GREAT ORMOND STREET HOSPITAL FOR CHILDREN NHS FOUNDATION TRUST

INFECTION PREVENTION AND CONTROL ANNUAL REPORT

April 15 - March 16 (Part A)

and

ACTION PLAN April 16 - March 17

(Part B)

Compiled by: Dr John Hartley - Director of Infection Prevention and Control & Helen Dunn- Lead Nurse Infection Prevention Control

(Format - Modified from the template recommended in Health and Social Care Act 2008)

GREAT ORMOND STREET HOSPITAL FOR CHILDREN NHS FOUNDATION TRUST
INFECTION PREVENTION AND CONTROL ANNUAL REPORT
April 15 - March 16

AUTHOR: Dr John Hartley - Director of Infection Prevention and Control

Part A Executive summary

1 Introduction

Great Ormond Street Hospital for Children NHS Trust recognises the obligation placed upon it by the Health Act 2006, (updated 2015) to comply with the Code of Practice for health and adult social care on the prevention and control of infections and related guidance.
The Trust supports the principle that infections should be prevented wherever possible or, where this is not possible, minimised to an irreducible level and that effective systematic arrangements for the surveillance, prevention and control of infection are provided within the Trust. This is recognised as a key Trust strategy in the Quality Statement for 2015/16:

Standard 3 Decrease and eliminate hospital acquired infections

The aim of this programme is to focus on

- prevention of exposure to and acquisition of colonisation with antibiotic resistant and other potentially pathogenic microorganisms
- Antimicrobial stewardship
- Healthcare associated infections to be eliminated - Vascular access related infection, gastrointestinal and respiratory viral infections, Surgical Site Infections (SSIs), Post intubation respiratory infection (including ventilator associated infection), *Clostridium difficile* (C. Diff) infection, urinary tract infections from indwelling catheters

The IPC programme is described in the Trust Policy 'Infection Prevention and Control Assurance Framework and Operational Policy'. This report lists the IPC team structure (and team plan) and some aspects of the policy but mainly reports the results of process (control) and outcome (infection) surveillance and audit.

A great effort is employed to reduce HCAI through adoption of standard and transmission based isolation precautions, through care bundles, environmental control, screening and audit but they still occur – there were 345 potential bacteraemias, with 75 acquired line infections, or 242 hospital onset respiratory and enteric virus infection - and some are preventable.

Health care associated infection is an ever present risk for patients and staff and requires constant application of best practice to reduce to a truly unavoidable minimum.

2) Description of infection control arrangements

Director of Infection Prevention and Control (DIPC) and Infection Control Doctor
- Dr John Hartley, Consultant Microbiologist
Executive lead for IPC -The Chief Nurse, Juliette Greenwood.
Lead Nurse for Infection Prevention and Control – 1 wte, Helen Dunn
Deputy Lead Nurse in IP&C 1 wte; IPC nurse 1 wte commenced June 2014; 0.4 wte Clinical Scientist in IP&C

Other consultant microbiologists – 3 PAs
IPC Administrative support and Data Management **–** 1 wte band 4; vacant
(The CNSs for Tuberculosis and ID lead on Tuberculosis related issues;
ID consultants contribute to the out of hours advice.)
Antibiotic pharmacist – 1 day of time, post within pharmacy
Quality Improvement team – dashboard development and display

Divisional Responsibility
Under the terms of the Trust IPC Strategy set out previously each Division developed a local Divisional group to drive local planning and implementation of IPC actions.

Divisions had chosen to structure this in different ways with an active IPC Board now formed and meeting regularly for the Surgical, Cardiorespiratory, International and Private Patients, Infection Cancer and Immunity and Neurosciences divisions, and as part of the Quality and Risk group for MDTS.This will be reviewed in light of the Divisional restructuring in 26/17.

2:3 The Infection Prevention and Control Committee (ICC) meet every two months.

2:4 Reporting lines
The DIPC is accountable to the CEO and reports to the Board.
The DIPC and Lead nurse for IPC meet weekly with Executive lead.
A highlight report of all significant IPC issues is presented weekly to the Safety Team.
An annual plan is written and included in each annual report.
***2:5 Links to Drugs and Therapeutics Committee,* Antimicrobial stewardship**
A Consultant Microbiologist and Infectious Disease Physician are members of the Drugs and Therapeutics Committee. There are antimicrobial working and stewardship groups.

2:7 **IPC advice and On-call service*.*** Continuous advice service provided by IPC Team, Microbiology and Infectious Disease consultants.

3:3 Outbreak Reports
Contemporaneous outbreak reports are written by the IPCT and fed back to clinicians and managers and disseminated through the IPC Committee.

4 Budget allocation to IP&C activities

4:1 Staff
Staff budget in Department of Microbiology, Virology and IPC, Laboratory Medicine
4:2 Support
IT Support and hardware: is supplied within the departmental budget.
There is no separate IPC budget, but emergency outbreak funding is provided by the Trust.

5 HCAI Statistics *2015/16*

5:1 **MRSA bacteraemia =** 2 (one was present before admission therefore not attributed to Trust, so it is and not on National data return; the one reported was a contaminant)
5:2 MSSA bacteraemia = 23 RCAs showed line infection is the most common cause.
5:3 E. coli bacteraemias = 17 episodes
5:4 ***Glycopeptide resistant enterococcal bacteraemia (GRE)*** *= 2*
5:5 Clostridium difficile **associated disease** = 7 reported; 2 judged as lapse in clinical care due to probable cross infection (against objective of less than 14).
5:7 GOS acquired Central Venous Catheter related bacteraemia = 1.4/1000 line days. Maintained last year's rate. Still 75 episodes. Effort is underway to reduce further.
5:8 Other bacteraemia episodes and antimicrobial resistance – 345 episodes (so potentially 280 non GOSACVCRB bacteraemias).

Review of the antibiotic resistance of the 20 coliforms in haematology/oncology /immunology/BMT children still shows a high level of resistance (although less than 14/15):

	Amikacin	Gentamicin	Ciproflox	Ceftaz	P/Taz	Carbaepnem
% resistant	0	10	30	20	15	5

5:10 Surgical Site Infection Surveillance

Surgical division –SSIS programme including at least one procedure from each specialty. Reports at Surgical IPC Board. Spinal surgery cluster investigated.
Critical care and cardiorespiratory – a continuous surveillance programme. Reports to the CCCR M&M and the SSIP group. 769 procedures. Deep and organ space SSI 0.4%
Neurosciences – continuous audit is performed for permanent shunt procedures, and displayed on the dashboard. 2015/16 - 6 infections from 165 procedures at a rate of 3.6

5:14 Viral infections detected while at hospital

Children, parents and staff frequently enter the Trust incubating these common infections and act as sources for localised outbreaks. GOSH Trust outbreak and prevention policy includes isolation of children with suspected viral respiratory infection or gastro-enteritis with emphasis on recognition and early intervention.

Respiratory viral infections detected:			
	Total	Community onset	Hospital onset
Total in 2013/14	252	172	80
Total in 2014/15	399	302	97
Total in 2015/16	333	230	103
Enteric viral infections detected			
Total in 2013/14	360	229	131
Total in 2014/15	352	199	153
Total in 2015/16	351	212	139

Over all there has been little change in detection of viruses in children admitted to the trust. 5 wards were closed or on restricted admissions because of viral risk.

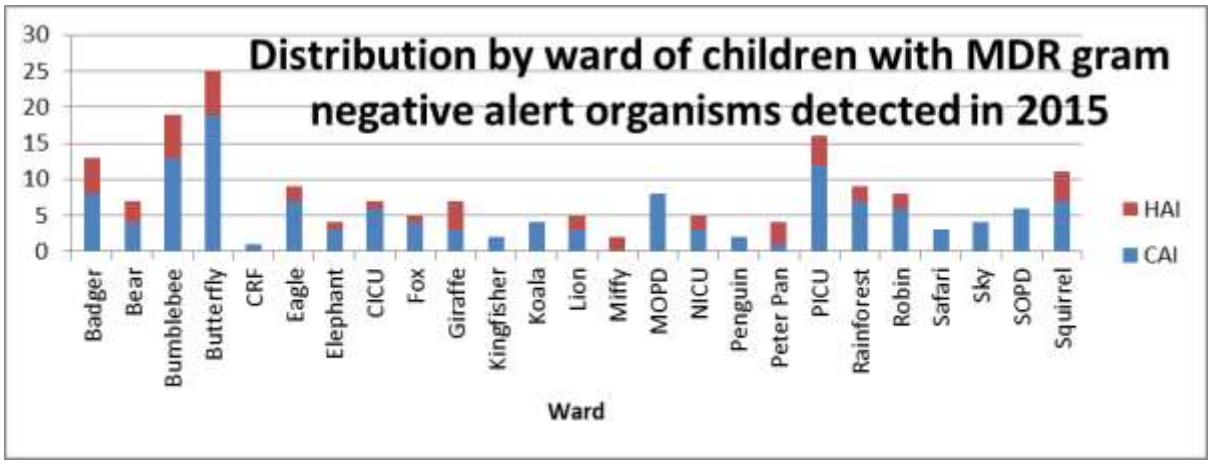
5:11 MRSA Admission Screening and rates
Nose and throat swab screening rate at 48 hours for inpatient admissions remaining in for > 48 hours, all patients. Target > 95%: 2015 screen compliance = 98%

MRSA cases of colonisation/carriage at GOSH
In 2015 there were 187 children with first detections, 19 probably or possibly acquired in the hospital. Each case is investigated. There was an outbreak on Bumblebee ward.

5:12 Multiple resistant 'gram negative' (MDRGN) organisms screening and rates
Faecal screening for inpatients remaining in for > 48 hours; target >75%: 2015 rate = 88%

MDR-GN carriage/colonisation - In 2015 testing revealed 186 first detections, 130 came in colonised, 50 were possible cross infection. These are found across the Trust.

Bar chart showing location of children colonised on admission or subsequently found to be colonised with multiple resistant gram negative bacteria by ward in 2015



A number of small clusters were detected.

5:18 Serious Untoward incidents and complaints involving Infection, major outbreaks and threats (including Ebola virus)

No SIs.
Complaints with IPC component – 4 (3 re-communication, 1 staff re-screening)
Major outbreak episodes - MRSA; influenza A
Significant control events – Measles, Pertussis x 3, M. tuberculosis
SSI clusters – investigations undertaken in spinal surgery and Nuss bars.

6 <u>Hand Hygiene, CVC on going care guidelines, National Staff Survey</u>

The Trust clinical practice guidelines are available on the GOSH Web within the Infection Control link. Alcohol gel hand hygiene products are placed inside all ward areas to encourage staff, visitors and patients to decontaminate their hands within the clinical area. Regular hand hygiene audit is undertaken by ward staff showing good compliance (96%), although number of audits completed has fallen (19,258 audits compared to 23,568 last year)
However, IPC team audit (202 observations) demonstrated lower compliance (51%). A review and relaunch of hand hygiene is planned.
Compliance with the CVL ongoing care bundle is essential for the prevention of line infections. There has also been a decrease CVC bundle audit, with compliance steady at 88%. We would like this to be higher.

7) <u>Facilities</u>

Environment

Additional measures that were put in place in 2015 to validate the Domestic Services audit process has evidenced an improved standard in the quality of cleaning across the Trust. Weekly waste compliance audits are carried out by the Waste & Sustainability Manager. Key highlights include the roll-out of recycling in main non-clinical buildings, trial of food waste collections and a project group has been set up with Theatres to review the segregation of Theatres' waste.

Decontamination

The Sterile Services provision of service for GOSH remains of site at Guys and ST Thomas Hospitals NHS Foundation Trust (since September 2013). The quality of service delivered has been monitored as deemed acceptable by the Clinical staff at GOSH
GOSH have maintained accreditation status to BS ISO 13485:2003 for Endoscopy and Medical Equipment decontamination. Implementation of NICE IPG 196 for reduction of risk of transmission of Creutzfeldt-Jacob disease (CJD) vie interventional procedures is nearly complete.

8. Estates

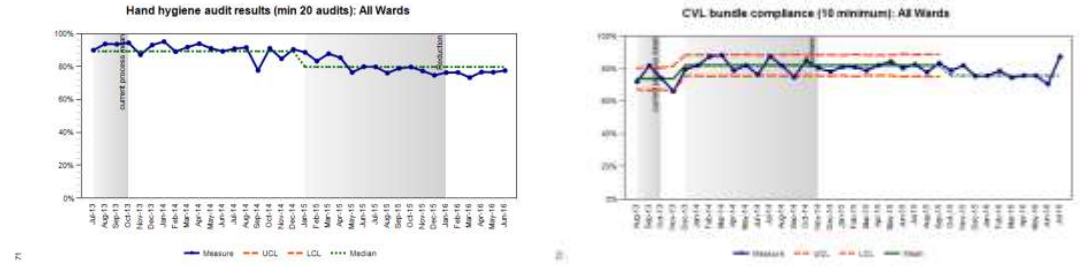
The extensive programme of verification of specialist ventilation was followed in theatres and most areas, but was not able to proceed to schedule in clinical ward areas. This has been prioritised in 2016/17 with ward closures underway to accommodate plan.
Water Safety Management Group continues to develop and manage risk associated with water. There is an expanded programme to control risk from *Pseudomonas aeruginosa*.
Risk from heater cooler units has been identified as low risk but on going pending manufacture of new equipment.

9 Trust wide audit

A Trust annual IPC audit programme is followed. Individual ward and 'All Trust' compliance is published monthly on the dashboards and reviewed by Divisional and Nursing boards.

Hand Hygiene and CVL care bundle compliance

Audit completion compliance rates have decreased in hand hygiene and CVL bundle compliance, when scoring negative for incompleted audits as shown in graphs below:



Absolute number hand hygiene audit compliance for ward based audit was 96% but IPC Team surveillance of hand hygiene showed 51% compliance.

9:5 Antibiotic prescribing and audit

The Drug and therapeutics Committee ruled that if amikacin is used in non-septic patients this should ideally only be following a negative screen for m.1555A>G (a mutation that predisposes patients to deafness following aminoglycoside use). This is a major change. As a result the antimicrobial policy group created a list of all GOSH prophylaxis policies that included amikacin and reviewed many of them during the financial year 2015-16. Other policies were reviewed as they became out of date.

Regular audit was undertaken for recording of indication for antibiotic prescription was with electronic prescribing on JAC. Satisfactory outcome > 90%.

10 Occupational Health

OH continues to provide 'new entrants' screening, "Exposure Prone Procedures" clearance, staff immunisation (including influenza, final uptake 48%, 8% up on last year)) and blood borne virus exposure follow up (88 events, compared to 74 in previous year).
In response to difficulty ensuring new started OH attendance and readily available knowledge of staff immunity status (especially to measles and chicken pox) a new procedure has been introduced, in conjunction with HR. Further work is required to ensure all information is collected, documented and available when needed for all staff. This is underway.

11 Targets and Outcomes	Target	Outcome
MRSA bacteraemia –	0	1
MRSA Screening for children admitted > 48 hours (total screens done = 23,274)	95%	98%
Faecal screens for children in > 48 hours	> 75%	88%
Clostridium difficile infection lapses in care	<14	2
Rate of GOS acquired line infection /1000 days	< 1.3	1.4
Root cause analysis for S. aureus bacteraemias	100%	100%
MRSA colonisation acquisition	0	19
Hand hygiene audits (total audits 19258)	95%	96%
(IPC team undertaken audit (n=202)		51%)
CVL care bundle audits (total audits 3405)	90%	88%
IPC level 1 induction	95%	88%
IPC level 2 update	95%	59%

12. Training activities

Basic IPC training and update is provided for all staff through either e-learning, face to face teaching from the IPC team or both. Update is now only through e-learning, including assessment questions. Attendance is monitored and records are maintained by the Training Department, but uptake is not satisfactory.

New training modules:
The new induction 'game' has almost completed development and will be introduced.
A new online level 2 update training package has now been created and released, with focus on standard precautions, and target to achieve 95% completion.

IPC training days: A popular training day programme continues.

Hand hygiene training for staff on wards is provided locally, and by the IPC team for staff without a ward. All episodes should be recorded by the training department.

IV and aseptic non-touch technique training and update is provided for nursing staff locally but currently there is no assurance that this is provided to all medical staff.

Training and competency assessment for intravascular catheter insertion is provided locally and all divisions should be working towards a standard policy. This is not yet completed.

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April 14 - March 15

AUTHOR: Dr John Hartley - Director of Infection Prevention and Control
Helen Dunn – Lead Nurse IPC

Full report

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Part A - Full Infection Prevention and Control Report for GOSH 2015/16 Activity

1 Introduction

Great Ormond Street Hospital for Children NHS Trust recognises the obligation placed upon it by the Health Act 2006, (updated 2008, 2012, and 2015), to comply with the Code of Practice for health and adult social care on the prevention and control of infections and related guidance. During the CQC visit in April 2015 the trust was rated as 'Good' with areas of outstanding also noticed. There were no major issues identified with regard to infection prevention. There was a recommendation that we strengthen our evidence of cleaning around toys and this has been completed. A toy policy has been written by the play service with support from Infection Prevention Control and is currently being implemented.

The Trust supports the principle that infections should be prevented wherever possible or, where this is not possible, minimised to an irreducible level and that effective systematic arrangements for the surveillance, prevention and control of infection are provided within the Trust. The Trust promoted infection prevention and control as one of the 12 standards we aim to continually improve in the 2015-16 Quality Standard (Standard 3: Decrease and eliminate hospital acquired infections).

It is the policy of the Trust to include in the individual responsibility of every member of staff the need to participate in the prevention and control of infection expressed through compliance with Health and Safety, Control of Substances Hazardous to Health (COSHH), and other legislation and regulations, applying to the safe provision of care.

The Director of Infection Prevention and Control is responsible for the Trusts overall programme for IPC, working closely with the IPC Team, the Executive Lead with responsibility for IPC (currently the Chief Nurse), the Divisional Teams, Occupational Health, Estates, Facilities and Redevelopment, Clinical Governance and Safety Team, and Quality Improvement Team. The IPC team is embedded in the Department of Medical Microbiology, Virology and Infection Prevention and Control. The Trust requires an infection control programme for active investigation, surveillance, prevention and control of infection in patients, staff and visitors to the Trust. This programme is the responsibility of all staff, not just the central IPC Team, and the delegation to and acceptance of this responsibility by Divisional IPC teams has increased and is key to success. The IPC team, Divisional or central, ensures the infection control programme is implemented and any risks related to or likely to cause infection are investigated and appropriate action taken.

The infection control programme aims to continuously review and build on existing activity, driven by local needs, while incorporating and complying with the latest Department of

Health (DH), Public Health England or other relevant strategy and regulations as laid out in such documents as:

Strategy:

- Antimicrobial stewardship: 'Start smart – then focus'. Guidance for antimicrobial stewardship in hospitals (England). Advisory Committee on Antimicrobial Resistance and Healthcare Associated Infection (ARHAI), DH. Nov 2011, updated 25 March 2015

- Acute trust toolkit for the early detection, management and control of carbapenemase-producing Enterobacteriaceae, PHE, Dec 2013

- Water Systems. Health Technical memorandum 04-01: Addendum *Pseudomonas aeruginosa* – advice for augmented care units. March 2013

- Legionnaires' Disease. The control of legionella bacteria and guidance on regulations. Health and Safety Executive. Fourth edition 2013

- Updated guidance on the diagnosis and reporting of *Clostridim difficile.* DH March 2012

The Health and Social Care Act 2008 (updated July 2015) Code of Practice on the prevention and control of infections and related guidelines and its subsequent updates.

Older guidance is listed in previous reports.

Infection prevention and control is a complex issue and everyone's concern; the Trust continues to support managers and clinical leaders in the drive to reduce healthcare associated infection. Minimising infection is a key target in the trust strategy, featured as a key Strategy in the Quality Statement for 2015/16:

Standard 3 Decrease and eliminate hospital acquired infections

The aim of this programme is to focus on

- prevention of exposure to and acquisition of colonisation with potentially pathogenic microorganisms; especially

MRSA; antibiotic resistant gram negatives including carbapenemase producing organisms and *Pseudomonas aeruginosa* and other water-related organisms

- Antimicrobial stewardship
- Elimination of healthcare associated infections, especially
    - Vascular access related infections
    - *Staphylococcus aureus* infection - both Methicillin sensitive and Methicillin resistant (MRSA) bacteraemia and other infection
    - Acute gastrointestinal and respiratory viral infections
    - Surgical Site Infections (SSIs)
    - Post intubation respiratory infection (including ventilator associated infection)
    - *Clostridium difficile* ('C.diff')
    - Urinary Tract Infections from indwelling catheters

The IPC programme is described in the Trust Policy 'Infection Prevention and Control Assurance Framework and Operational Policy', July 2014.This report lists the IPC team structure (and team plan) and some aspects of the policy but mainly reports the results of process (control) and outcome (infection) surveillance and audit. The data shows that a great effort is employed to reduce HCAI, but that they still occur and some are preventable. Health care associated infection is an ever present risk for patients and staff and requires constant application of best practice to reduce to a truly unavoidable minimum. In recognition of the ever growing needs for IPC input the Trust has agreed to fund a new IPC nurse who commenced work during this financial year.

When considering IPC in children it is important to remember

1. IPC activity requires energy and commitment from all staff and resources (such as 19,258 hand hygiene audits or 26,000 MRSA screens) - but infections still occur (such as 345 bacteraemias, with 76 acquired line infections, or 242 hospital onset respiratory and enteric virus infection)

2. The necessary IPC activity may impact on the patient journey for the individual and for others, with daily risk assessment necessary to optimise flow while reducing risk. This is limited by resources.

3. IPC activity is not about single high profile individual actions but about the continuous provision of a safe environment (clean wards, water, air and equipment), regular assessment of risk, and the use of standard precautions and specified protocols by all staff. These may be inadvertently bypassed when other activities are high.

4. IPC is embedded in the functioning of the hospital and the care provided such that many infections are prevented, the risk of them may be forgotten and the drive to continuously implement actions may wane, so constant promotion is required.

5. Many of the Nationally driven goals, such as MRSA bacteraemia, Clostridium difficile infection, urinary catheter infection and ventilator associated pneumonia, were never top priority for children, and particularly not the specialist children service provided.

6. Many of the children require vascular access devices. It is particularly important we to protect them from vascular device associated infection.

7. Many of the children are susceptible to infection because of their illness or the treatment and are often already infected or colonised. We need to protect them from each other's bugs – respiratory and enteric viruses and antibiotic resistant organisms. The latter is a major challenge as the worldwide threat from antibiotic resistance increases.

8. Above all, children are children, with very different needs to adults, that have to be sympathetically incorporated into the care environment – often with great difficulty as love, attention and toys are perfect routes for cross infection.

This report describes the IPC programme in place, with measures of the implementation compliance and outcomes used to support current actions and direct future plans.

2) Description of infection control arrangements

2:1 Director of Infection Prevention and Control (DIPC)

- Dr John Hartley, consultant Medical Microbiologist. DIPC since August 2009 (0.3 wte allocated that also includes time as Infection Control Doctor).

2:2 The Infection Prevention and Control Team (IPCT) during 2015/16

Nursing and clinical scientist establishment:

- Lead Nurse for Infection Prevention and Control - Helen Dunn
- Deputy Lead Nurse in IP&C - Barbara Brekle
- IPC Nurse– Helen Saraqi
- Clinical Scientist in IP&C – Elaine Cloutman-Green – 2 days per week

- The Clinical Nurse Specialist for Tuberculosis and other Infectious Diseases CNSs lead on Tuberculosis.

***Medical Staff**:*

- Dr John Hartley - Consultant Microbiologist, Infection Control Doctor and DIPC
- Dr Garth Dixon - Consultant Microbiologist, Lead Clinician for the Department of Microbiology, Virology and Infection Control: 1PA for IPC
- Dr James Soothill - Consultant Microbiologist: 2 PAs for IPC
- Professor Judy Breuer – Consultant Virologist (part time)

Working with:

- Dr Vas Novelli - Consultant in Infectious Diseases (retired during year)
- Professor Nigel Klein – Professor of Infectious Diseases and Microbiology
- Dr Delane Shingadia – Consultant in Infectious Diseases
- Dr Karen Moshal – Consultant in Infectious Diseases

Antibiotic pharmacist

Part time post – one day a week

Administrative support and Data Management

Administrator and data analyst IPC Team – currently vacant

Quality Improvement Team -,

Provides invaluable central support for audit and surveillance data display.

Executive lead for IPC

The Chief Nurse Juliette Greenwood, is the Executive lead for IPC; supported for medical issues by the Deputy medical director.

2.3 Divisional Responsibility

Under the terms of the Trust IPC Strategy set out previously each Division developed a local Divisional group to drive local planning and implementation of IPC actions.

Units have chosen to structure this in different ways with an active IPC Board now formed and meeting regularly for the Surgical, Cardiorespiratory, International and Private Patients, Infection Cancer and Immunity and Neurosciences divisions, and as part of the Quality and Risk group for MDTS.

The structure is under review with the new divisional structure launched in 2016/7.

2:4 The Infection Control Committee (ICC) meets every two months.

Committee continues to meet bi-monthly.
Membership will be reviewed in 2016/17 with new divisional structure.

Current establishment:-

Chair Director of Infection Prevention and Control, Infection Control Doctor.	Dr John Hartley
Executive lead for IPC	
Consultant Microbiologists	
Lead Nurse in IP&C Deputy Lead Nurse and Scientists in Infection Control	
Consultant in Infectious Disease	
Academic Representative from ICH Infection Unit	
HPU Representative - Consultant for Communicable Disease Control (or delegate)	
Estates representative	
Corporate Facilities	
Occupational Health Representative , Consultant in Occupational Health/ or Nurse Manager	
Head of Nursing Representative	
Pharmacy Representative	
Consultant Surgeon	
Clinical Governance and Patient Safety representative	
Theatre Representative	
Divisional Representatives (may be delegated from above)	
ICI - LM	Lead Nurse
Surgery	Head of Nursing
IPP	Consultant Physician or

	Head of Nursing
Medicine / DTS	Head of Nursing
Cardio-respiratory	Consultant Lead for IPC
Neurosciences	Head of Nursing

Administrative support: provided by IPC Administrator (currently vacant)
Minutes: placed on the Trust minutes library.
The committee met as planned every 2 months.

2:5 Reporting lines

The DIPC is accountable to the CEO.
The DIPC and Lead nurse for IPC meet weekly with Executive lead.
A highlight report of all significant IPC issues is presented weekly to the Safety Team.

The IPCT provide a report of all incidents dealt with by the IPCT to the ICC every two months.

The IPCC previously reported to the Quality and Safety Committee, then to the Senior Management Team, Quality and Safety session, but now to the Patient Safety and Outcome Committee.

During management of incidents the IPC team or clinical area complete clinical incident forms returns via Datix. The QST Team (now Clinical Governance and Safety Team) compile a monthly report for wards/Heads of Nursing/Risk Action Groups for feedback on individual incidents and a quarterly reports for the Quality and Safety Committee, which feeds to the Clinical Governance Committee.

The DIPC continued to report directly to the Trust Board.

2:6 Links to Drugs and Therapeutics Committee, Antimicrobial Stewardship

A Consultant Microbiologist and Infectious Disease Physician are members of the Drugs and Therapeutics Committee. The Consultant Microbiologist leads the Antibiotic working group, which is a sub-group of the D&T Committee, supported by the part time pharmacist.

An Antimicrobial Stewardship group meet regularly. AMS has focused on review and provision of Antimicrobial Policies and audit, lead by the antimicrobial pharmacist. An annual plan was followed (see report).

In 2016/17 further time has been made available within the Infectious Disease Consultant job plans to lead a new theme on Education and Communication and Engagement.

2:7 Links to Trust Business Plans

Incidents are notified by the IPCT or the Divisions via the incident reporting system. Information is supplied to the Divisions when requested and there is open access when assistance is needed.

Specialties and Divisions are advised to put IPC issues on their risk registers for review in RAG/Divisional meetings to support business plans.
IPC Team bids are made through the Department of Microbiology, Virology and IPC within the Department of Paediatric Laboratory Medicine, ICI-LM Division.

2:8 IPC advice and *On call service.*

The 3 wte IPC nurses and 0.4 wte clinical scientist provide a service for IPC from 8 am to 6 pm, Monday to Friday, supported by the continuous consultant microbiologist service. The Consultant Microbiologists and Infectious Disease Consultants provide a continuous out of hours on call service. The IPCT cover Occupational Health needs related to infection control, such as inoculation injuries, which are also covered by consultant microbiologist/ID consultant during out of working hours.

3 DIPC Reports

3:1 Board Reports
2015-03-17 Trust Board regular IPC Report
2015-07-22 Trust Board, presentation of annual report
2015-11-25 Trust Board regular IPC Report
2016-04-01 Trust Board regular IPC Report

3:2 Annual IPC Team Action Plan
An annual plan is written and included in each annual report.

3:3 Outbreak Reports

The DIPC ensures contemporaneous outbreak reports are written by the IPCT and fed back to clinicians and managers and disseminated through the IPC Committee.

4 Budget allocation to IP&C activities

4:1 Staff

Medical: There are 6 specific consultant programme activities funded to consultant medical microbiologists for IPC (3 allocated to Dr John Hartley, 2 and 1 to the others)

Nursing: 3 WTE infection control nurses (ICNs) funded (Band 8b and 2 Band 7).

Scientific: 0.4wte band 6 clinical scientist.
The laboratory is a fully staffed and accredited NHS Laboratory.

Administrative: 1 wte equivalent post; staff member on maternity leave much of year. This post was vacant for the year 15/16.

SSIS Team : Surveillance has been devolved to the Divisions in 2013 and is undertaken and funded differently. Surgery – one full time surveillance officer, supported by practice educator and Lead Nurse; CCCR – one surveillance officer supported by practice educator; Neurosciences – no dedicated team, surveillance through regular MDT audit.

4:2 Support

IT Support and hardware: is supplied within the departmental budget.
Emergency outbreak funding: is provided by the Trust if and when needed.

4:3 Training of IPC team members

Resources for continual professional development (CPD) of the IPC Team are currently funded by the Trust or department.
Medical staff have an allocated study leave allowance from the Trust which may be used towards infection control training.
Nursing staff obtain funds from the nurse training budget, external sponsorship and the departmental special purpose fund.

5 HCAI Statistics

A MANDATORY SURVEILLANCE

5:1 Methicillin Resistant Staphylococcus aureus (MRSA) bacteraemia

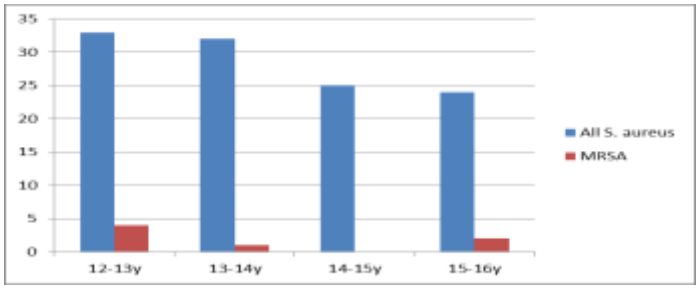
Surveillance of methicillin resistant *Staphylococcus aureus* (MRSA) bacteraemia is undertaken in line with National reporting requirements. NHS England have now concluded that preventable MRSA bloodstream infections are no longer acceptable and as such there is no longer an MRSA objective as the target is zero. Trust attributed cases are shown below:

Annual GOSH MRSA Bacteraemia Rates (PHE Data) Trust Apportioned Cases

Year	*MRSA Bacteraemia numbers (attributed)*	*Estimated MRSA Bacteraemia rates per 100,000 bed days*
April 01 – Mar 02	7	9.1
April 02 – Mar 03	13	17.3
April 03- Mar 04	4	5.1
April 04 – Mar 05	7	9.6
April 05 – Mar 06	6	7.7
April 06 – Mar 07	5	6.3
April 07 – Mar 08	2	2.5
April 08 – Mar 09	8	11
April 09 – Mar 10	1	1.0
April 10 – Mar 11	1	1.1
April 11 – Mar 12	4	4.3
April 12 – Mar 13	3	2.9
April 13 – Mar 14	1	0.9
April 14 – Mar 15	0	0
April 15 – Mar 16*	1 (2)*	Not available

*2nd bacteraemia present pre-admission therefore not attributed in PHE data.

Table showing total number of S. aureus bacteraemias and MRSA bacteraemias



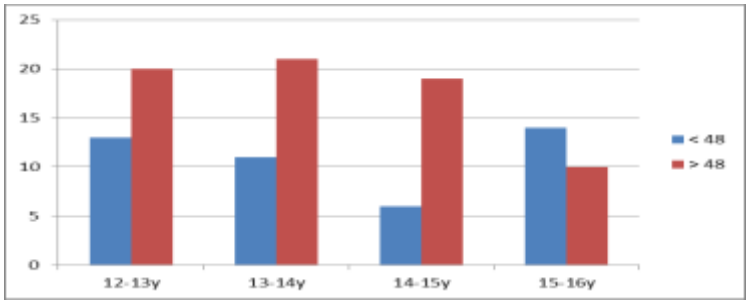
Note: in 2015/16 – 1 MRSA was a contaminant and the other was present on admission and does not appear in the Nationally reported data as assigned to another Trust.

5:2 Methicillin sensitive *Stapylococcus aureus* (MSSA) bacteraemia

While MRSA has been the principle *S. aureus* of concern nationally, GOSH has recognised that methicillin sensitive *S. aureus* (MSSA) is a more significant issue to children. This has now been recognised nationally as all *S. aureus* bacteraemia is now reported, although there are no national targets for MSSA.

Continuous surveillance is undertaken of all *S. aureus* bacteraemia and root cause analysis is undertaken to investigate all episodes where there may have been an opportunity for trust to influence onset. Overall there were 23 episodes, with only 10 with onset after 48 hours.

Bar chart showing number of S. aureus bacteraemia episodes in patients with onset before or after 48 hours of admission:



This is the lowest number with onset in hospital; however, avoidable infection is not yet eliminated.

Root cause analysis of S. aureus bacteraemias

All S. aureus bacteraemias are reviewed; full or mini-RCAs completed for all S. aureus bacteraemias developing after 48 hours of admission and not incubating before admission and those occurring in prior GOSH patients. For the 15 episodes analysed:
6 (40%) were felt to be definitely central line related, with a further 2 (24%) line or another cause.
7 (28%) were not central line related.

Interventions continue to focus on prevention of line related bacteraemia.

5.3 E. coli bacteraemias

E. coli bacteraemias are reported nationally, although currently there is not national target.
There were 19 episodes in the financial year 12/13
There were 23 episodes in the financial year 13/14
There were 19 episodes in the financial year 14/15, 9 detected in first 48 hours
There were 17 episodes in the financial year 15/16, 7 detected in the first 48 hours.

5:4 Surveillance of Glycopeptide Resistant Enterococcal bacteraemia (GRE)

Year	Number of GRE bacteraemias
2008/09	0
2009/10	0
2010/11	1
2011/12	5
2012/13	5
2013/14	0
2014/15	2
2015/16	2*

*Typing showed they were each unique events.

5:5 Surveillance of Clostridium difficile infection*.*

The role of toxigenic *Clostridium difficile* as a pathogen in children is not well understood, although it rarely causes severe disease. With a higher carriage rate than that found in adults and frequent multiple causes of diarrhoea in children, especially hospitalised children receiving intensive therapy, it is often impossible to determine clinical significance of toxin when detected.

The potential for disease has always been acknowledged at GOSH and we have performed extensive testing and surveillance for many years, allowing instigation of additional infection prevention and control actions with hand washing with soap and water and cleaning with chlorine releasing agents.

While there has been some variation in number of children with positive tests year on year, we did not experience the dramatic increase seen in adult hospitals during the 2000s and almost no cases due to the virulent endemic strain, ribotype 027, seen in adults.

National mandatory surveillance was introduced for children aged 2 year and over in April 2007 and a nationally determined target, based on the initial year, was set for those first tested on or after third day of admission (after day of admission and next two days). We report toxin positive children with diarrhoea and no other cause present or, if another possible cause is present, where clinical opinion led to treatment as a possible case. This strategy has been explicitly discussed and agreed with NHS England, London HCAI lead.

There has been national guidance on testing, advocating that Trusts move from the ‘standard EIA toxin’ tests to a two stage test with antigen detection (GDH) and EIA, due to the poor sensitivity and specificity of the EIAs. We have reviewed this advice and in 2015/16 continued to use the neutralised cell cytotoxicity assay for toxin detection as this is the

acknowledged reference toxin detection test. We follow up toxin detection with culture and ribotyping to ensure detailed surveillance is maintained.

Almost all positive stools represent co-incidental detection and are sporadic ribotypes, although there was some clustering suggesting cross infection.

	11/12	12/13	13/14	14/15	15/16
C. difficile 1st toxin detections ALL ages and any duration of admission	96	104	92	97	103
Number 'trust apportioned cases' (aged above 1 year and in for > 2 days when tested and reported as possible CDI on HCAI site)	9	7	13	15	7
Objective (number below which we aim to keep apportioned cases._	9	8	7	7	14
Possible lapse in care				2	2

Analysis of every case is undertaken to assess the likelihood of true disease, and any avoidable risk factors or lapses in control measures. Details were presented to the NHS England, London lead for Infection Prevention and Control and the Clinical Commissioning group. It was agreed that the majority of cases reported and assigned to the Trust did not represent a failing in C. difficile infection prevention and control, however 2 cases were classified as 'lapse in care', based on epidemiological and typing data suggesting cross infection.

As disease does rarely occur and there is a continuing risk of cross transmission we will continue to test stool to detect these rare cases and assist in control measures.

5:6 Mandatory Surgical Site Surveillance (SSI)

National mandatory surveillance only requests information on hip and knee implants and open reduction and fixation of long bones. These are rarely performed so no surveillance is undertaken.

Periodic and continuous SSI surveillance is undertaken by a number of surgical specialties and is reported in the local surveillance section below.

Additional Local Surveillance

5:7 GOSACVCRB – GOS acquired Central Venous Catheter related bacteraemia

Continuous Trust wide surveillance mechanisms were introduced in Feb 2006 to identify GOSH inpatient associated central venous catheter related blood stream infection (GOSACVCRB). Surveillance requires daily recording of presence of patient lines by ward staff on an online form (audit of compliance shown in Audit section) and classification of all

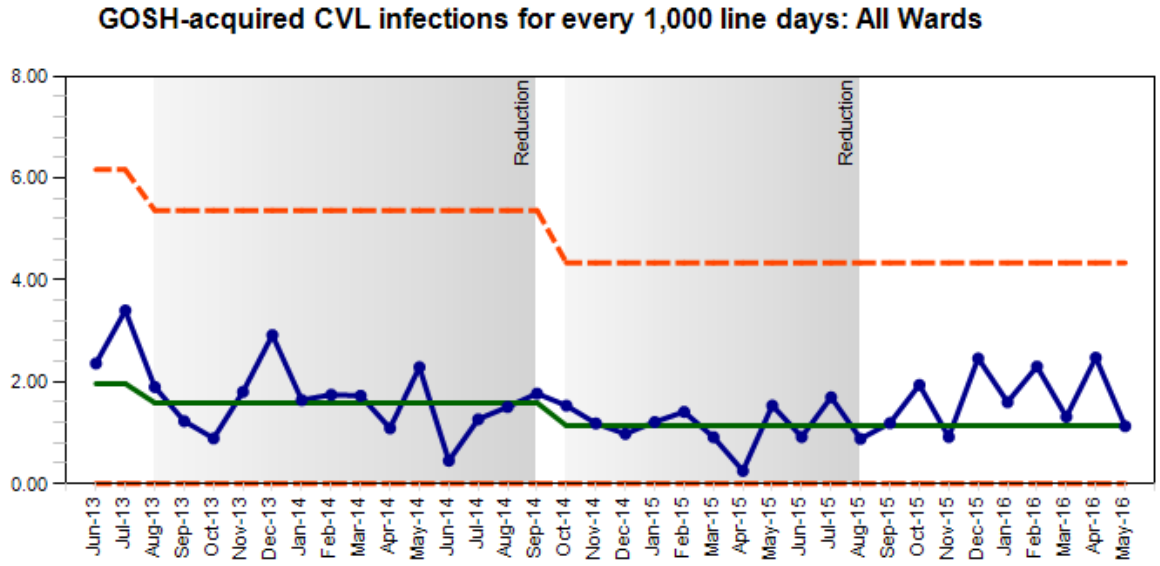
positive blood cultures according to a standard protocol. Outcomes measured is the GOSH acquired infection rate per 1000 line days. Compliance with line day data return is audited.

The data is displayed on the dashboard for IPC and clinical teams to review. Monthly data is broken down to 'ward where child was when blood culture taken' and each unit receives specific case data so further analysis. Root cause analysis can be performed by clinical teams.

Comparison with other hospitals is not straightforward as definitions vary. The GOSACVCRB definition was designed to have low specificity and alert units to potential cases for review. Implementation of CDC CLABSI criteria (which requires two blood cultures for common skin organisms), would reduce the apparent number.

Overall Trust rate (GOSACVCRBs per 1000 line days) was 1.3 last year (our lowest rate) this low rate was maintained (1.4 this year) but has shown an increasing trend in recent months. Contributory factors are discussed below.

Financial year	Rate per 1000 line days
7/8	4.3
8/9	3.7
9/10	3.3
10/11	2.6
11/12	2
12/13	2.1
13/14	2.1
14/15	1.3
15/16	1.4



Organisms associated with GOSACVCRB

In 2015/16 75 episodes have been called GOSACVCRB (compared with 76 in 2014/15). See the table below for a breakdown of the organisms identified from the 75 episodes

Organisms causing GOSACVCRB in the financial year 2015/16		**Number**
Gram positive	Coagulase negative staphylococci	34

	S. aureus	6
	Streptococcus sp	3
	Enterococcus sp	3
	Brevibacterium	1
Gram negative		
-Enterobacteriacea	Klebsiella sp	7
	E. coli	4
	Serratia spp	3
	Enterobacter sp	2
	Citrobacter sp	1
-Pseudomonas and others	Pseudomonas aeruginosa	3
	Acinetobacter	1
	Chryseobacterium	1
	Achromobacter	1
	Bacteroides	1
Fungal	Candida sp	4
Total		75

GOSH CVC infection reduction programme.

The programme to reduce GOS acquired CVC related bacteraemias (GOSACVCRB; 'line infections') has used an improvement process based on the universal or focussed introduction of care components combined with continuous process and outcome audit. Initially the 'saving lives' standard care bundle was implemented across the entire trust and significant reduction in line infection rate was seen year on year. However, this did not reach zero. Review of additional interventions was undertaken and it was decided to introduce parafilm and biopatch in areas or situations associated with the greatest risk.

Parafilm is a thermoplastic paraffin film with a paper backing primarily used in laboratories. It is semi-transparent, water-resistant, moldable, self-sealing and cohesive. Evidence suggests that using a protective barrier around the hub and the connections of a central venous catheter might be an effective preventive measure against contamination and infection (Stotter et al, 1987). A small study done by Irving et al (2011) demonstrated a reduction of CRBSIs after the introduction of Parafilm to protect CV catheter hubs and connections.

References: STOTTER, A.T. et al (1987) Junctional care: the key to prevention of catheter sepsis in intravenous feeding JPEN J Parenter Enteral Nutr 11, pp. 159-162;

IRVING, S. et al (2011) Protective Barrier Reduces Central Venous Catheter Infection Nutr Clin Pract 26 (6), pp 726

The rollout of parafilm to the rest of the inpatient areas in the trust is planned during 16/17. Alongside the rollout the standard measures of CVL care bundle surveillance will continue as will the monitoring of GOS acquired CVC related bacteraemias.

5.8 Other bacteraemia and gram negative resistant isolates.

As the number of bacteraemias associated with CVC related infection had reduced the proportion of non-line related bacteraemias has increased. Regular surveillance has been

undertaken of crude bacteraemia episodes defined by any positive blood culture in a child. The table below shows the 345 episodes by species detected in the financial year, and the table below shows comparison year on year for the Haem/Oncol/Immunol/BMT/ID group of patients (Episodes of contamination have not been removed and further blood cultures are classed as a new episode after 14 days.)

		All patients	Haem/Onc/Immunol/BMT/ID
GNR	E. coli	16	5
	Klebsiella sp	16	4
	Enterobacter sp	8	4
	Serratia sp	5	2
	Acinetobacter sp	4	2
	Citrobacter sp	2	
	Proteus sp	1	
	Pseudomonas aeruginosa	9	3
	Stenotrophomans	3	1
	Other non-fermenters	8	3
GNR	Anaerobic GNR	5	3
GPC	CNS	153	42
	alpha haem Streptococcus	30	16
	S. pneumoniae	1	
	S aureus	25	9
	Enterococcus sp	16	5
	Micrococcus	11	1
GNC	Neiserria sp	4	1
	N meningitidis	1	1
	Eikenella	1	1
GPR	Actinomyces	2	
	Brevibacteria	2	1
	Gordonia	1	
	Bacillus sp	3	1
	Propionibacterium	1	
	Nocardia	1	1
	Microbacterium	1	
	Tsukamurella sp	1	
Yeast	Candida albicans	8	
	Candida species	6	4
	Total	345	110

Table of blood culture episodes in haematology/oncology/BMT/immunology patients in one year periods:									
		2001		2009		2011		14 -15 FY	15-16 FY
	Organism								
GPC	Coag neg staphylococcus	187		60		71		39	42
	Staphylococcus aureus	14		11		8		4	9
	Enterococcus sp	33		7		9		10	5
	alpha haem strep	22		20		12		14	16
	beta haem strep			2		1		0	0
	other cocci	4		9		5		6	1
GNR	'coliforms'	69		28		23		20	17
	Pseudomonas aeruginosa	10		3		6		2	3
	Stenotropohomonas maltophilia	7		0		1		4	1
	Other non-fermenters			5		3		3	3
	Other gram negative rods/cocci	6		2		4		3	3
	Anaerobes	2		4		5		1	3
GPR	Gram positive rods	9		12		10		10	3
Yeast		6		9		4		11	4
Total		369		172		162		127	110

Antibiotic resistance:

Review of the 20 haem/onc/immunol/BMT/ID coliforms and Pseudomonas aeruginosa shows:

	Amikacin	Gentamicin	Ciproflox	Ceftaz	P/Taz	Carbaepnem
% resistant	0	10	30	20	15	5

There is still significant resistance and choice of dual therapy amikacin plus piperacillin/tazobactam is still justified as first line empirical therapy in the antibiotic policy. There were 3 of 20 isolates resistant to ciprofloxacin and piperacillin/tazobactam, which is being used more to avoid aminoglycoside use but has an increased risk of being inadequate.

5.9 Ventilator associated pneumonia / Ventilator associated events.

The PICU Ventilator Associated Pneumonia (VAP) study: VAP was shown to be low in PICU and systematic surveillance was stopped in 2011. (See earlier annual reports.)

Continuous central surveillance is currently not performed. PICU / Microbiology have undertaken surveillance using different surveillance definitions in PICU between July - December 2014. VAP incidence was 1.8/1000 ventilator days using 2015 criteria (onset > 2 days after ventilation) and 2.4/1000 ventilator days using 2008 criteria (irrespective of duration of ventilation- early onset intubation associated).The different definitions pick up different patients.

With the new VAE-with infection – called infection related ventilator condition (iVAC) ,there is seemingly no requirement for chest x-ray changes and the condition is defined by acute ventilatory deterioration plus inflammatory changes and then proceeds through a diagnostic criteria for infection, for which are graded according to strength of evidence from protected BAL, quantitative culture, semi quantitative, to clinician decision to treat.

The difficulty in applying the standard set of definitions currently available has been highlighted by the PICU and microbiology department nationally through a letter in the Journal of Hospital Infection.

5.10 Surgical Site Infection Prevention and Surveillance

From 2011 to 2013 there was a SSIS team based in the IPC team, however, subsequent surveillance has been performed by the individual specialty or Divisional teams. Trust wide rates were established (using the Public Health England SSIS scheme definitions and 30 day home followup) and are summarised for the total surveillance below:

Summary of data collected by SSIS Team 2010 - 2013

Number of Operations	3966	% infection
Total of Infections	245	6.2
Superficial	87	2.2
Deep	16	0.4
Organ Space	36	0.9
Patient Reported	106	2.7
Lost to Follow Up	481	12.1

The data was drawn from all neurosurgery, cardiorespiratory, spinal implant and a selection of procedures from plastics, general and neonatal, craniofacial, and other orthopaedic, without any day cases. The area with the highest rate of organ space infection was

neurosurgery. After the cessation of the central surveillance scheme the divisions continued and in different formats, described below.

In parallel with surveillance there has been development of prevention bundle, with particular emphasis on preoperative wash, skin preparation, antimicrobial prophylaxis, temperature control, wound closure and dressings.

In recognition of need for further standardisation, the IPC is assisting the Surgical division audit the surgical care pathway this year (in IPC annual plan).

5.11 Surgical Division: one full time surveillance officer working with Practice Educator and Lead Nurse has undertaken surveillance of designated procedures in each specialty. This is reported locally and spinal implant surgery reported to the PHE National SSIS scheme.

Report from Karen Rowson, Practice Educator Surgical Division

Clinical Division of Surgery

Surgical Site Surveillance

Surgical Site Surveillance Programme

Introduction

The Surgical Division at Great Ormond Street Hospital for Children NHS Foundation Trust comprises 9 clinical Specialities, providing care to around 22,000 children a year. The trust has a long history of Surgical Site Surveillance which was conducted centrally as part of the Infection Prevention and Control Team until April 2013 when the responsibility transferred to the relevant individual clinical divisions.

Within the Surgical Division a SSIS officer was appointed to work within the education team under the direction of the Lead Nurse. This paper sets out a review of the service to date and details the plans and objectives for the SSIS programme in the financial year 2015-16.

2015 -16 Aims

- For lead nurse to form a bi-monthly meeting for Spinal Surgical site surveillance
- To further develop the exception report which will highlight deviations from the care bundle and give some explanatory narrative
- To assist the surgical teams to standardise areas of the patient pathway

Speciality Surveillance procedures

Speciality leads were involved in discussions regarding which procedures were suitable and useful to carry out surveillance. Procedures that are undertaken by laparoscopy, are a diagnostic theatre based test (such as biopsy) and where the primary wound closure does not occur in theatre were excluded in line with the HPA guidance. It is important to note that

no surgical category falls in the mandatory group, but spinal surgery at GOSH is reported to the HPA.

The procedures and surveillance protocols for each speciality are listed below:

Speciality	**Procedure**	Surveillance
Spines	All (excluding plaster jackets)	SO Post op D1, D2, D3 30 day phone call + 1 year follow up
Orthopaedics	Insertion of 8 plates	SO post op D1 30 day phone call
Orthopaedics	Open Reduction and Internal Fixation	SO post op D1 30 day phone call
ENT	Cochlear Implant	SO post op D1 30 day phone call + 1 year follow up
ENT	LTR Graft	SO post op D1 30 day phone call
ENT	Excision of thyroglossal cyst	SO post op D1 30 day phone call
Urology	Open Pyleoplasty	SO post op D1 30 day phone call
Urology	Wilm's Tumour / nephrectomy	SO post op D1, D3 (weekly if still here) 30 day phone call
Cleft	Cleft lip repair (+/- palate)	SO post op D1 30 day phone call
General Surgery	Neonatal Laparotomy	SO post op D1, weekly until 30 days (telephone if transferred out)
General Surgery	Excision of neuroblastoma	SO post op D1, D3 (weekly if still here) 30 day phone call
General Surgery	General Laparotomy	SO post op D1, D3 (weekly if still here) 30 day phone call

Plastic Surgery	Non-buried K wires	SO post op D1 30 day phone call extend to 6/52 if required
Plastic Surgery	Tissue Expander insertion	SO post op D1 30 day phone call
Plastic Surgery	Tongue Reduction	SO post op D1 30 day phone call
Dental & MaxFax	ABG	SO post op D1 & 30 day phone call
Ophthalmology	No data required	[redacted]

Ophthalmology were excluded as no procedure was able to be identified which met the inclusion criteria and could be easily surveyed.

Where appropriate an information sheet about SSIS is given to children and their families undergoing appropriate procedure at the pre-operative appointment. The SSIS team identify children from the daily theatre list and then ensure the following data collection protocol:

- Base line data collected on all patients on day 1 post op
- All children have a 30 day post discharge follow up telephone call
- Spinal patients are seen on post op day 1, 2 and 3 until the post-operative wound check. Once the IVABx have stopped the surveillance is discontinued and the patients then receive the 30 day phone call and follow up at one year.
- Any child with an implant, such as spinal and cochlear, will receive a 1 year follow up in addition to the 30 day phone call.

Data Collection

For the 2015-16 financial year, all specialities have one full year of data for their identified procedure or procedures. Tongue reduction surgery was added in December 2015 on commencement of the service again.

Monitoring and recording data

The SSIS team have utilised the S4 database to enter all data including follow up and have a robust system in place for ensuring that all children are followed up as per the protocol outlined above.

The data collected for the financial year 2015-16 is detailed below:

Spinal Surgery

Procedure	Lost to Follow Up	Parent Reported Infections	SSI			Annual Total	Infection %
			Superficial	Deep	Organ Space		
All Spines	4	8	6	3	0	180	9.4%
Posterior Spinal Fusion	4	5	6	3	0	109	12.8%
Anterior Spinal Fusion	0	0	0	0	0	4	0%
MAGEC Insertion	0	0	0	0	0	18	0%
Combined Fusion	0	0	0	0	0	5	0%
Growth Rod Lengthening	0	3	0	0	0	29	10.3%
Growth rod Revision	0	0	0	0	0	9	0%
Extension Of Fusion	0	0	0	0	0	5	0%
SHILLA	0	0	0	0	0	1	0%

Orthopaedics

Procedure	Lost to Follow Up	Parent Reported Infections	SSI			Annual Total	Infection %
			Superficial	Deep	Organ Space		
8 plates	0	1	0	0	0	23	4.3%
Open Reduction	1	0	0	0	0	23	0%

ENT

Procedure	Lost to Follow Up	Parent Reported Infections	SSI			Annual Total	Infection %
			Superficial	Deep	Organ Space		
Cochlear Implant	1	0	0	0	0	51	0%
LTR Graft	0	0	0	1	0	7	14.3%
Thyroglossal Cysts	1	1	0	0	0	11	9.09%

Maxillofacial

Procedure	Lost to Follow Up	Parent Reported Infections	SSI			Annual Total	Infection %
			Superficial	Deep	Organ Space		
ABG	4	3	0	1	0	70	5.7%

Urology

Procedure	Lost to Follow Up	Parent Reported Infections	SSI			Annual Total	Infection %
			Superficial	Deep	Organ Space		
Open Pyeloplasty	5	0	0	0	0	32	0%
Nephrectomy	1	0	0	0	0	22	0%

Cleft

Procedure	Lost to Follow Up	Parent Reported Infections	SSI			Annual Total	Infection %
			Superficial	Deep	Organ Space		

Cleft	6	1	0	0	0	64	1.5%

General Surgery

Procedure	Lost to Follow Up	Parent Reported Infections	SSI			Annual Total	Infection %
			Superficial	Deep	Organ Space		
Laparotomy	3	0	0	0	0	79	0%
Neuroblastoma	0	0	0	0	0	9	0%

Plastic Surgery

Procedure	Lost to Follow Up	Parent Reported Infections	SSI			Annual Total	Infection %
			Superficial	Deep	Organ Space		
Non-buried K wires	0	0	0	0	0	32	0%
Tongue Reduction ***Only resumed procedure Dec 2015**	0	0	0	0	0	4	0

Process dashboards

In addition the team have commenced a real time dashboard looking at the four main areas of the care bundle for theatres which the DoH recognise as having the highest impact on surgical site infections. The areas are antibiotic protocol adherence, pre-operative wash, temperature control, MRSA screen.

Divisional and specialty run charts are produced and displayed on the Dashboard.

Investigating infections and sharing of learning

The on-going monitoring of both infection rates and compliance with the care bundle are discussed at the division infection control meeting monthly. In addition the division carry out an RCA for any child who meets the following criteria:

- Readmitted to GOSH or a local service for wound management (including administration of IVAB)
- Has an organ space infection (including return to theatre for management)
- Prolonged stay at GOSH for wound management
- All spinal surgery

Indications for an RCA are monitored through the 30 day phone call by the Surveillance officer. When called an RCA is led by the child's consultant or the speciality lead. Findings are presented to the infection control committee with a summary of key learning and should feed into local M & M meetings.

Cluster of infections in spinal implant surgery

A cluster of infections was again noted through the surveillance process

Unlike previous years the wounds were more easily classified given the improved documentation

Bi monthly spinal infection meetings commenced

After investigation it was noted that there are no single risk factors to explain this (Spinal RCA Grid available upon request). Each case was looked at individually and comparatively.

The infection rate in spines for 2015 was 9.4%, this is a decrease from 2014 data, although higher than target.

Moving forward

The SSIS team have increased surveillance in specialities where there are 2 procedures that fit into the criteria; SNAPS now have 3 procedures monitored.

The team has generated speciality exception reports.

The SSIS team propose the following aims for the 2016-17 financial year:

- To use the data gathered and report it back to each speciality in their m&m. Work together to use the data and add any explanatory narrative to the data.

Spines

- CNS team to complete wound review and document in clinical notes
- Standardisation of skin prep and dressings

- Hypothermia noted as a risk factor, Work with anaesthetists to audit when hypothermia is occurring and factor if there are changes that can be made to reduce hypothermia.

Conclusion

More of an emphasis will now be on reviewing exceptions to the care bundle and patient pathway to improve the patient outcomes.

5.12 Report for Cardiorespiratory Surgical site infection surveillance

Cardiorespiratory continue to undertake surveillance by one surveillance officer. There is also an active SSI prevention group.

Report Submitted by Ashley Hurford & Liz Smith

Introduction

The cardiothoracic division at Great Ormond Street Hospital for children NHS Foundation Trust provides surgical treatment children with a variety of conditions. The local divisional surveillance program was established in 2013 following the end of the centrally funded SSI team within Infection Prevention and Control.

In the last year we have completed continued surveillance and established a robust system of monitoring going beyond the recommended standards of Public Health England (Previously Health Protection Agency). In the last 12 months we have surveillance on 769 procedures.

Underpinning activity

The surveillance officer is a band 3 health care assistant who has successfully completed the Trusts care certificate in 2015. The surveillance officer undertakes all surveillance across the specialty, offering consistency. The surveillance officer works under the supervision of the ward manager and ward practice educator, however has close links with the wider multi-disciplinary team.

Process

Patients are monitored throughout their inpatient and outpatient stay. They follow a process of compliance within our model of care. Currently due to the nature of cardiothoracic surgery we are unable to meet all the standards suggested by the PHE and meet all the NICE guidelines.

At this present time we aim to comply with the following standards:

Pre Admission

- Pre-operative information to patients and their families regarding infection rates
- MRSA Screening

Preoperative

- Preoperative wash
- Hair removal

Intraoperative

- Antibiotic prophylaxis timing
- Antiseptic skin preparation
- Wound dressing

Postoperative

- Wound dressing change
- Surveillance program

Developments in 2015-2016

- Surveillance now covers wider spectrum of surgical patients
    - Include implanted devices
    - Transplant patients
- Protocols updated for wound management
    - Dressings changed
    - Wound swabbing guide developed
- Nurse lead wound clinic established
    - Nurse practitioner team expanded
    - New tissue viability nurse appointed
- Surgeons now represented at SSI meeting
- Regular SSI meetings arranged to maximise attendance by SSI team
- New discharge booklet being developed to give patients and families more information on wound care and follow up process.
- Antibiotic protocol adherence – 30 minutes knife to skin

The surveillance covers four main areas of cardiothoracic surgery and captures all patients going through the department. We mainly monitor patients on Walrus, Bear, Badger, PICU, NICU and CICU.

Specialty	Surveillance	Surveillance Protocol	Surveillance Protocol	Review Process

	Protocol Pre-Admission	Inpatient	Outpatient	
Congenital Cardiac Surgery	Planned surgery patients have pre admission wellness call (Not able to do for emergency cases)	Every Monday, Wednesday and Friday whilst inpatient.	14 day post op telephone call (Unless still inpatient) 30 day post op telephone call	• 24-48 hour phone call from CNS • Wound issues reviewed in Nurse Practitioner clinic • Data reviewed at M&M Weekly
Heart and Lung Transplantation	This is normally emergency surgery. Patients consulted regarding infection risk when allocated to transplant list.	Every Monday, Wednesday and Friday whilst inpatient.	14 day post op telephone call (Unless still inpatient) 30 day post op telephone call	• 24-48 hour phone call from CNS • Wound issues reviewed in Nurse Practitioner clinic • Data reviewed at M&M Weekly
Thoracic Surgery	Planned surgery patients have pre admission wellness call	Every Monday, Wednesday and Friday whilst inpatient.	14 day post op telephone call (Unless still inpatient) 30 day post op telephone call	• 24-48 hour phone call from CNS • Wound issues reviewed in Nurse Practitioner clinic • Data reviewed at M&M Weekly
Device Implantation (Pacemaker / ICD)	Planned surgery patients have pre admission wellness call	Every Monday, Wednesday and Friday whilst inpatient.	14 day post op telephone call 30 day post op telephone call 6 & 12 Month post op telephone call	• 24-48 hour phone call from CNS • Wound issues reviewed in Nurse Practitioner clinic • Data reviewed at M&M Weekly

Data Collection

Successfully we have managed to capture almost all surgeries and we have increased our ability to follow up our patients at 30 days. For the year ending we have an overall infection

rate of 7.6% however unlike most centres we have chosen to include all superficial infections as well as deep and organ space infections in our overall data.

Overall surgical data:

2015/2016	Number of Surgeries	Inpatient	In %	Outpatient	Out %	Total	Surgery Total	Running Total	%
April	58	0	0	1	1.72	1	58	1	1.72
May	57	3	5.26	1	1.75	4	115	5	4.3
June	66	4	6.06	7	10.61	11	181	16	8.8
July	66	1	1.52	4	6.06	5	247	21	8.5
August	60	1	1.67	5	8.33	6	307	27	8.7
September	67	2	2.99	6	8.96	8	374	35	9.3
October	68	1	1.47	7	10.29	8	442	43	9.7
November	68	2	2.94	2	2.94	4	510	47	9.2
December	64	4	6.25	2	3.13	6	574	53	9.2
January	74	1	1.35	0	0	1	648	54	8.3
February	59	2	3.39	0	0	2	707	56	7.9
March	62	1	1.61	2	3.23	3	769	59	7.6

***Please note that if superficial infections were removed in line with other specialty reported programs our infection rate would be 0.4%. We had 3 deep/organ space infections reported within the year 2015/2016.**

Lost to Follow Up:

2015/2016	Number of Surgeries	Lost to follow Up	Overseas Patients
April	58	7	4
May	57	11	6
June	66	10	4
July	66	10	8
August	60	16	9
September	67	14	3

October	68	14	6
November	68	19	10
December	64	26	10
January	74	20	11
February	59	14	5
March	62	21	8

Results

Report on organisms in patients with confirmed SSI. This report was used to look at antimicrobial prophylaxis prior to cardiac surgery.

Year	Month	Age	Superficial	Deep	Organ Space	Total	Organisms Detected
2014	Oct - Dec	< 3 Months			1	1	CONS
		> 3 Months	5			5	CONS detected in 3/5
							2 patients outpatients - No lab results available
2015	Jan - Mar	< 3 Months	4	4		8	Staphylococcus Epidermidis 2/8 CONS detected in 2/8 Bacillus Species 2/8
							2 patients outpatients - No lab results available
		> 3 Months	10	3		13	Staphylococcus Aureus 2/13 CONS detected in 2/13 Enterococcus Casseliflavus 1/13
							8 patients outpatients - No lab results available
2015	Apr - Jun	< 3 Months	1	1		2	CONS detected in 2/2

		> 3 Months	6	2		8	Haemophilus Influenzae 1/8 Elizabethkingia Miricola 1/8 Corynebacterium Jeikeium 1/8 Bacillus Species 1/8 CONS detected in 1/8
							3 patients outpatients - No lab results available
2015	Jul - Sept	< 3 Months	3			3	CONS detected in 2/3 Escherichia Coli 1/3
		> 3 Months	12	1		13	CONS detected in 3/13
							10 patients outpatients - No lab results available

Report into Cluster of infections within thoracic surgery

During the summer of 2015 the infection rate on the thoracic patients rose significantly. This was a comparative study to compare with general cardiac surgery. Meetings were held and a full investigation by the MDT team took place following the confirmation of a total of 6 infections within the specialty. No single cause or issue was identified during the investigation. In light of this the surgical team contacted other centres who reported similar issues with no suggested solution.

		Thoracic Patients		
Month	Operated NO: Patients	Infected NO: Patients	Monthly Rate	Average
June	8	2	25%	25%
July	8	1	12.5%	18.75%
Aug	8	3	37.5%	25%
	Note: All patients symptomatic. Not all have diagnosed pathogens as all detected in the community and not			

	swabbed.

Due to no single cause the actions and recommendation following investigation were:

- Chlorhexadine wipes wash morning of surgery
- Bear Huggers to be repositioned
- Reduce non-essential staff in theatre
- Preoperative skin prep – 4 minute time lapse
- No antibiotics to be given to bar removals
- Improve/standardise wound closure technique
- Change dressing to standardise across cardio-thoracic surgery.
- Document closing surgeon on operation note
- Closer CNS follow up post discharge

The service was initially suspended following recommendations due to other clinical commitments and will resume shortly with close SSI monitoring.

Forward Planning and Future Developments for 2016-2017

- Maternity cover requirement for surveillance officer
- To extend and evaluate the effectiveness of the nurse lead wound clinic
- To review data on patients reported SSI to identify themes
- To continue to ensure the department receives appropriate education on wound care and the patient journey in preventing wound infections.
- Work on reporting SSI with dashboards
- Face the challenges of the current data recording system
- Surgical update on guidelines for infected wounds
- Continue support for surgical team induction to the Trust
- Update local web page
- Parent information of SSI surveillance to updated

5.13 Neurosurgery SSI surveillance

Neurosciences: The Division does not have a dedicated SSIS officer. Surveillance is undertaken through the weekly audit meeting and complication entry onto a bespoke Neurosurgery database with specific classification for SSI. Permanent shunt procedure CSF infection rate is accurately obtained as re-admission is inevitable. Superficial incisional infections of shunt and other procedures is not likely to be complete as there is no out of hospital data collected.

Shunt insertion bundle – there is a specific shunt insertion care bundle with audit of compliance, although completion has been incomplete in 2015/16.

Permanent shunt infection surveillance

The Neurosurgical team maintain a dedicated audit data base with accurate recording of shunt related infections. Since 2010 this will be used to provide monthly data for inclusion on the Neurosciences Safety dashboard.

RCAs are performed for each infection and a separate audit is performed of compliance with the shunt insertion protocol.

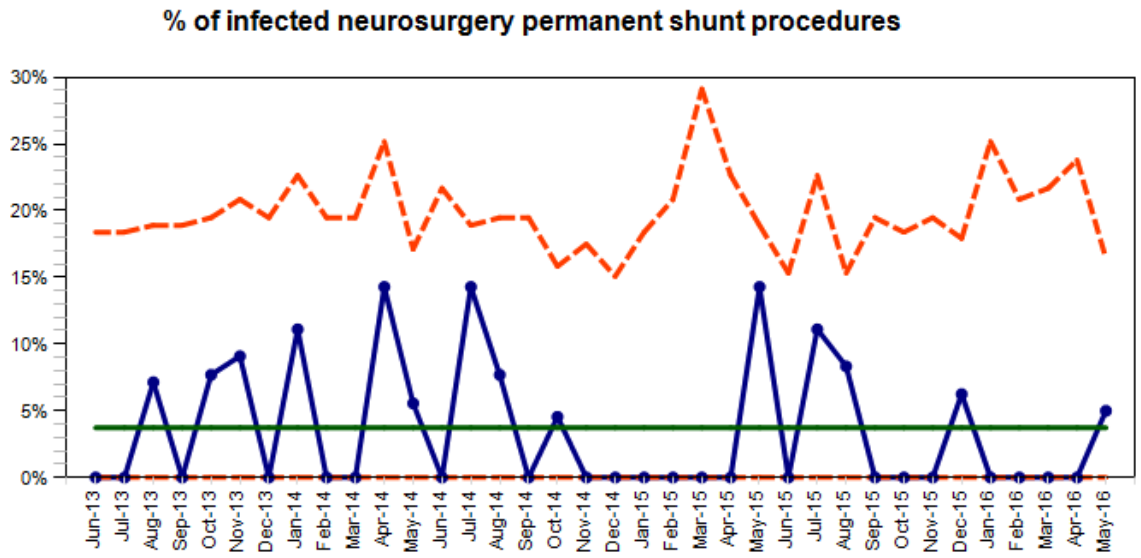
The permanent shunt procedure infection rate (all types of shunts, primary insertions, internalisation and revisions) was:

2013/14 - 6 infections from 170 procedure at rate of 3.5

2014/15 - 5 infections from 157 procedures at rate of 3.2

2015/16 - 6 infections from 165 procedures at a rate of 3.6

The continuous dashboard is shown below:



Viral infections detected while at hospital

5.14 Surveillance of Respiratory virus infection

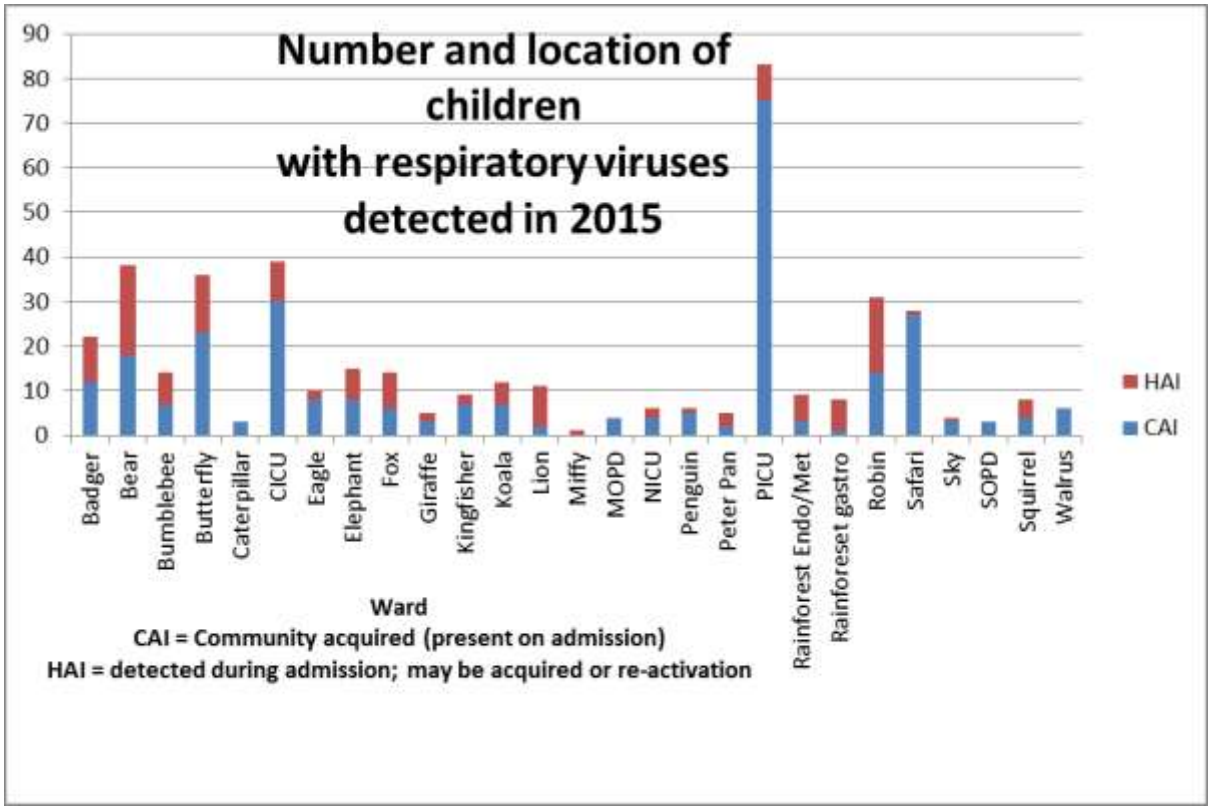
Respiratory viruses are common in children and often asymptomatic or only causing mild infection. However, in children with immunodeficiency or other severe illness, normally mild infections may be serious. We are aware that children acquire infections while in hospital, with multiple sources among patients, visitors and siblings, staff and other adults. The prevention of cross infection requires good compliance with standard and transmission based infection prevention procedures, including assessment of risk and low threshold for testing, including in asymptomatic immunocompromised children who shed high loads for long periods.

The advent of PCR testing a few years ago increased the test sensitivity and apparent numbers increased, but this has been unchanged in the last two years, with the exception of widening the panel in some children to include rhinovirus and coronavirus. First detections are called hospital acquired if the symptoms onset in hospital or if the first test was after 48 hours; some detections will have been incubating. Some children have 2 or 3 viruses so the total number of positive patients is less than the number of viruses.

Comparison of the last two years, see below, shows that the number of potential hospital acquired cases has increased slightly from 24% of cases to 30% of cases. The overall number of respiratory viral infections has decreased.

Implementation of standard precautions are designed to mitigate the risk of transmission but it has not been eliminated. We intend to focus further on all staff, patient and family involvement with prevention.

	Respiratory viral infections detected in 2014/15:				Respiratory viral infections detected in 2015/16:		
	Total	Community onset	Hospital onset		Total	Community onset	Hospital onset
Influenza	55	45	10		51	41	10
Influenza A	40	34	6		39	30	9
Influenza B	15	11	4		12	11	1
RSV	99	81	18		126	80	46
Parainfluenza	75	51	24		25	14	11
Parainfluenza 1	6	2	4		6	3	3
Parainfluenza 2	13	7	6		7	3	4
Parainfluenza 3	53	41	12		11	7	4
Parainfluenza 4	3	1	2		1	1	0
Adenovirus	104	75	29		26	23	3
HMPV	51	37	14		11	8	3
Rhinovirus	10	8	2		17	9	8
Human coronavirus	5	5	0		1	0	1
Total	399	302	97		333	230	103



5.15 Surveillance of Viral Gastro-enteritis

GOSH Trust outbreak and prevention policy includes isolation of children with suspected viral gastro-enteritis with emphasis on recognition and early intervention.

As in respiratory infections, children, parents and staff frequently enter the Trust incubating these common infections and act as sources for localised outbreaks. Control of these explosive outbreaks may require closure or restriction of admission to units, along with deep environmental cleaning, as attack rates are high and secondary cases occur.

Detailed investigation of these outbreaks and numbers of reported patients, staff or visitors affected are kept by the IPC team and the decision to close wards is based on risk assessment and epidemiological data.

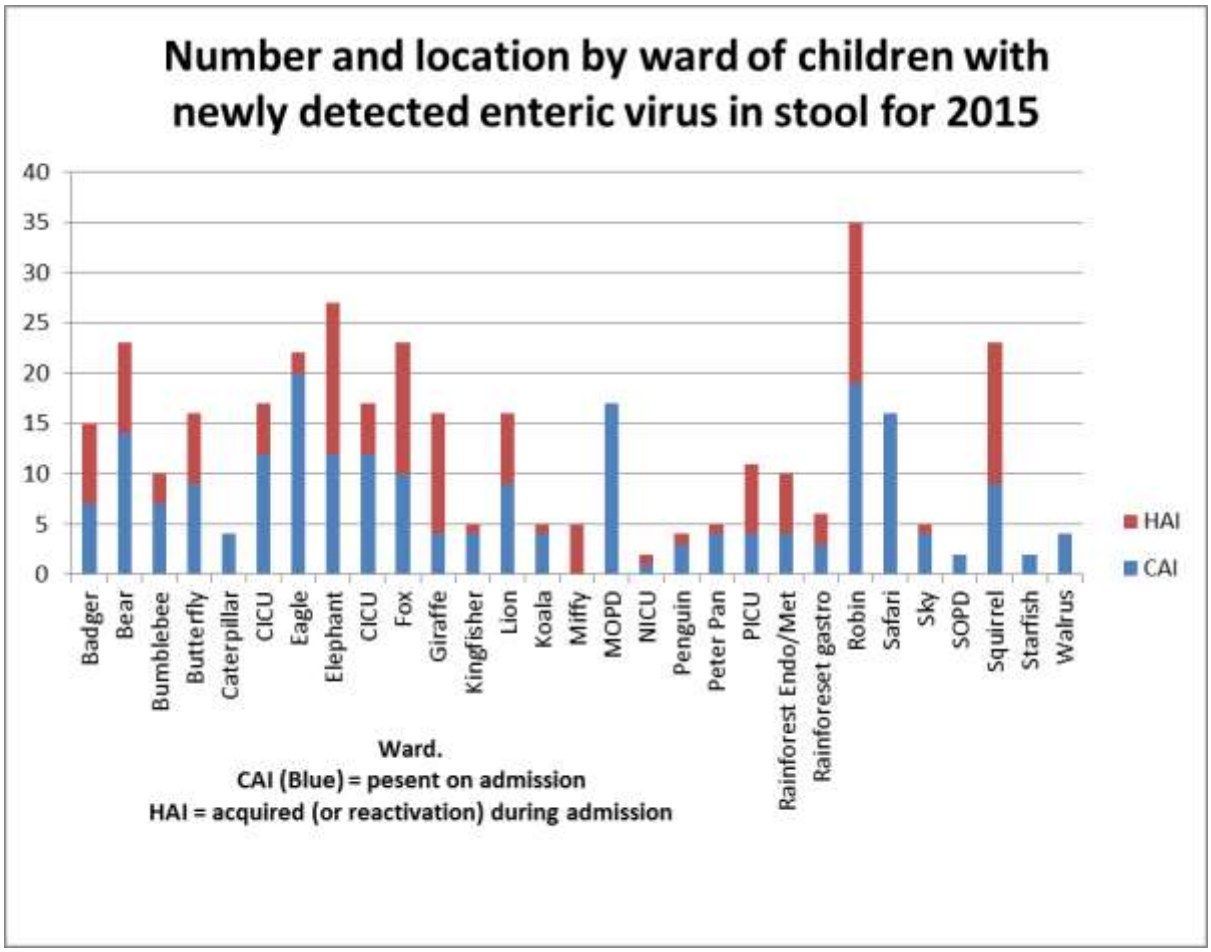
Change in methods: For the last 2 financial years all faeces have been tested by PCR (so numbers cannot be compared to previous years).

The number of enteric viruses detected in 2015/16 was similar to 2014/15 (351 v 352) but the number with apparent hospital acquisition decreased from 153 to 139.

Number of detections is shown by virus and onset in the table and by ward child was on in the bar chart below.

Despite this large number of cases admitted or with onset in the hospital, disruption to clinical services have been kept to a minimum in last 2 years. In 15-16 there were 11 episodes of acquisition reported as incidents and admission was restricted in 4 cases.

	Enteric viral infections detected in 2014/15			Enteric viral infections detected in 2015/16		
	Total	Community onset	Hospital onset	Total	Community onset	Hospital onset
Adenovirus	106	63	43	106	62	44
Astrovirus	16	10	6	18	15	3
Norovirus	147	77	70	117	73	44
Rotavirus	20	16	4	21	15	6
Sapovirus	63	33	30	89	47	42
Total	352	199	153	351	212	139



Number of Ward closures Year on Year due to confirmed or presumed viral gastroenteritis

Year	***Predominant organism***	***Ward Closures or admissions restricted to emergency***
April 04 – Mar 05	Rotavirus	17 wards (range from 3-9 days)
April 05 – Mar 06	Rotavirus / Norovirus	11 wards (range from 3-7 days)
April 06- -Mar 07	Norovirus	9 wards (range from 3-10 days)
April 07 – Mar 08	Norovirus	5 wards (range from 2-26 days)
April 08 – Mar 09	Norovirus	8 wards (range from 2-10 days)
April 09 – Mar 10	D and V (no organism detected)	3 wards (range from 3 – 4 days)
April 10 – Mar 11	Rotavirus, Norovirus and Astrovirus	3 wards on restricted admission (6 – 19 days)
April 11 – Mar 12	Norovirus, Rotavirus, Adenovirus, or D&V cause not found Mixed viruses	10 wards on restricted admission* admissions (4 – 14 days) 1 ward was closed for 1 week**
April 12 – March 13	Norovirus, staff and patients affected	One ward was closed for three days
April 13 – March 14		No ward was closed.
April 14 – March 15	Norovirus staff and patient	1 ward on restricted admission
April 15 - March 16	D and V (sapovirus & norovirus)	1 ward closed (8 days) 3 ward on restricted admissions

Surveillance for antimicrobial resistant organisms

5.16 MRSA Admission Screening and acquisition, carriage rates and ward location

The Trust MRSA Screening Statement is located in the Admission Screening Policy located on the GOSH Web.
We monitor compliance by

- review of screening rate of those who stay in for at least 48 hours and are screened within 48 hours of admission (Target 95%)
- screening of all inpatient admissions; all wards are provided with an online update of patients not screen within 24 hours of admission, and we fed back numbers not screened by 24 hours. We aim for 100% on ICUs, but there are always a few cases where this is not appropriate due to clinical condition. Surveillance of this standard was not available during 2014/15 and 2015/16 but will be re-established in 16/17.

Individual ward screening rates were displayed on the Infection Control web page and discussed at the Divisional IPC meetings (although this was not available this year due to data management issues).

GOSH Annual % Compliance to Infection Control Admission Screening Policy
Screening rate at 48 hours for inpatient admissions remaining in for > 48 hours – target 95%

Date	MRSA (nose and throat) screen compliance %
2002 Jan - Dec	91%
2003 Jan - Dec	86 %
2004 Jan - Dec	89 %
2005 Jan – Dec	92%
2006 Jan – Dec	95%
2007 Jan - Dec	95%
2008 Jan - Dec	95%
2009 Jan - Dec	96%
2010 Jan - Dec	95%
2011 Jan - Dec	96%
2012 Jan - Dec	97%
2013 Jan - Dec	95%
2014 Jan - Dec	98%
2015 Jan - Dec	98%

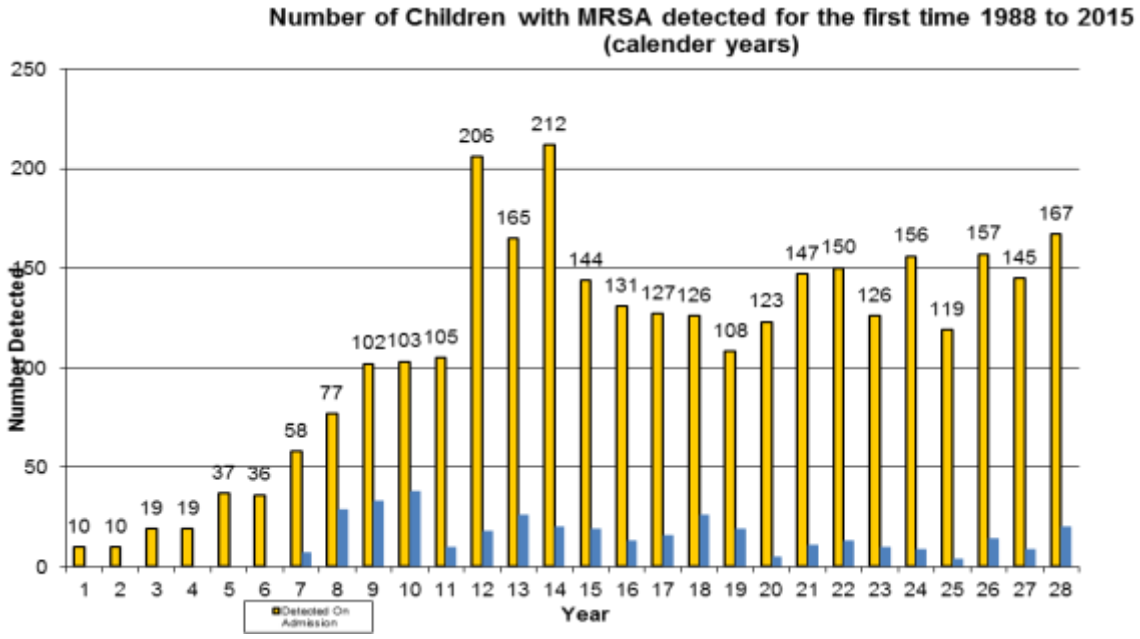
Admission screening compliance for admissions (30 day prior to within 24 hr)

– Not available for 2015/16.

MRSA cases of colonisation/carriage and infection at GOSH

Details of newly detected MRSA carriage is shown in the chart below by calendar year; in 2015 there were 187 new detections, with 19 probably or possibly acquired in the hospital.

Every apparent GOSH acquired case is investigated. There has been a significant outbreak of cross infection in the IPP Bumblebee ward that has required major intervention to control. Long term colonised patients are still present and represent ongoing risk.

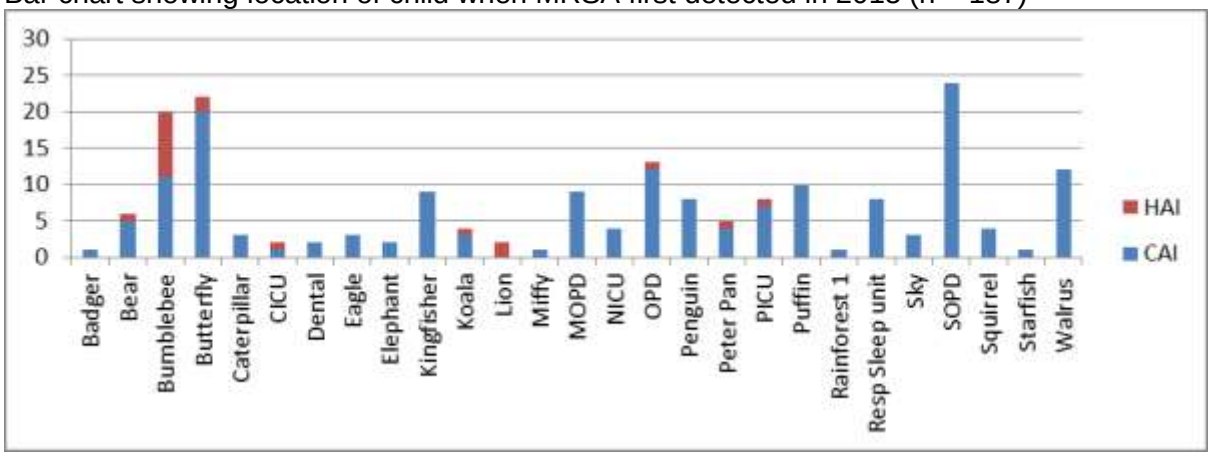


GOSH Hospital MRSA acquired colonisation by financial year:

	Number acquired colonisations
April 04 - March 05	19
April 05 – March 06	29
April 06 – March 07	9
April 07 – March 08	4
April 08 – March 09	16
April 09 – March 10	9
April 10 – March 11	10
April 11 – March 12	7
April 12 – March 13	6
April 13 – March 14	12
April 14 – March 15	7
April 15 – March 16	19

Distribution of MRSA 1st detections acquired in hospital in 2015

Bar chart showing location of child when MRSA first detected in 2015 (n = 187)



5.17 Multiple resistant 'gram negative' organisms (including transmissible carbapenemase producing organisms

Routine admission surveillance is performed to allow instigation of isolation procedures in patients who are colonised with multiple antibiotic resistant organisms; knowledge of the presence of Gram negative organisms carrying linked resistance mechanisms between an aminoglycoside and other first line antibiotics is used to guide antibiotic choice for empirical treatment of serious sepsis. We aim to achieve > 75% in stool screens for all children in for greater than 48 hours (see table below).

GOSH Annual % Compliance to Infection Control Admission Screening Policy
For inpatient admissions remaining in for > 48 hours; target >75%

Date	**Faeces screen compliance %**
2002 Jan - Dec	72%
2003 Jan - Dec	74 %
2004 Jan - Dec	77 %
2005 Jan – Dec	75%
2006 Jan – Dec	81%
2007 Jan - Dec	83%
2008 Jan - Dec	80%
2009 Jan - Dec	82%
2010 Jan – Dec	82%
2011 Jan – Dec	86%
2012 Jan - Dec	87%
2013 Jan - Dec	86%
2014 Jan - Dec	88%
2015 Jan – Dec	88%

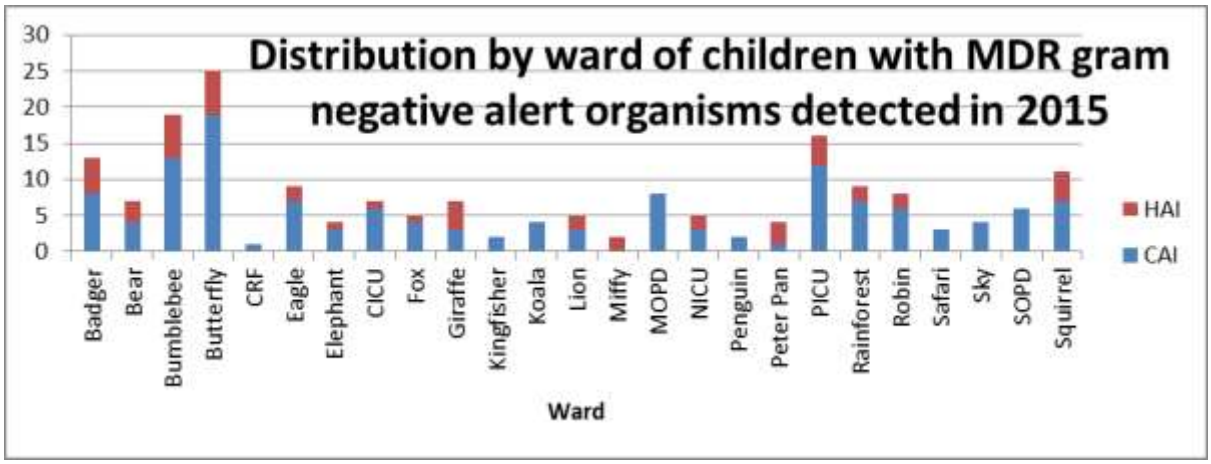
We detect similarly colonised or infected children during procession of clinical samples and weekly faecal screening of inpatients in high risk areas (haematology, oncology, immunology and bone marrow transplant) and instigate additional isolation procedures at considerable organisational, financial and individual cost.

Screening/testing in 2015 revealed 186 first detections (same as 2014), of which 136 came in colonised and 50 were either cross infection or detected as result of antibiotic selection with previous negative or unknown (as not screened on admission). This high level is due to the continuing national and international increase in antimicrobial resistant organisms but was also due to cross infection. Children are located in most wards (see bar chart below), with predominance in the International and Private Patients unit.

Potential acquisitions occur throughout the year and not all isolates can be investigated through detailed typing, so complete analysis of source is not possible. Where the initial epidemiological analysis strongly suggests cross infection further typing is undertaken and linked cases were confirmed in a number of wards. Undetected cross infection will be occurring.

The organisation is stretched in its ability to apply controls mechanisms without adverse impact on other aspects of care provision; however we feel it is essential to continue to do so.

Bar chart showing location of children colonised on admission or subsequently found to be colonised with multiple resistant gram negative bacteria by ward in 2015

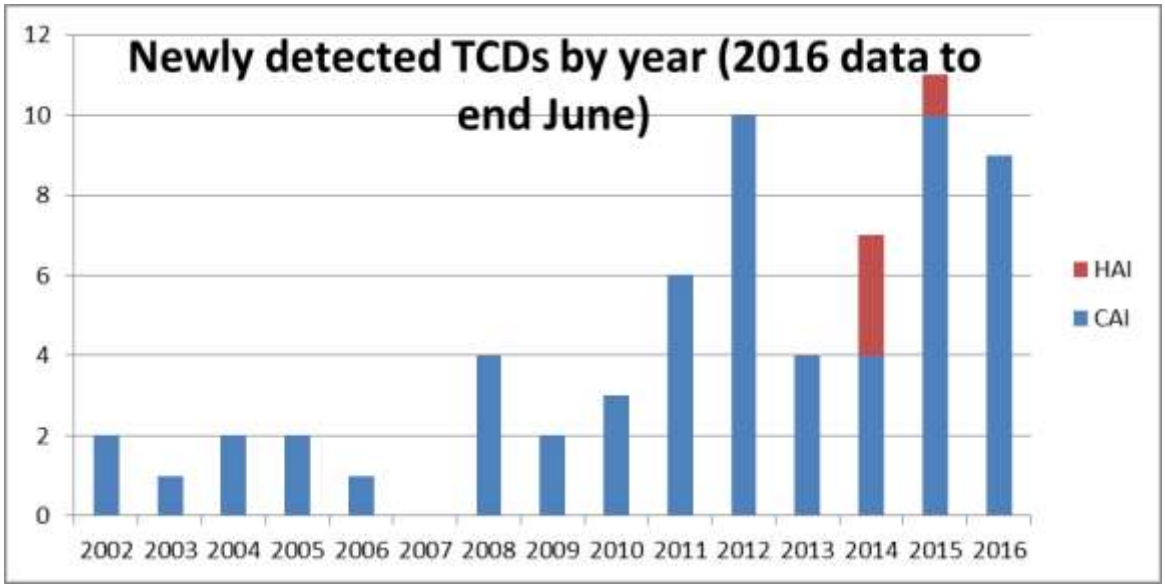


CAI = present on admission; HAI = detected during admission and possibly by cross infection

Carbapenemase resistant gram negatives

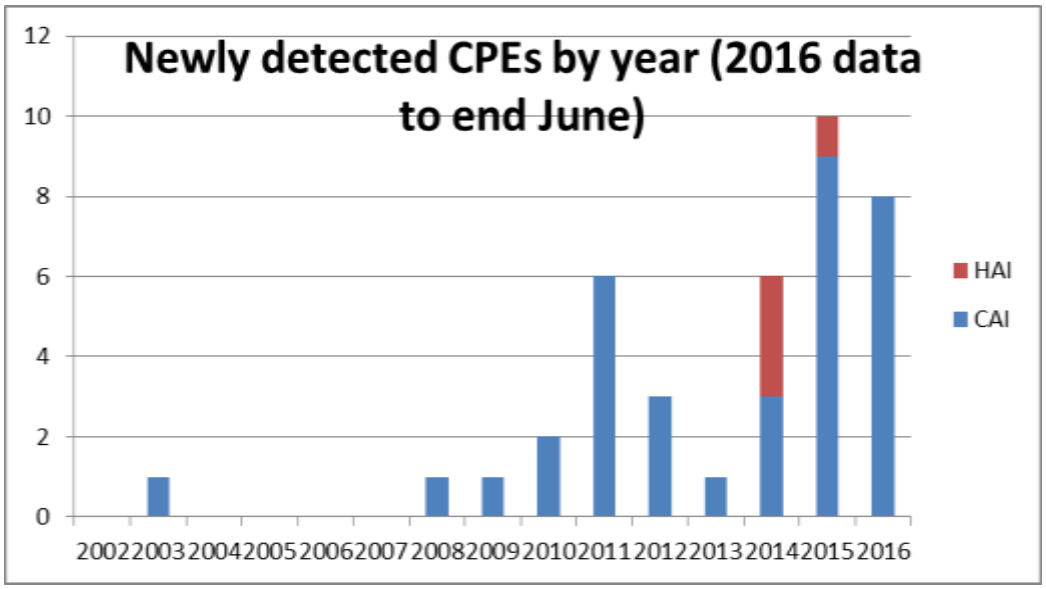
This antibiotic resistance mechanism represents the most serious threat to treatment yet. Organisms carrying this mechanism may be truly untreatable. They are becoming more prevalent in various countries and regions within UK and have been responsible for major outbreaks. We screen for carriage and implement severe control mechanisms when found. There had been an increase in detection of children colonised with carbapenemase over the last 10 years, with an initial peak in 2012, but increasing again in 2015 and 2016 has the highest number we have seen in the first 6 months.

Bar chart showing the number of children newly detected as colonised with significant transmissible carbapenemase carrying organisms (Enterobacteriaceae, Acinetobacter spps, Pseudomonas aeruginosa) , by year (2016 data to end June)



Carbapenemase producing enterobacteriaceae (CPEs) Within the group of carbapenenase producing organisms there is a particular focus on CPEs (organisms which are part of the normal human gut flora and frequently associated with HCAI e.g. *E. coli, Klebsiella pneumonia*), with a control kit introduced by PHE. We have seen an increase in the number of patients with this type of organism.

Bar chart showing the number of children newly detected as colonised with significant carbapenemase carrying organisms Enterobacteriaceae (CPEs) by year (2015 data to end June)



Until the end of 2014 we had successfully controlled all introductions but there was a significant outbreak in the haematology oncology wards. A full investigation was undertaken as transmission occurred to 4 children. Outbreak management included communication with parents and all shared care units, restriction in patient movements and non-essential ward visits and additional screening. The cross infection was actually identified and controlled before the presence of the oxa-48 gene was seen, as the strain was not initially detected as carrying this gene. Subsequently we have modified the screening process to improve detection of this type of organism. Nearly 2 years on children are still attending this, and other trusts, with this strain and the threat requires continuing attention to control.

5.18 Serious Untoward incidents and complaints involving Infection, major outbreaks and threats

Serious Incidents: In the 2015/16 financial year there were no SIs declared involving IPC

Complaints:

- 4 complains had an IPC component to answer (one staff (re screening) and 3 patient/parent (re information)

Major outbreaks / exposure control events

- MRSA transmission on Bumblebee
- In addition there was a further cluster of post-operative infections in spinal implant surgery was investigated. While no single cause was found, a new care bundle was introduced.
- Cluster of Nuss bar related infections (see SSI report)
- Patient and staff exposure to measles, congenital TB and pertussis (3 events)
- Influenza A outbreak in medical ward
- Response to heater cooler unit contamination with mycobacteria – low risk remains.

6 Hand Hygiene and Aseptic Protocols

6:1Hand Hygiene and CVC on going care guidelines

The emphasis on carrying out hand hygiene at the 'point of care' through the '5 moments' campaign has been adopted across the organisation.

The Trust clinical practice guidelines are available on the GOSH Web within the Infection Control link. Alcohol gel hand hygiene products are placed inside all ward areas to encourage staff, visitors and patients to decontaminate their hands within the clinical area. Compliance with the CVL ongoing care bundle is essential for the prevention of line infections.

Regular audit is undertaken (see section 9).

6.2 National Staff Survey hand hygiene

The 2012 and 2013 national staff surveys reported lower than desired satisfaction of availability of facilities for all staff at all times for hand hygiene.
The facilities team have placed stickers on soap & alcohol hand gel dispensers in clinical and non-clinical areas, alerting people who to contact, should they find an empty dispenser.
The 2014 survey did not ask this question.

The 2015 questionnaire asked no questions which relate to infection control provision or training.

6.3 Other Saving Lives High Impact Interventions

In addition to auditing hand hygiene compliance and compliance with the CVL care bundle the following areas are audited regularly and they results are on the Trust intranet dashboard against the relevant ward / department as part of the 'Saving Lives' programme:
- Peripheral line care bundle (insertion and maintenance)
- Urinary catheter care bundle (insertion and maintenance)
- Renal dialysis care bundle audited
- Isolation precautions audited annually

7) Facilities Annual Report Summary – 2016

Estates and Facilities and Redevelopment became one Division December 2015. The services are now known as Development and Property Services (DPS).
Environment
Report from Margaret Hollis, Head of Facilities.

Additional measures that were put in place in 2015 to validate the Domestic Services audit process has evidenced an improved standard in the quality of cleaning across the Trust. A tender process has been completed for Soft FM services which includes the Cleaning service. The contract with MITIE the incumbent terminates 31 July 2016. Outsourced Client Solutions (OCS) was awarded the new contract that was evaluated on Quality and Finance criterion. The new contract with OCS commences 1 August 2016. This is a five year contract with performance measures and Key Performance Indicators to ensure a high level of standard of cleaning is achieved on a consistent basis

<u>Waste Services</u>
The Waste collection & disposal service provided by Mitie ended May 2016. A new 3-year Integrated Waste Management contract commenced 1 June 2016 with service provider Bywaters. As part of the contract mobilisation, external Duty of Care site audits were undertaken by GOSH Waste & Sustainability Manager.

The annual Pre-acceptance clinical waste audits were carried out by the Trust clinical waste contractor, September 2015 which identified the requirement to introduce blue-lidded pharmaceutical bins across all areas. Implementation of this waste stream is planned to be implemented within the first quarter.

Waste & resource management guidance is detailed in Health Technical Memorandum (HTM) 07-01: Safe management of healthcare waste: https://www.gov.uk/government/publications/guidance-on-the-safe-management-of-healthcare-waste

Weekly waste compliance audits are carried out by the Waste & Sustainability Manager.

Key highlights include the roll-out of recycling in main non-clinical buildings; Barclay House, Weston House & Main Nurses Home; introduction of offensive waste into Weston House patient rooms. Current projects include trial of food waste collections and a project group has been set up with Theatres to review the segregation of Theatres' waste.

Decontamination

The Sterile Services provision of service for GOSH, and managed service for Endoscopy and Medical Equipment Disinfection (MEDU) remains with Guys and ST Thomas Hospitals NHS Foundation Trust (GSTT)(since September 2013). The quality of service delivered is monitored and deemed acceptable by the service end user at GOSH.
GSTT have supported and worked with GOSH to deliver the Department of Health requirement for GOSH to comply with NICE Patient safety and reduction of risk of transmission of Creutzfeldt-Jacob disease (CJD) vie interventional procedures. Interventional procedure guidance 196. (NICE IPG 196) http://www.nice.org.uk/IPG196.
The current contract has been approved for a one year extension. Within this period a tender process is to be undertaken for the scope of services under decontamination. New contract start date is planned for 1 September 2017

9. Estates

(No annual report received)

The Estate team continue to work closely with the IPC team in improving the practices of maintenance and monitoring on the both the ventilation and water systems.

- There is a programme now in place for annual verification of all areas with specialist ventilation. This programme is overseen by the Ventilation Committee (Chaired by Senior Compliance Officer, Estates)

  Theatre verification proceeds to plan. Difficulties were experienced maintaining a schedule with the clinical areas due to clinical work and potential disruption. This was not resolved in year for the BMT/Immunology/ID wards but planned closure with re-location to areas of the ICUs has been implemented in 16/17.

Work is still required to bring the new IR theatres up to HTM standard and this should be completed in 2016.

- Water safety is now managed through the Water Safety management Group, chaired by DIPC. All systems continue to be tested, monitored and reported on in liaison with the IPC. The remedial works have been acted on quickly from notification, with excellent communication and cooperation with the end users that now understand more clearly the work that goes into the maintenance of the safe deliverability of water to their areas.

Themes focused on are:
Legionella control: MSCB continues to be closely monitored as it is being operated outside of the L8 guideline, under derogation, at the lower temperature of 43^0C. No legionella has been detected in this building. The frontage building continues to have legionella detected in low risk areas and further remedial work is underway.

Pseudomonas aeruginosa control: continues to be tested for, with extension to other areas with at risk patients. Presently it does not present as a major risk due to the on-going control measures undertaken by the Estates team, however, the occasional possible acquisition is detected. Detailed clinical and water isolate typing is planned for 2016 to assess the risk in greater detail. An external *Pseudomonas aeruginosa* control audit has been commissioned by Estates.

ECMO heater cooler units – in line with national experience *Mycobacterium chimera* was isolated from the heater cooler units. Risk has been reduced through adoptin of recommended cleaning protocols but not eliminated. It remains low risk on the risk register.

Renal dialysis water: high bacterial counts were experienced in the intermediate water produced after first reverse osmosis and delivered to the dialysis machines. This did not lead to poor final water quality but has been difficult to remediate. On-going actions are planned and being implemented.

Other areas managed satisfactorily are Hydrotherapy pool water, Dental chair lines, Ice machines and Endoscope decontamination.

New projects – IPC works closely with Development on new projects, although the large number of projects stretches the IPC team.

9 Trust wide Audit

The infection control Trust-wide audit plan is now well embedded in the Trust's overall audit programme and registered with audit department. This plan is based on the internal and external infection control strategy which includes elements of High Impact Interventions from the "Saving Lives" programme. The infection control link network personnel in the Trust take responsibility, with guidance from the IP&CT, for performing planned audits. In addition IP & CT are now undertaking quarterly hand hygiene audits which commenced in January 2016.

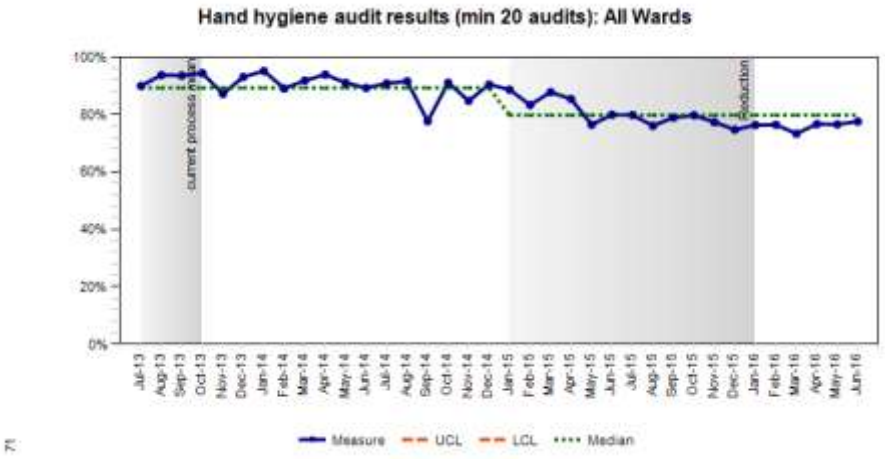
Antibiotic prescribing – the Trust has continued to fund a part time antibiotic pharmacist who is working one day per week, with the Antibiotic Subcommittee of Drugs and Therapeutics Committee (Chaired by Dr Soothill), on antibiotic policy. The Antimicrobial Stewardship group now meets regularly and had commenced an audit programme.

Audit of completion of reason for prescribing was undertaken through the electronic JAC.

9:1 Hand Hygiene Results

Individual ward/department and All Trust Hand Hygiene compliance is published monthly on the Transformation dashboards and reviewed by Divisional Boards and Nursing.

Ward based Hand Hygiene - All Trust compliance (with zero score for non-returns) is shown in the graphs below.



The time point for March 2016 represents 1431 satisfactory observations out of 1492 performed, giving a rate of 96%. Completion of audit has continued to decrease in this financial year, although compliance when assessed is still high.

Overall for the year, there were 19,258 ward based hand hygiene observations undertaken – compliance 96%

Infection control team audit

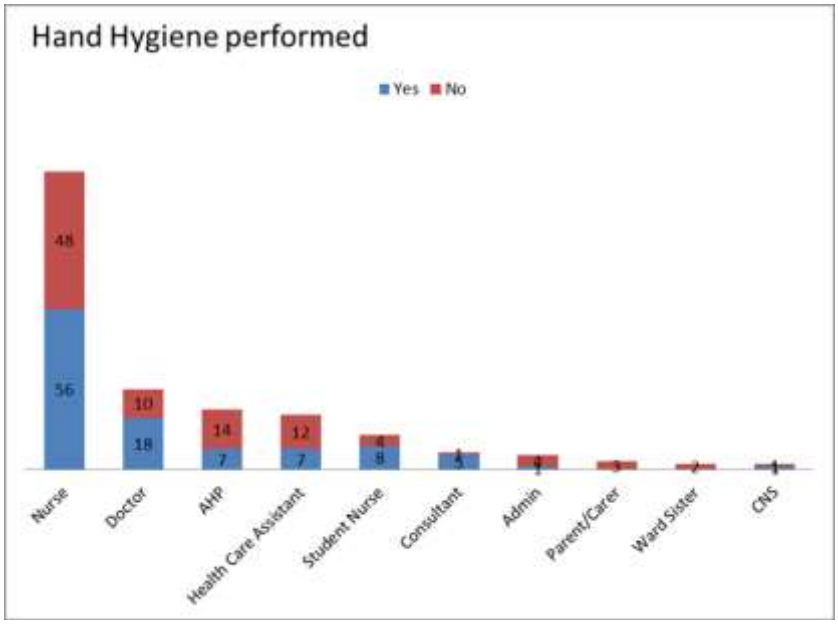
Infection Control Precautions Audit (Jan 2015)
Purpose of audit – to review if quality standards are being met around infection control precautions.
Method Observation audits undertaken discreetly by Infection Control team for one week in January 2016 on electronic tools designed by Clinical Audit department.
Key headline results
202 observations were undertaken across 21 inpatient wards.

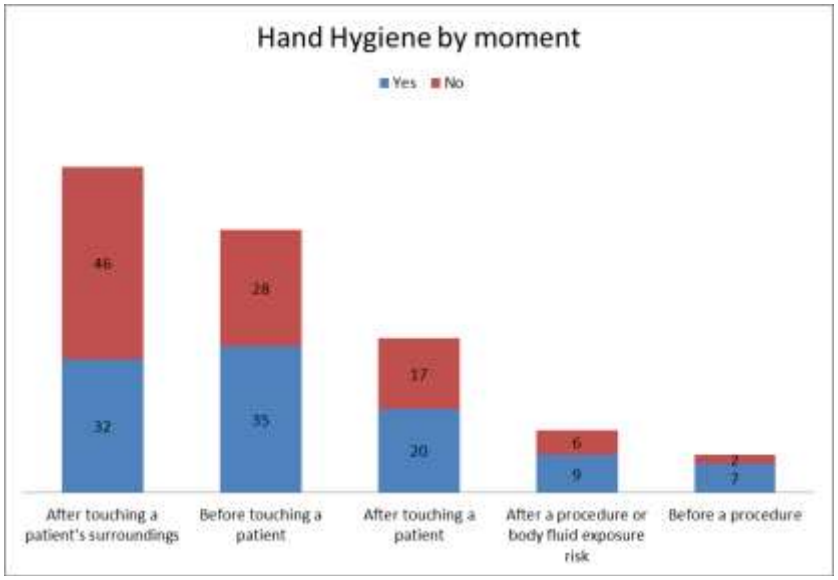
Hand Hygiene Performed for 51 % of opportunities.

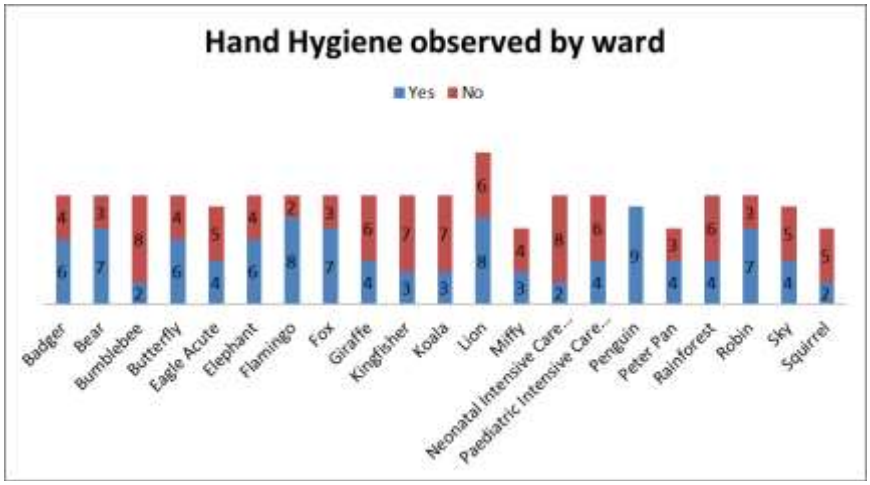
88% were bare below the elbows at the moment of observation.

Infection Prevention Society Standards for contact precautions were reviewed on each ward. The mean % of standards met is 71%.

Compliance was poor across staff groups, wards and 'moment'


Hand Hygiene performed
Yes
No
48
56
10
18
14
7
12
7
4
8
1
5
4
1
3
2
1
Nurse
Doctor
AHP
Health Care Assistant
Student Nurse
Consultant
Admin
Parent/Carer
Ward Sister
CNS

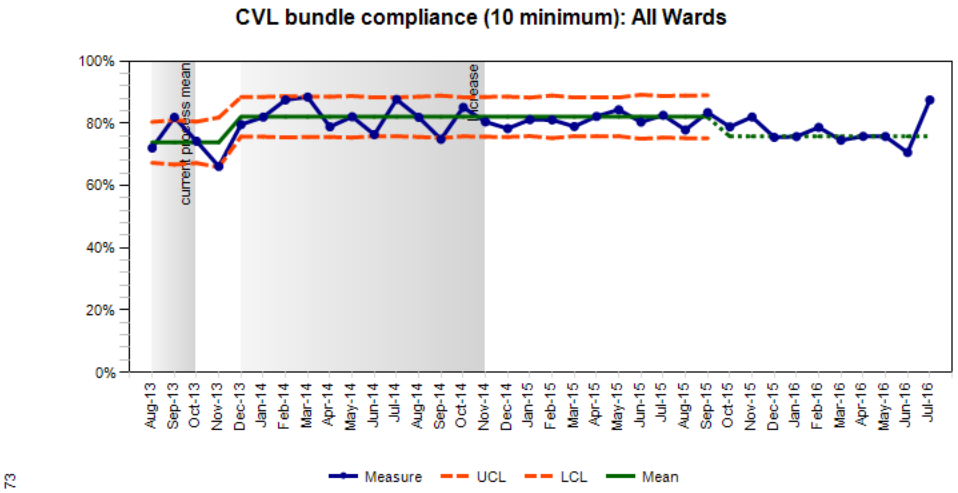

Hand Hygiene by moment
Yes
No
46
32
28
35
17
20
6
9
2
7
After touching a patient's surroundings
Before touching a patient
After touching a patient
After a procedure or body fluid exposure risk
Before a procedure


Hand Hygiene observed by ward
Yes
No
Badger
Bear
Bumblebee
Butterfly
Eagle Acute
Elephant
Flamingo
Fox
Giraffe
Kingfisher
Koala
Lion
Miffy
Neonatal Intensive Care...
Paediatric Intensive Care...
Penguin
Peter Pan
Rainforest
Robin
Sky
Squirrel

9:2 Central Venous Line Ongoing Care

Audit of the Saving Lives HII CVL care bundle is performed monthly from all areas with frequent CVLs. It is reported as All Trust and individual ward data on the Transformation Dashboard. Compliance seen as % of audit observations done is shown on graph.

CVL ongoing care bundle audit – compliance of observations expected (areas not providing a return are scored as zero and bring down the overall Trust audit.)



The time point for March 2016 represents 227 satisfactory observations out of 266 performed, giving a rate of 85%. Completion of audit has fallen off in this financial year, with 3405 audits (compared to 3844 last year) with overall compliance of audits undertaken 88%.This is still below the target for CVC bundle compliance.

9:3 'Line days' data entry for CVC surveillance

To enable the continuous surveillance of GOSACVCRB related bacteraemia, denominator data is entered on a daily basis by wards. Compliance with data entry is audited.

Individual wards are provided with specific data and encouraged to maintain high data entry.All dashboard data is discussed at each divisions infection control board. The divisions must develop a plan to ensure compliance against these audits.

9:4 Antibiotic prescribing, audit and antimicrobial stewardship.

One microbiologist has dedicated time (1PA) for specific work on antibiotic policy. This microbiologist sits on the drugs and therapeutics committee and chairs the antibiotic sub-committee – responsible for updating all policies. An antibiotic policy, devised to increase the likelihood of adequate antibiotic cover during empirical treatment of infection, limit the development of antibiotic-resistant bacteria at GOSH and reduce costs, continues to be observed.

The Trust now has an antibiotic pharmacist who spends one day per week working in the organisation.

A new Antimicrobial Stewardship group was formed and met for the first time in July 2012, to implement the DH guidance and antimicrobial stewardship was included as a CQUIN target for 13/14 and 14/15. There was no CQUIN target for the year 15/16.

Report from AMS committee (chair James Soothill) for activity in financial year 2015/16 in relation to the CQUIN target and AMS:

There was no CQUIN set for this financial year. Regular audit continued for recording of indication for antibiotic prescription was with electronic prescribing on JAC. Outcome > 90%.

All of the old policies were updated during the year 2015-16.

The policy group continued to review policies as they became out of date.

The Drug and therapeutics Committee ruled that if amikacin is used in non-septic patients this should only be following a negative screen for m.1555A>G, a mutation that predisposes patients to deafness following aminoglycoside use. As a result of the APG created a list of all GOSH prophylaxis policies that included Amikacin and reviewed many of them during the financial year 2015-16.

Audits of anti-fungal use were carried out and concluded that use of anti-fungals in the Trust was largely appropriate.

The question of monitoring total antimicrobial consumption was discussed. It was felt that since our large patients consumed so much larger doses than our neonates, units of antimicrobial consumption should reflect patient exposure. For this reason the unit Patient-dose days/per 100 inpatient days was devised and approved. One patient receiving at least one dose of the antibiotic in question on a day would score 1.

Additional comment: Future AMS development

In 2016/17 an additional work stream will be established, lead by the Infectious Disease Consultant, to focus on education, communication and engagement.

Audit of antibiotic consumption with targeted reduction and audit of 72 hour review will be undertaken as part of the 16/17 CQUINs.

9.5 Hospital cleaning

See Facilities report.

10 Occupational Health

Information from Lisa Liversidge, Head of Staff Health and Wellbeing

10:1 Occupational Health new starters

The service is run in house. All 'new entrants' who do not provide evidence of the required immunisations are asked to contact Occupational Health to arrange to be seen within the first two weeks of their start date. The OH Manager has worked hard to ensure to improve attendance and will be introducing a new monitoring system in 2016 to aid improved compliance. Introduction of an upgraded Occupational Health IT system planned this year will enable a changed process where all new starters a will be seen with regards immunisation status before their first day of work.

Staff Immunisations

Staff immunisation is described in the Immunisation and Screening of Healthcare and Laboratory staff policy stored on the Document Library (revised but not uploaded).

The need for continued screening and immunisation for measles has been highlighted by a number of outbreaks in the general population and amongst healthcare staff nationally. Employees who are unable to provide evidence of MMR vaccination or positive serology are vaccinated. This includes administrative and clerical staff and other staff if they work in clinical areas.

Immunisation for varicella zoster virus (chicken pox) is equally important as adult immunity is not guaranteed and staff are frequently exposed to infectious cases.

This programme is monitored by the Occupational Health Department and any incidents reported to the IPCT.

Influenza Vaccine

Health care worker influenza uptake is not high, although GOSH has done well compared to national figures. The Flu Immunisation group co-ordinated an active vaccination programme again for all staff.

The active programme will include a static station available for all staff and ward based stations provided by both local staff and OH. The local staff would form an essential part of the campaign and this is the approach we want (which worked well in the initial swine flu campaign).

Final flu uptake figures for 2015/16 were 48% this is an 8% year on year increase on uptake since 2012/13.

10.2 Exposure to blood borne viruses

Introduction

This report is a summary analysis of the attendances at Occupational Health following attendance for risk assessment and assistance follow exposure incidents. A quarterly analysis is undertaken and any trends are notified to the appropriate manager for action or discussion.

Data and Tables

Analysis by monthly data (Chart 2) has shown alarmingly high incidents of exposure in October and December. Incidents have reduced since January this year, however there has been an annual increase of 14 incidents in comparison to last year. Most exposures are attributed to sharps incidents as opposed to bite/scratches or splashes.

Table 1. Exposure incidents recorded by type 2014/15

Date event	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Grand Total
Bite/Scratch	0	2	2	0	0	0	0	1	0	0	0	0	5
Body Fluid	2	1	0	1	0	0	0	1	0	2	0	1	8
Sharps	6	7	6	4	7	4	8	2	4	4	1	8	56
Total	8	10	8	5	7	4	8	4	4	6	1	9	74

Table 2. Exposure incidents recorded by type 2015/16

Date event	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Grand Total
Bite/Scratch	0	1	0	0	0	0	1		1	0	0	0	3
Body Fluid	2	2	0	0	1	2	2	1	2	0	1	2	15
Sharps	4	5	5	7	2	7	8	3	12	10	6	1	70
Total	6	8	5	7	3	9	11	4	15	10	7	3	88

Table 3: Exposure incidents recorded by staff involved from 01.04.2015

Staff involved	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Grand Total
Medical	1	3		2		2	3		2	4	2	1	20
Nurse	2	3	5	3	1	7	4	2	11	4	3	1	47
HCA	2	1		1	1		3		1	1	2	1	13
Student nurse													
BMS				1	1				1	1			4
Radiographer		1						1					2
Volunteer	1												1
Domestic								1					1
TSW													
ODA							1						1
Total	6	8	5	7	3	9	11	4	15	10	7	3	88

Unsurprisingly nurses are the main recipient of exposure injuries, due to the nature of their work and numbers of nurses employed in comparison to other staff groups.

All of the exposures this year have been with different staff members and spread across the different areas with no hot spots identified.

Table 4: Exposure incidents recorded by how injury was sustained from 01.04.2015

Reason	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Clearing away equipment	2	1		1	2	1		1	7	3	2		20
Struck by diathermy needle							1						1
Post venepuncture	1	3				2	1				1	1	9
Splash	2	2			1								5
Cleaning equipment			3										3

Assisting colleague			1	2		1				1			5
Shaving patient													
Post injection		1											1
Accessing port				1			1			1			3
Sharps bin too full				1				1	1				3
During procedure						5	6	1	3	1	2	2	20
Cut with scalpel									2	1			3
Scratched by patient													
Bitten by patient		1											1
suturing	1			1					1				3
left lying around			1					1					2
Insulin pen							1						1
Resheathing				1			1		1				3
Undertaking blood gasses											1		1
Not immediately discarded into a sharps bin										2	2		4
Not known													
Total	6	8	5	7	3	9	11	4	15	10	7	3	88

Last year it was identified that some staff members were not using the correct procedure for blood gas testing and had stabbed themselves with a needle where a needle need not be used. Training was put in place. There appears to have been an incident in January so trends need to be monitored moving forwards to see if staff once again need reminding regarding procedure. This quarter there appears to have been 4 incidents where staff have not taken a sharps box to the bedside and have gone on to stab themselves when disposing of the sharp from the tray. This will be monitored to see if there is a training need around safe sharps disposal

Summary

During Q3 we saw an alarming rise in incidents. Anecdotally this time was a busy time within the Trust with winter pressures and so on. This year exposure incidents appear to be most

common during a procedure or whilst clearing away equipment. It is worrying is that we have seen 3 incidents due to re-sheathing which should never happen.

Where appropriate, management action has led to an on-going decline in related incidents. Accurate data recording and regular analysis of data enable trends to be picked up and enables central documentation of management action to ensure compliance with Health and Safety standards and the Trust's objective of 'zero harm'.

11 Targets and Outcomes in 2014/15

See section 5 A for full details on mandatory and internal surveillance targets

	Target	Outcome	Comment
MRSA bacteraemia	Zero	1	Contaminant
C. difficile infection	Less than 14 lapse in care	Lapse in care = 2	
MRSA screening Within 48 hours	95%	98%	
MRSA admission screening ICUs	100% (where screening appropriate)	Not available this year	
MRSA colonisation acquisition	Zero	19	
GOS acquired CVC related bacteraemia	< 1.3/1000 line days	1.4	
CVC care bundle compliance	90%	88%	
Hand hygiene compliance	95%	97%	IPC team audit of 202 opportunities showed 51% compliance.
Ventilator associated pneumonia	No target		Limited surveillance on PICU
Root cause analysis of S. aureus bacteraemia	100%	100%	
Surgical site infection surveillance	No target	Some data for each division	Neurosurgery VPSs – 3.6% Cardiac surgery – deep and organ space 0.4%; including superficial and parent reported 7.4%
Compliance with induction	95%	85%	
Compliance with level 2 update	95%	<50%	

12. Training activities

12:1 Infection Prevention and Control Training for all hospital staff

Infection prevention and control teaching is given to all groups of staff, including medical consultants and junior medical staff, on induction. All staff are required to complete the Infection Prevention and Control Level 1 Training which includes the completion of the level 1 e-learning programme, the reading of supporting materials and the answering of the assessment questions. Clinical staff receive the Infection Prevention and Control Level 2 face-to-face session as part of their induction programme. This teaching session is delivered by a member of the IPC team.

As part of the mandatory updates, all staff are required to complete the Infection Prevention and Control Level 1 e-learning programme, including the assessment questions bi-annually. In addition, all clinical staff are required to complete the Infection Prevention and Control Level 2 e-learning programme, including the assessment questions every year.

Attendance is monitored and records are maintained by the Training Department. The level 1 and level 2 e-learning programmes were designed by the IP&CT at GOSH and are based on the Skills for Health Core Skills Framework.

Level 1 completion was 88% as at June 2016.

A new level 2 update has been developed to promote implementation of standard precautions and has been launched through the Gold Site. Our aim is to achieve >95% coverage over the next 18 months, but currently sits at 59% (June 2016).

Hand hygiene training (initial training and yearly update training) for clinical staff and non-clinical staff working on the wards (e.g. house keepers and ward administrators) is delivered locally on each ward/department by the either the practice educators or IPC link practitioners. Hand hygiene training for non-clinical staff not affiliated to a specific ward/department (e.g. porters, linen room staff) is delivered by a member of the IP&CT. All episodes of training and update should be recorded by the training department.

12:2 Infection Prevention and Control Training Days

From October 2013, in addition to the mandatory induction and update training, the IPCT team run quarterly Infection Prevention and Control Training Days. These days are open to all clinical staff, including medical staff. They provide staff with an overview of infection prevention and control specific to the paediatric setting, including an introduction to basic microbiology and virology. In addition, emerging infection control issues such as the increasing threat of antimicrobial resistance and the role of the environment, especially in relation to water- and air management are also discussed. This day has been run regularly and well attended.

12:3 IV training, including aseptic non-touch technique (ANTT)

All nursing staff are trained and assessed in the administration of intravenous (IV) therapy and ANTT by either a practice educator or a member of the IV team. The mandatory yearly

update assessment of the administration of IV therapy is undertaken locally on the wards by either a practice educator or a member of the IV team. Currently there is no assurance that training for medical staff happens or is recorded (especially for peripheral cannula insertion and ANTT)

12.4 Intravascular catheter insertion

Vascular access devices are significant source of risk, including infection, in the health care environment. All staff inserting devices should be trained and competent and all Divisions should be working towards implementing a standard policy.

Part B - Infection control Action Plan for the year 2015/16
Infection Prevention & Control (IPC) Team Annual work plan 2015/16

Shown here are the 10 essential from the Code of Practice. Work programmes are like to these codes.

Code of practice criteria	
1	Systems to manage and monitor the prevention and control of infection. These systems use risk assessments and consider how susceptible service users are and any risks that their environment and other users may pose to them.
2	Provide and maintain a clean and appropriate environment in managed premises that facilitates the prevention and control of infections.
3	Ensure appropriate antimicrobial use to optimise patient outcomes and to reduce the risk of adverse events and antimicrobial resistance.
4	Provide suitable accurate information on infections to service users, their visitors and any person concerned with providing further support or nursing/ medical care in a timely fashion.
5	Ensure prompt identification of people who have or are at risk of developing an infection so that they receive timely and appropriate treatment to reduce the risk of passing on the infection to other people.
6	Systems to ensure that all care workers (including contractors and volunteer) are aware of and discharge their responsibilities in the process of preventing and controlling infection.
7	Provide or secure adequate isolation facilities.
8	Secure adequate access to laboratory support as appropriate.
9	Have and adhere to policies, designed for the individual's care and provider organisations, that will help to prevent and control infections.
10	Providers have a system in place to manage the occupational health needs and obligations of staff in relation to infection.

Programme of Work	Lead	Time frame	Progress to date	Action required	Hygiene code
Audits- finalise an environmental monitoring tool for use by the IPC team across the organisation.	IPC Team	Dec 2016	Provisional tool complete,	Complete on next team day	1, 2
Audits- update the hand hygiene audit tool to reflect the 5 moments	IPC Team	March 2017			1, 6, 9,10
Audits- monitor wards/departments compliance with the annual audit plan for hand hygiene. Support divisions with improving compliance as and when needed.	IPC Team	On-going			1, 6, 9, 10
Audits- High impact and CVL infections are monitored on a monthly basis. . These results and any improvement processes which are put in place will be discussed at divisional infection control meetings.	IPC Team	On-going			1, 6, 9, 10
Audits- work with QI to create a dashboard related to the nursing quality indicators and matrix of measures that reflects IPC information.	IPC Team	Commence Sep 2016			1, 6, 9, 10
Audit- the team will audit compliance against policies in place across the trust should be monitored	IPC team	To be carried out at least bi-annually.			1, 7

through audit. Examples of this include the isolation audit.					
Training- The IPC team will monitor and feedback training compliance with level 1 & 2 training	IPC Team	On-going			6
Training- The team will review IPC training carried out across the trust	IPC Team	March 2017			6
Information dissemination- The team will update/create patient/staff infection leaflets pertinent to infection prevention control	IPC team	On-going			3
Information dissemination- the team will review and update policy and guidelines to ensure they reflect new evidence and best practice	IPC team	On-going			
Surveillance- The team will continue to report and collect information on mandatory surveillance categories required by PHE. Where the infections are healthcare associated a root cause analysis +/- RCA review meeting will take place.	IPC Team	On-going			1, 5, 9
Admission screening- to monitor compliance with MRSA admission screening.	IPC Team	To commence ASAP when IT support acquired.			1
Surveillance- To be involved with RCA into	IPC	On-going			1, 6

deep/organ space wound infections which will be led by the divisions and reported back through the divisional infection control meetings.	Team				
Water management- the team will co-ordinate the testing and management of appropriate water outlets for pseudomonas aeruginosa and legionella in close collaboration with the estates department. In addition the team will access and provide guidance on any other waterbourne pathogens which may cause disease in patients/staff.	IPC team	On-going			1, 8, 9
Ventilation- the team will work closely with the estates department to ensure rooms with specialist ventilation are managed and maintained in an appropriate manner.	IPC team	On-going			1, 9
Cleaning- the team will work with clinical areas to develop specifications around cleaning for the upcoming tender.	Helen Dunn	April 2016			2,
Re-development- the team will actively be involved with the redevelopment works carried out within the trust as well as any refurbishment that takes place ensuring infection control standards are adhered to.	Helen Dunn	On-going			7, 2

Divisional IPC support- the team will provide infection control support to the divisions at divisional infection control meeting and on a day to day basis. In order to facilitate this the team will each lead on certain divisions.	IPC Team	On-going.			1