-08	468	26%
2008-09	254	46%
2009-10	218	14%
2010-11	190	13%
2011-12	191	0%
2012-13	177	7%
2013-14	134	24%

The majority of patients who acquire MRSA are colonised only. However it is possible that infection may develop. This can be prevented by early use of **decolonisation treatment** which can remove MRSA colonisation or, if given before surgery, prevent **surgical** site infection by reducing the MRSA bio-burden.

Decontaminating hands at the point of care and adherence to the WHO five moments for hand hygiene are essential factors to preventing the transmission of MRSA to patients. The IPC team promote the importance of hand hygiene through teaching sessions, monthly hand hygiene audits, assessment of healthcare workers hand hygiene technique and promotion of hand hygiene day across the trust.

MRSA Acquisitions for Community Services
There were no MRSA acquisitions cases for CSW bed-based services.

Outbreaks and Incidents

Influenza A Outbreak

There was an outbreak of Influenza A H3N2 on Rodney Smith ward in March 2014. There were 5 patients affected and this lead to the closure of the ward to new admissions.. All symptomatic patients and staff were screened during this period. No staff member was found to be positive. The ward was closed for 5 days and quarantined for a further 2 days.

Norovirus Infections

There were sporadic outbreaks throughout the hospital and in general the activity was increased on the previous year.

There was a significant outbreak on Marnham Ward between the 25th March and the 25th April during which the ward was either quarantined or closed to new admissions. In total 11 patients were found to be positive for norovirus infection and 3 members of staff. The outbreak did not spread beyond the confines of the ward.

Legionella Infection

Another case of legionella was acquired at St Georges on Allingham ward. *Legionella pneumophila* was identified in a number of water sources on the ward. Remedial action was instituted including removal of all water pipe deadlegs, flexible hosing, replacement of old taps, and refurbishment of showers. Pall filters were placed on all taps during this process and only removed when follow up tests were negative. Further investigation into the rest of the hospital identified further dead legs that were not identified at the time of the last outbreak. Following the introduction of a new estates team a systematic effective proactive program of identification and remedying of all water risks has started. This will be a long program.

Cardiothoracic Intensive Care Unit Isolation Rooms

During a routine investigation of the cardiothoracic intensive care unit isolation rooms it was discovered that the design of these rooms was not optimal and that extracted unfiltered air was being vented into outside public areas. Although this design was compliant at the time of construction, subsequent official guidance makes it explicit that air must be safely vented via a filter or at the top of the building. These rooms were immediately removed from use as infection isolation rooms, although they continued to be used for routine patients. The main risk came from tuberculosis especially drug resistant TB. Although the risk was low staff members who may have been exposed for extended periods were screened for TB, All were negative. A total redesign of two rooms was undertaken allowing extract air to be vented safely and this will be completed by July 2014.

Community Outbreaks

There were no incidents or outbreaks in community services Wandsworth.

Saving Lives

The Saving Lives Programme is a set of 'Care Bundles' or High Impact Intervention (HII) for Acute Trusts that were first issued by the Department of Health in 2005. Originally a collection of five audit tools, this was expanded to eight tools in 2007.

In order to streamline the number of audits, the Trust has combined the Saving Lives Audits with three other mandatory Trust audits, these are hand hygiene, PPE (Personal Protective Equipment) and environmental audits to produce a programme of eleven audits that are completed twice yearly as a rolling programme. The current programme which commenced in January 2008 and subsequently expanded is shown below.

Audit	**Month**	**Month**
Central venous catheter	January	July
Peripheral venous catheter	January	July
Renal dialysis catheter	February	August
Prevention of SSI	February	August
Care of ventilated patients	March	September
Urinary catheter	March	September
Reduction of *C difficile*	April	October
Decontamination of Patient Equipment	Monthly	
Hand Hygiene	Monthly	
Personal Protective Equipment	May	November
Environmental	These were temporarily suspended as a series of corporate infection prevention and control mock CQC inspections were undertaken instead.	

Wards are responsible for entering results directly to the L drive of the Trust Computer Network. Results of these audits must be uploaded by the 7th of the following month.
Not all audits are appropriate for all wards and an allowance has been made for this.

Results for the wards are now incorporated within the combined composite scorecard for Infection Prevention and Control. The responsible clinical unit is required to generate and implement a remedial action plan and present the work to the HCAI Taskforce once a month

Detailed results of these audits and action plans are not presented in this report but are accessible on the Trust's clinical governance network drives. Copies of the composite monthly scorecard and all action plans are displayed on the wards' Infection Prevention and Control notice Boards to raise awareness and to enhance compliance.

Infection Control Audits

The Infection Prevention and Control team undertook a programme of policy audits during the year, as part of the action plan.
These included:

- **Compliance with the *Clostridium difficile* protocol**
  This audit is conducted for all patients who are diagnosed with *Clostridium difficile* (hospital and non-hospital acquired).The following aspects are reviewed patient management; environmental cleanliness; healthcare use of standard precautions and antimicrobial stewardship. Audit findings require analysis and then feeding back to the divisions.

- ***Clostridium difficile:* time to isolation**
  Trust guidance recommends that patients suspected of having infectious diarrhoea must be isolated within two hours of suspicion. This audit is conducted for all patients who are diagnosed with *Clostridium difficile* (hospital and non-hospital acquired). Audit findings require analysis and then feeding back to the divisions.

- **Commode audit**
  This audit was undertaken by the company Vernacare. Await results.

Estates and Facilities inc. Environmental Cleaning

The estates and facilities team in conjunction with the nursing and infection control teams help to audit and assure the Trust of its obligation to provide a safe care environment and meet the CQC outcome requirements.

1. Monitoring and Assurance

In 13-14 the team were part of the audit teams for the **corporate mock CQC cleaning and infection control audits** which formed part of the assurance and preparations for the formal CQC visits.

These included audits across the community sites, and Queen Mary's Hospital and actions were then taken to rectify any concerns when noted.

The National Standards of Cleanliness scores across all areas continue to exceed the Trust overall percentage and high standards are being maintained. Any areas of non-compliance from auditing processes were rectified in the correct rectification times.

2. Main areas of development in 13-14 through from the Estates and Facilities team were:

- Retendering and award of the new Linen and Laundry contract.
- Roll-out of the nursing leadership uniforms.
- Introduction of blinds on windows in the AMW areas
- Updating of the Food Hygiene Policy.
- Bespoke training for nursing staff on cleaning standards.
- Development with Infection control team of new auditing tool for annual infection control. audits.
- Proposals for deep cleaning of clinical equipment.
- Combined governance reporting between all sites through to HCAI taskforce
- Implementation of pictorial cleaning posters for patient and staff information
- Review of the water safety risk assessment and action of planned works
- Significant capital projects have been built and these included: increased Bed capacity on surgical and cardiology wards; new surgical admission lounge; new Haematology and Oncology Outpatients department

3. Patient-Led Assessments of the Care Environment (PLACE) Programme 2014

The 2013 Patient-Led Assessments of the Care Environment (PLACE) is a new assessment and replaces the previous assessments known as Patient Environment Assessment Team (PEAT).

PLACE builds on the foundations of PEAT the two main differences are as follows:

1. Patients make up at least 50% of the assessment team providing a stronger voice
2. Focus on improvement with hospitals required to report publicly and say how they plan to improve

The definition of patients is:
“anyone whose relationship with the hospital is as a user rather than a provider of the services”

Assessors are recruited from patient representatives via the local Healthwatch, Residents Committees, Patient Reference Group, Patient Issues Committee and Access Committees and training on the assessment was provided by the Trust team.

The Assessment

The assessment period took place in St George’s Hospital and Queen Mary’s in May 2013 with dates not being shared widely.

The areas of assessment include the following four domains:

1. Cleanliness
2. Food
3. Privacy & dignity

4. General maintenance and decor

A minimum 25% of the site needs to be assessed at the St George's Hospital and 100% of Trust space at Queen Mary's Hospital.

Areas to be assessed

There no single assessment form rather there is a series of nine assessment sheets specific to each area:

1. Organisation/Hospital details
2. Organisation facilities questions
3. Accident & Emergency
4. External Areas
5. Food & Hydration Assessment
6. Organisation food questions
7. Ward assessment acute/community
8. Outpatients Departments
9. Internal Areas

Scores were as follows and a robust action plan was completed with 95% of actions being rectified in the financial year with the remaining areas requiring funding and planned for action in 2014.

St George's Hospital

Results are provided for four domains:-
-Cleanliness (including hand hygiene) 96.01%
-Condition, Appearance and Maintenance 92.42%
-Privacy, Dignity and Wellbeing 85.85%
-Food (including service) 77.07%

Services at Queen Mary's Hospital

Results are provided for four domains:-
-Cleanliness (including hand hygiene) 99.12%
-Condition, Appearance and Maintenance 90.59%
-Privacy, Dignity and Wellbeing 86.25%
-Food 94.68%

Environmental Hygiene

The IPC team, with the cooperation of Facilities, Waste Manager and Matrons, are responsible for carrying out annual environmental audits.

During this financial year it was decided through the Infection Control Committee to suspend the environmental audit programme and work on introducing a new audit tool. The IPC team worked at moving from using the Infection Control Nursing Association (ICNA) audit tools to the Infection Prevention Society (IPS) Quality Improvement Tools (QIT). The QIT project was managed by the IPCT and involved the installation, testing and piloting of a web based programme, the purchase of tablets, development of an audit schedule and training of matrons and the estates and facilities team. The QIT programme commenced April 2014. Carrying out the audits electronically allows for ease of use and the automatic generation of scores, reports and action plans. Also the adoption of the QIT programme results in greater engagement between the IPC team and wards teams and timely feedback and follow up.

In the interim an extensive programme of cleanliness and infection control corporate inspections were undertaken by the IPC nurses, Estates and Facilities and corporate nursing. Four clinical areas were inspected weekly and reports sent to ward/ unit managers who were in turn requested to generate action plans identifying how issues had been resolved. Throughout the financial year all clinical areas across the organisation were inspected.

Composite Scorecard

A scorecard that combines several infection control indices was published quarterly for Apr-June 2013. Thereafter the score-card was published monthly in order to give real-time feedback to wards.

A number of changes were made to the score-card;

- It was combined with saving lives data.
- Antibiotic stop dates were excluded; these data are not collected monthly and are included in antibiotic audit reports disseminated by pharmacy.
- The criteria for allocation of red flags were amended (see below)

Wards are given red flags depending on the number of infections or the result achieved in hand hygiene and saving lives audits. The information is given for each ward and the criteria for allocation of red flags are a follows:

- Any MRSA bacteraemia that occurs greater than 48 hours after admission when the Root Cause Analysis (RCA) shows that it was preventable.
- Wards with 2 or more MRSA acquisitions (previously 3 or more)
- Wards with 1 or more *C. difficile* infections (previously 2 or more)
- Wards with hand hygiene audits results below the required level of compliance (95%) or if no record of results found on the L Drive under Saving Lives
- Wards with saving lives results below the required level of compliance (100%) or if no record of results found on the L Drive under Saving Lives

The responsible clinical unit is required to generate and implement a remedial action plan and present the work to the HCAI Taskforce once a month.

The total number of red flags per month since July 2013 – March 2014 is shown below

Month 2013-2014	**Total Red Flags**
Jul.	92
Aug	37
Sept.	49
Oct.	47
Nov.	55
Dec.	44
Jan.	69
Feb.	35
Mar.	55

An example of the monthly combined composite scorecard is shown below;

Infection Prevention & Control Combined Monthly Scorecard – March 2014

Ward	Associated pneumonia care bundle	Urinary Catheter (Insertion)	Urinary Catheter (Ongoing)	8. Cleaning & Decontam of Clinical Equip	9. Hand Hygiene	*C difficile*	MRSA acquisition	MRSA bacter-aemias	Total red flags #
Dalby				100%		0	1	0	#
Heberden			100%	100%	98%	0	0	0	
Mary Seacole		0%	67%	100%	100%	0	0	0	##
Cardiac ICU	80%	70%	80%	80%	100%	0	0	0	####
Carmen Suite				100%	100%	0	0	0	
Champneys			100%	100%	100%	0	0	0	
Delivery Suite		100%	100%	100%	100%			0	
Frederick Hewitt				100%	94%	0	0	0	#
General ICU	100%		100%	100%	97%	0	0	0	
Gwillim		100%	100%	95%	95%	0	0	0	#
Jungle		100%	100%	100%	100%			0	
Neuro ICU	90%	90%	100%	100%	92%	0	0	0	###
Nicholls/Ocean				100%		0	0	0	#
NNU	89%			100%	82%	0	0	0	##
Paediatric ICU	100%	100%	100%	100%	87%	0	0	0	#
Pinckney			100%	100%	96%	0	0	0	
A&E / CDU		100%		100%	47%	0	0	0	#
Allingham		100%	100%	100%	98%	0	0	0	
Amyand				100%	98%	0	0	0	
Belgrave			100%	100%	98%	0	0	0	
Ben Weir		100%	100%	90%	100%	0	0	0	#
Buckland			100%	100%	97%	0	0	0	
Buckland Acute Dialysis				100%	98%		0	0	
Caesar Hawkins			100%	100%	99%	0	0	0	
Caroline		100%	100%	100%	96%	0	0	0	
CCU		100%	100%	100%	88%	0	0	0	#
Cheselden		100%	100%	100%	100%	0	0	0	
Endoscopy					83%				#
James Hope		100%	100%	89%	100%	0	0	0	#
Knightsbridge Dialysis				80%	97%	0	0	0	#
Marnham			100%	80%	100%	1	0	0	##
McEntee				100%		0	0	0	#
Norman Tanner Dialysis				100%	97%	0	0	0	
Richmond						0	0	0	##
Rodney Smith		100%	50%	100%	96%	0	0	0	#
Ruth Myles		100%	100%	100%	75%	0	0	0	#
Ruth Myles Day Unit				98%	100%	0	0	0	#

Saving Lives Audits 1 - 9
Audit Not Applicable = Gray

Saving Lives Audit 1 - 9 Data Not Entered or Audit Undertaken by Deadline = **NR**

Saving Lives Audits 1 - 8
Compliant = 100%

Saving Lives Audits 1 - 8
Non-Compliant = ≤99

C. difficile - Number of cases diagnosed in patients admitted for >48 hours (hospital acquired). **Red flag for 1 or more cases.** (Note the revised threshold).

MRSA Acquisition - Number of acquisitions is shown. **Red flag for 2 or more acquisitions.**

MRSA Bacteraemias show the number of diagnosed on that ward **>48 hours after admission** to hospital and thus **hospital-acquired**.

MRSA Bacteraemias diagnosed **<48 hours after hospital admission** are **community-acquired**.

One **red flag** if any **>48**

Trevor Howell				100%	100%	0	0	0		**bacteraemias** when the RCA shows that it was preventable.
Trevor Howell Day				100%	96%		0	0		
Brodie		100%		88%	100%	0	0	0	#	
Cardiothor. Recovery	100%		100%	100%	94%		0	0	#	
Cardiothor. Theatres		100%	0%	100%	100%		0	0	#	
Cavell			100%	95%	96%	0	0	0	#	
Day Surgery		100%		100%	100%		0	0		
Florence Nightingale		100%	100%	100%	100%	0	0	0		
Gray		100%	100%	100%	96%	0	0	0		
Gunning		100%	100%	50%	99%	1	0	0	##	
Gwynne Holford				100%	98%	0	0	0		
Holdsworth		100%	100%	33%	94%	0	0	0	##	
Keate		100%	100%	100%	91%	0	0	0	#	
Kent	100%	100%	100%	40%	98%	0	0	0	#	
Lanes. Recovery			100%	100%	98%		0	0		
Lanes. Theatres		100%		93%	97%		0	0	#	
McKissock	100%	100%	100%	83%	94%	0	0	0	##	
Neuro Day Care				70%			0	0	##	
Neuro Recovery			100%	100%	98%		0	0		
Neuro Theatres					93%		0	0	####	
Paul Calv. Recovery				100%			0	0	#	
Paul Calv. Theatres		100%		100%	98%		0	0		
St James Recovery			100%	100%			0	0	#	
St James Theatres		100%		100%	98%		0	0		
Vernon		100%	88%	92%	95%	0	0	0	##	
William Drummond		100%	100%	80%	100%	0	0	0	#	
Wolfson / TY				100%	94%	0	0	0	#	
						2	1	0		

Community Services

Children & Women's, Diagnostic & Therapy Services

Medicine & Cardiothoracics

Neurosciences, Surgery, Cancer & Anaesthetics

Venous Access Service

The most recent vascular access device (VAD) audit was carried out across the Trust in April 2014. 474 VADs were reviewed and showed improved compliance with most standards when compared to the 2013 audit. These include: recording of the visual infusion phlebitis score, documentation of the need for the VAD, visibility of the exit site and lumens/hubs being free from blood. FRED* training is delivered on a weekly basis and to date has seen 475 staff attend.

Peripheral cannulation packs have now been introduced across the Trust to promote best practice in the insertion and documentation of peripheral cannulas. The peripheral cannula surveillance form has been updated to reflect the research based change from routine replacement to replacement when clinically indicated. A new central venous catheter surveillance form has been introduced. Single use chlorhexidine applicators are being introduced across the Trust to ensure that skin antisepsis during the insertion and maintenance of VADs is in line with the latest (epic3) guidance. Weekly VAD ward rounds continue in conjunction with the Infection Control Team and feedback is given to clinical areas both in real time and follow up email. Following the publication of the epic 3 guidelines in the Journal of Hospital Infection, specific adult, paediatric and neonatal policies in relation to best practice in the insertion and management of central venous catheters are being developed.

* FRED is an acronym designed to prompt the healthcare worker to consider whether a venous access device is **F**unctioning and **R**equired, whether the **E**xit site has been inspected and whether **D**ocumentation is complete.

Antimicrobial Stewardship

Key strategies introduced in 2013-14 are:-

- Increasing the antibiotic audit program to adhere to recommendations from AHRAI/DOH antibiotic stewardship guidelines published in 2012.
- Development of the electronic prescribing system to facilitate the antibiotic stewardship program.
- Update of the empiric guidelines for managing common infections to reduce the use of oral co-amoxiclav and ensure guidelines are compliant with the standards detailed in the AHRAI/DOH antibiotic stewardship guidelines.
- Initiation of audit programme to evaluate surgical antimicrobial prophylaxis
- Increased involvement of senior pharmacy staff in the Antibiotic Stewardship Programme

Existing methods of antimicrobial stewardship include:-

- **Antibiotic Prescribing Guidelines**

The portfolio of evidence-based guidelines has expanded to include: Paediatric Surgical Antimicrobial Prophylaxis guidelines. Updates to 9 other antibiotic prescribing guidelines were made throughout the year.

Appropriate antibiotic use (defined as compliance with guidelines, choice according to microbiology results or recommendations by medical microbiology) was 97% in Q1, 91% in Q2, 93% in Q3 and 95% in Q4.

Review of non-microbiology authorised guidelines containing antibiotic prescribing information continues to ensure all guidelines are harmonised and adhere to stewardship principles.

- **Antibiotic Restriction**

Certain antibiotics are 'restricted' (termed dual approval) – their usage must be approved by the responsible clinical team and a Medical Microbiologist before pharmacy can dispense. This includes agents which are very expensive and/or should be reserved for infections due to highly resistant organisms. As a result of increasing restrictions on the prescribing of cephalosporins and ciprofloxacin using this method there have been significant reductions in the use of these agents – 70% reduction in cephalosporin use and 80% reduction in ciprofloxacin use (see antibiotic usage data). Adherence to this policy remained high in 2013-14; 98% in Q1, 97% in Q2, 93% in Q3 and 93% in Q4.

- **Antibiotic Stewardship Rounds**

Consultant Microbiologists and pharmacists have been conducting weekly ward rounds since October 2006. These increased in frequency to 3 times a week in March 2007. This has continued throughout 2013-14 where 2020 patients were seen on 247 ward rounds and 1091 interventions to improve antibiotic prescribing were made. An audit showed 83% of recommendations were acted upon.

- **Education and Training**

Medical staff – Antimicrobial stewardship is discussed at all junior doctor inductions with annual in depth teaching sessions for FY1 and FY2 doctors.
Pharmacy staff – All new pharmacists receive detailed induction training and regular training sessions (three times a year).
Nursing staff – antibiotic stewardship and prescribing standards are discussed at all nurse inductions and during harm free care training.

- **Audit Program:**
    - Antimicrobial Point Prevalence audit
    - Divisional audit
    - IV to oral switch audit
    - Surgical prophylaxis audit
    - Audit of interventions made on the antimicrobial stewardship rounds (adults and paediatrics)

- **Antibiotic consumption reporting**

The following in-patient antimicrobial consumption data is monitored quarterly.

1. IV versus oral antibiotic consumption
2. Consumption of antibiotics with high risk of CDI (cephalosporins, quinolones, clindamycin, co-amoxiclav)
3. Consumption of broad-spectrum antibiotics (piperacillin-tazobactam, meropenem and ertapenem)

Consumption data is obtained from the pharmacy dispensing system with units dispensed to in-patients or as ward stock converted to WHO defined daily doses (DDDs) and presented as DDDs/1000 occupied bed days (OBDs).

- **Incident reporting**

All antibiotic-related medication incidents in the Trust are analysed every 2 months and reported to the Antimicrobial Stewardship Committee who act upon the reports to improve patient safety.

Key priorities for 2014-15 include:-

- Implementation of electronic prescribing to support the antibiotic stewardship agenda through promoting compliance with antibiotic guidelines/policies, increasing the ability to audit prescribing and monitor antibiotic consumption within the Trust and utilise this new system to evaluate outcomes of stewardship interventions.
- Roll out the surgical antibiotic prophylaxis audit programme to all care groups.
- Continue to update guidelines and policies and improve access to these by widening the number of guidelines available on the Smartphone "app".
- Improve education and training within the Trust with development of an e-learning package

- **Summary of audit reports 2013-2014**

Point prevalence survey of use of Anti-infective Agents –
This audit is conducted every 6 months to evaluate adherence to protocols and policies for use of anti-infectives in the in-patient setting (July 2013 and February 2014).

Table 8: Summary of Results against Trust Targets

	Results July 2013	**Target**	**Care groups Meeting Targets**											
			General Medicine	Renal	Haemato-oncology	CIU	Senior Health	CSW (QMR)	Surgery & Trauma	Cardiovascular	Neurosciences	Women's	Children's	Critical Care
Indication in notes*	**82%** (1%↓)	**100%**				√	√	√						
Indication on drug chart*	**87%** (9%↑)	**70%**	√		√	√	√	√	√	√	√	√	√	√
Stop/review date on drug chart	**74%** (10%↑)	**70%**	√		√		√	√	√		√	√	√	√
Dual Approval (restricted) anti-infectives used as per policy	**97%** (1%↑)	**95%**	√	√	√	√	√	√		√	√	NA		√
Compliance with guidelines, micro advice or as per cultures	**91%** (4%↑)	**95%**	√			√		√				√		√
Cultures taken prior to starting antibiotics	**68%** (3%↑)	**No target**												
Evidence of review of antibiotics in notes at 48h	**79%** (4%↑)	**No target**												
Antibiotics continued >7 days have a clear justification for prolonged prescribing in notes	**85%** (3%↑)	**No target**												

*23 anti-infectives were prescribed (5% of prescriptions) with no indication documented on either the drug chart or in the medical notes (a 1% increase from September 2012).

	Results February 2014	Target	Care groups Meeting Targets											
			General Medicine	Renal	Haemato-oncology	CIU	Senior Health	CSW (QMR)	Surgery & Trauma	Cardiovascular	Neurosciences	Women's	Children's	Critical Care
Indication in notes*	**89%** (7%↑)	**95%**	√			√	√	√				√		
Indication on drug chart*	**84%** (3%↓)	**95%**				√		√				√		
Stop/review date on drug chart	**78%** (4%↑)	**95%**						√				√		
Dual Approval (restricted) anti-infectives used as per policy	**93%** (4%↓)	**95%**		√	√	√	√	√			√	NA	√	√
Compliance with guidelines, micro advice or as per cultures	**95%** (4%↑)	**95%**			√	√	√	√			√	√	√	√
Cultures taken prior to starting antibiotics	**71%** (3%↑)	**No target**												
Evidence of review of antibiotics in notes at 48h	**79%** (→)	**No target**												
Antibiotics continued >7 days have a clear justification for prolonged prescribing in notes	**98%** (13%↑)	**No target**												

*12 anti-infectives were prescribed (2% of prescriptions) with no indication documented on either the drug chart or in the medical notes (a 3% decrease from July 2013).

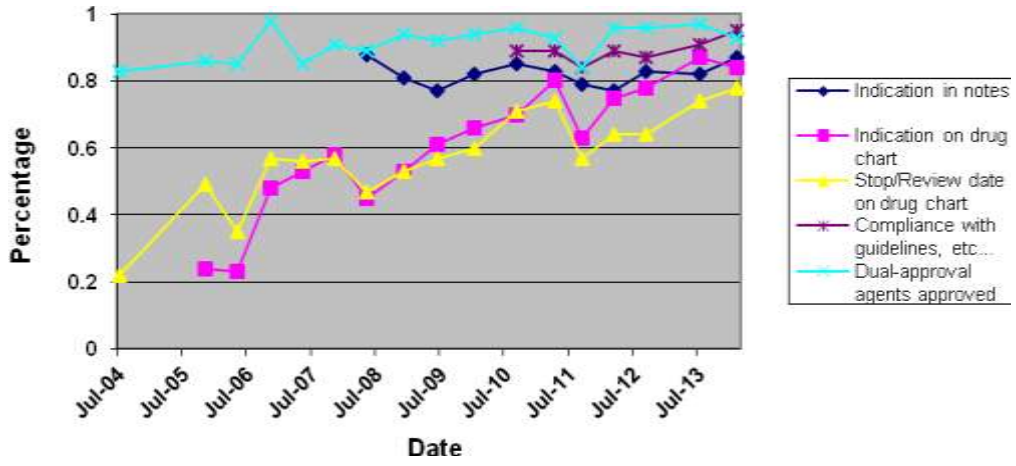


Figure 5 Compliance with Antimicrobial Prescribing Policy (2004-2014)

The 2013-14 audits show improved documentation of indication and duration on drug charts and in the medical notes. The targets for these KPIs were raised to 95% during the year to reflect our higher aspirations. We have yet to meet these targets. Restricted antibiotics used as per policy remains high; exceeding the 95% target in July, but falling to 93% in the February audit. The indicator used to measure appropriate prescribing (compliance with guidelines, microbiology advice or prescribing according to culture results) improved throughout the year to meet the 95% in the February audit.

No significant changes were seen in the proportion of in-patients receiving anti-infectives and the proportion of anti-infectives that are prescribed intravenously.

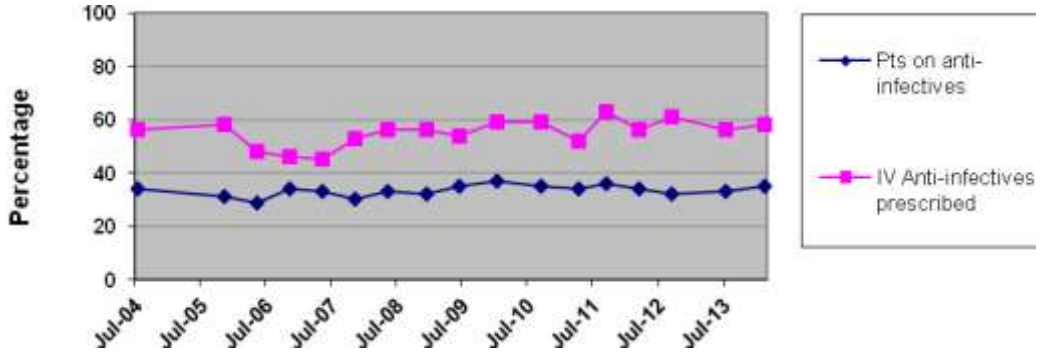


Figure 6 Proportion of patients on anti-infectives and proportion of IV anti-infectives

Divisional Antibiotic Audit

Data was returned from 21 wards in the Q1 divisional antibiotic audit and 26 wards in Q3 (a significant improvement from 2012-13). The trust targets for restricted antimicrobials used as per policy and the indicator used to measure appropriate prescribing (compliance with guidelines, microbiology advice or prescribing according to culture results) met the target of 95% on one audit only. The other indicators failed to meet the 95% target.

	Results Q1 2013-14	**Results Q1 2013-14**	**Target**
Indication in notes*	88%	88%	**95%**
Indication on drug chart*	82%	78%	**95%**
Stop/review date on drug chart	83%	75%	**95%**
Dual Approval (restricted) anti-infectives used as per policy	98%	93%	**95%**
Compliance with guidelines, micro advice or as per cultures	97%	93%	**95%**
Cultures taken prior to starting antibiotics	92%	83%	**No target**
Evidence of review of antibiotics in notes at 48h	83%	78%	**No target**

Intravenous to oral antibiotic switch audit

All wards were audited in-patients in August 2013 to assess the proportion of patients who were receiving IV antibiotics and whether patients receiving IV antibiotics met the criteria for an oral switch.

This audit revealed a reduction in the number of in-patients on IV antibiotics (14%). The proportion of patients on IV antibiotics met the criteria for an IV to oral switch (10%) remains stable compared to previous years (9% in 2012).

Surgical Prophylaxis Audit

Adherence to the St Georges Hospital Antibiotic Prophylaxis guidelines for Obstetrics and Gynaecology procedures was audited in a sample of 101 procedures in 2013. Compliance with the guidelines was high in Obstetrics (94%), but lower in gynaecology due to poor documentation of the timing of prophylaxis in relation to skin incision (91% compliance with choice of antibiotics, 30% doses given within 30 minutes of incision; timing unknown for 68% of patients). All elective patients were screened for MRSA pre-operatively and found to be negative.

Audit of interventions made on the antimicrobial stewardship rounds

An audit was conducted in 30 patients in February 2014, which showed that advice given on the antimicrobial stewardship rounds was accepted in 83% of patients.

An audit of 159 prescriptions in 110 children was conducted over a four week period in December 2013 on the paediatric wards to assess antibiotic use in paediatric inpatients. This revealed high use of co-amoxiclav for lower respiratory tract infections and prolonged surgical prophylaxis, however use of meropenem was found to be low. The stewardship team were able to stop 20 prescriptions due to a clear diagnosis of viral bronchiolitis and have developed paediatric surgical prophylaxis guidelines to address the prolonged prophylaxis.

Antibiotic Usage Data

Antibiotic consumption is reported for in-patients only in this document as WHO defined daily doses (DDDs) per 1000 occupied bed days (OBDs), with the exception of the IV to oral comparison graph, which is presented without denominator data. Selected antibiotics are reported due to their high potential for emergence of resistant organisms, such as *Clostridium difficile* (ciprofloxacin, clindamycin, cephalosporins and co-amoxiclav), or their broad-spectrum of action and expense (carbapenems and piperacillin/tazobactam).

Figure x shows the proportion of antibiotics prescribed to in-patients as oral versus intravenous medication revealing a recent increase in oral antibiotic consumption. This reflects an increase in doxycycline prescribing following the amendment of the empiric guidelines for common infections in August 2013.

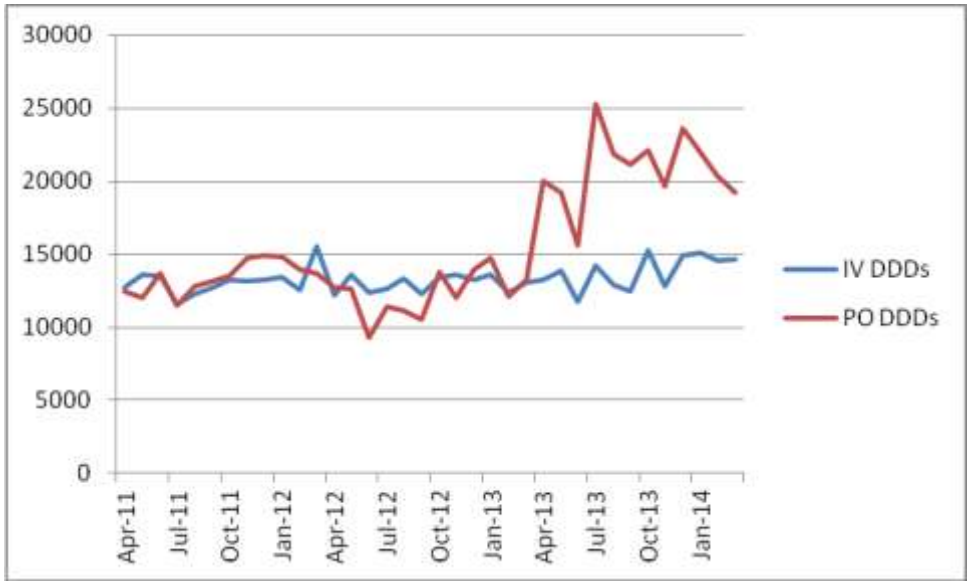


Figure 7 Intravenous and Oral Antibiotic Consumption

The measures to reduce in-patient usage of antibiotics with a high risk of Clostridium difficile infection (quinolones, clindamycin and cephalosporins) introduced in 2006-07 continue to yield results in maintaining low prescribing rates (see figures ……..).

Figure 8 In-patient Quinolone usage

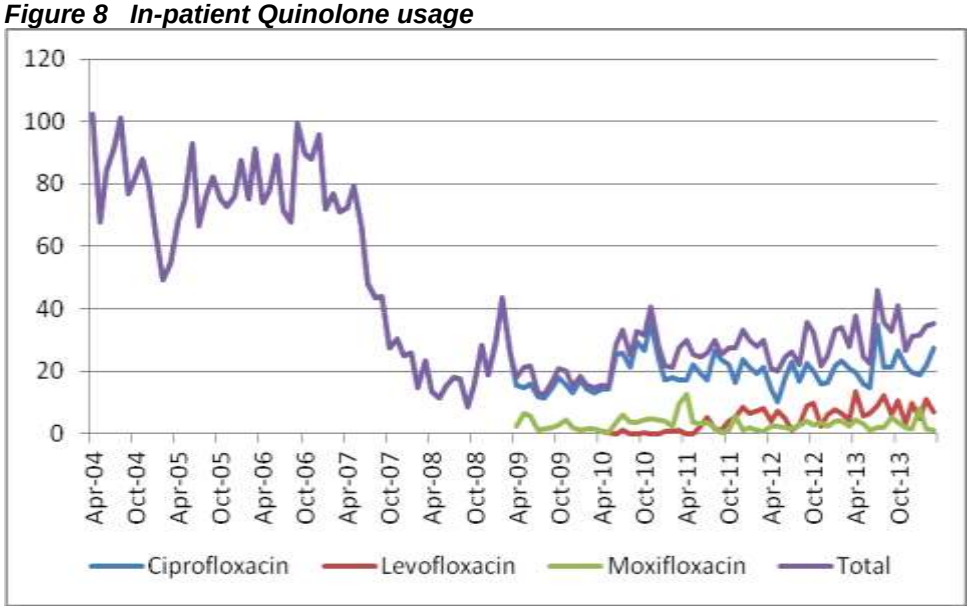


Figure 9 In-patient Cephalosporin usage

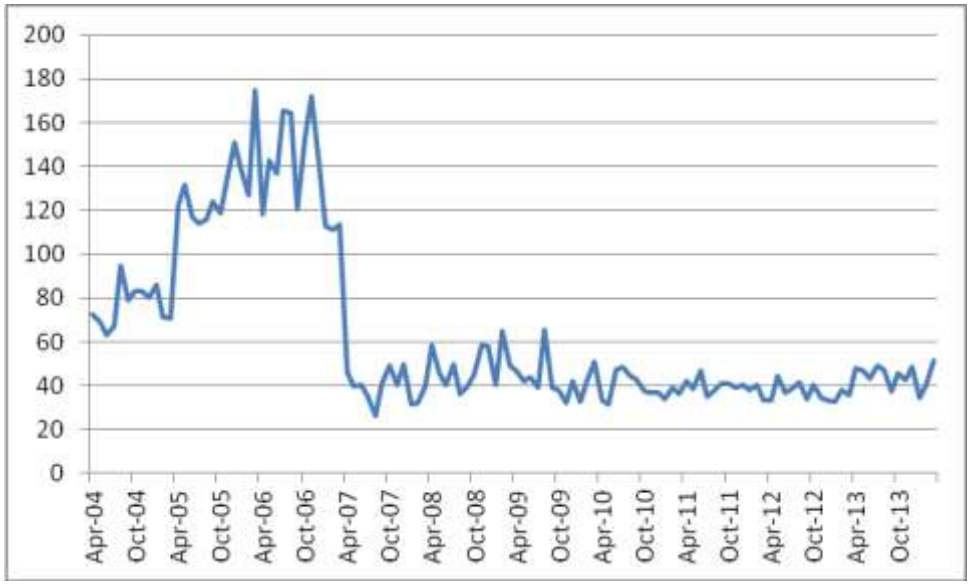
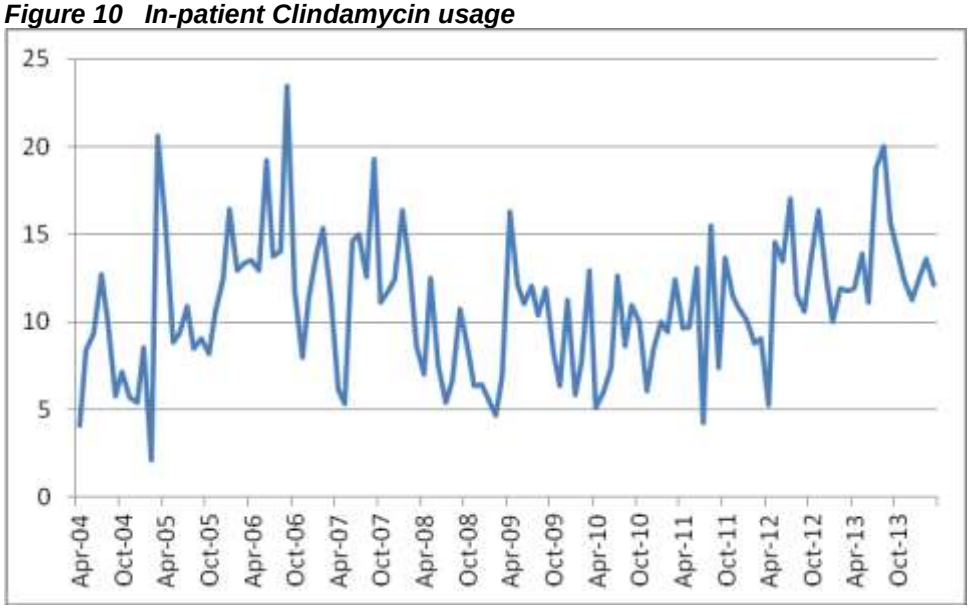


Figure 10 In-patient Clindamycin usage



Co-amoxiclav usage has steadily increased since guidelines were amended to reduce usage in 2006 (see figure 14). Empiric guidelines were modified to curb this and since August 2013 consumption of oral co-amoxiclav has fallen from 20% of our total antibiotic use to 14%.

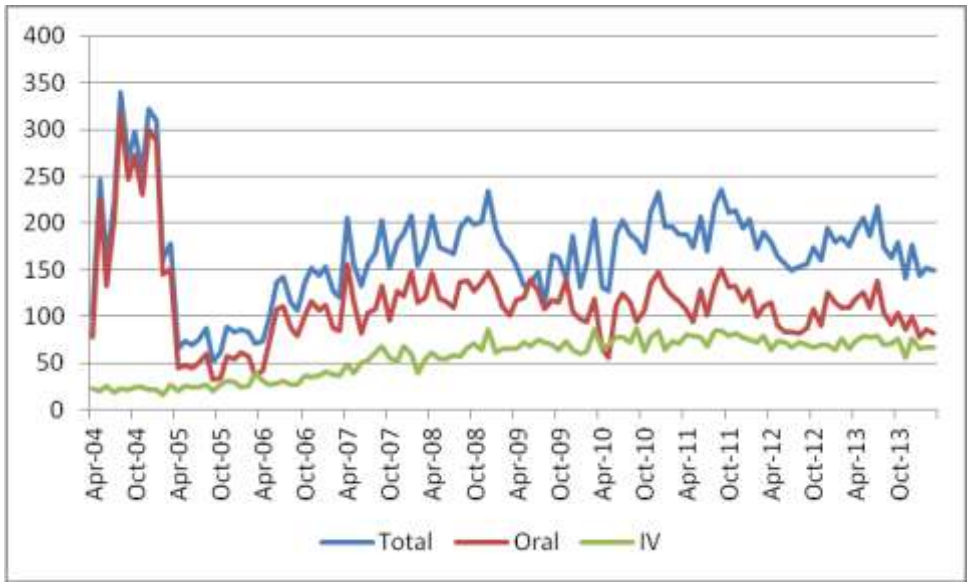


Figure 11 In-patient Co-amoxiclav usage

The reductions in cephalosporin and quinolone usage have led to an increase in the use of alternative broad-spectrum agents, namely piperacillin-tazobactam and carbapenems as shown in figure. Consumption continues to be monitored closely and efforts will be made to control use in 2014-15.

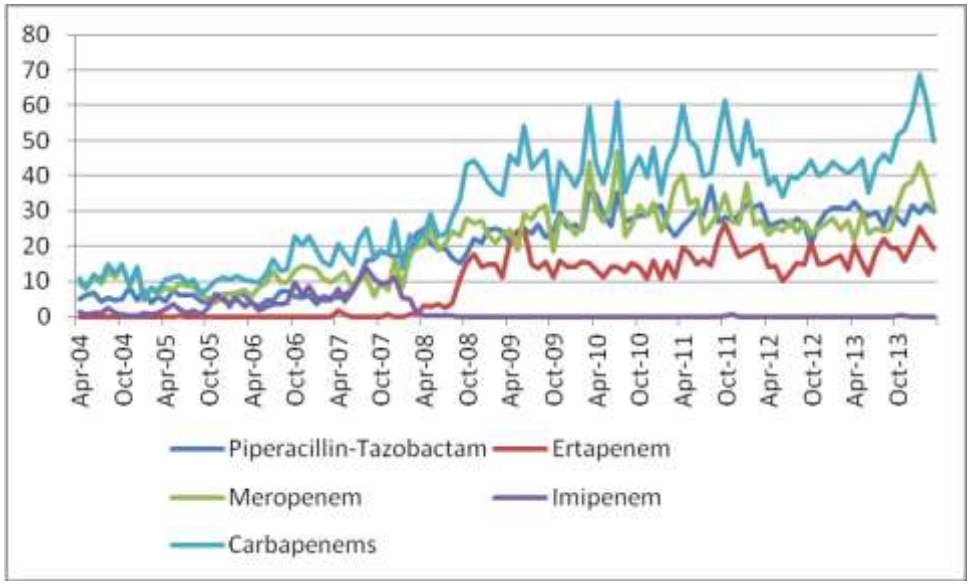


Figure 12 In-patient carbapenem and piperacillin-tazobactam usage

Infection Prevention and Control Nurse Teaching

The infection prevention and control nurses delivered trainings to at least 2528 staff members at more than 210 teaching sessions throughout the year across the various trust sites. These included trust induction, nurse and HCA induction, annual updates, hand hygiene and saving lives training, link staff training, study days and master classes, and additional bespoke training.

In mid-July, the Trust Induction programme changed to weekly sessions vs. fortnightly. The IPC team now deliver hand hygiene training to all staff coming through induction, utilising a UV light box. In addition, a total of 2979 clinical and 965 non-clinical staff members received IPC MAST as part of their statutory training requirement. This consists of an online assessment followed by online training, if staff fail the assessment.

Face-to-face IPC updates trainings (in addition to on-line MAST):

Monthly IPC update training (1 hour session)

- General Medicine and Senior Health
- General Surgery
- Neurosciences
- Nurse Induction
- Paediatrics
- Renal
- Trauma and Orthopaedics

Other training / frequencies

- HCA Induction – 1 hour / 6 times yearly
- IPC Study Days – 1 day / twice yearly

- IPC Master Classes – 1 day / twice yearly
- Medical Students (MBBS4 Programme) – 1 hour / 4 times yearly
- Midwifery IPC update – 1 hour / every other month
- NNU IPC update – 1 hour / every other month
- Trust Induction Hand Hygiene Training – 45 minutes to one hour / weekly

Annual IPC update training (45 minutes to 1 hour session)

- Brocklebank/Doddington Health Centres- DN's
- Children Continuing Care
- Dietetic Service
- Health Visitors
- HMPW clinical staff
- Intermediate Care Day & Night Service
- Learning Disability Team
- Physiotherapists
- QMH Amputee/Neuro Therapy Team
- QMH Radiology
- QMH Wheelchair Service
- QMH Minor Injuries Unit
- St John's Therapy Centre Primary Care Podiatry, OT
- Surgical outpatients
- Theatre staff team day

As set up / required IPC update training (30 minutes to 1 hour session)

- F1 induction
- F2 IPC teaching
- Cardiac Surgery
- IV Therapy
- Paediatric SpR study day
- MRSA bacteraemia wards
- Outbreak wards
- Wards – hand hygiene w/light box

Training was delivered to nurses and midwives, junior medical and dental staff, medical and nursing students, healthcare scientists, therapists, estates and other ancillary staff. The details of attendees, topics covered and venues are held on a Trust computerised database.

Study days and Master Classes

The IPC Nurses organised and ran two study days for qualified nurses and health care assistants: one in June and the other in December 2013. The June study day was a Hand Hygiene Workshop, presented by outside experts in the field. Both were attended by over 80 nurses and HCAs from the trust and were well received. Lectures were provided by members of the IPC team and other invited specialists. Topics presented included pertussis, measles, *C. difficile*, environmental cleaning, and care of venous access devices. Two master classes were also put on during the year: one in September 2013 on Influenza and the other in March 2014 on Aseptic Non Touch Technique. These were attended by 40-60 staff members.

Additional events and sessions

The annual WHO Hand Hygiene Day (in May) and Infection Control Week (in October) were observed at both St George's and Queen Mary's Hospitals. This involved the IPC nurses providing mobile hand hygiene training and stands for both staff and visitors. Occupational health supported with information on skin care and product representatives were on hand to discuss topics such as cleaning and line care.

Norovirus training was delivered during the year in addition to Cleanliness and Infection Control sessions around CQC visits.

Laboratory Support

As in previous years, the Infection Control Team has received excellent support from the medical microbiology diagnostic service.

The Infection Prevention and Control Team would like to record their appreciation for this microbiology support. We would especially like to thank them for providing this support while they are undergoing a massive transformation with the development of South West London Pathology with Kingston and Croydon Hospitals. We wish them well in this project.

Trust Infection Control Annual Programme
Priorities and Strategy
April 2014 – March 2015

The Trust's infection control programme for 2013-14 is designed to ensure compliance with the hygiene code. The table below shows the priority areas for the Trust. It may be necessary to change the programme in response to unforeseen events. A comprehensive infection control action plan is monitored on a regular basis at the taskforce meeting.

Priority Areas	Current/Planned Activities
***Staphylococcus aureus* blood stream infection (BSI)** **<u>Intended Outcome</u>** Zero tolerance to avoidable infections	Increase and strengthen system to monitor compliance with MRSA screening policy to elective / emergency patients. Ensure compliance with MRSA decolonisation protocols. Systematic programme of training and updates on line insertion, line care and blood culture collection. FRED training occurs weekly. Systematic prospective audit of IV devices. Line care rounds are undertaken weekly. Single use applicators containing 2% chlorhexidene in 70% isopropyl alcohol have been introduced for insertion of vascular access devices and by some surgical specialities. Root cause analysis is undertaken for all *Staphylococcus aureus* blood stream infections and learning cascaded throughout the Trust. Actively participate in Post Infection Reviews (PIR) for all MRSA BSIs.
Clostridium difficile **<u>Intended Outcome</u>** Achieve irreducible minimum	Antimicrobial stewardship Audit time taken to isolate patients, data collection in progress. Audit compliance with *C.difficile* policy.

	Data collected for each new case. Multiplex respiratory PCR introduced which has improved utilisation of side rooms A new diarrhoea protocol has been implemented, which emphasises the need for clinical review of all patients with diarrhoea prior to a specimen being taken. A new form to support the diarrhoea protocol has been introduced. Root cause analysis is carried out for all *Clostridium difficile* infections and learning cascaded throughout Trust.
Medical Infection Control Champions **<u>Intended Outcome</u>** To increase awareness and support from medical staff.	Network of champions in place Increase consultant ownership/ engagement with divisional chairs who are sponsoring the development of the network.
Surgical Site infection **<u>Intended Outcome</u>** Reduce surgical site infection	Set up a comprehensive SSIS programme
Training **<u>Intended Outcome</u>** All staff are fully trained in the processes of preventing and controlling infection.	Implement ANTT trust-wide within relevant staff groups for insertion and on-going care of central and peripheral lines, drug administration, venepuncture and blood cultures.

Acknowledgements:

This report reflects the fundamental approach to infection control that operates across the Trust in being very much a team effort. Principle authors and contributors of the different sections on the annual report are as follows:

Jane Callaway
Jayshree Dave
Jenni Doman
Amelia Floresca
Helen Graham
Kristina Hager
Juliana Kotey
Matthew Laundy
Hasan Al-Ghusein
Ruth Law
Selma Mehdi
Martha Ugwu
Laura Whitney

The Infection Control Team would like to record their thanks to many colleagues in Medical Microbiology and throughout the Trust for their continuing assistance.

We would also like to thank Peter Alesbury and his new estates team for all their hard work and effective management in dealing with the various estates related infection control issues.

We would like to thank all the support and direction provided by Alison Robertson, DIPC and Chief Nurse who was left us for a new post in the Middle East. She will be greatly missed. We would also like to welcome Jennie Hall our new DIPC and chief nurse to our team.