Attachment V

# GREAT ORMOND STREET HOSPITAL FOR CHILDREN NHS FOUNDATION TRUST

# INFECTION PREVENTION AND CONTROL ANNUAL REPORT

## April 19 - March 20 (Part A)

and

## ACTION PLAN April 20 - March 2021

## (Part B)

Compiled by: Helen Dunn- Consultant Nurse Infection Prevention Control & Director of Infection Prevention Control

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

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**GREAT ORMOND STREET HOSPITAL FOR CHILDREN NHS FOUNDATION TRUST**
**INFECTION PREVENTION AND CONTROL ANNUAL REPORT**
**April 19 - March 20**

Summary

There is a fully functioning Infection Prevention and Control programme established at GOSH, with involvement of all staff.

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

Key achievements this year include:

- Development of ward level data dashboards
- Embedding of the IPC audit days and associated action plans
- Expansion of the gloves off work prior to covid-19
- Build and commissioning of MEDU and refurbishment of EDU
- Launch of Electronic Patient Record and subsequent optimisation
- Successful re-tender of the sterilisation services
- Response to covid-19 outbreak

Key areas of activity for 2020/2021:

- Respond to the covid-19 pandemic and provide support and infection control resource for the organisation
- Work to unify the surgical site surveillance services across to trust to provide enhanced services for all patients
- Work with estates to complete the water safety plan
- Work with facilities to re-tender the cleaning services
- Improve compliance with MRSA and stool screening on admission.
- Improve compliance with care bundles, in particular central venous lines.
- Laboratory expansion to enable appropriate testing for management of patients during covid-19 pandemic.

We strive to keep the right balance.

Helen Dunn
Consultant Nurse Infection Control & DIPC

## Part A Executive summary of full report

## 1 Introduction

Great Ormond Street Hospital for Children NHS Trust recognises the obligation placed upon it by the Health and Social Care Act Code of Practice of the prevention and control of infections and related guidance.

### 2) Description of infection control arrangements

Director of Infection Prevention and Control (DIPC) and ICD- Dr John Hartley
Executive lead for IPC - Chief Nurse, Alison Robertson
Lead Nurse for Infection Prevention and Control – 1 wte, Helen Dunn
Deputy Lead Nurse in IP&C 1 wte; IPC nurse 1 wte;
Clinical Scientist in IP&C 1wte (currently 0.4 in place as scientist on NIHR fellowship 0.6; returns to wte June 2019)
Other consultant microbiologists – 4 PAs
IPC Administrative support and Data Management **–** 0.6 wte
IPC Data analyst – 2 years fixed contract commenced Mar 2018, made permanent March 2020.
Infectious Diseases CNS leads on Tuberculosis related issues;
Antimicrobial stewardship: As part of job plan for infectious disease consultant (chair of AMS committee), Antimicrobial Policy Group Chair - consultant microbiologist 1 PA (as part of IPC activity), One wte antimicrobial pharmacist

Sepsis Programme – now lead by ID Consultant 0.5 PA; supported by ID CNS

### Development of IPC Team

- IPC data analyst role made permanent March 2020.
- Funding was agreed to employ a band 7 IPC nurse to support the Built Environment team. This role has been appointed to but there was a delayed start into post due to covid-19.

### Data analysis - Quality Improvement team

- Dashboard development and display.
- Data analyst to develop service and transition to new integrated system (RL Solutions & Epic)

### 2.3 Directorate Responsibility

Each Directorate had a local group to drive local planning and implementation of IPC actions. This had faltered following the clinical service restructure but has now recommenced with 4 directorate level meetings taking place monthly and reporting to the IPCC. These meetings are:

- Medical
- Surgical
- Heart & Lung
- IPP

**2.4 The Infection Prevention and Control Committee (IPCC)** meets every month (except Aug & Dec). The committee reports to Patient Safety and Outcome Committee.

### *2.5* Reporting lines

The DIPC is accountable to the CEO and reports quarterly to the Board.

The DIPC and Lead nurse for IPC meet bi-weekly with Executive lead.
A report of all significant IPC issues is presented weekly to the Safety Team.
Significant IPC issues are entered on Datix, collated and passed through reporting line.
An annual plan is written and included in each annual report.

### *2.6* Antimicrobial stewardship and Sepsis

There is an expanded antimicrobial stewardship programme with regular committee meetings taking place and reporting to the IPCC. Whilst part of normal trust business, sepsis has met significant obstacles with extracting data from the EPR system. Work is underway to improve the recognition of sepsis and recording of appropriate interventions within EPR.

### *2.8* IPC advice and On-call service*.*

Continuous advice service provided by IPC Team / Consultant Microbiologists (out of hours ID consultant contribution to IPC service was withdrawn)

### *3.3* Outbreak Reports, Serious incidents and investigations

Contemporaneous outbreak reports are written by the IPCT and fed back to clinicians and managers and disseminated through the IPC Committee. There were no IPC SI's in 2019/20. A SI was undertaken as a result of bedbugs which was managed by the operational team and the estates team. A major outbreak group was commenced for a staff member who tested positive for COVID-19 in March 2020.

## 4 Budget allocation to IP&C activities

### 4.1 Staff

IPC Team Staff budget sits within Department of Microbiology, Virology and IPC
Directorates fund own audit and surveillance staff, including surgical site infection surveillance

### 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 Mandatory reporting for 2019/20

***5.1*** **MRSA bacteraemia** = 1 episode, not attributed to trust (2 previous year, both trust attributable)
**5.2 MSSA bacteraemia** = 23 episodes (26 previous year)
**5.3** ***E. coli*** **bacteraemias** = 8 episodes (18 previous year)
**5.4** ***Klebsiella*** **species** = 26 episodes (17 previous year)
**5.5** ***Pseudomonas aeruginosa*** = 18 (16 previous year)
**5.6** ***Glycopeptide resistant enterococcal bacteraemia (GRE)*** = 2 in one child (7 previous year)
***5.7 Clostridium difficile*** **associated disease** = 7 reported, 2 trust attributable; 0 lapse in care.

### Local surveillance

### 5.9 GOS acquired Central Venous Catheter related bacteraemia

1.3/1000 line days (72 episodes). (Rate 1.5 previous year).

**5.10 Other bacteraemia episodes and antimicrobial resistance**

Number of episodes - 528 clinical episodes. A rise from 432 last year.
Rate of primary gram negative resistance in blood culture episodes – this year has seen a reduction in gentamicin resistance but a 10% rise in resistance to piptazo is still noted justifying the use of piptazo and amikacin as a first line for gram negative sepsis.

**5:12 Surgical Site Infection Surveillance and Prevention**
SSI surveillance was limited across the organisation this year. This is due to the EPR implementation and additional work required to bring data out of Epic into the new reporting and recording system for SSI (RL Datix).

5.13 Surgical specialties
We remain an outlier for spinal surgery but have seen a decrease in the reported rate of infection; variation explained by the complex case mix. A specific programme to improve the surgical pathway has assisted with this decrease in rates which has resulted in a lower rate.

5.12 Cardiothoracic specialities
The Cardiothoracic SSI group has met regularly throughout the year with good involvement from the MDT. Due to staffing issues surveillance was not completed every month. Organ space infection was rare.

5.13 Neurosurgery
Continuous surveillance is undertaken as part of weekly audit programme, with dash boards for permanent shunts.

It is difficult for the Divisions to maintain surveillance, especially due to staff turnover, and alternative structure may be needed in the long term, for which a proposal will be developed as part of the IPC work plan for 2020/21.

**5:16 Viral infections detected while at hospital**

A decrease in enteric virus testing is noted. There has been an increase in both HAI & CAI respiratory viruses, the most likely cause is an increase in viral testing for new pathogens as standard in-house. Failure to identify and isolate symptomatic children is continues to be a problem but is improving with more patients being placed in isolation when symptoms develop.

| Respiratory viral infections detected: | Total | Community onset | Hospital onset |
|---|---|---|---|
| Total in 2017/18 | 509 | 354 | 155 |
| Total in 2018/19 | 810 | 555 | 255 |
| Total in 2019/20 | 920 | 625 | 295 |
| **Enteric viral infections detected:** | | | |
| Total in 2017/18 | 498 | 272 | 226 |
| Total in 2018/19 | 595 | 307 | 288 |
| Total in 2019/20 | 339 | 184 | 155 |

**5:18 MRSA Admission Screening and colonisation/carriage**
We continue with a universal admission screening policy, the average compliance with this was 50%.

There was a decrease in acquired MRSA from 22 in 2018/19 to 16 in 2019/20. Many cases were isolated and extensive investigation found no point source. However one outbreak in cardiac was related and a potential sources identified.

**5:19 Multiple resistant 'gram negative' (MDRGN) organisms screening and rates**
Universal admission faecal screening is advocated and compliance is around 12%. Detection of MDR-GN carriage / colonisation remains steady. There was an increase of acquired across both standard gram negative and highly resistant, carbapenemase producing organisms.

**5.20 Vancomycin resistant enterococci**

Cases detected both in hospital and out of hospital continued to decline.

**5.21 Serious Untoward incidents and complaints involving Infection, major outbreaks and threats**
No SI's were declared.
There were 2 major outbreaks; cardiac MRSA and SARS-CoV2 in a staff member also within cardiac. There was also an adenovirus outbreak of sustained transmission in Robin and Fox ward.

**6. Hand Hygiene and CVC on going care guidelines**
Appropriate guidelines are in place and audited quarterly. Care bundle audits have been updated to reflect newly updated national guidance.

**7. Facilities**
**Cleaning-** No report received. Improvement plan completed and maintenance of cleaning standards achieved. SI regarding VHP occurred- action plan completed.

**Decontamination-** A new sterile services provider has been tendered and appointed. The new build of a Medical Equipment Decontamination Unit (MEDU) was complete and the Endoscopy Decontamination Unit (EDU) was refurbished.

**8. Estates-**
Ventilation: The trust specialist ventilation programme continues. Work was undertaken to verify 6 additional source isolation rooms on Pelican and prepare Hedgehog as the COVID-19 cohort ward.
Water: The Water Safety Management Group continues to develop and manage risk associated with water. Risk from heater cooler units has been controlled. Sampling was suspended in some areas due to the COVID-19 pandemic.
Redevelopment / projects – IPC continue to work with redevelopment. The development of the IPC post within redevelopment was approved and the post appointed to.

**9. Trust wide audit**
A Trust annual IPC audit programme is followed with results available on the trust intranet and Nursing Care Quality Dashboards.

Trust IPC audit days are held quarterly to complete hand hygiene and point prevalence audits as well as associated action plans.

'Bare-below-the-elbows' component of hand hygiene remains continues to be excellent with compliance over 90%, hand hygiene compliance remains lower than previous years but areas for improvement remain the focus of the audit rather than demonstrating compliance.

Central venous line care bundle audit remains lower than acceptable. Most areas for improvement remain around documentation. Work was undertaken with EPR to make this easier which was slow to implement but is now completed.

**9:5 Antimicrobial stewardship and Sepsis**

Antimicrobial Stewardship – the CQUINS is now discontinued and the reduction in antimicrobials is part of the standard contract. A fully functioning AMS team is now embedded.

**9.6 Sepsis report**

Sepsis is led by an ID consultant. The programme is now part of normal business for the organisation. Work is underway to improve the identification and management of sepsis within EPR.

**10. Occupational Health**

OH continues to provide 'new entrants' screening ,"Exposure Prone Procedures" clearance, staff immunisation (including influenza, final uptake 59% (61% previous year) and blood borne virus exposure follow up (57 events, compared to 65 in previous year).

| **11 Targets and Outcomes** | Target | Outcome |
|---|---|---|
| MRSA bacteraemia – | 0 | 0 |
| *Clostridium difficile* infection (lapses in care) | <5 | 2 (0 lapse in care) |
| Rate of GOS acquired line infection /1000 days | < 1.3 | 1.3 |
| Analysis for S. aureus bacteraemias | 100% | 100% |
| MRSA colonisation acquisition | 0 | 16 |
| Hand hygiene audits | 95% | 78%, |
| CVL care bundle audits | 90% | 47% |
| For substantive staff: | | |
| IPC level 1 induction | 95% | 96% |
| IPC level 2 update | 95% | 89% |

**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.

**New training modules:**

The online level 2 update training package is due to be updated.

**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** an update is provided for nursing staff locally but currently there is no assurance that this is provided to all medical staff.

# GREAT ORMOND STREET HOSPITAL FOR CHILDREN NHS FOUNDATION TRUST
# INFECTION PREVENTION AND CONTROL ANNUAL REPORT
# April 19 - March 20

**AUTHOR: Helen Dunn – Consultant Nurse IPC & Director of Infection Prevention Control**

**Other reports as individually credited.**

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## Part A - Full Infection Prevention and Control Report for GOSH 2018/19 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 of 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.

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. This is listed directly in medical and nursing job descriptions and expressed through requirement to provide safe care by compliance with Health and Safety, Control of Substances Hazardous to Health (COSHH), and other legislation and regulations

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 Directorate Teams, Occupational Health, Estates and Facilities, Built Environment, 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 a programme for prevention, surveillance, active investigation, 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 clinical directorates and corporate teams has increased and is key to success. The IPC team, Directorate 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:**

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 guidances are 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.

The IPC programme is described in the Trust Policy 'Infection Prevention and Control Assurance Framework and Operational Policy', October, 2019.

This annual report lists the IPC team structure and 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 a significant investment in Antimicrobial Stewardship team and microbiology consultant time which began implementation in 2018/19.

When considering IPC in children it is important to remember

1. IPC activity requires energy and commitment from all staff and resources.
2. The two 'well known' mandatory key indicators reveal 0 MRSA bacteraemias and 2 trust attributable cases of C. difficile infection (with no lapses in care). However, this is the tip of the iceberg.
3. There were 76 bacteraemias reported in the mandatory categories and 72 identified as GOS acquired line infections (out of 528 total possible bacteraemia episodes).
4. Looking at the non-mandatory infection, there was an even greater burden of infection, with 450 enteric and respiratory viruses recognised as being acquired in hospital.
5. In addition to infection, 16 children acquired MRSA colonisation, 82 multidrug resistant gram negatives and 4 VRE.
6. The necessary IPC activity striving to prevent or control these infections impacts 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.
7. IPC activity is not just about a high profile hand hygiene campaign – important that it is - but is also 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 to reduce risk e.g. to prevent surgical site infection, by all staff all the time. These may be inadvertently bypassed when other activities are high.
8. 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.

9. 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. As the figures show above, the priorities are different.
10. Many of the children require vascular access devices. It is particularly important to protect them from vascular device associated infection.
11. 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 – especially respiratory and enteric viruses and antibiotic resistant organisms. The latter is a major challenge as the worldwide threat from antibiotic resistance increases.
12. 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.

    We strive to keep the right balance.

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 for IPC - 0.1 wte allocated as DIPC. 0.2 as Infection Control Doctor).

### *2.2 The Infection Prevention and Control Team (IPCT) during 2017/18*

***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
- Principal Clinical Scientist in IPC (0.6 NIHR fellowship until June 2019; currently with some backfill undertaking scientific IPC activity. Elaine is also the Trust Healthcare Clinical Scientist lead).
- Infectious Diseases CNSs lead on Tuberculosis control as required

***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 (1 for AMS)
- Dr James Hatcher – Consultant Microbiologist: 1 PA AMS,
- Professor Judy Breuer – Consultant Virologist (advisory)

*Working with:*

- Dr Alasdair Bamford - Consultant in Infectious Diseases, lead for Antimicrobial Stewardship for most of year.
- Professor Nigel Klein – Professor of Infectious Diseases and Microbiology
- Dr Delane Shingadia – Consultant in Infectious Diseases
- Dr Louis Grandjean New consultant started June 2018
- Dr Karen Moshal – Consultant in Infectious Diseases, Lead for Sepsis Programme- 0.5 PA; supported by ID CNS.

Antimicrobial stewardship (AMS) -
One WTE pharmacist
Paediatric infectious disease consultant AMS time – Chair of AMS committee
Antimicrobial Policy Group Chair - consultant microbiologist 1 PA (IPC time)
Consultants in microbiology and PID contribute.

**Administrative support**
Administrator IPC Team – 0.6 WTE

**IPC Data management**
A new data analyst started in March 2018 and will cover transition to the new IPC Data management system (RL Solutions) which will be implemented in parallel to EPIC and the new lab systems (Beaker). Transfer to new systems underway. In March 2020 this became a permanent role with support provided across the laboratory but with a focus on IPC activity and data.

**Development of IPC Team**: In recognition of the ever growing demands for IPC services (including antimicrobial stewardship, expansion of services with PICB opening and work with DPS on new and existing developments) the team has expanded, but not as quickly as hoped.
The new fixed term IPC data analyst (started in March 2018) continues and is now a permanent post
Funding was agreed to employ a band 7 IPC nurse to support the Built Environment team. This role has been appointed to but there was a delayed start into post due to covid-19.

**Quality Improvement Team -**
Continues to provide invaluable central support for audit and surveillance data display.

**Executive lead for IPC**
The Chief Nurse is the Executive lead for IPC; supported for medical issues by the Deputy medical director. Alison Robertson took over this role in April 2018.

**2.3 Divisional Responsibility – change to new Directorates**
Under the terms of the Trust IPC Strategy set out previously each Division developed a local Divisional group / structure to drive local planning and implementation of IPC actions.

The structure had changed with the divisional structure changes in 2016/7 with Divisional IPC meetings for J M Barrie, Charles West and International and Private Patients.
After the restructuring, only the IPP Meetings continues. A new Directorate system started in Aug 2019.The trust now functions under 9 directorates:

- Body, Bones & Bones
- Brain
- Research & Innovation
- Blood, Cells & Cancer
- IPP
- Sight & Sound
- Operations & Images
- Heart & Lung
- Medicines, Tests and Therapies

**2.4 The Infection Prevention and Control Committee (IPCC)**

The Terms of Reference were updated in 2019 to reflect the Trust re-structure and developments in IPC.

Committee continued to meet monthly in 2019/20

Membership by role:

- The Director of Infection Prevention and Control – currently the Chair
- Executive lead for infection control – currently the Chief Nurse
- Medical Director team (TBC)
- Lead Nurse in IPC – currently the deputy DIPC and the committee vice-Chair
- IPC Team
- Infection Control Doctor
- Consultant Microbiologist(s)
- Paediatric ID consultant
- Director of Estates & Facilities (or Head of Estates and Head of Facilities as representatives)
- Head of Staff Health & Wellbeing (or representative)

- Representation from each clinical directorate (role not specified)
- Pharmacy/AMS
- Member of Risk team
- Representation from Academic Paediatric Infectious Diseases, ICH
- Public Health England representative

Administrative support: provided by IPC Administrator

Topics discussed or ongoing projects in the year include:
Agreement reached to modify mask selection for use as personal protective equipment.
Agreement reached to change use of isolation practices in outpatients.
Continuation of IPC audit days
Adoption and implementation of offensive waste stream
Directorate reporting structure
Gloves off

### *2.5 Reporting lines*

The DIPC is accountable to the CEO, continues to provide regular reports directly to the Trust Board and present an Annual Report

The executive lead for IPC is the Chief Nurse, and the DIPC and Lead nurse for IPC meet bi-weekly with her.
A highlight report of all acute significant IPC issues are presented weekly to the Safety Team.

The IPCT provide a report of all incidents dealt with by the IPCT to each IPCC.
The IPCC reports to the Patient Safety and Outcome Committee.
An IPC Team action plan is included in the annual report.
During management of incidents the IPC team or clinical area complete clinical incident forms returns via Datix. The 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.

### *2.6* **Antimicrobial Stewardship and Sepsis**

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

Antimicrobial Stewardship – Dr Bamford (ID Consultant) has been chair since Oct 2016. AMS focused on review and provision of Antimicrobial Policies (Policy group), and audit of consumption and antibiotic review (in line with the 18/19 CQUIN). The Trust has supported a significant business case for additional staff time to enable expansion of AMS activity. A new wte pharmacist and additional infectious disease and microbiology consultant became available during 2018-19. An AMS report is included below.

Surviving Sepsis – the Trust established a dedicated improvement project team to lead on implementation of the Surviving Sepsis / Sepsis 6 initiative. This was led by consultant surgeon Ms Clare Rees who has now left the trust and Dr Karen Moshal, ID Consultant, is now lead. Report below. Full report below.

### *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 Directorates when requested and there is open access when assistance is needed.
Specialties and Directorates are advised to put IPC issues on their risk registers for review in RAG/Directorate 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, now part of Charles West 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 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 during out of working hours.

### 2.9 KPMG Infection Control Audit internal audit 2019-20

No internal audit was undertaken this year.

## 3 Plans and Reports

### *3:1 DIPC Board Reports*
201-04-04 Report to Quality, Safety and Experience Assurance Committee
2019-07-17 Trust Board, with presentation of Annual Report
2019-11-27 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* Serious incidents, performance reviews and major outbreaks
The DIPC ensures contemporaneous outbreak reports are written by the IPCT and fed back to clinicians and managers and disseminated through the IPC Committee.

There was no SI related to IPC in 2019/20. An SI was reported related to bed bugs but was led by the hospital operations team and estates.

Major outbreak control group: The major outbreak group was convened in March 2019 following a staff member being identified as positive for covid-19. Large scale testing and follow up of exposed staff members and patients was undertaken.

## 4 Budget allocation to IP&C activities

### 4.1 Staff

Medical: There were 6 specific consultant programme activities funded to consultant medical microbiologists for IPC (3 allocated to Dr John Hartley, 2 and 1 to the others). The fourth consultant microbiologist started Nov 2018, and has one PA for antimicrobial stewardship.

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

Scientific: 1 wte Band 8a Principal Clinical Scientist, currently 0.4 wte working in IPC and 0.6 secondment on NIHR Clinical Fellowship.

Laboratory: The laboratory is currently understaffed with UKAS accreditation to the appropriate ISO standard on 26.07.2017. UKAS number 8675. Reaccredited in 2019.

Administrative: 0.6 wte PA to IPC Team. 2 year fixed term data analyst from March 2018- now a permanent role from April 2019

SSIS Team: Surveillance was devolved to the Directorates in 2013 and is undertaken and funded differently in different areas. Until the latest re-structure there was:
Body, Bones & Mind - Surgery (except Neurosurgery) – one full time surveillance officer, supported by practice educator and Matron
Neurosciences – surveillance through regular MDT audit
Heart & Lung- Cardiothoracic - one surveillance officer supported by practice educator; surveillance incomplete in 19/20 due to staffing issues.
Neurosciences – audit data base

With Divisions rearranged into current Directorates surveillance has continued across directorates.

### 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*

Mandatory data can also be viewed on the PHE website
https://fingertips.phe.org.uk/profile/amr-local-indicators/

**Mandatory bacteraemia reported:**

The overall number of bacteraemias reported under the mandatory HCAI process has shown an increase from last year. All figures shown in table below.

| Year | ECOLI | Klebsiella | MRSA | MSSA | Pseudomonas | Grand Total |
|---|---|---|---|---|---|---|
| 10/11 | 25 | 20 | 3 | 29 | 13 | 90 |
| 11/12 | 14 | 29 | 3 | 15 | 8 | 69 |
| 12/13 | 17 | 20 | 3 | 26 | 14 | 80 |
| 13/14 | 19 | 22 | 1 | 30 | 11 | 83 |
| 14/15 | 15 | 14 | 0 | 23 | 10 | 62 |
| 15/16 | 14 | 17 | 2 | 20 | 11 | 64 |
| 16/17 | 20 | 19 | 3 | 26 | 13 | 81 |
| 17/18 | 18 | 18 | 3 | 14 | 14 | 67 |
| 18/19 | 18 | 17 | 2 | 26 | 16 | 79 |
| 19/20 | 8 | 26 | 1 | 23 | 18 | 76 |
| **Grand Total** | **168** | **202** | **21** | **232** | **128** | **751** |

Attachment V

| Year | ECOLI | HAI | CAI | ?AI | Klebsiella | HAI | CAI | ?AI | MRSA | HAI | CAI | ?AI | MSSA | HAI | CAI | ?AI | Pseudomonas | HAI | CAI | ?AI | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10/11 | 25 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 90 |
| 11/12 | 14 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 69 |
| 12/13 | 17 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 80 |
| 13/14 | 19 | 0 | 0 | 0 | 22 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 83 |
| 14/15 | 15 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 62 |
| 15/16 | 14 | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 64 |
| 16/17 | 20 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 81 |
| 17/18 | 18 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 67 |
| 18/19 | 18 | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 79 |
| 19/20 | 8 | 6 | 2 | 0 | 26 | 15 | 11 | 0 | 1 | 0 | 1 | 0 | 23 | 13 | 10 | 0 | 18 | 8 | 10 | 0 | 76 |
| **Grand Total** | **168** | **6** | **2** | **0** | **202** | **15** | **11** | **0** | **21** | **0** | **1** | **0** | **232** | **13** | **10** | **0** | **128** | **8** | **10** | **0** | **751** |

Gram negative bacteraemia rates remain stable. A slight decrease in E-coli is noted in the year but an increase in klebsiella species seen.

***Staphylococcus aureus***

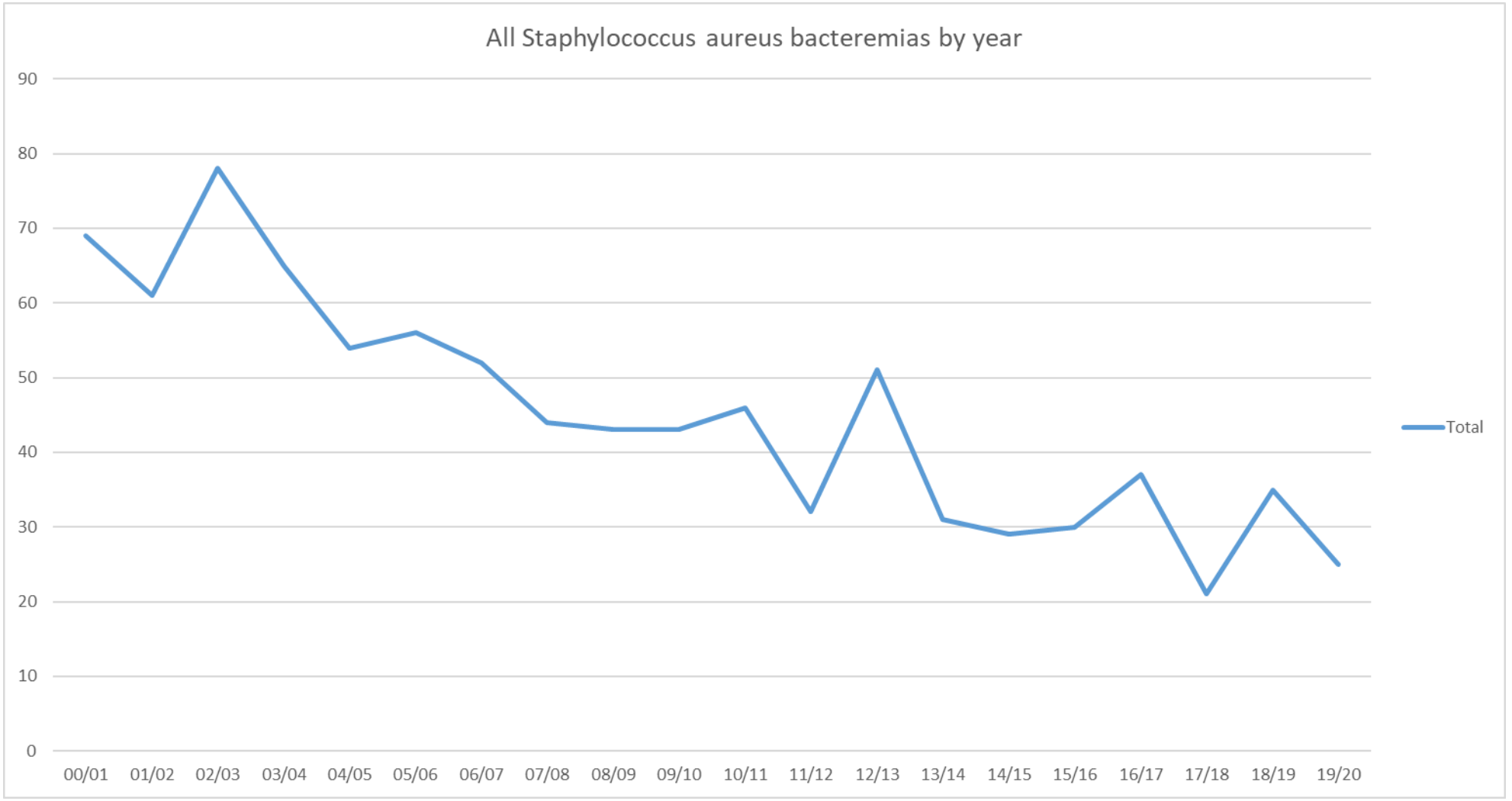
**5.1 MRSA bacteraemia -** In 2019/20 financial year 1 children had an MRSA bacteraemia. This was not Trust attributable.

**5.2 MSSA bacteraemia** - In 2019/20 financial year 22 children had an MSSA bacteraemia, 13 Trust attributable.

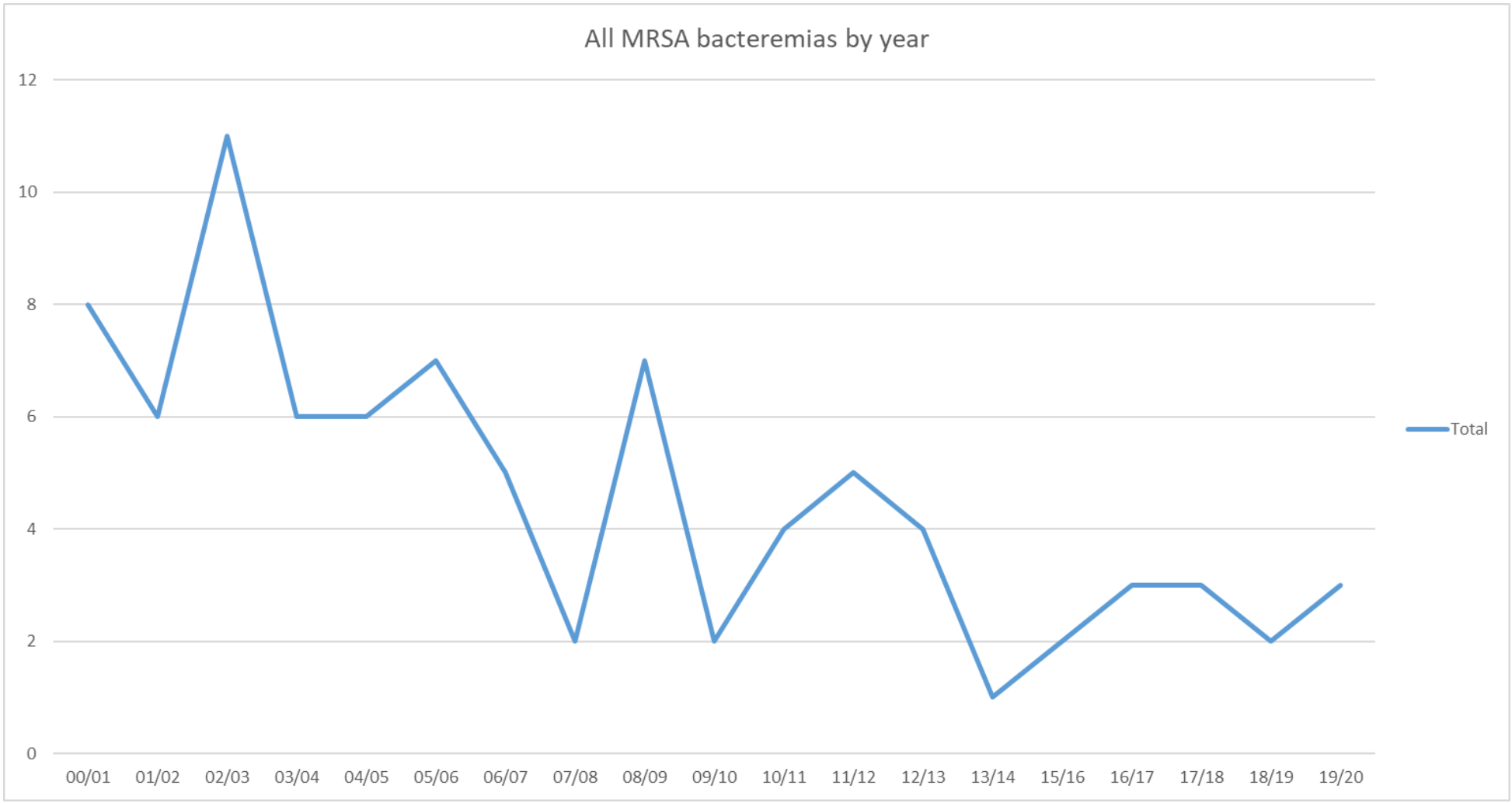
Analysis of all S. aureus bacteraemias.

Graphs showing number of S. aureus bacteraemias (all and MRSA alone) by financial year

Attachment V



Attachment V



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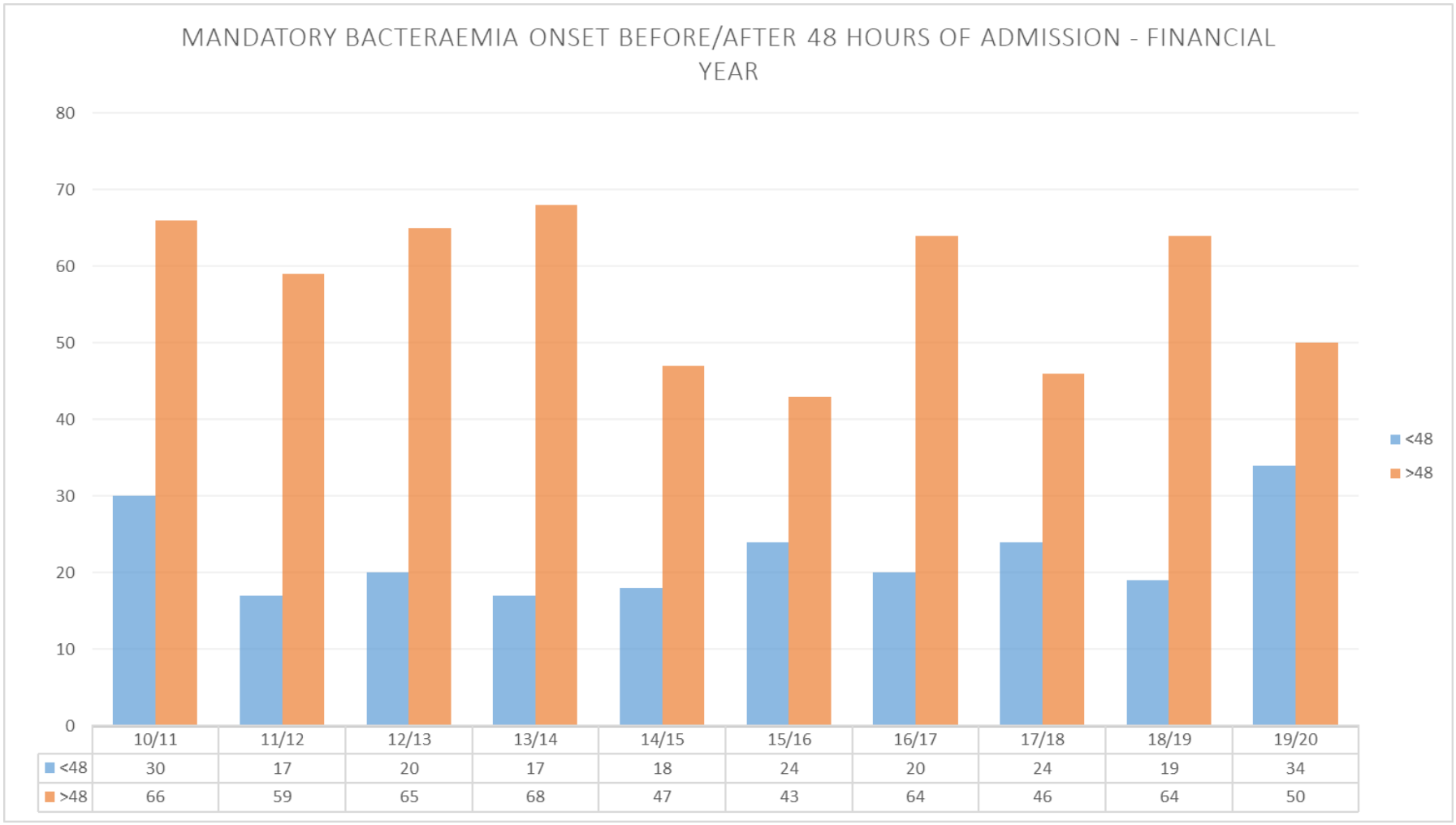
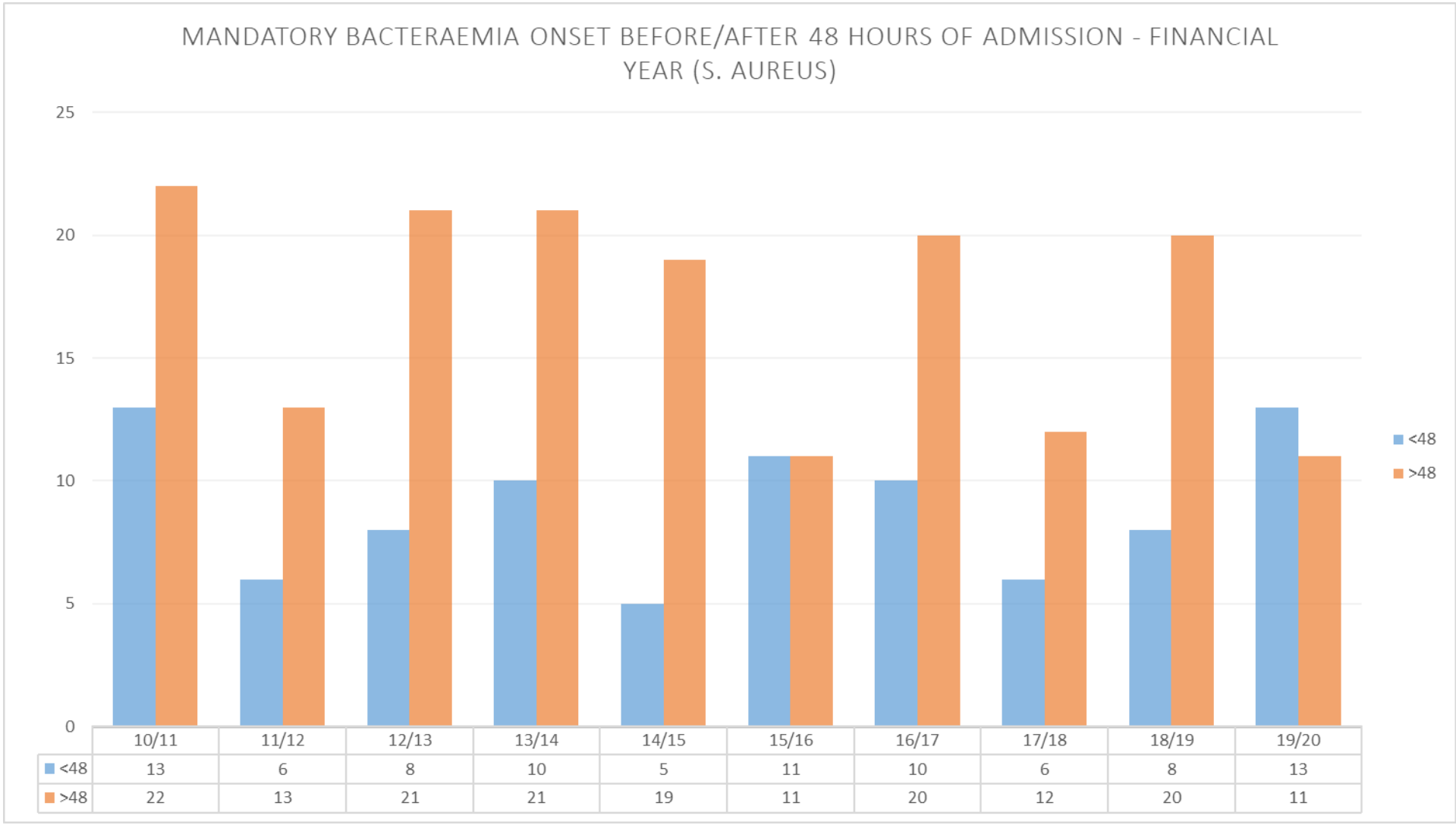



| | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | 16/17 | 17/18 | 18/19 | 19/20 |
|---|---|---|---|---|---|---|---|---|---|---|
| <48 | 30 | 17 | 20 | 17 | 18 | 24 | 20 | 24 | 19 | 34 |
| >48 | 66 | 59 | 65 | 68 | 47 | 43 | 64 | 46 | 64 | 50 |




| | 10/11 | 11/12 | 12/13 | 13/14 | 14/15 | 15/16 | 16/17 | 17/18 | 18/19 | 19/20 |
|---|---|---|---|---|---|---|---|---|---|---|
| <48 | 13 | 6 | 8 | 10 | 5 | 11 | 10 | 6 | 8 | 13 |
| >48 | 22 | 13 | 21 | 21 | 19 | 11 | 20 | 12 | 20 | 11 |

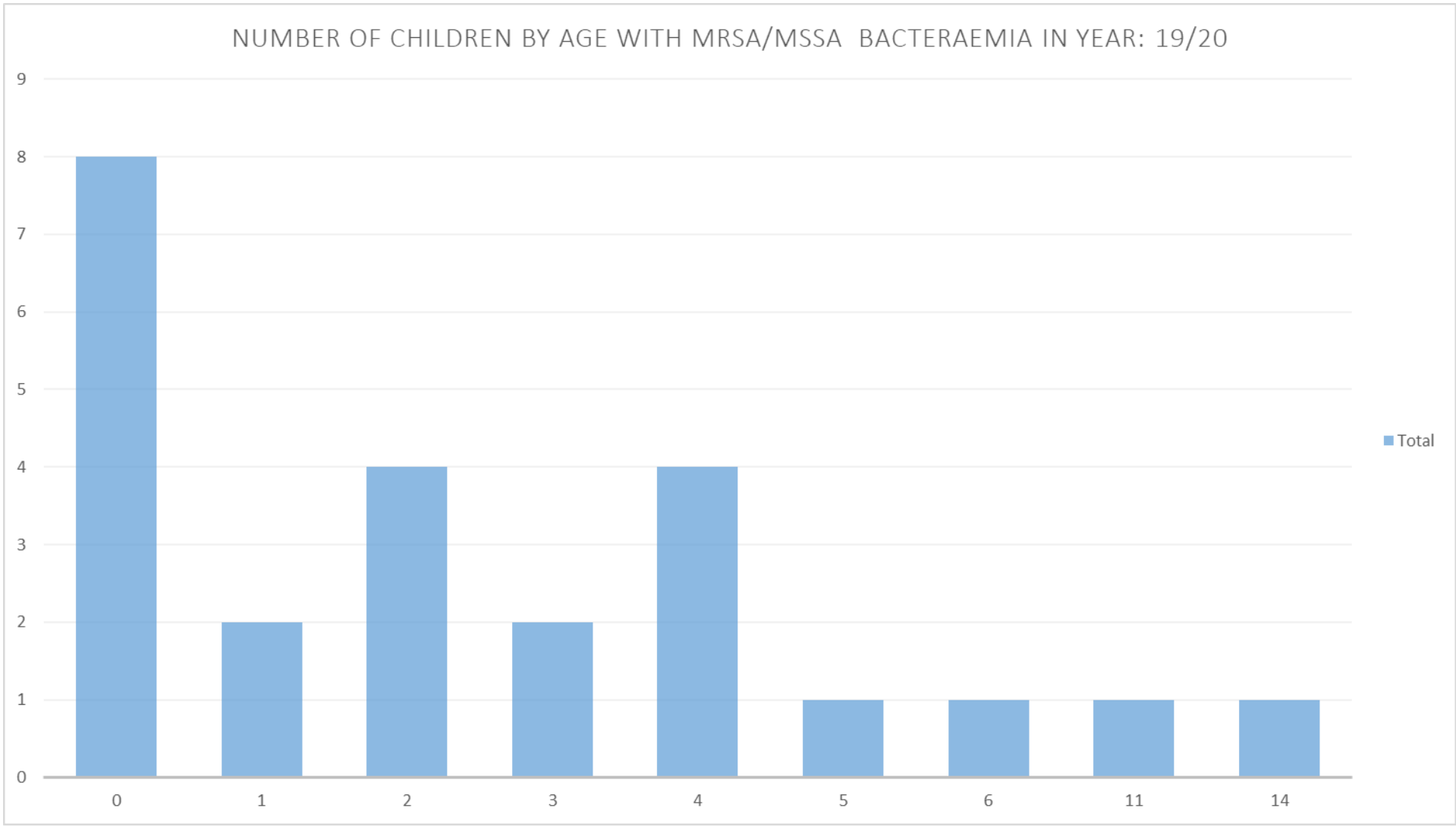
Bar chart showing number of S. aureus bacteraemia (all) episodes in patients with onset before or after 48 hours of admission:

### 5.3 Root cause analysis of all S. aureus bacteraemias (MRSA and MSSA)

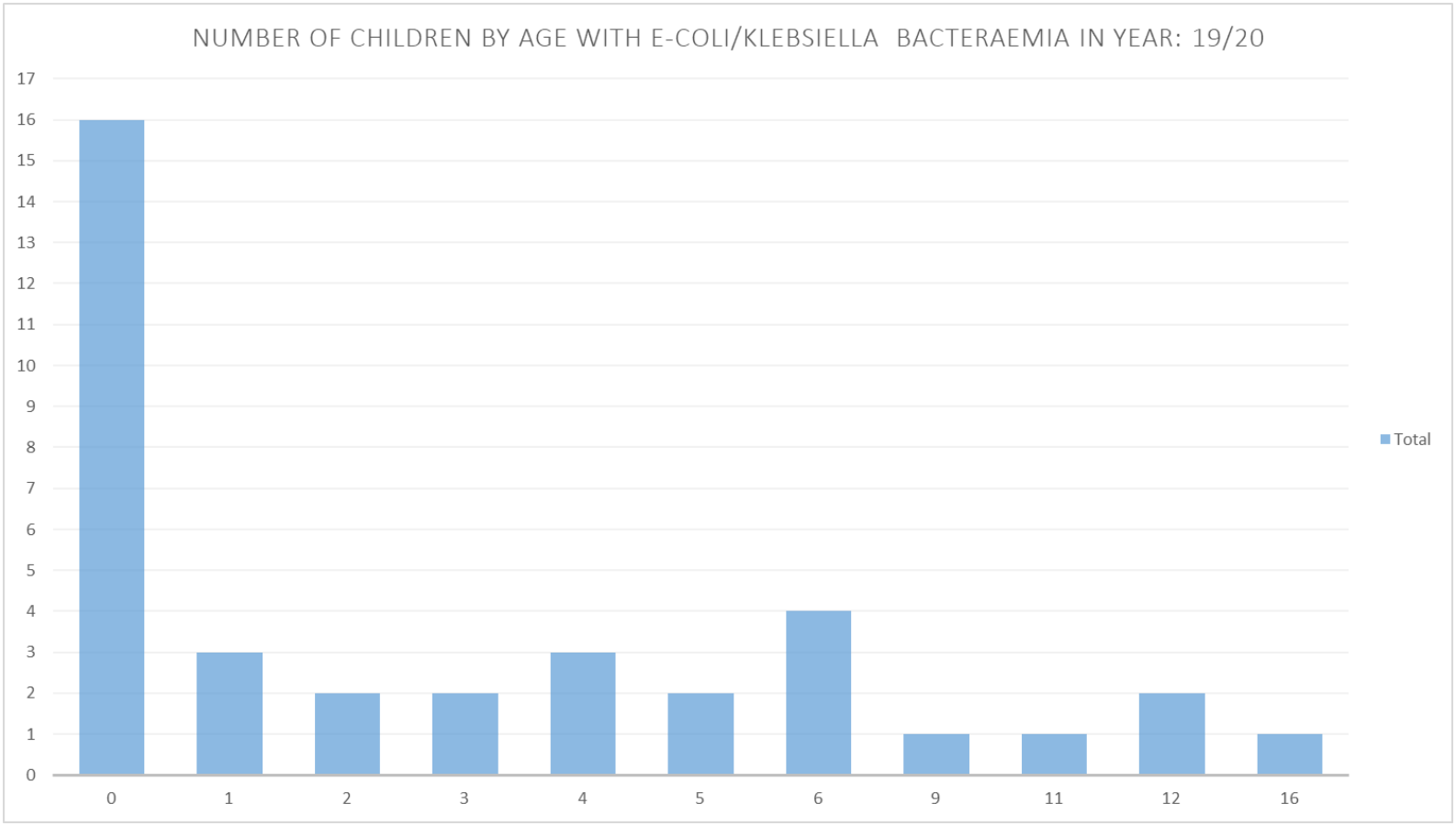
As shown above a lower number of the bacteraemias occurred after 48 hours. All S. aureus bacteraemias are reviewed by IPC team and full or mini-RCAs requested for all S. aureus bacteraemias developing after 48 hours of admission and not incubating before admission and those occurring in prior GOSH patients.

RCA completion by clinical teams was not complete for the year, however clinical review was undertaken by IPC team and shows a range of potential sources beyond the lines.

Attachment V



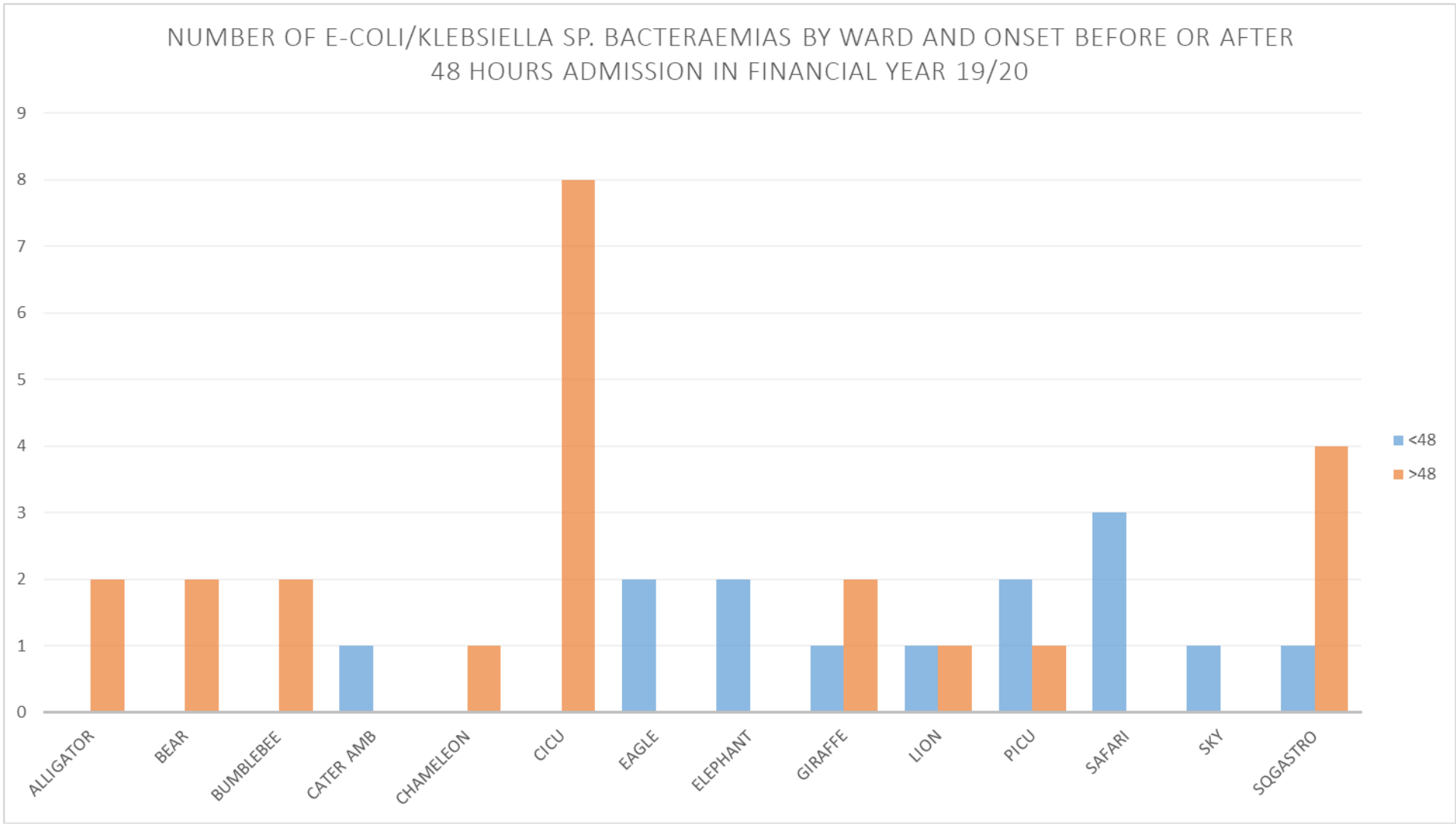

Further efforts could be put into understanding the causes in the under 1 year olds to aid preventions.



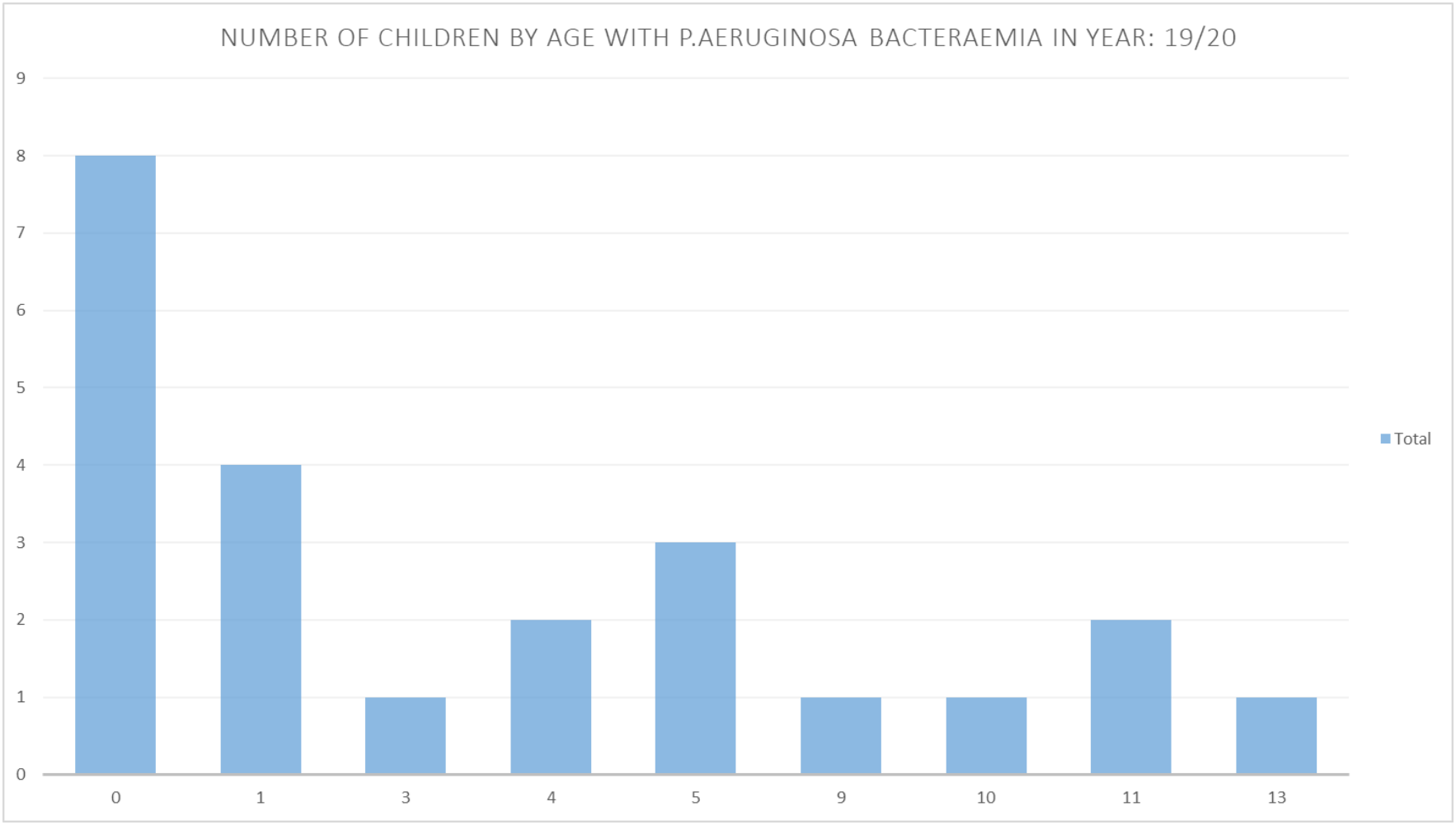

### 5.4 Other mandatorily reported bacteraemias – E. coli and Klebsiella

The numbers are shown above. As with S. aureus, the majority of E. coli and Klebsiella occur in infants, although P. aeruginosa has a greater age spread. We hope to be able to investigate these episodes further to plan interventions.

Attachment V



## 5.5 Pseudomonas aeruginosa bacteraemia



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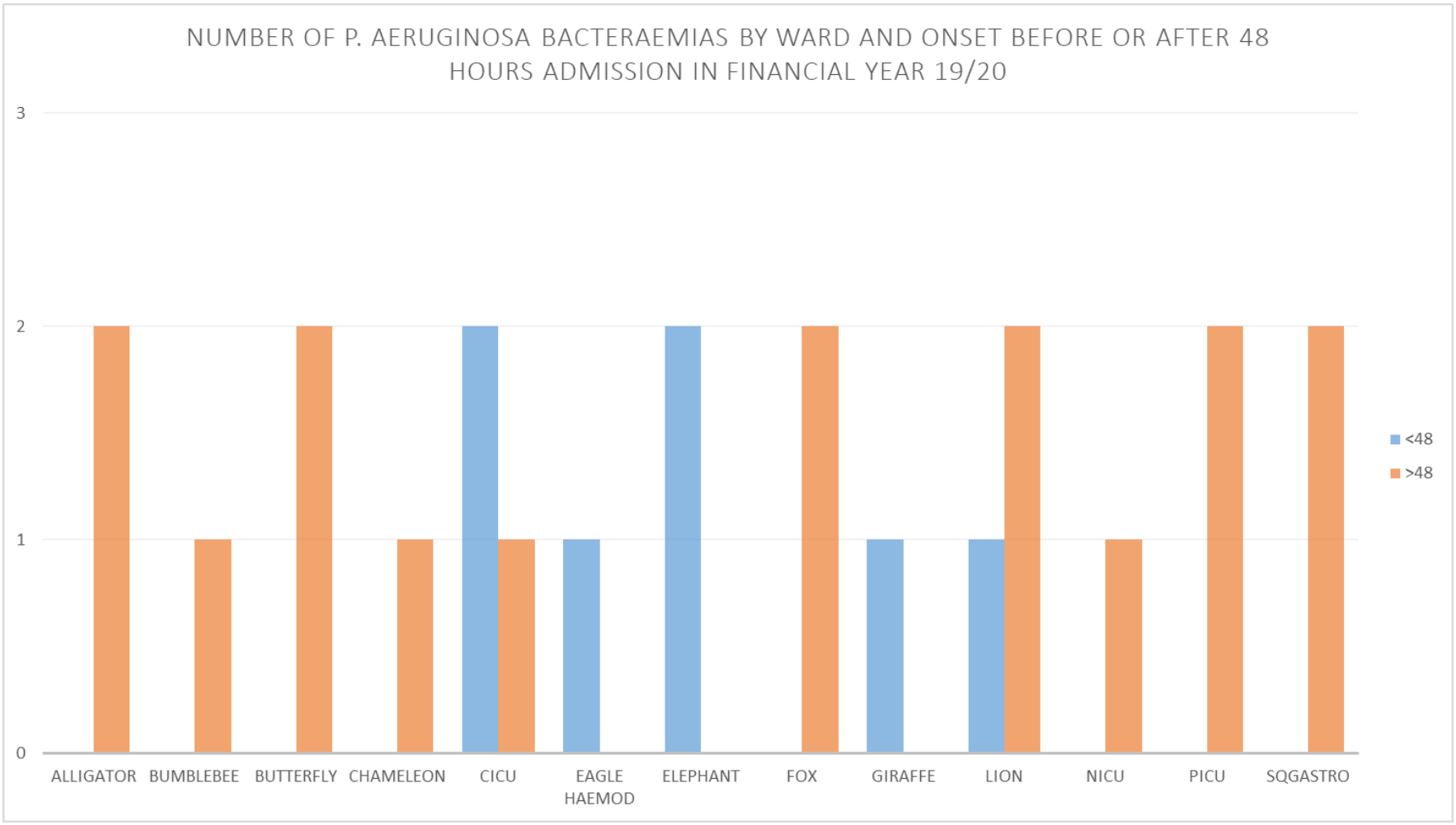


### *5:6 Mandatory Surveillance of Glycopeptide Resistant Enterococcal bacteraemia (GRE) 2019/20*

The number of children experiencing VRE bacteraemias is static

| Year | Number of GRE bacteraemias |
|---|---|
| 2015/16 | 2* |
| 2016/17 | 2 |
| 2017/18 | 6* (3 children; 4 in one child) |
| 2018/19 | 9 (3 children: 7 in one child as above) |
| 2019/20 | 2 (2 episodes in 1 patient) |

### *5:7 Mandatory reporting of Clostridium difficile* infection.

In line with previous agreement with NHS England, while we test extensively for toxigenic C difficile colonisation and infection, we continue to report all children aged 2 and over who have C difficile toxin in the faeces and diarrhoea with no other cause, or other possible cause but treated. There was no clustering of C difficile this year and typing was not undertaken.

Cases

| | 16/17 | 17/18 | 18/19 | 19/20 |
|---|---|---|---|---|
| C. difficile 1st toxin new detections ALL ages and any duration of admission | 70 | 108 | 57 | 47 |
| | | | | |
| CDI notified on HCAI website (total numbers) | 4 | 18 | 7 | 7 |
| Number 'trust apportioned cases' (aged above 1 year and in for > 3 days when tested and reported as possible CDI on HCAI site) | 1 | 12 | 7 | 2 |
| | | | | |
| Objective (number below which we aim to keep apportioned cases. | 14 | 14 | 14 | 5 |
| Possible lapse in care | 0 | 3 | 0 | TBC. |

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.

For 2017/18 there had been an increase in the absolute numbers of children identified with C difficile toxin, and the number of trust apportioned cases. Analysis had suggested this was in part due to cross-infection in a number of wards and may have been related to the drop in cleaning standards that led to the review of cleaning.

The number in 18/19 & 19/20 has returned to the base line level. No obvious ward clustering was observed.

### *5:8 Mandatory Surgical Site Surveillance (SSI)*

We do not undertake significant numbers of procedures in the mandatory SSI surveillance categories.

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**

**5:9 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.

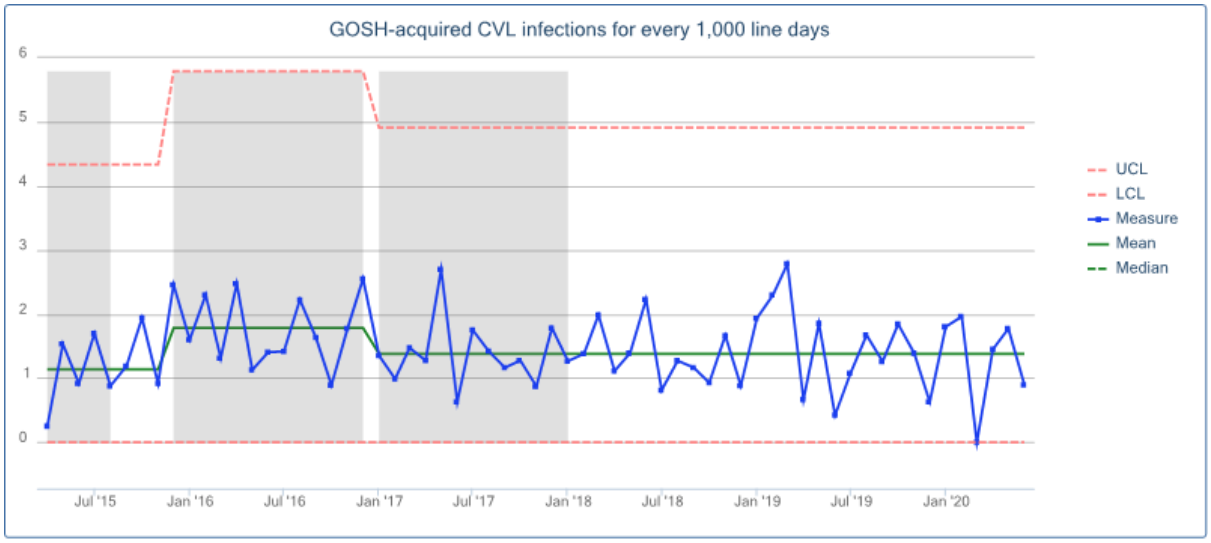
Overall Trust rate (GOSACVCRBs per 1000 line days) was 1.3 this year. This is a slight decrease in rates from the previous year. March 2020 was excluded from the data capture due to the COVID-19 pandemic, nevertheless the trust rate appears stable when compared to previous years with a slight decrease noted.

## 3. GOSACVCRB (GOS acquired CVC related bacteraemias ('Line infections')*

| Period | GOSACVCRB_No | DaysRecorded | Rate | Rate_YtD |
|---|---|---|---|---|
| Year 15/16 | 75 | 51976 | 1.4 | 1.4 |
| Year 16/17 | 87 | 52679 | 1.7 | 1.7 |
| Year 17/18 | 82 | 50791 | 1.6 | 1.6 |
| Year 18/19 | 82 | 52932 | 1.5 | 1.5 |
| Year 19/20* | 73 | 51520 | 1.3 | 1.3 |

Annual rate, ward location, organisms and contributory factors are displayed below.

Attachment V



**Ward location of children with a surveillance definition of a GOS acquired CVC RB**:

| Directorate | Ward | GOSACVCRB | Line Days 19/20 | Rate 19/20 |
|---|---|---|---|---|
| Blood, Cells and Cancer | ELEPHANT | 3 | 3265 | 0.9 |
| Blood, Cells and Cancer | FOX | 3 | 3329 | 0.9 |
| Blood, Cells and Cancer | GIRAFFE | 2 | 1978 | 1 |
| Blood, Cells and Cancer | LION | 2 | 3003 | 0.7 |
| Blood, Cells and Cancer | PELICAN | 2 | 2080 | 1 |
| Blood, Cells and Cancer | ROBIN | 1 | 1735 | 0.6 |
| Blood, Cells and Cancer | SAFARI | | 20 | 0 |
| Body, Bones and Mind | CHAMELEON | 5 | 2317 | 2.2 |
| Body, Bones and Mind | EAGLE | 1 | 1271 | 0.8 |
| Body, Bones and Mind | EAGLE HAEMOD | | 422 | 0 |
| Body, Bones and Mind | KINGFISHER | | 103 | 0 |
| Body, Bones and Mind | MCU | | 2 | 0 |
| Body, Bones and Mind | PANTHERURO | | 957 | 0 |
| Body, Bones and Mind | SKY | | 719 | 0 |
| Body, Bones and Mind | SQUIRREL | 8 | 2195 | 3.6 |
| Brain | KOALA | | 1690 | 0 |
| Brain | POSSUM | | 98 | 0 |
| Brain | SQENDOMET | 3 | 1282 | 2.3 |
| Heart and Lung | ALLIGATOR | 3 | 1482 | 2 |
| Heart and Lung | BEAR | 7 | 3753 | 1.9 |
| Heart and Lung | CATS | | 49 | 0 |
| Heart and Lung | CICU | 8 | 6590 | 1.2 |
| Heart and Lung | KANGAROO | | 1031 | 0 |
| Heart and Lung | LEOPARD | | 2265 | 0 |
| Heart and Lung | NICU | 5 | 2188 | 2.3 |
| Heart and Lung | PICU | 10 | 3761 | 2.7 |
| Heart and Lung | RSU | | 19 | 0 |
| International and Private Patients | BUMBLEBEE | 7 | 2926 | 2.4 |
| International and Private Patients | BUTTERFLY | 3 | 4443 | 0.7 |
| International and Private Patients | HEDGEHOG | | 41 | 0 |
| Sight and Sound | PANTHER | | 363 | 0 |

**Organisms associated with GOSACVCRB**

In 2019/20 72 episodes have been called GOSACVCRB (compared with 84 in 2018/19). See the table below for a breakdown of the organisms identified from the 72 episodes (some episodes had multiple isolates)

| | 15/16 | 16/17 | 17/18 | 18/19 | 19/20 |
|---|---|---|---|---|---|
| **ANO2** | **2** | | **1** | | |
| Bacteriodes | 1 | | | | |
| Bacteroides | | | 1 | | |
| Brevibacterium | 1 | | | | |
| **FUNGI** | **5** | **5** | **2** | **8** | **6** |
| Candida | 5 | 5 | 2 | 6 | 6 |
| Fungus | | | | 1 | |
| Trichosporon | | | | 1 | |
| **GNC** | | | **2** | | |
| **GNR** | **16** | **15** | **14** | **14** | **15** |
| Acinetobacter | 1 | | | | 1 |
| Citrobacter | 1 | | | | |
| Coliform | | 1 | 1 | | |
| Enterobacter | 2 | 3 | 3 | 3 | 6 |
| Escherichia | 4 | 4 | 4 | 4 | 2 |
| Gram | | | | 1 | |
| Klebsiella | 6 | 7 | 5 | 6 | 6 |
| Serratia | 2 | | 1 | | |
| **GPR** | | **5** | **2** | **4** | **3** |
| **PSEUDO** | **6** | **5** | **4** | **7** | **5** |
| Achromobacter | 1 | | | | |
| Chryseobacterium | 1 | | | | |
| Pseudomonas | 4 | 3 | 2 | 4 | 3 |
| Roseomonas | | 1 | | | |
| Stenotrophomonas | | 1 | 2 | 3 | 2 |
| **STAPH** | **38** | **44** | **47** | **36** | **35** |
| Coagulase | | | | | 1 |
| Kocuria | | | | | 1 |
| Micrococcus | | 1 | | | |
| Staphylococcus | 38 | 43 | 47 | 36 | 31 |
| Staphylococcus aureus | | | | | 2 |
| **STREP** | **6** | **9** | **13** | **15** | **8** |
| Abiotrophia | | 1 | | 1 | |
| Enterococcus | 4 | 4 | 6 | 8 | 4 |
| Streptococcus | 2 | 3 | 5 | 5 | 2 |
| Viridans | | 1 | 2 | 1 | 2 |
| **Grand Total** | **73** | **83** | **85** | **84** | **72** |

**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.

The main control is implementation of the standard care bundle, which, despite continuous attention has not reached 100%.
Review of additional interventions was also undertaken and it was decided to introduce parafilm and biopatch in areas or situations associated with the greatest risk.

Compliance with good line care has improved with audit rising to 72% compliance from 64% in the previous year. The focus remains increasing compliance with the care bundle as well as the additional interventions.

**5.10 Other bacteraemia and sensitivity data in gram negative isolates.**

Blood culture surveillance is complicated due to mixed cultures and difficulty defined clinical episodes. In the year 19/20 there were:
11 516 separate blood culture sets sent (11 092 in 18/19)
809 were positive (706 in 18/19)

Removing repeat isolates (same species within 14 days of initial) there were
528 new clinical episodes with (432 in 18/19)
617 different first isolates (514 in 18/19).

Regular surveillance has been undertaken of crude bacteraemia episodes defined by any positive blood culture in a child.

Work is underway to develop trust wide antibiograms to display pathogen prevalence and resistance data which can be used to inform infection control practice and antimicrobial therapy.

**Antibiotic resistance:**

There were 83 episodes of significant Gram-negative bacteraemias from 66 unique individuals.

- 60 episodes of Enterobacterales (eg E. coli, Klebsiella sp etc.)
- 20 episodes of Pseudomonas aeruginosa
- 3 episodes of Acinetobacter species

Data shows the following:

- A decrease in resistance to single agents, other than amikacin, compared to 18/19 data
- No change in the low level of resistance to the original first line empirical choice for patients with sepsis (piptazo and amikacin)
- There were no duplicate episodes of resistant organisms in any individual
- All carbapenem resistance was isolated in Pseudomonas aeruginosa and not found to be transmissible carbapenamases (CPO)

| | Amik | Gentamicin | Ciproflox | Ceftazidime* | Pip-tazo | Carbapenem |
|---|---|---|---|---|---|---|
| Episodes (children) | 1 | 6 | 12 | 14 | 12 | 2 |
| % episodes | 1 | 7 | 15 | 17 | 15 | 2 |
| % individuals | 2 | 9 | 18 | 21 | 18 | 3 |

* Ceftazidime was not tested in 3 episodes of Acinetobacter species as not recommended

Multidrug resistant isolates in blood -

| Amik / Ptaz | Amik / Cip | Amik / Ceftaz | Amik / Mero |
|---|---|---|---|
| 0 | 0 | 0 | 1 |

| Gent / Ptaz | Gent / Cip | Gent / Ceftaz | Gent / Mero |
|---|---|---|---|
| 2 | 3 | 4 | 1 |

| Ptaz / Cip |
|---|
| 4 |

**Combined Pip-tazo / Ciprofloxacin resistance**
12 bacteraemia episodes occurred with a Ptaz resistant isolate, from 12 children.
Of these 12 children, 4 had episodes with Ptaz/Cip resistance. This is the same amount of children as last year.

Although there has been a reduction in the amount of gentamicin resistance seen this year compared to last year there remains a >10% resistance to piptazo. This re-enforces the choice of piptazo and amikacin as empirical choice for sepsis. The addition of ciprofloxacin to piperacillin/tazobactam gives less additional cover than amikacin.

There is a low incidence of carbapenemase resistance in blood cultures at this time leaves this as a good third line.

**5.11 Ventilator associated pneumonia** / Ventilator associated events.

Care plans are in place in the ICUs for the reduction of risk of ventilator associated events but the ICUs do not undertake any systematic surveillance.

### 5.12 Surgical Site Infection Prevention and Surveillance

Within the organisation surgical site surveillance programmes are currently devolved and carried out by the directorates.

### 5.13 Surgery

(Excluding Cardiac and Neurosurgery): one full time surveillance officer managed by a modern matron has undertaken surveillance of designated surgical procedures in each surgical specialty. This is reported locally and spinal implant surgery reported to the PHE National SSIS scheme.

Report below from Leo Morgan, Surgical Site Infection Surveillance Service Officer (SSISSO).

**Surgical Site Surveillance Programme**

**Introduction**

Surgical specialities were previously under J.M Barrie division and were reshuffled in Oct 2018 within two new directorates: *Body Bones and Mind* and *Sight and Sound*. The trust has a long history of Surgical Site Infection Surveillance Service (SSISS) 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 Surgery, under both aforementioned newly formed directorates, a SSISS officer was appointed to work following Infection Prevention Control team guidance, managed by the modern matron and under the head of nursing direction. This paper sets out a review of the service to date 2019-2020 and details the plans and objectives for the SSISS programme in the financial year 2020-21.

**2019 -20 Aims:**

- For SSIS Service to present SSI reports to senior management on Infection Prevention Control meetings (defined by the IPC team and directorates senior management following Trust restructuration carried out during Oct 2018) or any meeting eventually required;
- To further develop the exception report; this 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 continue to carry out surveillance. Procedures that are undertaken by laparoscopy approach, diagnostic theatre based tests (such as biopsy) and where the primary wound closure does not occur in theatre were excluded in line with PHE guidance. It is important to note that spinal surgery at GOSH is reported to PHE.

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

| **Speciality** | **Procedure** | Surveillance |
|---|---|---|
| Spines | All (excluding plaster jackets and injections) | SO Post op D1, D2, D3<br>30 day phone call + 1 year follow up |
| Orthopaedics | Insertion of 8 plates | SO post op D1<br>30 day phone call |
| Orthopaedics | Open reduction and internal fixation | SO post op D1<br>30 day phone call |
| ENT | Cochlear implant | SO post op D1<br>30 day phone call |
| ENT | LTR graft | SO post op D1<br>30 day phone call |
| ENT | Excision of thyroglossal cyst | SO post op D1<br>30 day phone call |
| Urology | Open pyleoplasty | SO post op D1<br>30 day phone call |
| Urology | Wilm's tumour / nephrectomy | SO post op D1, D3 (weekly if still here)<br>30 day phone call |
| Cleft | Cleft lip repair (+/- palate) | SO post op D1<br>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)<br>30 day phone call |
| General Surgery | General laparotomy | SO post op D1, D3 (weekly if still here)<br>30 day phone call |
| Plastic Surgery | K-wires | SO post op D1<br>30 day phone call extend to 6/52 if required |
| Plastic Surgery | Tissue expander insertion | SO post op D1<br>30 day phone call |
| Plastic Surgery | Tongue reduction | SO post op D1<br>30 day phone call |
| Dental & MaxFax | ABG | SO post op D1 & 30 day phone call |
| Ophthalmology | No data required | [redacted] |

Ophthalmology was 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 SSISS is given to children and their families undergoing monitored procedures at the pre-operative appointment. The SSISS team

identifies 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 IVABs have stopped, the surveillance is discontinued and the patients then receive the 30 day phone call and follow up at one year, for any spinal patient with metal work implantation.

**Data Collection**

For the financial year 2019-20, spinal surgery has one full calendar year (2019) of data for all eligible identified procedures. All remaining surgical specialities will have data covering only Jan-Feb-Mar 2019 and the reason is not having the system replacement project from the previous Surgical Site Surveillance System (S4)/PIMS to RLDatix/EPIC completed as initially expected by April 2019. Understandably, the Epic team had to prioritise other crucial/urgent areas during Epic GO live April 2019 so this is now an outstanding and an ongoing Epic-RLDatix project affecting SSISS production and capacity. The IPC and the SSISS teams are eager to go back to full surveillance but this is out of their reach until a proper system replacement is completed.

**Monitoring and recording data**

The SSISS team have utilised the S4 database (Surgical Site Surveillance System) 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. Please note that from April 2019- Epic GO live, as highlighted above, the S4 system has lost its data feeder (PIMS). Therefore, all systems and processes for data collection from Epic to S4 had to be switched back into a lengthy manual process that has severely reduced SSIS Service data processing capacity.

The data collected for the year of 2019 is detailed below:

**Spinal Surgery**

| Procedure | Lost to follow up | Parent Reported Infections | SSI | | | Annual total | Infection % ** |
|---|---|---|---|---|---|---|---|
| | | | Superficial | Deep | Organ space | | |
| **All spines** | 0 | 1 | 0 | 3 | 0 | 165 | 2.4% |
| **Posterior fusion** | 0 | 1 | 0 | 3 | 0 | 96 | 2.4% |
| **Anterior fusion** | 0 | 0 | 0 | 0 | 0 | 6 | 0% |
| **Hemi vertebrae/ decompression/ short fusion/ Kyphectomy** | 0 | 0 | 0 | 0 | 0 | 10 | 0% |
| **Combined fusion** | 0 | 0 | 0 | 0 | 0 | 5 | 0% |
| **Extension of fusion/revision** | 0 | 0 | 0 | 0 | 0 | 16 | 0% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Growth rod insertion:**<br>**-traditional**<br>**-MAGEC**<br>**-SHILLA** | 0 | 0 | 0 | 0 | 0 | 16 | 0% |
| **Growth rod lengthening:**<br>**-traditional** | 0 | 0 | 0 | 0 | 0 | 5 | 0% |
| **Growth rod revision:**<br>**-traditional**<br>**-MAGEC**<br>**-SHILLA** | 0 | 0 | 0 | 0 | 0 | 10 | 0% |
| **Microdiscectomy** | 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 | 0 | 0 | 0 | 0 | 3 | 0% |
| **Open reduction** | 1 | 0 | 0 | 0 | 0 | 8 | 0% |

*Jan-Feb-Mar 2019 only.

**ENT**

| **Procedure** | **Lost to follow up** | **Parent Reported Infections** | **SSI** | | | **Annual total*** | **Infection %**** |
|---|---|---|---|---|---|---|---|
| | | | **Superficial** | **Deep** | **Organ space** | | |
| **Cochlear implant** | 0 | 0 | 0 | 0 | 0 | 21 | 0% |
| **LTR Graft** | 0 | 0 | 0 | 0 | 0 | 4 | 0% |
| **Thyroglossal cyst** | 0 | 0 | 0 | 0 | 0 | 2 | 0% |

*Jan-Feb-Mar 2019 only.

**Dental/Maxillofacial**

| **Procedure** | **Lost to follow up** | **Parent Reported Infections** | **SSI** | | | **Annual total*** | **Infection % **** |
|---|---|---|---|---|---|---|---|
| | | | **Superficial** | **Deep** | **Organ space** | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **ABG** | 1 | 0 | 0 | 0 | 0 | 22 | 0% |

*Jan-Feb-Mar 2019 only.

**Urology**

| Procedure | Lost to follow up | Parent Reported Infections | SSI | | | Annual total* | Infection %** |
|---|---|---|---|---|---|---|---|
| | | | Superficial | Deep | Organ space | | |
| **Open pyeloplasty** | 0 | 0 | 0 | 0 | 0 | 6 | 0% |
| **Nephrectomy** | 0 | 0 | 0 | 0 | 0 | 13 | 0% |

*Jan-Feb-Mar 2019 only.

**Cleft**

| Procedure | Lost to follow up | Parent Reported Infections | SSI | | | Annual total* | Infection %** |
|---|---|---|---|---|---|---|---|
| | | | Superficial | Deep | Organ space | | |
| **Cleft** | 0 | 0 | 0 | 0 | 0 | 20 | 0% |

*Jan-Feb-Mar 2019 only.

**General Surgery**

| Procedure | Lost to follow up | Parent Reported Infections | SSI | | | Annual total* | Infection %** |
|---|---|---|---|---|---|---|---|
| | | | Superficial | Deep | Organ space | | |
| **Laparotomy** | 2 | 0 | 3 | 0 | 0 | 27 | 11% |
| **Neuroblastoma** | 0 | 0 | 0 | 0 | 0 | 2 | 0% |

*Jan-Feb-Mar 2019 only.

**Plastic Surgery**

| Procedure | Lost to follow up | Parent Reported Infections | SSI | | | Annual total* | Infection %** |
|---|---|---|---|---|---|---|---|
| | | | Superficial | Deep | Organ space | | |
| **K-wires** | 0 | 0 | 0 | 0 | 0 | 12 | 0% |
| **Tissue Expander** | 0 | 0 | 1 | 0 | 0 | 4 | 25% |
| **Tongue reduction** | 0 | 0 | 0 | 0 | 0 | 8 | 0% |

*Jan-Feb-Mar 2019 only.

** It is important to highlight that the overall infection rate for the calendar year of 2019 includes all diagnosed SSIs (superficial, deep and organ-space) and all PRIs (Patient/Parent Reported Infection). PRIs are based on the answers given by the patient on the post-discharge questionnaire to assess whether what the patient described and/or the treatment they were given was clear indicative of an SSI.

Please also note that -with the exemption of posterior spinal fusions- some infection rates for yearly reports could appear either considerably too high or low due to small data sample size.

**Process dashboards and the Outcomes Hub**

In addition to the SSISS reports, the SSISS team have 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 and MRSA screen. Directorate and specialty run charts are produced and displayed on the Dashboard, which can be found using the link below:

http://qst/spcworks/dashboard#dashboardID=-82&p1=spin

The Outcomes Hub devised by the Quality and Improvement team in partnership with the SSISS team incorporates, among other features, SSI data charts and its definitions.

The new Outcomes Hub was widely welcomed by the specialities involved with the project (Dental Maxillofacial, Plastics, SNAPS and Urology) as it gave a much better visibility of SSI data and its definitions and other measures each speciality found useful to be added.

The Outcomes Hub can be found at GOSH *Web* under useful links “Clinical Outcomes Hub”.

Please note that from April 2019- Epic GO live, as previously outlined above on the “Data Collection” section of this report, the S4 system has lost its data feeder (PIMS) and therefore the SSI dashboards and the Outcomes Hub previously reliant on S4/PIMS have also lost their data feeder. The Quality and Improvement, IPC and SSISS teams are hoping to re-establish live Dashboards and The Outcomes Hub as soon as Epic-RLDatix teams complete the outstanding system replacement project.

**Investigating infections and sharing of learning**

The on-going monitoring of both infection rates and compliance with the care bundle are discussed with each speciality and the Infection & Prevention Control team. In addition, each directorate carry out a Route Cause Analysis (RCA) for any child who meets the following criteria:

- Prolonged inpatient stay or readmitted to GOSH for wound management (including administration of IVAB);
- Has an organ space infection (including return to theatre for management);
- All deep and organ/space spinal surgery infections.

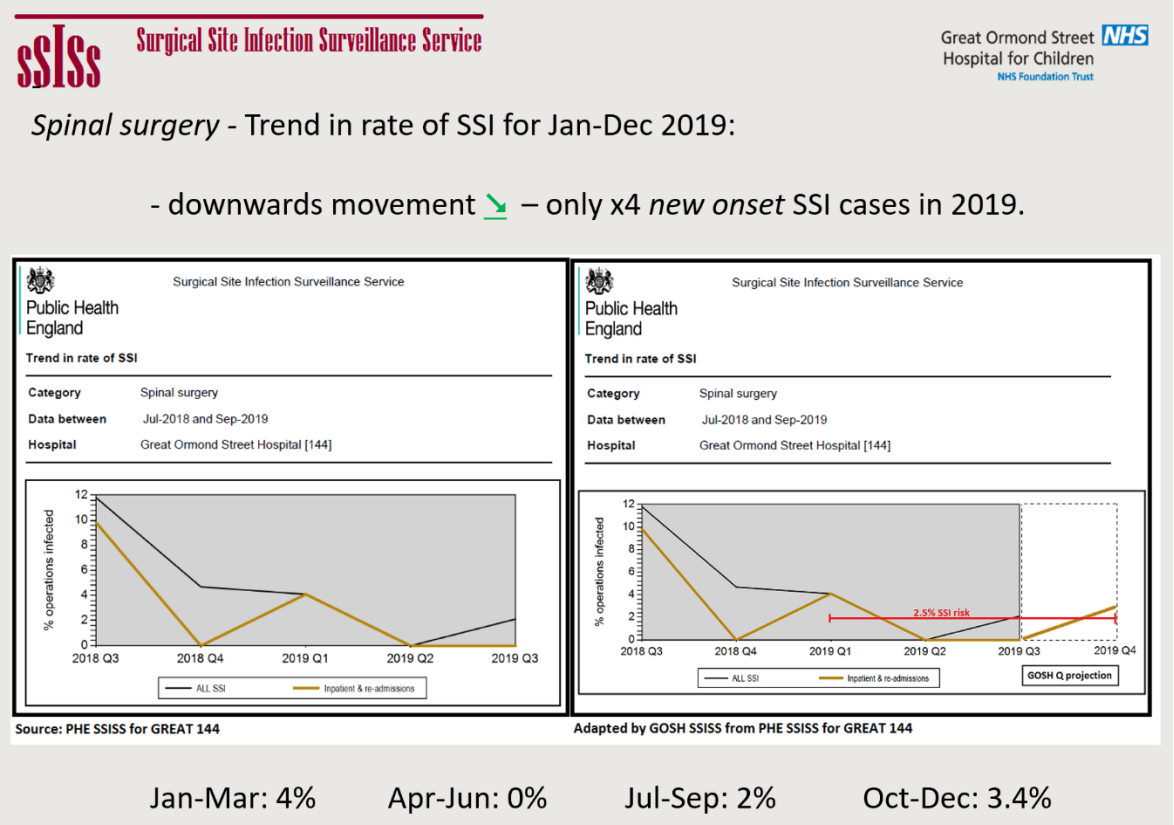
Indications for an RCA are monitored through the 30 day phone call by the surveillance officer. When called, an RCA is led by the child’s consultant or the speciality lead. Findings are presented to the infection control committee with a summary of key learning and should feed into local M&M/RCA meetings.

**Cluster of infections in spinal implant surgery**

The infection rate in spines for 2019 was 2.4%, this is a noteworthy decrease from 2018 (7.5%).

However, it is important to understand changes to the population monitored in 2019 that might have decreased the overall infection rate compared to 2018. During 2019, a decrease was observed in the number of kyphectomies procedures, normally dedicated to patients who carry a factual higher risk of wound breakdown. This procedure was responsible for pushing the overall infection rate upwards during 2018 but the actual infection rate for posterior spinal fusions sat at only 3.2% in 2018 (2019: 2.4%).

In addition to this, the average infection rates for all spines have been presently trending down (please see graphic below for trend in rate of SSI for 2019) when compared to the overall rate from previous years: 9.4% (2015), 7.4% (2016), 5.2% (2017), 7.5% (2018) and 2.4% (2019). During the period 2015-2018, GOSH remained an outlier in comparison to other participating Hospitals through the PHE Surgical Site Surveillance programme.




The adoption of Epic (system launched on Easter 2019) and RLDatix (work in progress) will hopefully minimize the significant poor documentation encountered previously on medical notes. Epic-RLDatix shall unite all fragmented data required when conducting an RCA, as the information was formerly stored across too many different systems, making the process lengthy and time consuming. The SSIS team is currently working with the Infection & Prevention Control and the RLDatix teams so that the RLDatix system should be able to capture all baseline data from Epic and minimize this negative impact from data being stored across multiple systems.

Each SSI case is investigated following actions from the MDT and each incident is looked at individually and comparatively. After investigation, it was noted through the surveillance process that there are rarely no single risk factors to explain the occurrences as SSI's, like most infections can be multi-factorial in causation.

**Moving forward**

The team has generated speciality exception reports and have productively worked with the Quality & Improvement team to support the creation of the SSI Tab for the Outcomes Hub.

After the Epic system launch, the SSISS team is supporting the Infection & Prevention Control team, Epic and RLDatix teams and is presently working with them to promote the potential replacement of the S4 system.

Antibiotic protocol adherence and Temperature control are recognized by DoH as having high impact on surgical site infections. The SSIS team has continuously monitored these two risk factors and reported back to the relevant teams, where an optimal compliance with expected antibiotics protocol and temperature control remain a significant issue.

Following feedback from the IPC and SSI teams to the Spinal team during SSI RCAs investigations, the spinal team have decided to enhanced their SSI prevention pathway by doing the pre-operative wash at ward level in the morning of the operation date just before the patient is taken down to theatres. This action plan aims to ensure that every patient – including patients with mobility and/or urine/faecal incontinence, goes down with their surgical sites are as clean as possible.

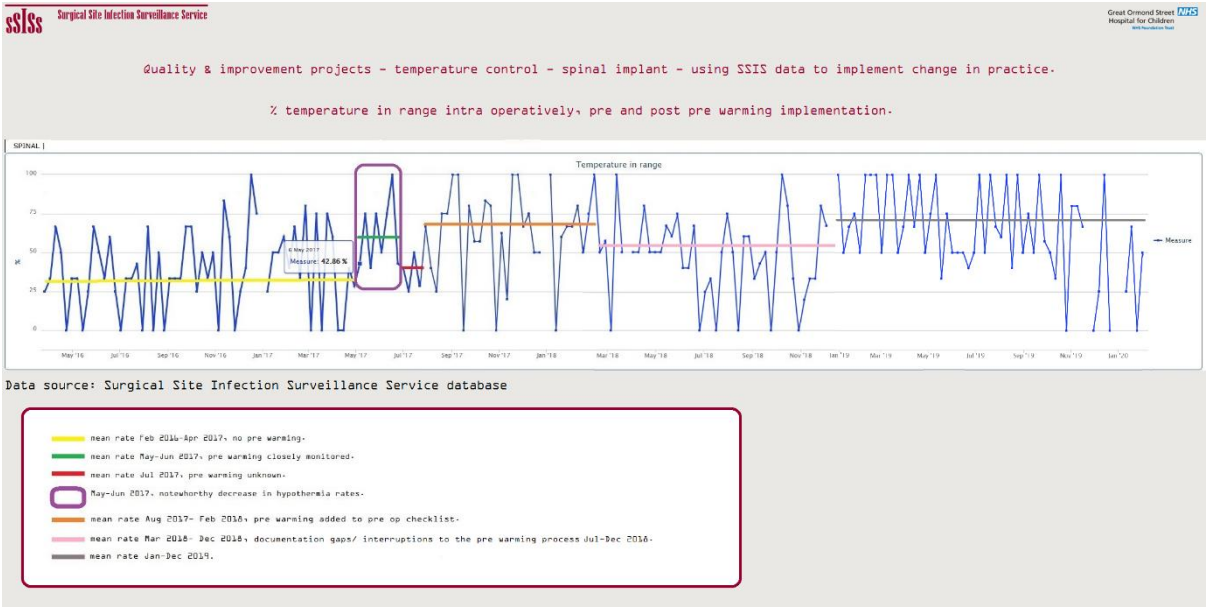
**Reduction of hypothermia rates for spinal patients: the pre warming SSISS project and an update on the latest figures**

Based on all data (census) captured for our entire eligible spinal patient population and since pre warming at ward level was initially trialled and subsequently implemented (using NICE/One together recommendations), it is out of question that hypothermia rates have substantially decreased (overall) when compared to the mean rate before the pre warming project started. A summary of the project at a glance can be found below:

- Feb 2016- Apr 2017: no pre warming at ward level. Only 30% out of the total of patients operated during this period had temperatures within range intra-operatively. Interventions to tackle persistent historical hypothermia high rates discussed on several occasions previously;
- May-Jun 2017: decision to trial pre warming. Hypothermia decreased. 60% had temperatures within range intra-operatively. Decision: to roll out pre warming at ward level and continue to monitor trend over an extended period of time;
- July 2017: pre warming implemented but unknown if effectively done as not documented anywhere. Decision: to incorporate pre warming status to pre op checklist. 40% had temperatures within range intra-operatively;
- Aug 2017-Feb 2018: pre warming implemented and recorded on pre op checklist. 65% had temperatures within range intra-operatively over an extended period of time. Decision: to continue pre warming indefinitely;
- Mar 2018- Dec 2018: results were presented to the Divisional Board and welcomed by Divisional Director for Anaesthesia (April 2018). 55% had temperatures within range intra-operatively. However, it was observed an increase in hypothermia rates between Jul-Dec 2018. Following an investigation of the issue, it was noted that documentation gaps for evidence of pre warming have widened during this period at ward level. In addition to this, patients were being pre warmed at ward level and taken down to Ocean but then left on the theatre trolley in a cold environment without switching the bair hugger back on. The SSI Service informed both sky ward and ocean theatre of those issues for further improvement.

- Jan-Dec 2019: 70% had temperatures within range intra-operatively. Pre-warming embedded to nursing practice.
- Oct-Dec 2019: SSI data potentially suggests variation in practice for temperature control intra-op. However, Sky ward closure and patients moved to multiple wards (pest control) has caused reduction on patient pre-warming evidence (expected).

Please find below the historical and the latest figures on the graphic timeline with mean rates (%) for temperatures within range.




**Aims 2020-2021**

The SSIS team propose the following aims for the financial year 2020-21:

- Antibiotics prophylaxis, where applicable: to continue to feedback surveillance data to Theatres and Anaesthetics to promote the use of Epic resources to capture more accurate data of the time of surgical incision and the antibiotics administration, as per pharmacy policy;
- Hypothermia: to continue to monitor and report temperature control data and factor if there are changes that can be made to continue to improve temperature control. Other specialities could benefit from the successful implementation of the pre warming pilot done for spines and this remains an option that other specialities could potentially adopt;
- To continue to use the data gathered and report deviances of standardisation of care back to each speciality. Work together to use the data and add any explanatory narrative to the data;
- To assist the surgical teams to standardise areas of the patient pathway, where pertinent;

- To support further creation of Outcomes Hub SSI tabs for the remaining surgical areas;
- To continue to work with the Infection & Prevention Control team, Epic and RLDatix teams during the duration of the Epic-RLDatix project to promote the potential replacement of the S4 system.

**Conclusion**

The SSISS team will continue to review exceptions to the care bundle and patient pathway to improve the patient outcomes.

### 5.14 Report for Cardiorespiratory Surgical site infection surveillance

SSI prevention has been co-ordinated by an Advanced Nurse Practitioner led team; the representatives for the preceding 12 months were Ruth Umney and Hannah Thomas.

Cardiac Surgical Site Surveillance is based on Bear ward (level 6 MSCB) and has an aim of reviewing every patient following their cardiothoracic surgery and then at 30 days post-surgery, ensuring that their surgical sites are monitored and data collected. Unfortunately, there have been a number of difficulties over the last 12 months.

The band 3 SSI officer resigned with immediate effect, leaving the service uncovered from October 2019. Recruitment was pending in early 2020, however this was stopped due to the COVID-19 crisis. It is the goal of the division to appointment into this role as soon as possible as the crisis subsides.
The cardiothoracic surgical site surveillance team continued to meet on a monthly basis and review the data from 2 months prior. This meeting has been postponed since January 2020 – again due to the COVID-19 Crisis.

SSI Surveillance was undertaken by a part time band 3 SSI officer until October 2020. The surveillance team led by the cardiac ANP Ruth Umney comprise of; consultant surgeon, consultant microbiologist, ward nursing and medical leads, surgical site officer, tissue viability nurse specialists and infection prevention and control nurse specialists. All patients should be contacted for the 30 day post- surgery wound follow- up by the SSI officer and those with issues are flagged to the ANP team on Bear for further review and management. This has helped to identify SSI and ensure each child receives appropriate treatment as required.

Since the loss of the SSI officer wound issues have been raised in a more ad-hoc way, relying heavily on the ANP team highlighting any wound issues for inpatients as they were discussed during handovers or when seen clinically. In addition, once the patients were discharged reliance was put on the families to communicate any concerns they may have.

During this time, a new patient information document was created following an audit of how prepared parents felt to care for their child following discharge. This highlighted a lack of confidence in recognising a deteriorating wound, so a 2 sided information card has been published, showing wounds at varying degrees of deterioration. This has been a helpful guide for the families, and gives them key contact details for the cardiac ANP team.

We continue to ratify the surveillance data with respect to infection type, classifying wounds reported using the Public Health England (2013) definitions. Any wounds which classify as Deep Incisional Infection or Organ space undergo root cause analysis led by the surgical team.

In addition to this innovation on a local level, since the last report the Trust has implemented a fully integrated electronic patient record (EPR) and this has allowed the utilisation of patient photos in a way that we have not done before. Photos can be taken as an inpatient using the handheld 'Rovers' as well as photos from families being added to their electric record. This has allowed the classification of wounds – as per PHE guidance to be agreed by the SSI MDT during the SSI meetings in a more informed and accurate way.

There has been a continued issue of stitch abscesses as well as delayed wound healing, (compared to last year).
We completed and began a 'roll out' of a new Wound Care Pathway, including the innovations of the EPR such as wound photos being uploaded immediately to the new system. This roll-out has had its challenges – again slowed by the COVID-19 situation. However, the pathway has been well received and teaching on this pathway and further publicity will continue into this year.

The last complete data set from the SSI officer was August 2019, and we report this data below. Following this, we have included any 'ad-hoc' cases that have come to the attention of the ANP team whilst no SSI officer has been in place.

As a specialty we undertook a total of 721 cardiac and thoracic surgical cases in the past 12 months.
From these we identified the following infections through the surgical site surveillance program.

| **Data From April 2019-Aug 2019 (Collected by SSI Officer)** | | | | | |
|---|---|---|---|---|---|
| | SII | DII | OS | PR | SA |
| **In Hospital** | 1 | | | | |
| **Out of Hospital** | 1 | 2 | | 2 | 1 |
| Total | **2** | **2** | | **2** | **1** |
| **Rate (n=317)** | 0.6% | 0.6% | | 0.6% | 0.3% |

| Sept 2019 – March2020 (Collected by ANP Team on an 'ad-hoc' basis and only partially agreed with SSI Team Meeting) | | | | | |
|---|---|---|---|---|---|
| | SII | DII | OS | PR | SA |
| **In Hospital** | | 1 | | | |
| **Out of Hospital** | 3 | 1 | 1 | 3 | 6 |
| Total | **3** | **2** | **1** | **3** | **6** |
| **Rate (n=404)** | 0.7% | 0.5% | 0.2% | 0.7% | 1.4% |

| Total Combined Figures for SSI Officer and ANP Ad-Hoc Data | | | | | |
|---|---|---|---|---|---|
| | SII | DII | OS | PR | SA |
| **Combined total** | 5 | 4 | 1 | 5 | 7 |
| **Rate (n=721)** | 0.7% | 0.55% | 0.13% | 0.7% | 1% |
| **Comparison to 2018/2019** | 1% | 0% | 0.14% | 0.6% | 0.7% |

*Classification of SSIs – surgical site infections according to PHE Criteria.*
*SSI – Superficial incisional infection; DII – Deep incisional infection; OS – organ space: PR – Patient (Parent) reported: SA – Stitch abscess (not a surgical site infection but also recorded).*

Compliance data was also gathered to look at 4 measures:

1. pre-operative wash
2. pre-operative antibiotics administered within defined knife to skin time
3. post-operative antibiotics according to protocol
4. MRSA swab result available before surgery – and taken within 30 days?

The above data overall represents a small number of infections identified in this period. The total number of SII is reduced this year, however a greater number of DII have been identified, the reasons for this are multifaceted and it is important to recognise that the SSI Officer role has not been fulfilled for all months, therefore data collection is limited. The compliance data has not been reported as the data collection was incomplete – mainly due to the implementation of the EPR and the complexity of finding the correct data. It is likely that moving forward into 2020-2021 that this data will now transfer directly into the new RL SSI reporting software that has been brought in. This will allow for a greater level of accuracy and will allow root cause analysis of cases to be completed with ease.

It is the hope that a permanent SSI officer will be established in the coming few months and monitoring can begin again. This is vital to the reliability of the SSI surveillance and for the service moving forward.

There have been discussion around the centralisation of the SSI data collection teams, allowing data to be collected across the trust, ensuring quality and accuracy and allowing for cross-cover during times of staff sickness or annual leave.

The wound care pathway will continue to be rolled out across the division, ensuring teaching at each 'team-day' for the ward nursing team. The goal is to then audit the understanding of the nursing staff as well as to compare the SSI surveillance results to see if there is any impact on the infection rates.

### 5.15 Neurosurgery SSI surveillance

Neurosciences 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 deep or organ space craniotomy infections are likely to be detected 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.

**Permanent shunt infection surveillance**

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

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

2018/19 4 infections from 196 procedures at a rate of 2.0%

2019/20 6 infections from 225 procedures at a rate of 2.7

Neurosurgical team are reviewing these and the shunt care pathway.

Data abstract from the Audit data base (provided by Brain Data manager) for all infections shows:

| **Count of PtID1** | Column Labels | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2019 | | | | | | | 2020 | | Grand Total |
| Row Labels | May | Jun | Jul | Aug | Oct | Nov | Dec | Jan | Mar | |
| Deep Incisional | 1 | | | 2 | | | | | | 3 |
| EVD infection | | | | | 1 | | | | | 1 |
| Organ Space (not GOSH shunt) | | | 1 | | 2 | 1 | 1 | 1 | 1 | 7 |
| Shunt infection (CSF) | 1 | 2 | | | | 1 | 1 | | 1 | 6 |
| Superficial Incisional | | | | | 2 | | | | | 2 |
| **Grand Total** | **2** | **2** | **1** | **2** | **5** | **2** | **2** | **1** | **2** | **19** |

However, this is not systematic surveillance.

## Viral infections detected while at hospital

### 5.16 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, with even the simplest ‘common cold’ leading to death. 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 introduction of extended viral panel testing for acute admission this winter season will have increased the number of rhinovirus / coronaviruses detected, but even accounting for this we have seen an increase in viral respiratory infection.

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 six years, see below, shows that the number of potential hospital acquired cases has increased slightly again as did the overall number of respiratory viral infections compared to last year. Adenovirus infection which had increased in the previous year have stabilised at the new higher rate (both community acquired and hospital acquired). An increase in RSV infection and rhinovirus was also noted, likely to be due to the increased use of the diagcore platform.

The bar charts below show

- Acquisition occurs across the hospital.
- as a trust we are still not implementing droplet precautions rapidly on recognition of symptoms, although this has improved in 2019.

The data unsurprisingly shows that the highest number of admissions with acute respiratory virus infection is to the PICU and CICU; however this leaves non-infected children admitted to these units at risk of exposure and transmission is detected. Probable virus transmission detected during admissions (labelled HAI) is observed across the hospital, disproportionately higher than the ICUs and reflecting transmission from unrecognised reservoirs, which are common in children and their carers and staff, or long stay susceptible children likley to be tested.
Implementation of standard precautions are designed to mitigate the risk of transmission but it has not been eliminated. We intend to keep focus on all staff, patient and family involvement with prevention.

Numbers of respiratory viral infections detected in patients by financial year:

(Data has been collected by an automated electronic search of data base (as opposed to a manual count in previous years, using a coded algorithm, and has given a slight change for absolute numbers for previous years shown in previous reports.)

Tables and graphs are shown below detailing the number of viruses detected, whether they were present on admission or after 48 hours and location of children.

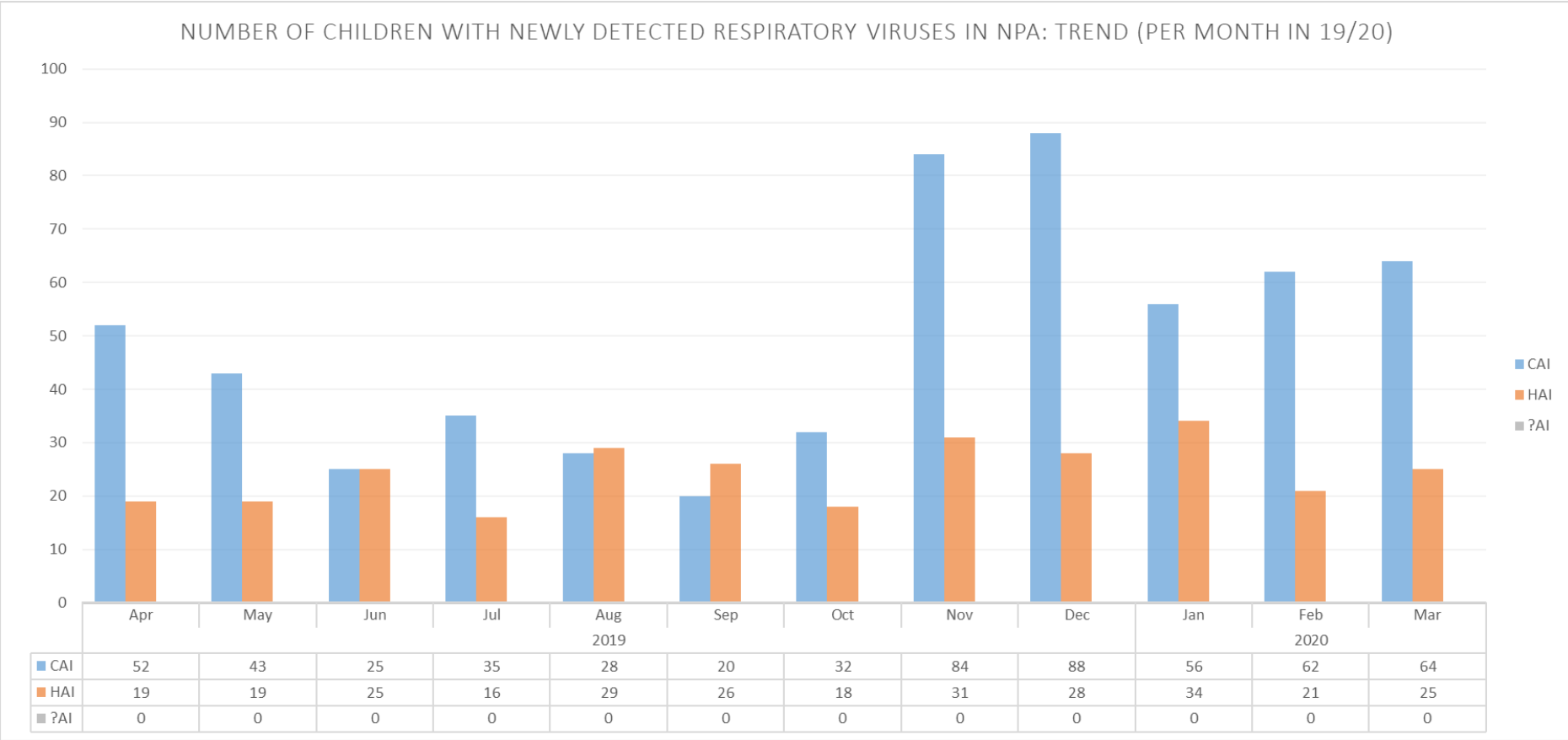
Attachment V

| | 14/15 | | | 15/16 | | | 16/17 | | | 17/18 | | | 18/19 | | | 19/20 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAI | HAI | ?AI | CAI | HAI | ?AI | CAI | HAI | ?AI | CAI | HAI | ?AI | CAI | HAI | ?AI | CAI | HAI | ?AI |
| Adenovirus | 23 | 5 | 0 | 45 | 20 | 0 | 54 | 31 | 1 | 72 | 39 | 2 | 108 | 58 | 4 | 119 | 61 | 0 |
| Bordetella pertussis | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Coronavirus 229E | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 4 | 0 | 2 | 4 | 0 |
| Coronavirus HKU1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 0 | 6 | 3 | 0 |
| Coronavirus NL63 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 2 | 0 | 14 | 2 | 0 |
| Coronavirus OC43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 6 | 6 | 0 | 5 | 9 | 0 |
| Enterovirus | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 3 | 0 | 0 | 0 | 0 |
| hMPV | 11 | 4 | 0 | 12 | 6 | 0 | 23 | 5 | 0 | 34 | 9 | 0 | 41 | 9 | 1 | 36 | 6 | 0 |
| Influenza A | 20 | 5 | 0 | 16 | 4 | 0 | 25 | 6 | 0 | 24 | 2 | 0 | 44 | 16 | 0 | 39 | 6 | 0 |
| Influenza A H1N1 | 1 | 0 | 0 | 11 | 2 | 0 | 1 | 0 | 0 | 9 | 1 | 0 | 29 | 13 | 0 | 10 | 2 | 0 |
| Influenza A H3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 9 | 0 | 0 |
| Influenza B | 9 | 2 | 0 | 16 | 3 | 0 | 13 | 3 | 0 | 33 | 9 | 1 | 3 | 0 | 0 | 11 | 0 | 0 |
| Legionella Pneumononie | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Mycoplasma pneumoniae | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parainfluenza 1 | 1 | 2 | 0 | 15 | 9 | 0 | 6 | 0 | 0 | 18 | 6 | 0 | 3 | 8 | 0 | 27 | 6 | 0 |
| Parainfluenza 2 | 1 | 1 | 0 | 7 | 5 | 0 | 9 | 8 | 0 | 8 | 8 | 0 | 10 | 9 | 1 | 13 | 14 | 0 |
| Parainfluenza 3 | 8 | 5 | 0 | 20 | 20 | 0 | 40 | 16 | 0 | 34 | 26 | 0 | 57 | 40 | 2 | 32 | 13 | 0 |
| Parainfluenza 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 8 | 5 | 0 |
| Rhinovirus | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 20 | 3 | 105 | 48 | 0 | 178 | 103 | 0 |
| RSV A | 9 | 4 | 0 | 45 | 23 | 0 | 35 | 20 | 0 | 50 | 18 | 2 | 48 | 14 | 0 | 85 | 56 | 0 |
| RSV A/B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 22 | 1 | 0 | 8 | 1 | 0 |
| RSV B | 11 | 1 | 0 | 18 | 7 | 0 | 42 | 13 | 0 | 40 | 10 | 1 | 63 | 20 | 1 | 19 | 3 | 0 |
| SARS-CoV-2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 |
| **Grand Total** | **94** | **29** | **0** | **205** | **99** | **0** | **248** | **102** | **1** | **354** | **155** | **11** | **555** | **255** | **9** | **625** | **295** | **0** |

Attachment V

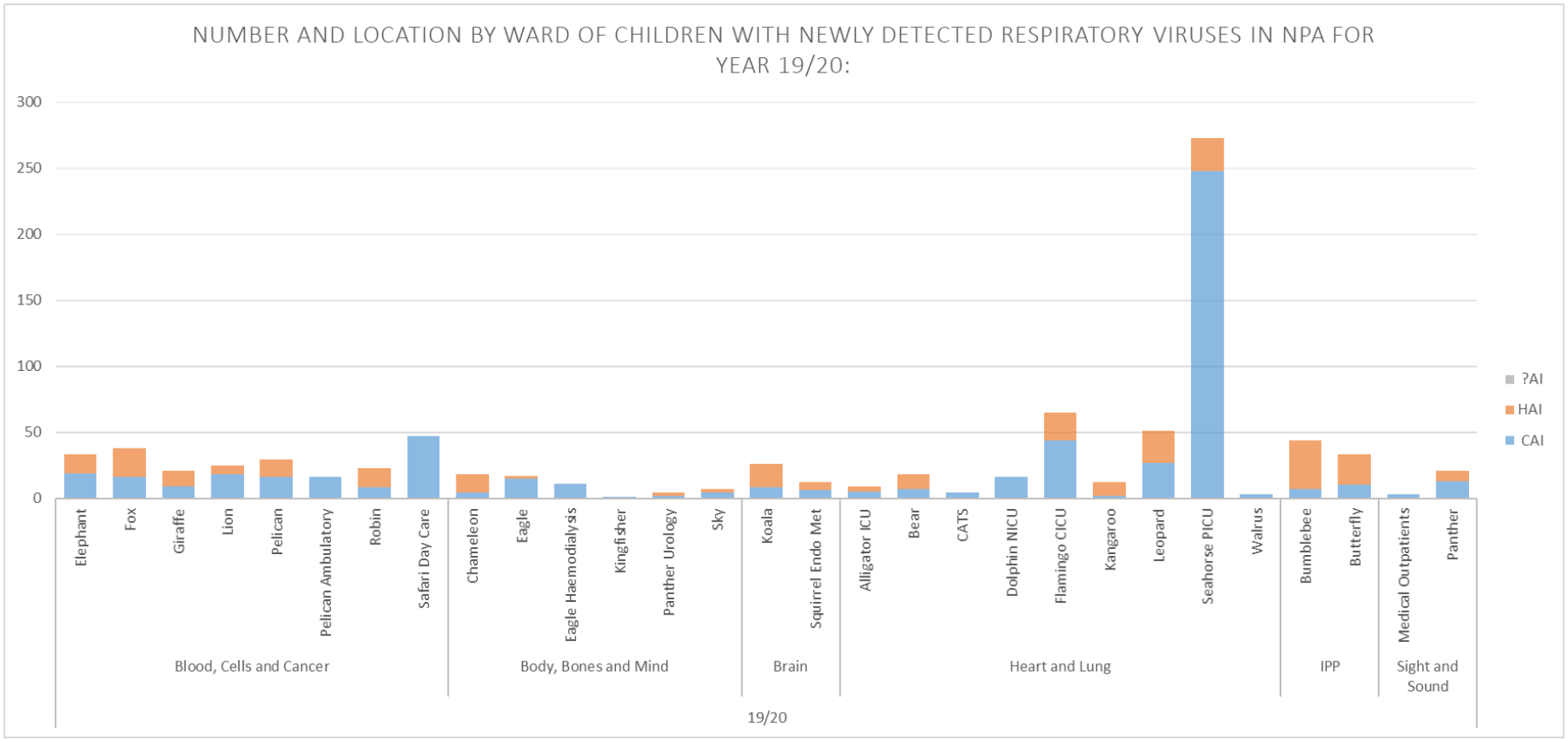
**Bar chart showing numbers of children with newly detected respiratory viruses and location at diagnosis during 2017/18**

CAI – 'Community acquired' = present on admission
HAI - 'Acquired in hospital' – for convention this is taken as onset after 48 hours, however in reality this will include some incubating on admission as incubation varies.
?AI – where unable to assign due to uncertain history or delayed testing.



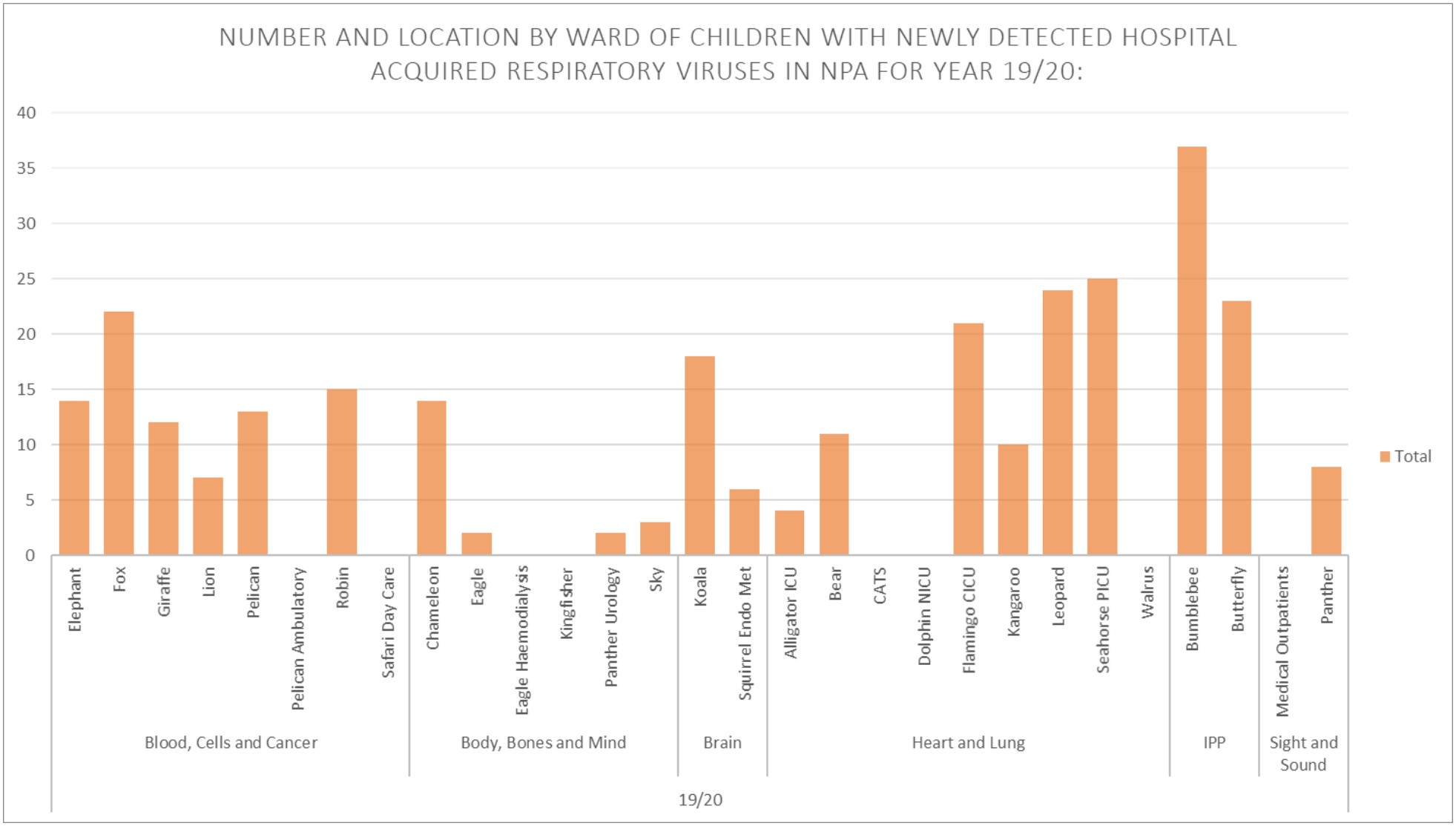

| | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2019 | | | | | | 2020 | |
| CAI | 52 | 43 | 25 | 35 | 28 | 20 | 32 | 84 | 88 | 56 | 62 | 64 |
| HAI | 19 | 19 | 25 | 16 | 29 | 26 | 18 | 31 | 28 | 34 | 21 | 25 |
| ?AI | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Attachment V



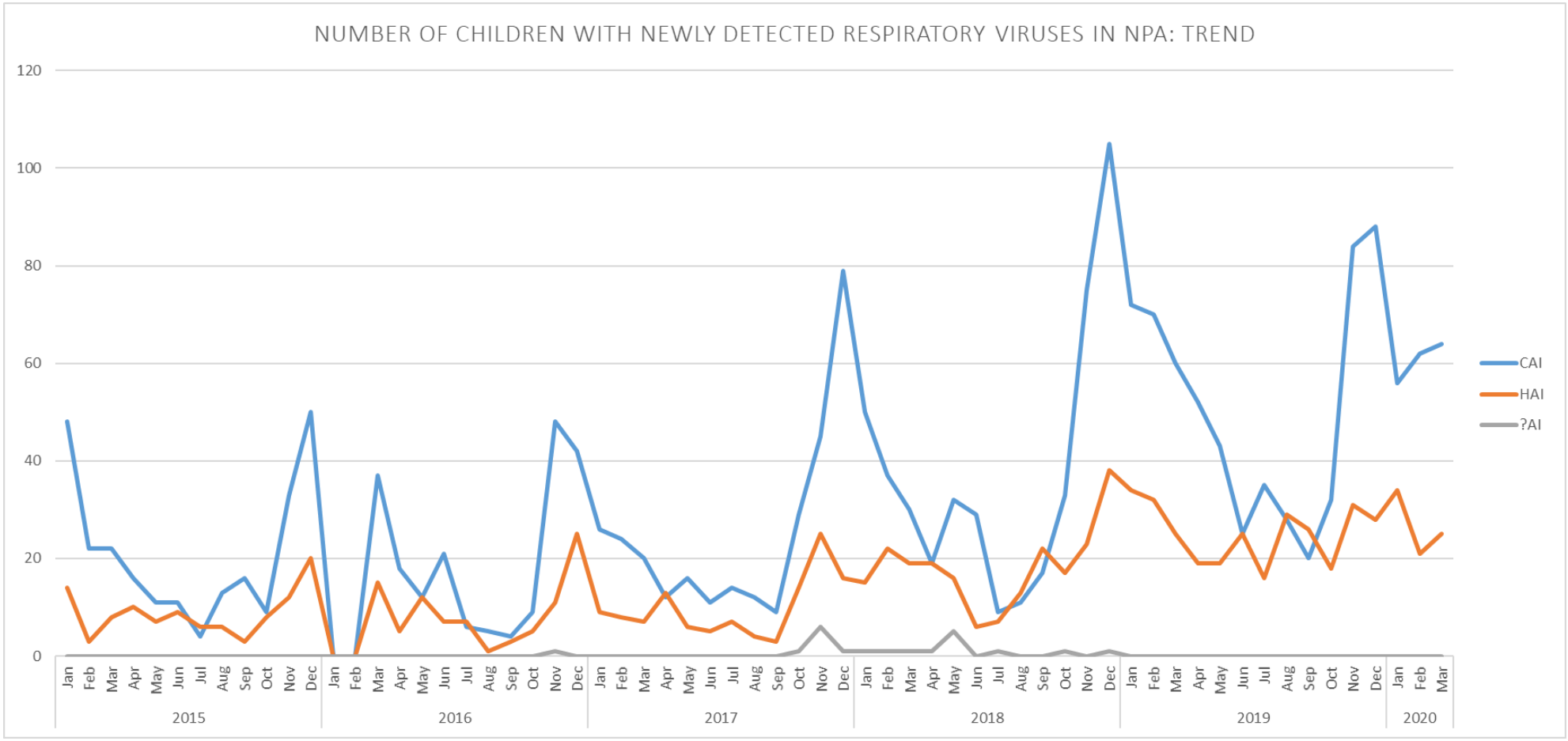

**Bar chart showing numbers of children with newly detected hospital acquired respiratory viruses and location at diagnosis during 2019/20**

Attachment V



Attachment V

**Graph showing season trends in respiratory virus infection over last 5 years at GOSH**



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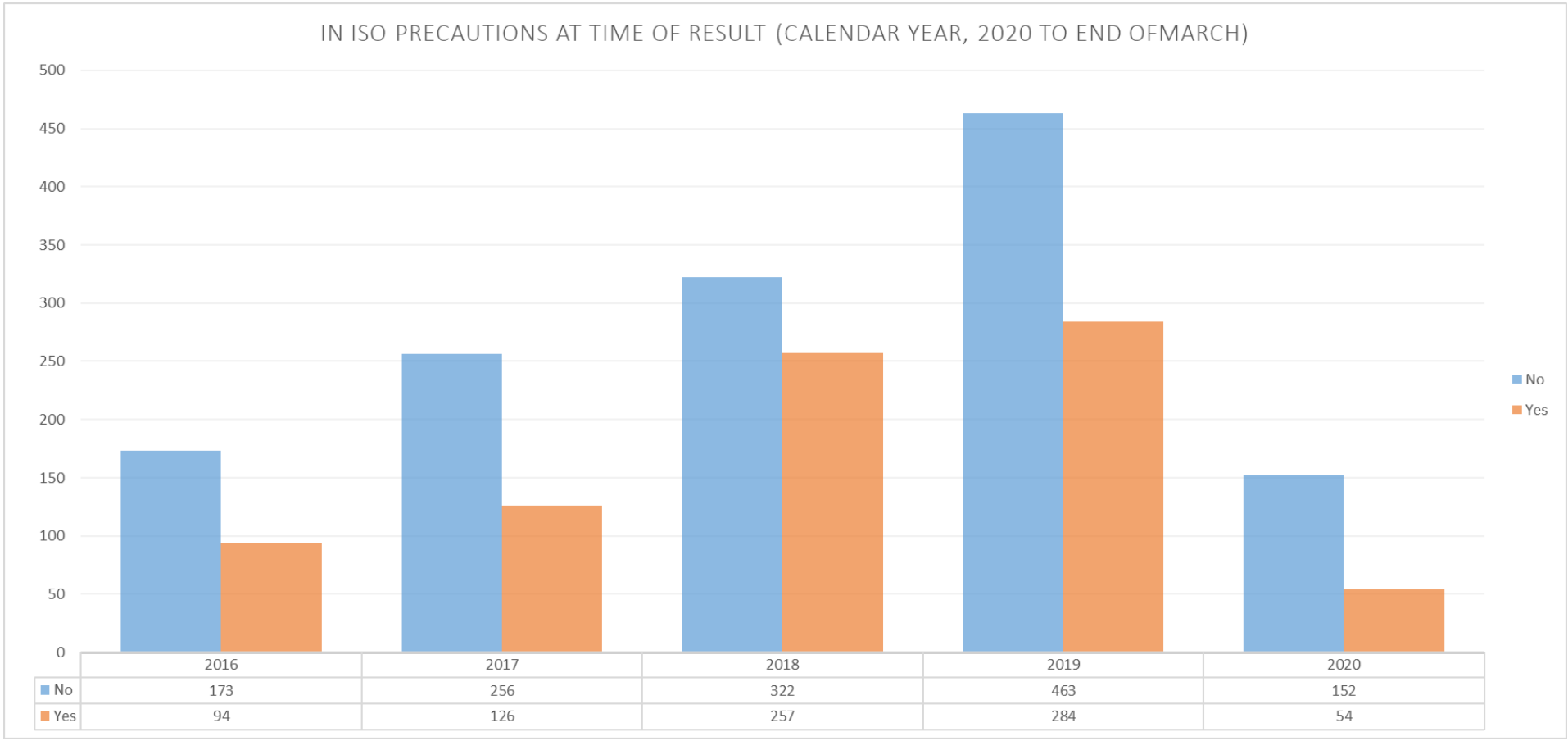



| | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|
| No | 173 | 256 | 322 | 463 | 152 |
| Yes | 94 | 126 | 257 | 284 | 54 |

## 5.17 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 additional 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.

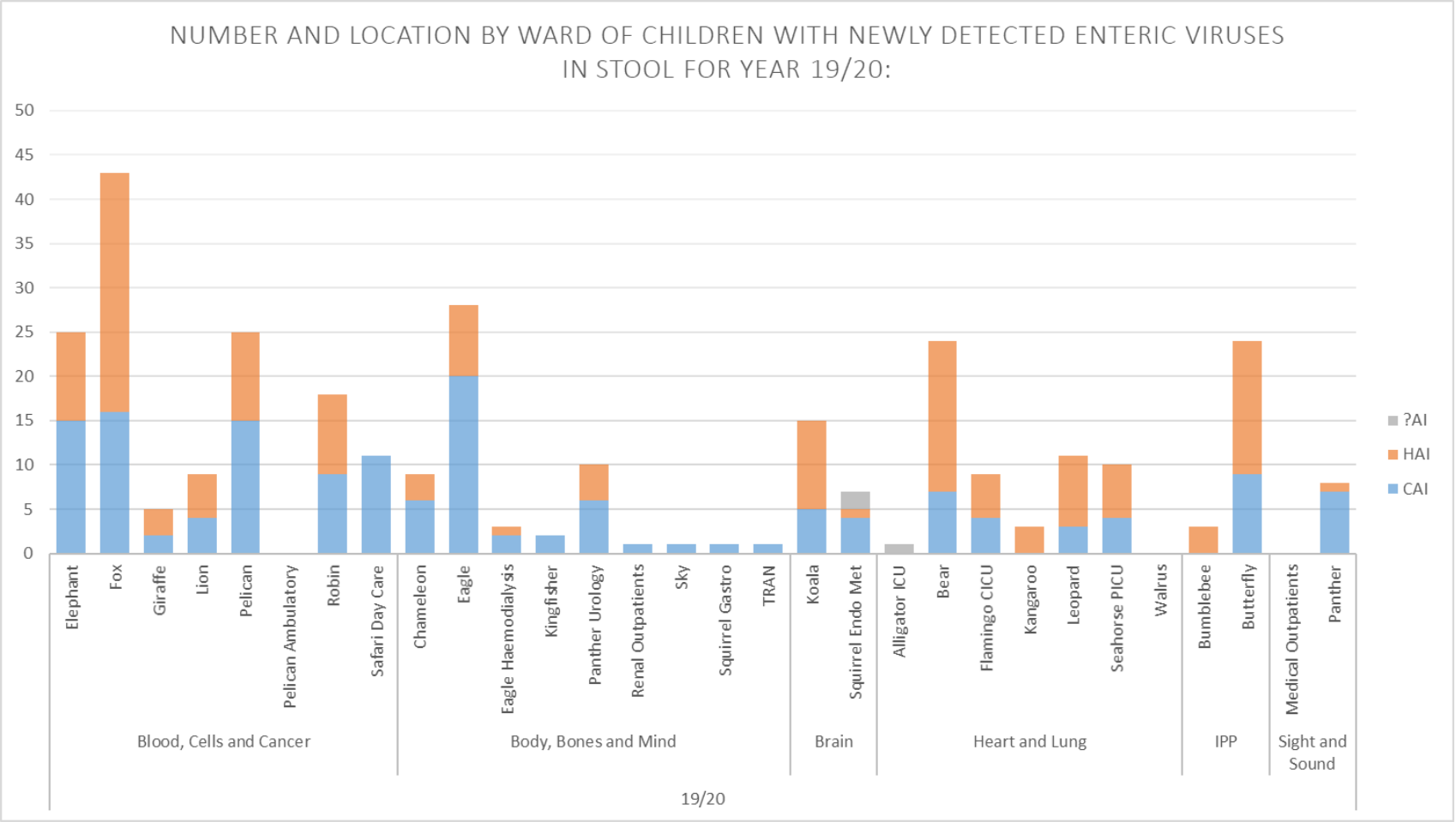
The number detected in 2019/20 has decreased significantly to 343 (from 624 in 2018/19), with 155 (down from 288) recorded as acquisitions.

Table showing number of enteric viruses detected by financial year

| | 14/15 | | | 15/16 | | | 16/17 | | | 17/18 | | | 18/19 | | | 19/20 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CAI | HAI | ?AI | CAI | HAI | ?AI | CAI | HAI | ?AI | CAI | HAI | ?AI | CAI | HAI | ?AI | CAI | HAI | ?AI |
| Adenovirus | 10 | 12 | 0 | 56 | 38 | 4 | 112 | 72 | 5 | 117 | 87 | 6 | 159 | 145 | 15 | 77 | 82 | 3 |
| Astrovirus | 5 | 2 | 0 | 14 | 3 | 0 | 20 | 27 | 0 | 25 | 34 | 2 | 18 | 21 | 0 | 15 | 8 | 0 |
| Norovirus G1 | 2 | 1 | 0 | 9 | 0 | 0 | 4 | 1 | 1 | 6 | 5 | 0 | 13 | 9 | 0 | 10 | 4 | 0 |
| Norovirus G2 | 13 | 16 | 0 | 62 | 43 | 0 | 68 | 73 | 2 | 61 | 49 | 0 | 54 | 52 | 1 | 40 | 28 | 1 |
| Rotavirus | 5 | 2 | 0 | 14 | 6 | 0 | 21 | 5 | 0 | 19 | 8 | 0 | 12 | 17 | 2 | 12 | 6 | 0 |
| Sapovirus | 10 | 9 | 0 | 44 | 42 | 0 | 33 | 22 | 1 | 44 | 43 | 1 | 51 | 44 | 1 | 30 | 27 | 0 |
| **Grand Total** | **45** | **42** | **0** | **199** | **132** | **4** | **258** | **200** | **9** | **272** | **226** | **9** | **307** | **288** | **19** | **184** | **155** | **4** |

In 2018/19 services and wards were impacted by clusters and outbreaks resulting in ward closures. A large drive was undertaken to encourage the implementation of contact based precautions before test results and a small improvement has been seen.

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



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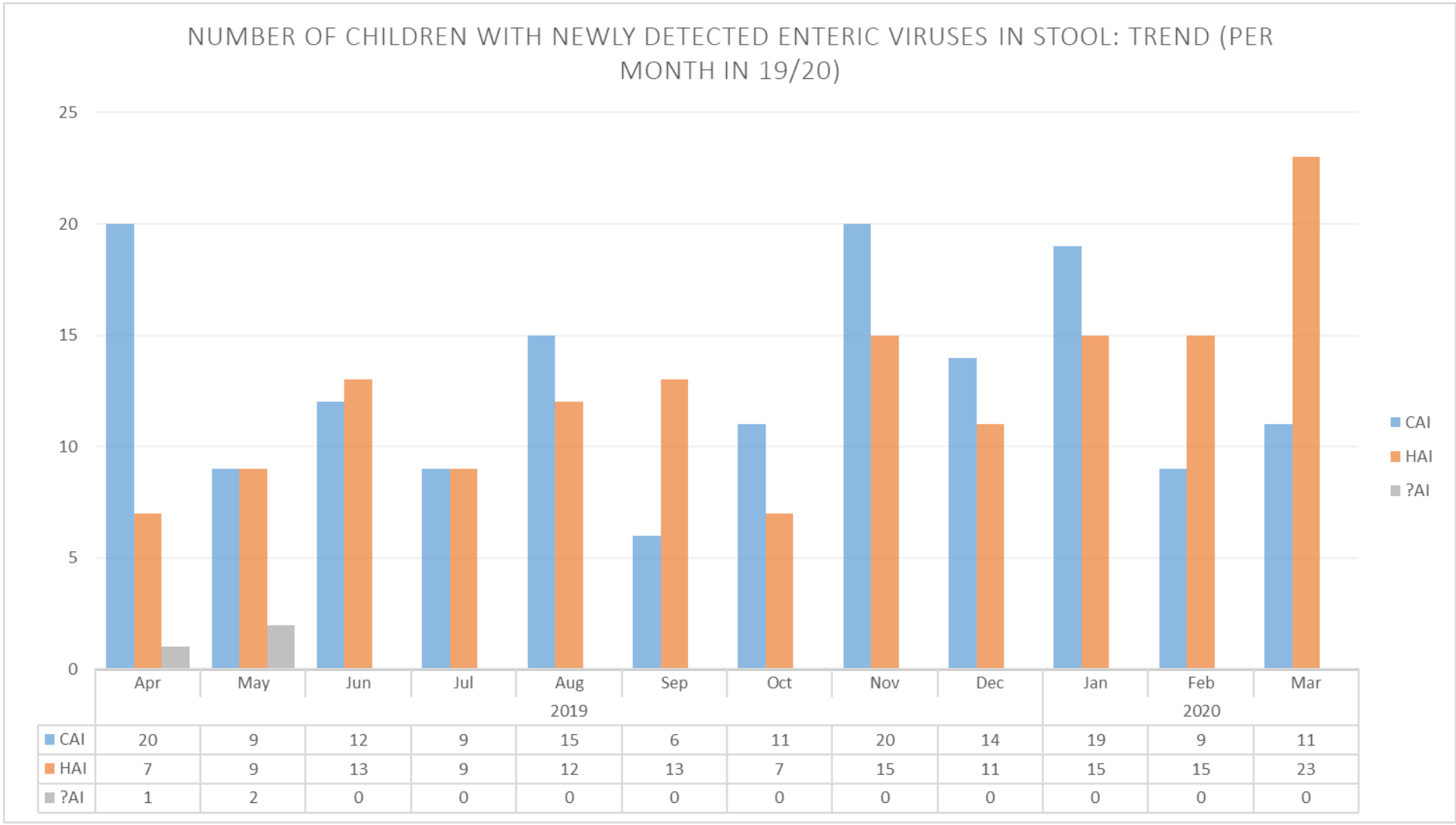


| | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2019 | | | | | | | | | 2020 | | |
| CAI | 20 | 9 | 12 | 9 | 15 | 6 | 11 | 20 | 14 | 19 | 9 | 11 |
| HAI | 7 | 9 | 13 | 9 | 12 | 13 | 7 | 15 | 11 | 15 | 15 | 23 |
| ?AI | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

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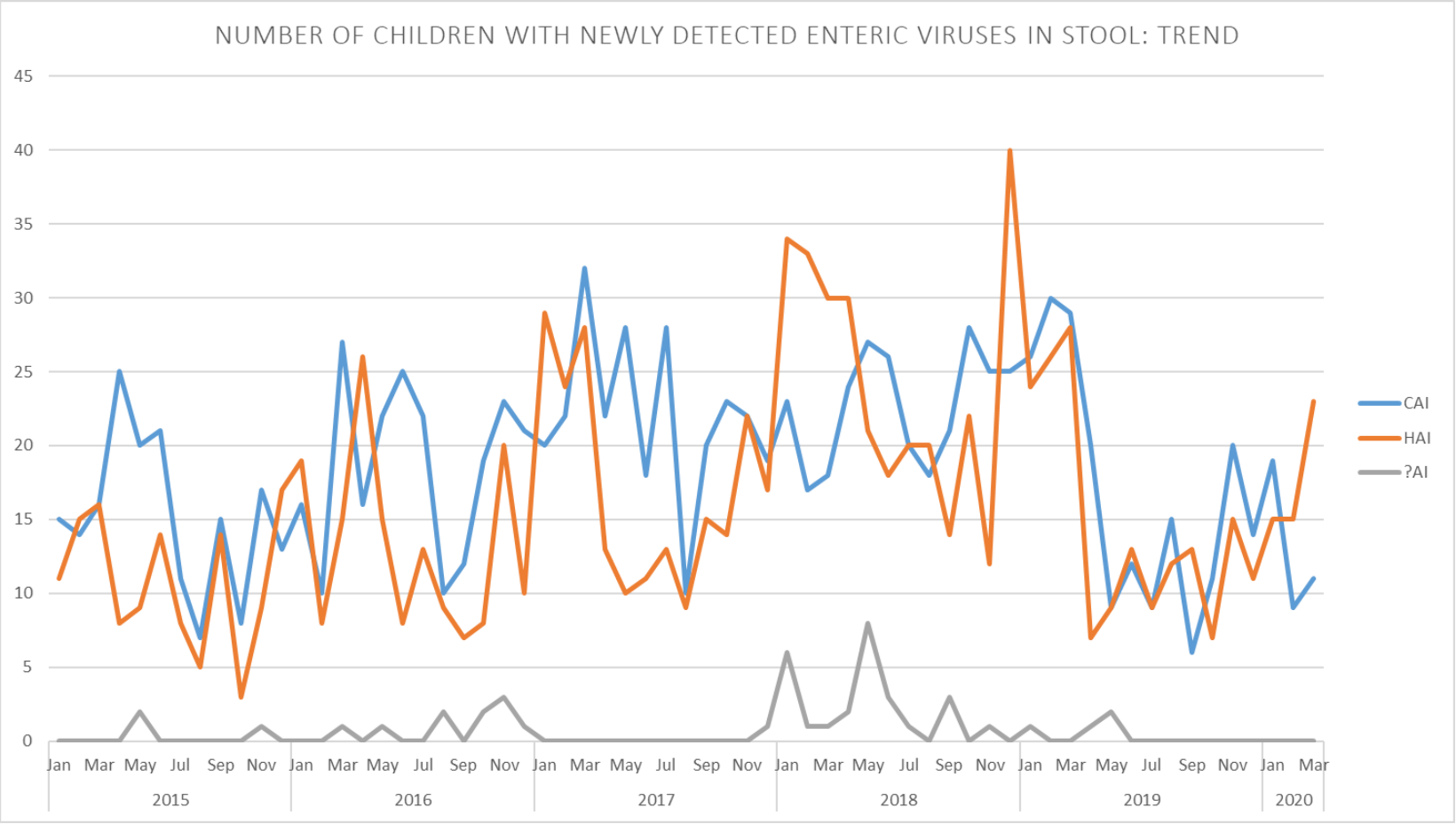


Reasons for outbreaks are multifactorial, but frequently include failure to recognise and react appropriately to an initial infectious child and difficulty managing clinical services such that environmental control is not achieved rapidly. At times staff have also found difficulty maintaining good personal protection while working, especially in relation to water supplies.

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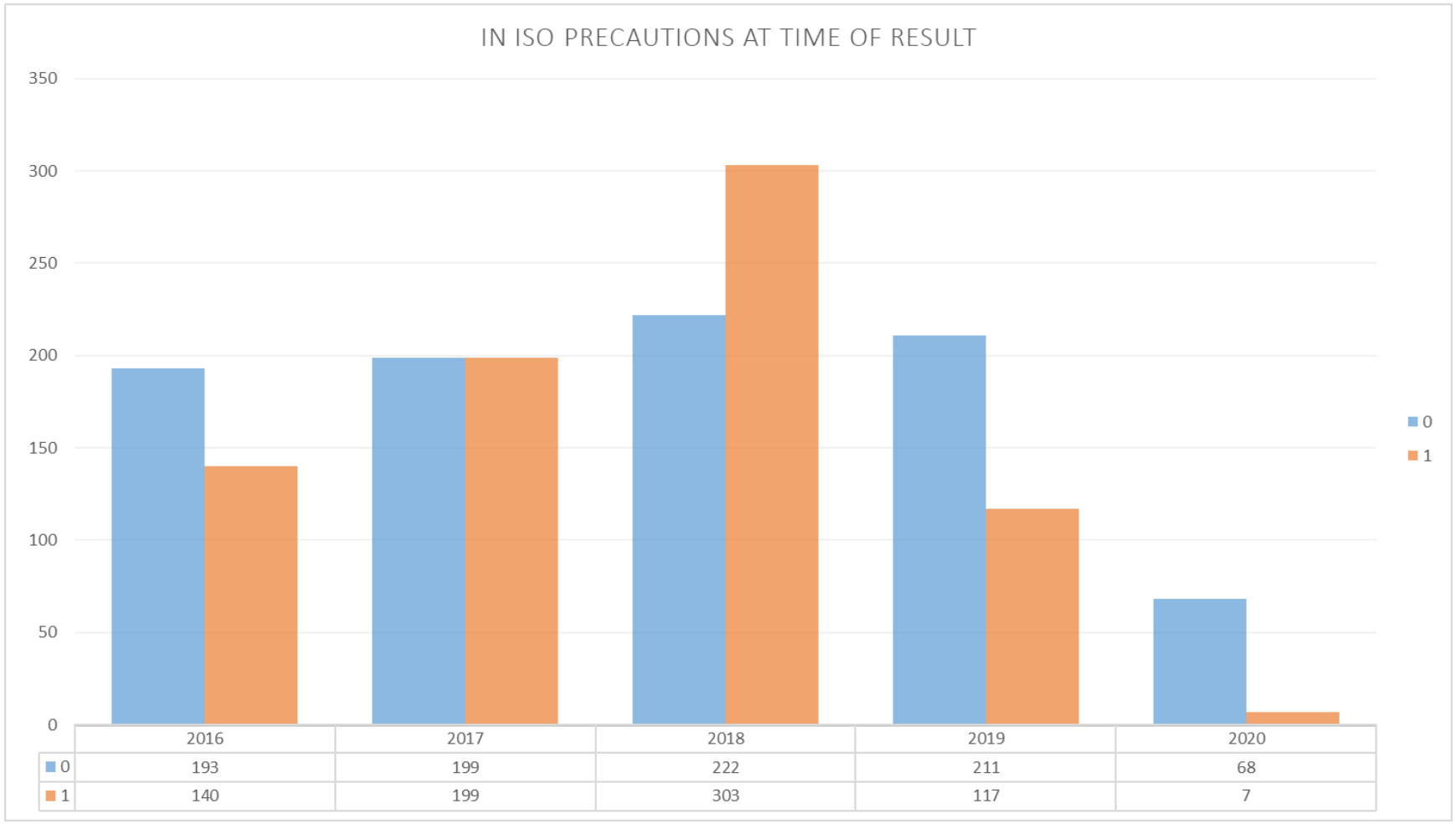
Attachment V

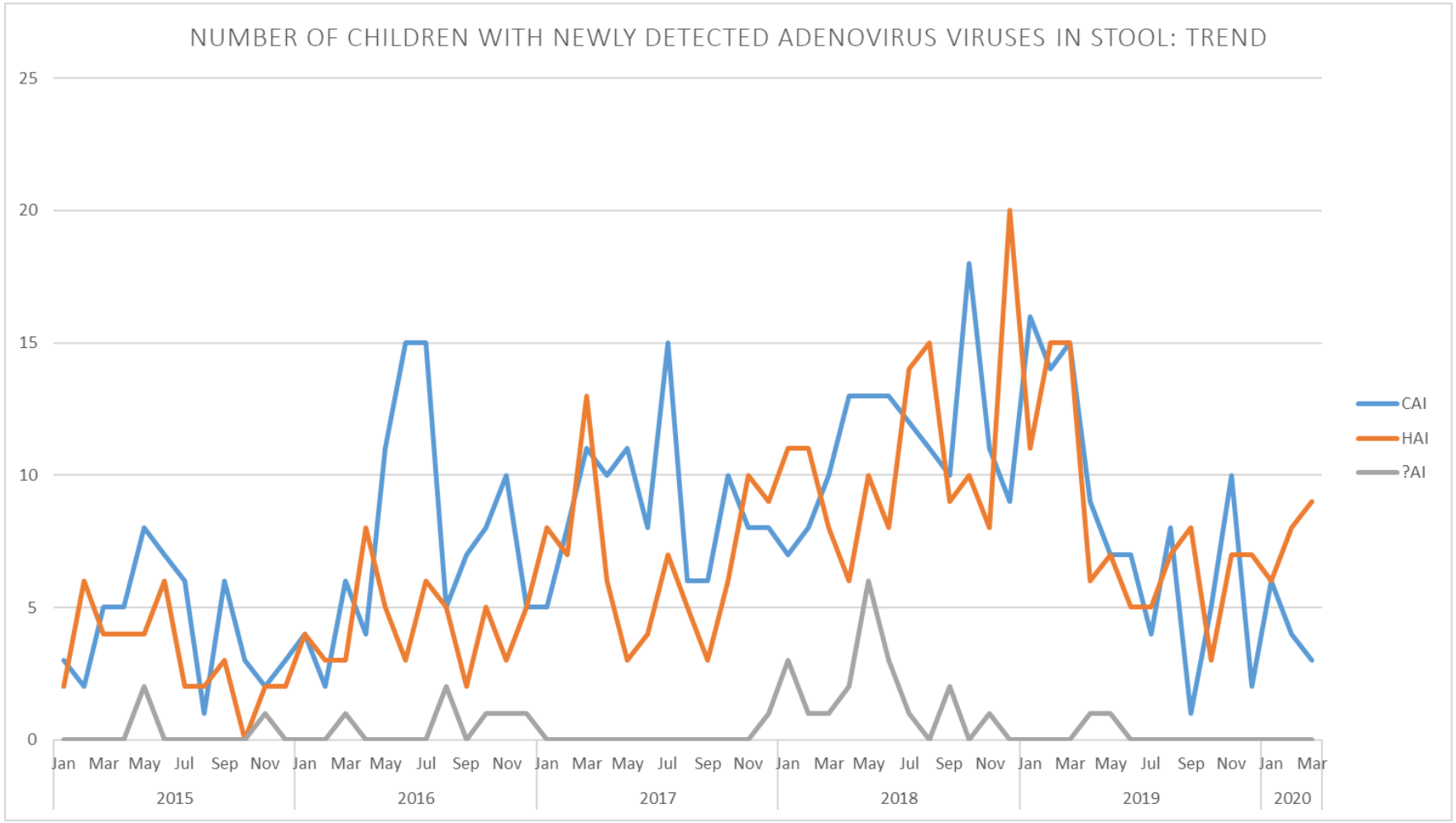



| | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|
| 0 | 193 | 199 | 222 | 211 | 68 |
| 1 | 140 | 199 | 303 | 117 | 7 |

**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 19- March 20 | Norovirus, astrovirus, rotavirus | 9 ward outbreaks with no wards or bed closed<br><br>5 wards under restricted visiting, enhanced cleaning etc. |

Attachment V



# Surveillance for antimicrobial resistant organisms

### 5.18 MRSA Admission Screening and acquisition, carriage rates and ward location

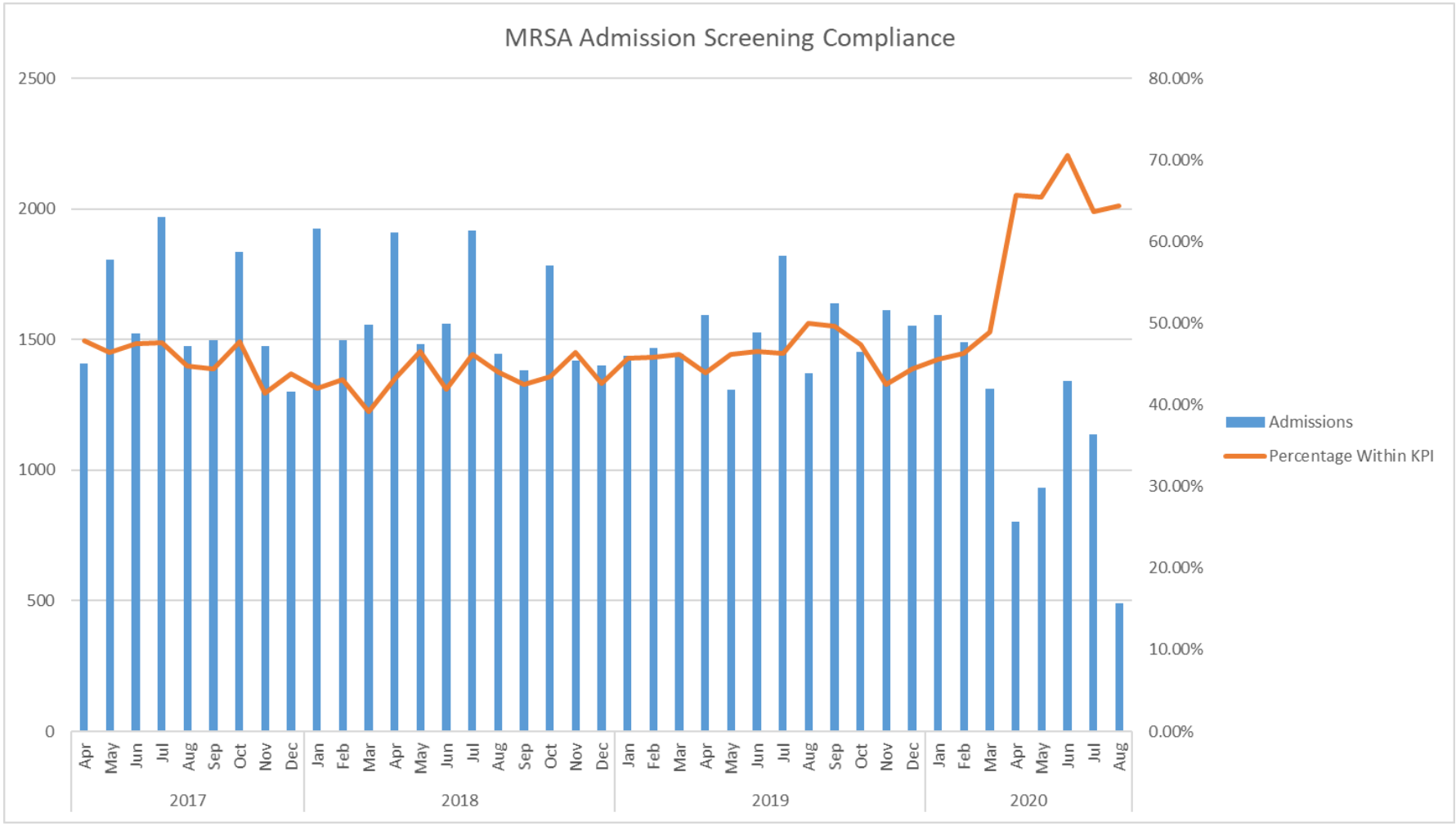
The Trust MRSA screening policy is universal admission screening (in the 30 days prior to admission (or sooner if admitted elsewhere in those 30 days) or within 24 hours of admission). We aim to achieve > 80% for all admissions, and near to 100% for the ICUs (except some situations it is not appropriate, so > 95% target).

Wards are provided continuous feedback on completion of screening through the Infection Control Report page (which wards monitor daily) and reminders from the IPC team.

A new automated admission screening compliance report had been created (30 day prior to within 24 hr) linked to the Nursing KPI dashboard for ease of access.

Screening compliance: Screening for all patients is monitored but with the switch to EPIC the data has been difficult to acquire. This is now resolved and monitoring and feedback systems are being developed.

Attachment V

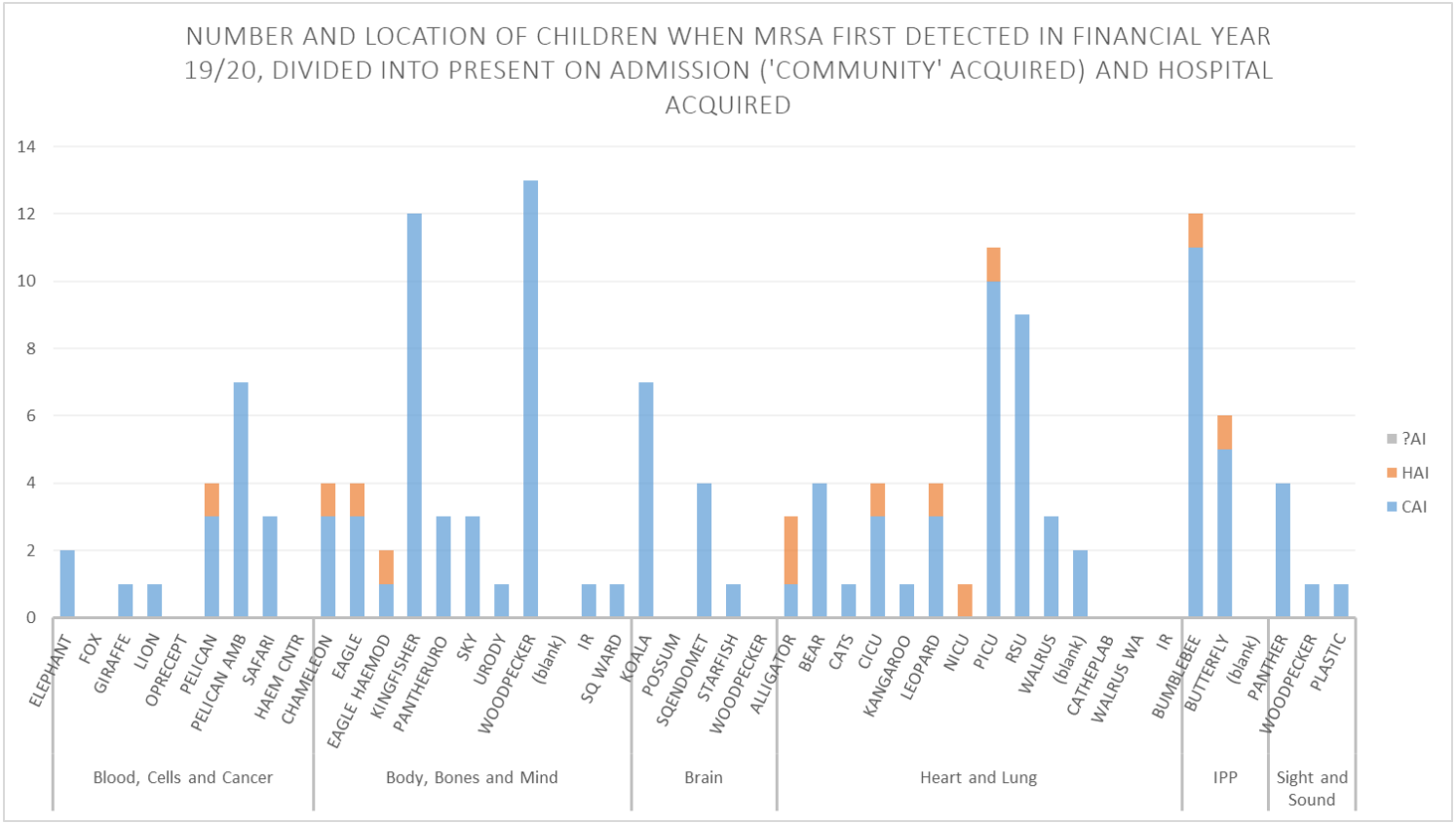


***MRSA cases of colonisation/carriage and infection at GOSH***

Details of newly detected MRSA carriage is shown in the table below.

**MRSA colonisation by financial year:**

| | CAI | HAI | ?AI | Total |
|---|---|---|---|---|
| 10/11 | 154 | 16 | 0 | 170 |
| 11/12 | 162 | 8 | 1 | 171 |
| 12/13 | 129 | 8 | 0 | 137 |
| 13/14 | 171 | 21 | 0 | 192 |
| 14/15 | 169 | 12 | 1 | 182 |
| 15/16 | 161 | 27 | 3 | 190 |
| 16/17 | 206 | 16 | 5 | 226 |
| 17/18 | 195 | 9 | 3 | 207 |
| 18/19 | 190 | 22 | 2 | 214 |
| 19/20 | 197 | 16 | 3 | 216 |
| **Grand Total** | **1734** | **155** | **18** | **1905** |




Every apparent GOSH acquired case is investigated.
Long term colonised patients are always present and represent ongoing risk; small clusters were seen.

In previous years there has been a disproportionately high rate of carriage in IPP where the unique situation of parents and families probably leads to higher transmission. During 19/20 an outbreak on MRSA colonisation was noted in the cardiac services which can be seen in the graph above.

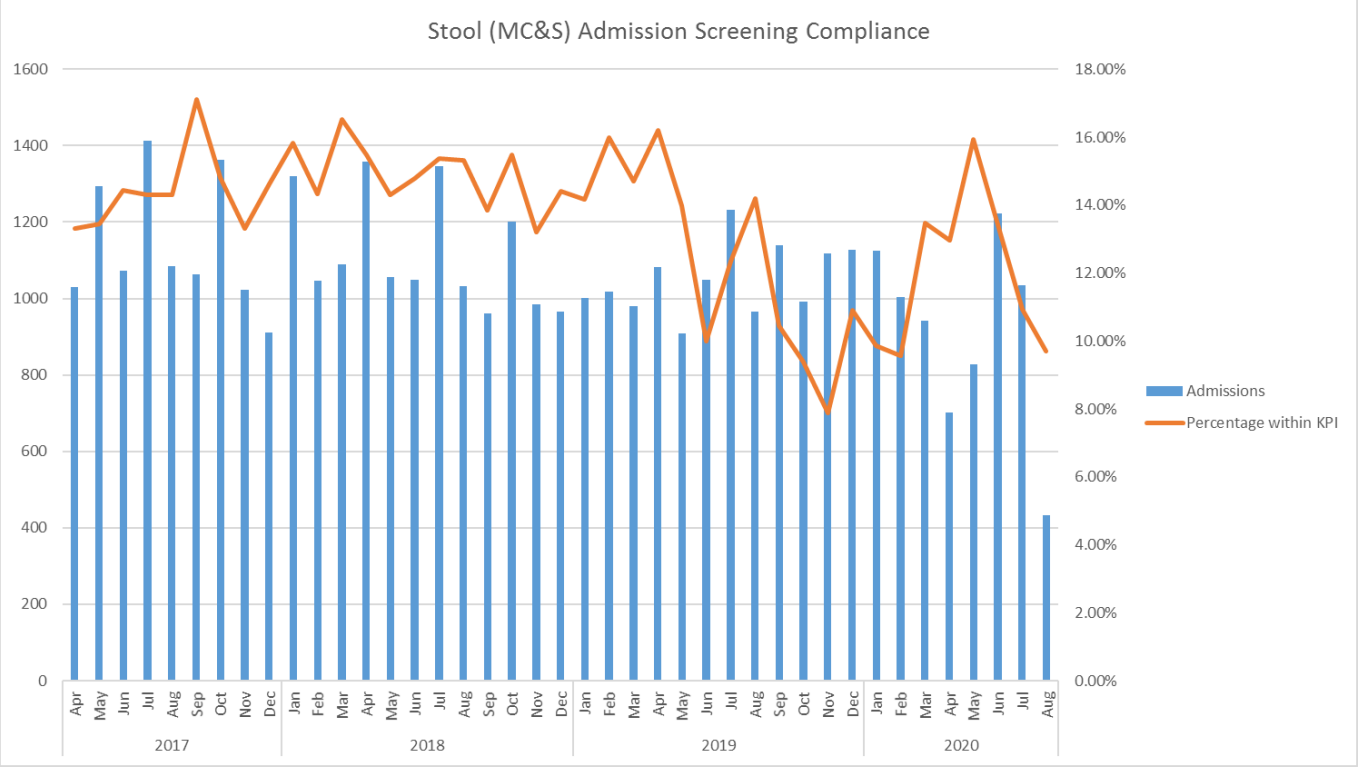
**5.19 Multiple resistant 'gram negative' organisms**, including transmissible carbapenemase producing organisms

Routine admission faecal surveillance is performed to allow

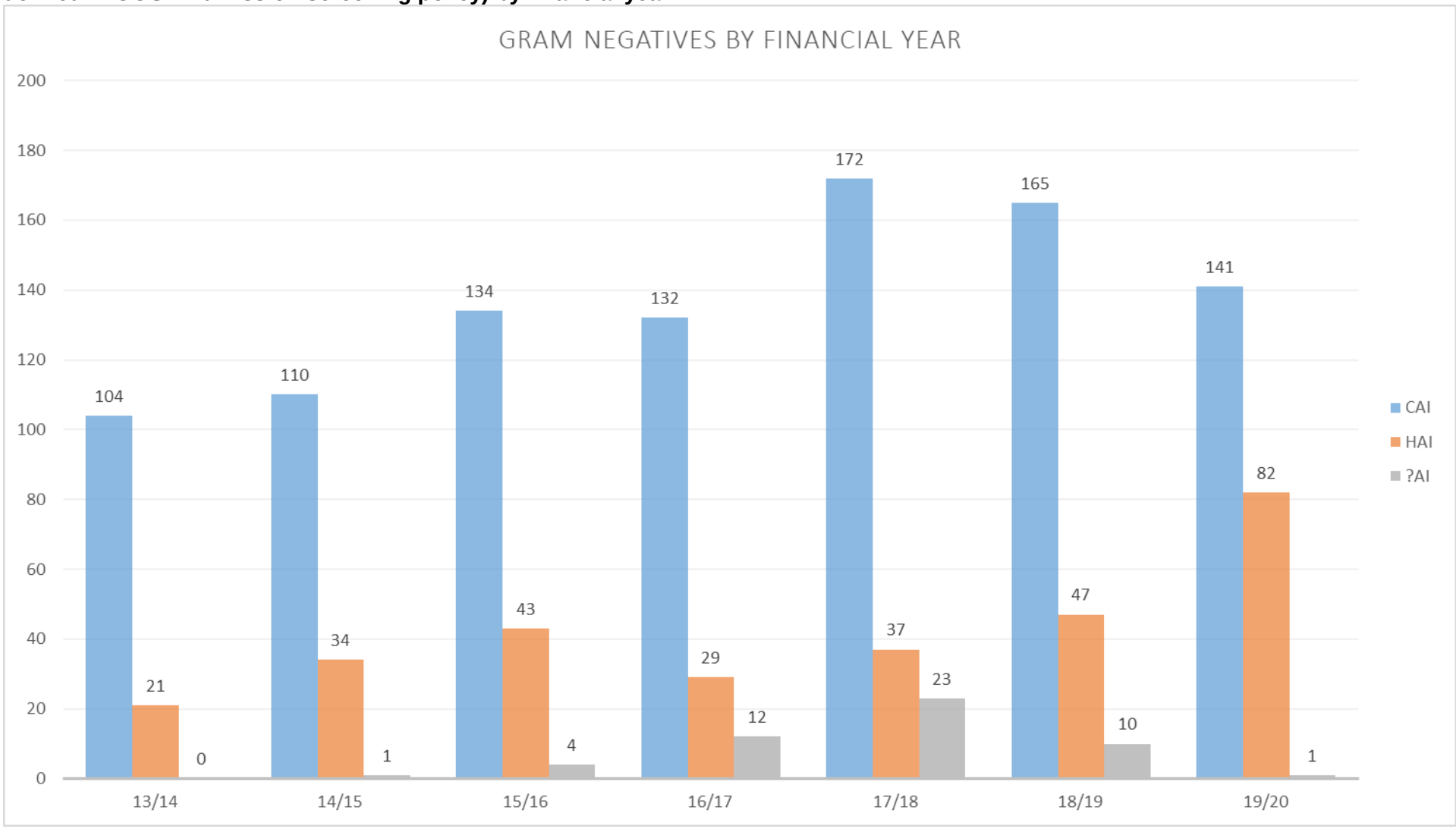
- instigation of isolation procedures in patients who are colonised with multiple antibiotic resistant organisms , including transmissible carbapenemase resistance ('ALERT' organisms as defined in the Admission screening policy) and
- to guide individual antibiotic choice of empirical treatment of serious sepsis.

We also detect colonised or infected children during processing of clinical samples and as part of routine stool screening on admission and after 30 days as an inpatient. In 19/20 weekly faecal screening of high risk inpatients (immunology and bone marrow transplant) was moved in line with the rest of the trust and is now undertaken every 30 days. Additional isolation procedures at instigated at considerable organisational, financial and individual cost.

Screening/testing shows a maintained number of colonised children detected on admission and an increase in those acquired in hospital.



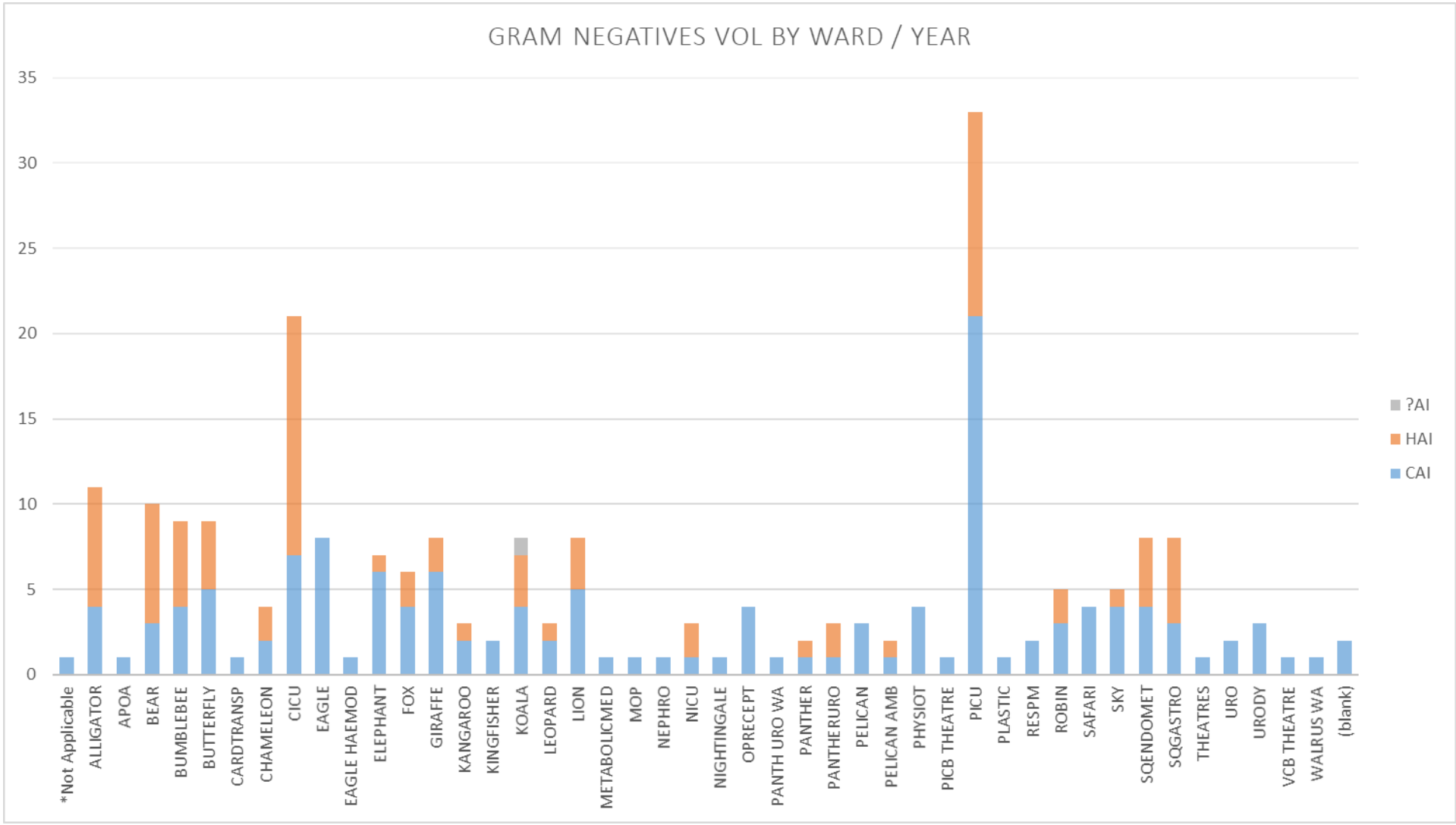
**Bar chart showing number of children with newly detected colonisation with multidrug resistant gram negative organisms (as defined in GOSH Admission screening policy) by financial year.**



CAI = those colonised on admission
HAI = those acquiring colonisation in hospital

This high level is due to the continuing national and international increase in antimicrobial resistant organisms but was also due to cross infection. In addition stool screening compliance figures are not as high as we would like them to be meaning, meaning children may be allocated as HAI when they arrived with the resistant organism or there may be cases of cross-infection which go unnoticed due to transmission based precautions not being implemented. Children are located in most wards (see bar chart below), with predominance in the International and Private Patients unit.

**Bar chart showing location of children when first detected as colonised with multidrug resistant gram negative organisms in financial year 2018-19**



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. Detailed research is underway to answer help understand the epidemiology of these isolates.

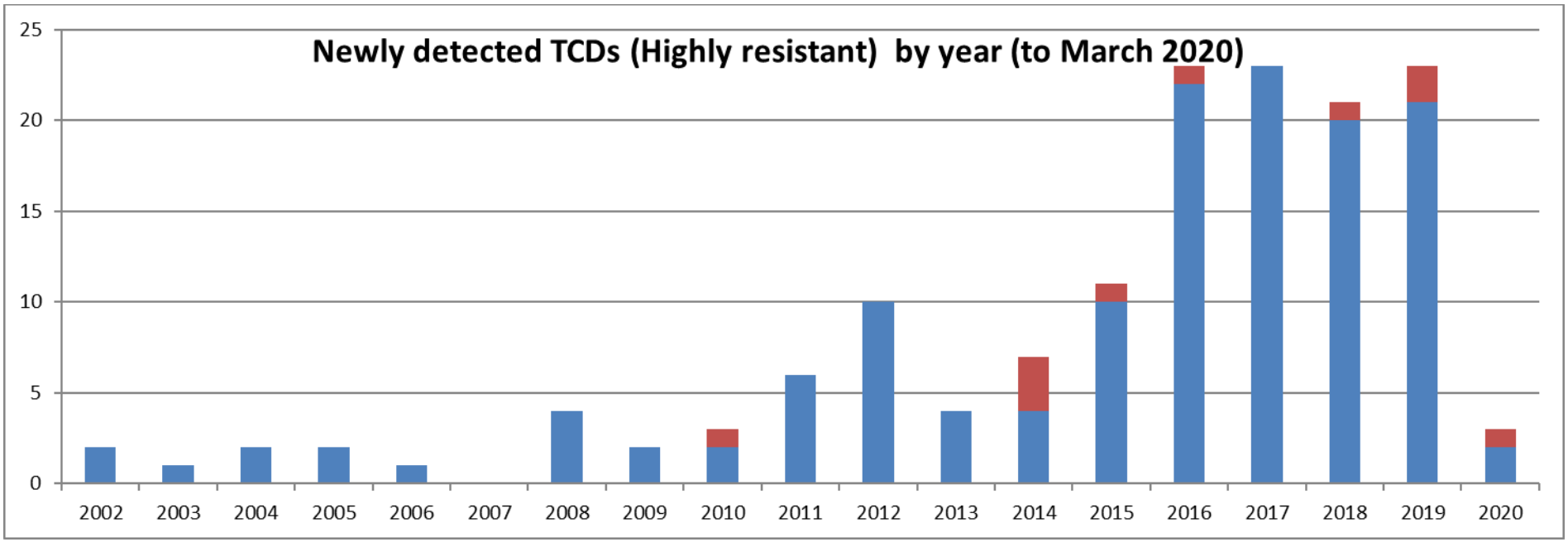
The organisation is stretched in its ability to apply controls mechanisms without adverse impact on other aspects of care provision; however, we feel it is essential to continue to do so.

**Carbapenemase resistant gram negatives**

The transmissible carbapenemase resistance determinants (TCDs; blaNDM, KPC, oxa48, VIM and IMI especially) represents the most serious threat to treatment yet. Organisms carrying this mechanism may become truly untreatable. They are becoming more prevalent in various countries and regions within UK and have been responsible for major outbreaks. We routinely screen for carriage and implement strict control mechanisms when found. There had been an increase in detection of children colonised with TCDs, plateauing in the calendar year chart shown below (but there were 21 in the financial year 2019/20).

Organisms are detected during routine screening and clinical samples.

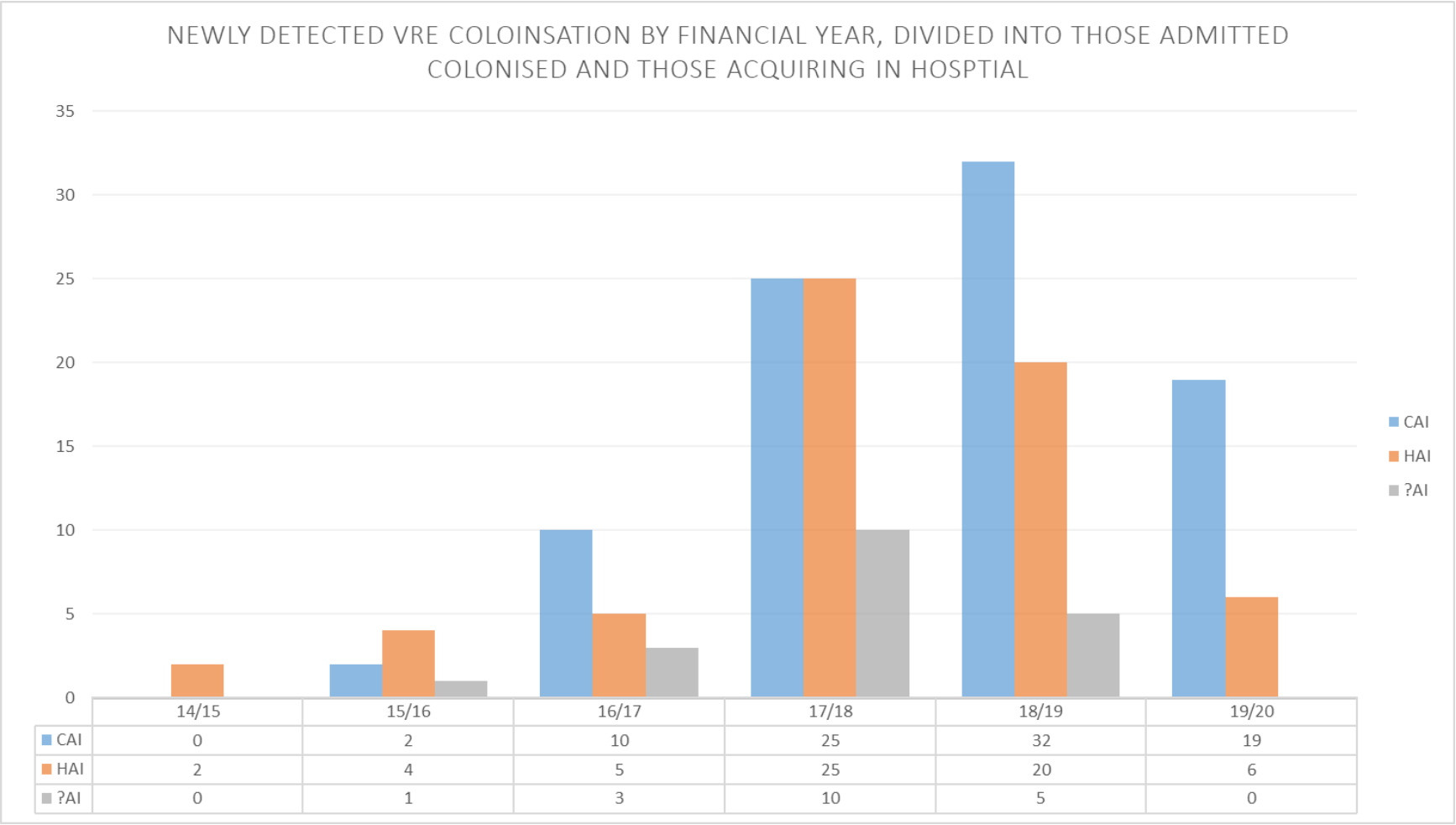
Bar chart showing the number of children newly detected as colonised with significant **transmissible carbapenemase carrying organisms** (Enterobacteriaceae, Acinetobacter)




Smaller orange boxes are possible hospital acquired – definite transmission in 2014/15, one case in 2018 and apparent in 2019 but source not found. Lack of compliance with stool screening on admission means that is a risk to the trust.

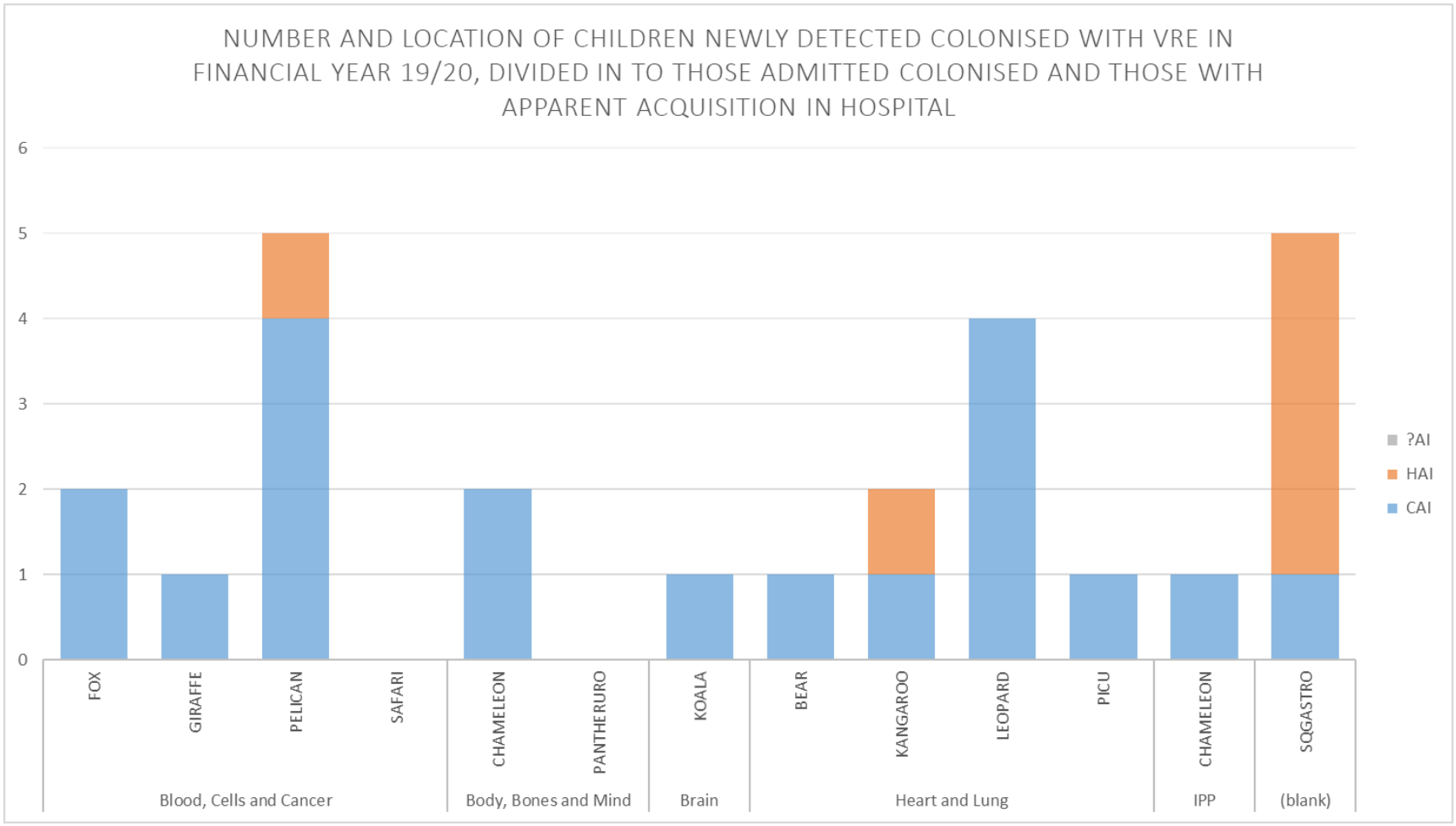
### 5.20 Vancomycin resistant enterococci (VRE)

VRE colonisation, community and hospital acquired, is shown below. Children may be found in most clinical services. VRE bacteraemia was rare (except for recurrence in one child).




| | 14/15 | 15/16 | 16/17 | 17/18 | 18/19 | 19/20 |
|---|---|---|---|---|---|---|
| CAI | 0 | 2 | 10 | 25 | 32 | 19 |
| HAI | 2 | 4 | 5 | 25 | 20 | 6 |
| ?AI | 0 | 1 | 3 | 10 | 5 | 0 |

Attachment V




As a result of the increase in cross transmission detected in 2017-18 we have increased terminal cleaning after room occupancy and, combined with actions on general cleaning, we hoped to reduce transmission. A small reduction has been seen.

### *5.21 Serious Untoward incidents and complaints involving IPC, major outbreaks and threats*

Serious Incidents: There were no SI's related to IPC in 19/20.

Major outbreaks: There was one large outbreak of MRSA that happened across cardiac services. In addition a large scale outbreak of adenovirus was noted across Robin & Fox wards (BMT).

A major outbreak meeting was also called after a staff member was found to have SARS-CoV2 in March 2020. A number of staff and patients were contact traced and followed up. Cardiac services were suspended in the hospital whilst this took place.

There were also no wards closed or on restricted admission due to enteric and respiratory viruses.

## 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 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

The savings lives bundles will be updated in line with national update.

## 7) Facilities- prepared by Sylvia Chegra

### Decontamination Report 2019-20

The past year has been a busy one for the Trust decontamination programme and has seen a number of long term projects completed as well as major changes in how some elements of decontamination are delivered.

Since 2012 decontamination services (including the decontamination of surgical instruments, equipment and flexible endoscopes) has been outsourced to a third party provider with the decontamination of surgical instruments provided from an off-site SSD, whilst the decontamination of equipment and flexible endoscopes has been provided from units on the GOSH site staffed by the third party provider.

This service provision was reviewed as part of the decision to retender the decontamination services contract and it was agreed that the on-site services for the decontamination of equipment and the one for flexible endoscopes would be removed from the contract and the service managed and staff by the Facilities team.

The contract for the decontamination of surgical instruments was tendered in the autumn of 2019 using a specification that was derived from a number of stakeholder engagement sessions to ensure the service going forward would meet the needs of the clinical teams. The contract was awarded to a new provider with a start date of 1st April 2020. The successful transfer between providers was overseen by a project team led by Facilities with the support of key stakeholders such as ICT and clinical service users.

The build of a new Medical Equipment Decontamination Unit (MEDU) was ongoing throughout the year and, once completed and handed over to the Trust, will provide a state of the art facility for the decontamination (including high level disinfection) of equipment and toys as well as providing a compliant facility for the decontamination of cardiac heater coolers which will be one of the first in the country.

The centralised endoscopy unit also underwent a refurbishment during 2019 which saw the installation of new washer disinfectors and supporting water softening systems as well as an upgrade and reconfiguration of the decontamination rooms. This has helped to provide a more reliable service as well as a more productive workspace.

The decontamination team, which is part of Soft Services and Estates & Facilities, continues to strive towards both ensuring that decontamination is provided in compliance with national and international standards as well as working collaboratively with other stakeholder groups to develop the service and incorporate innovation into GOSH.

**Cleaning**

The Trust works in partnership with Outsourced Client Solutions (OCS) who provide a cleaning service across the Trust. The service provided is in line with the national cleaning standards and monitored through a multi-tiered audit process which includes OCS (contractor) led audits, triumvirate audits (where there is representation from Facilities, OCS and Clinical teams) as well as Facilities led audits. These audits, which feed into the service KPIs, are monitored as part of the contract monitoring process and are reported through a number of committees, including the contract monitoring committee and the Trust Infection Control Committee.

**PLACE**

The Soft Services team play an active part in leading the PLACE audits for GOSH and have consistently seen improvement in the achieved scores year on year.

The Patient-Led Assessments of the Care Environment (PLACE) are an annual assessment of the non-clinical aspects of the patient environment. GOSH PLACE 2019 was held in October and was supported by 18 patients/ parents representatives which is the highest patient participation since PLACE was first held in GOSH in 2013

PLACE aims to promote the principles established by the NHS Constitution that focus on areas that matter to patients, families and carers:

– Putting patients first;
– Active feedback from the public, patients and staff;
– Adhering to basics of quality care;
– Ensuring services are provided in a clean and safe environment that is fit for purpose

**Linen & Laundry**

The Trust works in partnership with Elis who are contracted to provide a linen and laundry service, this service is audited and monitored in line with national standards to ensure the service is of an acceptable level and the service KPIs are being met. In 2019/2020 Elis provided a total number of over 1.6 million laundered items to GOSH with a reject rate well below the contractual KPI and expected national average. For the first quarterly of the year, please see table below.

| | April 2019 | May 2019 | June 2019 |
|---|---|---|---|
| Total Number of Items Delivered | 121770 | 105555 | 131209 |
| Number of Rejected Linen Items | 996 | 742 | 653 |

**Mattress Audit**

The Facilities team carry out an annual audit of all mattresses in the trust. This is to ensure all mattresses are fit for purpose – the table below shows the number of mattresses audited in 2019.

| | |
|---|---|
| **Total no. of tested mattresses** | 329 |
| **Pass** | 298 |
| **Fail** | 31 |

## 8. Estates IPC report, prepared by Head of Estates and Estates Compliance Manager

This report has been provided by the Head of Estates with sub-reports provided by the Senior Estates Manager and Estates Compliance Manager. The report covers significant events relating to the Hot and Cold Water Systems and Ventilation Systems at GOSH for year 2019-20, as well as planned works for the upcoming year 2020-21.

### 8.1 Hot and Cold Water Systems

The Estates Team has worked to develop a Compliance Dashboard which captures all requirements set out by relevant legislation and guidance to ensure continued safe and effective operation of the systems, and also allows for easier monitoring and reporting of non-compliance issues and escalation of non-conformities to ensure remedial action is carried out where necessary. The Water Safety Group meets on a quarterly basis, supported by monthly Water Monitoring Group Meetings which provides a focus on water sampling. The Water Remedial Action Tracker has also been updated and is shared on a weekly basis to provide oversight of remedial actions carried out on positive outlets. An enhanced flushing regime procedure has also been developed to support the sampling programme. Any on-going issues can then be escalated through the WMG to the WSG. The Water Safety Policy was reviewed and approved at the Policy Approval Group in September 2019 and is available on the Trust Intranet. The WSG also implemented the Trust Water Safety Plan, which has been developed with the Estates and IPC Teams, along with the Trust Authorising Engineer Sav Christoforou of Hydrop E.C.S.

Due to the current Covid-19 pandemic, water sampling in ward areas carried out by contractors has been suspended to limit contact and potential spread of the virus. As such, the Estates Team are working to produce an in-house water sampling standard operating procedure which will allow this sampling to continue, this is expected to be implemented in May 2020.

The Water Monitoring and Maintenance Contract was due for renewal during this financial year, and following the tender process was re-awarded to ProEconomy and WCS, who continue to carry out water sampling, servicing and maintenance on the Hot and Cold Water Systems at GOSH. With regards to in-house Planned Preventative Maintenance, the Estates Department migrated from the Zetasafe PPM system to Compass, which now allows direct reporting between Compass and the Concept Helpdesk CAFM system.

Significant works carried out during this year are as follows:

- Minor and Major service of Thermostatic Mixing Valves (TMVs) (November 2019 and February 2020)
- Annual Cold Water Storage Tank Inspection and Cleaning (October 2019)
- Monthly Servicing of Cooling Towers and Annual Clean (October 2019)
- Annual Cooling Towers Audit (July 2019)
- Additional 6 monthly Cooling Towers Audit (January 2020)

- Risk Assessments – Southwood Building (October 2019), Frontage Building (October 2019), ZCR Building (Post-Handover RA) (November 2019)

Planned Works for 2020-21

The hot water system supplying Octav Botnar Wing is currently oversized. Improvements are planned to reduce the system size from 4 calorifiers to 2 with Plate Heat Exchangers, this will ensure higher turnover and overall a more efficient system.

Modifications are also planned for the system supplying Southwood Building. Alterations will be made to the calorifier pipework size to make the system more efficient. More information on these plans will follow in due course.

## Ventilation Systems

A big improvement has also been seen with regards the Ventilation systems on site at GOSH. The development of the compliance dashboard has ensured quarterly validations are carried out on time and any non-conformities are raised and monitored via the monthly Ventilation Performance Meeting. Any on-going issues are then escalated as necessary to the quarterly Ventilation Committee Meetings. The Specialist (CRITICAL) Ventilation Systems Policy was reviewed and approved at the Policy Approval Group in December 2019 and is available on the Trust Intranet. The updated policy also includes a new process for derogations and design alterations which provides a more robust and comprehensive record for auditing purposes as well as re-validations. All future planned maintenance schedules have been input into the Concept CAFM Helpdesk system, including future verifications.

Following the KPMG internal audit in October 2019, 3 medium priority actions were raised with regards Ventilation Systems, 2 of which have been completed, the third is expected to complete in June 2020. A specialist ventilation remedial tracker has been implemented to ensure prompt response to non-conformities raised through quarterly validations, and this is monitored via the Ventilation Performance Meeting on a monthly basis.

Significant works carried out during this year are as follows:

- Due to the Covid-19 pandemic, Pelican Ward was reconfigured in March 2020 to create 6 SIR rooms for Covid-19 patients.
- Hedgehog Ward was also reconfigured to convert 10 bed spaces to accommodate Covid-19 patients.

Planned Works for 2020-21

The Air Handling Units supplying VCB Theatres currently do not have inspection hatches, making cleaning and maintenance difficult. Reconfiguration of the layout of the AHU components will allow for inspection hatches to be installed, as well as replacing the cooling and heating coils and replacing belt driven fans which will improve the overall energy efficiency of the system. Further details of these planned works will follow in due course.

8.2 Water Safety:

## 8.3 Water Safety Group Water

Water safety is now managed through the Water Safety Group. Chaired by the DIPC; this committee met quarterly and continues to develop its role in in the assessment and management of water risk.

An authorised engineer water (AE Water) is in place. The Trust has a number of fully trained Authorised Persons who will now be certified by the AE, although this is not complete.
The new Water Safety Policy is now approved and work is underway on the water safety plan.
The group received retrospective details on the water control systems in the two major development projects (Sight and Sound or ZCR) so they were approved after installation or purchase.

8.4 Legionella: All building systems continue to be tested and results and remedial works monitored in the Water Monitoring Group (Chaired by the Head of Estates). Legionella remains under control in the Estate (with Frontage Building contamination considered an acceptable risk). Communication and cooperation with the end users is improving as the importance of water risks are appreciated.
MSCB and PICB continue to safely run a low temperature hot water system with silver and copper ionisation. Significant changes have occurred in the estates teams, including bringing services in house, and reporting of activity to Water Safety Group is not yet satisfactory.
8.5 Pseudomonas aeruginosa risk - risk from water cannot be eliminated but continues to be controlled, through monitoring of patients, control of water use from colonised outlets and extension of testing to other areas with at risk patients.

8.6 Risk from heater cooler units has been controlled with replacement of all contaminated units and ongoing monitoring.

IPC input into development / projects:

IPC continue to input into all projects, although this is time constrained. The development of an IPC post with in Built Environment, proposed last year, was approved as part of the children cancer centre. A post holder was appointed and due to start later in the year.

## 9 Trust wide Audit – IPC Report

The infection control Trust-wide audit plan is 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 personnel in the clinical areas take responsibility, with guidance from the IP&CT, for performing planned audits. All data is displayed, by the QI Team, on continuous dashboards, although this required modification with the audit process change and switch to EPIC.

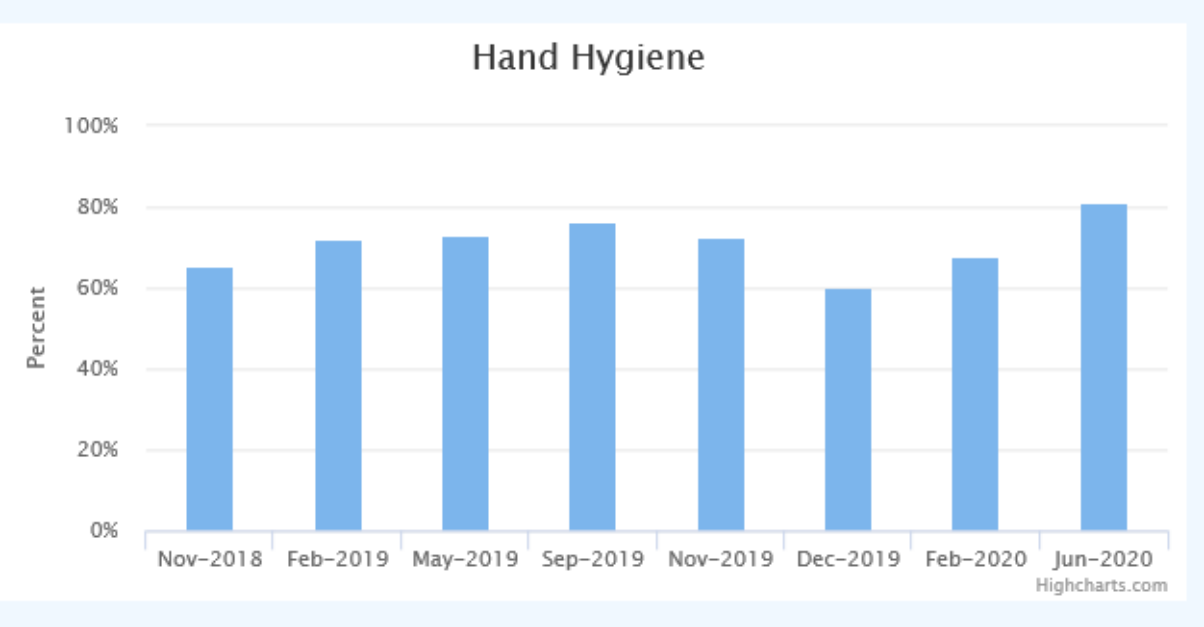
### 9:1 Hand Hygiene Results

The infection control trust-wide audit plan undertook a major change in focus and direction in October 2018. In previous years and until the change monthly hand hygiene (including bare below the elbows) and high impact intervention audits were carried out on a monthly basis. Results from both these audits were in the mid to high 90 percentiles and had remained at this rate for many years.

In October 2018 with approval from the IPCC and the Trust board we moved to quarterly audit days where hand hygiene audits and updated high impact intervention audits would be carried out using point prevalence methods rather than a minimum number of audits per month. In addition to completing the audits and collecting qualitative data as well as quantitative data we implemented the use of action plans to be completed each quarter on the findings from the audit days.

**9:1A Hand Hygiene Results**

The first trustwide audit day was held in November 2018. Hand hygiene rates have improved since the introduction in Nov 18. There was a slight reduction in compliance in Dec 2019 but this was due to a large number of areas not attending the audit day. This was highlighted and compliance again improved.



## Hand Hygiene

| Date | Observed | Compliant | Percent |
|---|---|---|---|
| Nov-2018 | 821 | 537 | 65% |
| Feb-2019 | 822 | 592 | 72% |
| May-2019 | 748 | 546 | 73% |
| Sep-2019 | 860 | 654 | 76% |
| Nov-2019 | 760 | 549 | 72% |
| Dec-2019 | 20 | 12 | 60% |
| Feb-2020 | 600 | 405 | 68% |

Action plans are live within the IPC dashboards and compliance is monitored through the directorate IPC meetings and the quarterly audit days

Outstanding improvement plan items — See completed items

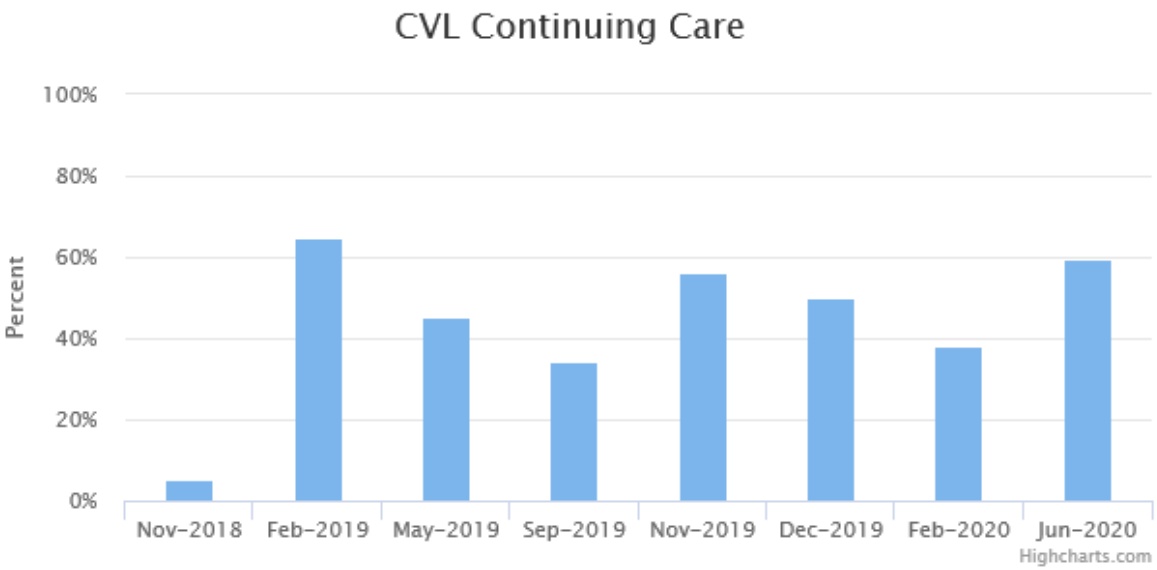
| Learning | Action | Escalation | Lead | Deadline |
|---|---|---|---|---|
| Wearing PPE in rooms | Posters on door, reminders to staff including doctors and play team. | n | Hayley | 30/06/2020 |
| CVL continuing care, full daily assessment | Poster, look at assessment (?same staff each time) Discuss, performance manage if required. Contact NIO via Helen to check data, act accordingly. | y | Hayley/Sarah/Kat | 31/07/2020 |
| CVL continuing care audit bundle | Update Biopatch info, email Helen | n | infection control team | 30/06/2020 |

### 9.2 'Gloves off' campaign

Arising from work during the audit development, it became apparent failure to decontaminate hands was often associated with unnecessary glove use. A highly successful programme, endorsed by the IPC Committee, was developed to rationalise and reduce unnecessary glove use. This work has now been picked up by NHSE/I as a project for dissemination across the health service. In 2019/20 this work expanded to include the risk assessment for gloves when using transmission-based precautions. No increase in infection rates was noted but the work has been paused due to covid-19.

### 9.3 Central Venous Line Ongoing Care

Audit of the Saving Lives HII CVL care bundle was performed monthly from all areas with frequent CVLs until Oct 2018. From Nov 2018 this was completed on a quarterly basis.




## CVL Continuing Care

| Date | Observed | Compliant | Percent |
|---|---|---|---|
| Nov-2018 | 112 | 6 | 5% |
| Feb-2019 | 99 | 64 | 65% |
| May-2019 | 151 | 68 | 45% |
| Sep-2019 | 119 | 41 | 34% |
| Nov-2019 | 103 | 58 | 56% |
| Dec-2019 | 6 | 3 | 50% |
| Feb-2020 | 105 | 40 | 38% |

Compliance with this bundle has been poor since the introduction of the audit system but CVL line related infection remains static. Areas for improvement within the bundle lie mainly around the documentation of dressing changes and needle free connectors within Epic.

**Comment: The components of the bundle not complied with are analysed and improvement is needed. The new directorates are re-starting their IPC Committees to help with this.**

### 9:4 ‘Line days’ data entry for CVC surveillance

This data is now automatically collected from Epic.

## 9:5 Antimicrobial Stewardship Annual report 2018-19

**AMS report prepared by Caroline Dalton, Louis Grandjean and James Hatcher (AMS team)**

The AMS committee last met in February 2020 and finalised the terms of reference. The terms of reference for AMS committee and membership is in line with NICE guidance on antimicrobial stewardship and the Start Smart then Focus initiative. We welcomed Caroline Dalton, Antimicrobial Pharmacist, on a maternity locum for Orlagh McGarrity in October 2019.

In the last financial year there have been three AMSC meetings; June 2019, October 2019 and February 2020, and we will continue to meet on a quarterly basis. There continues to be 4 main work streams identified (Policy, Resistance reporting, Education and Audit).

Main themes currently highlighted in each work stream include:

1. **Policy**

- The majority of guidelines have been reviewed and are now in date, with action plans for the remainder.
- Accessibility of policies has been highlighted as a continuing area for improvement, and there is a continuing effort to ensure out of date policies are removed from the intranet in a timely manner.
- In early 2020 we switched to using caspofungin as first line (in place of Ambisome) for empirical treatment of suspected fungal infection in non-BMT patients with febrile neutropenia, we will aim to evaluate the cost-effectiveness of this policy change next year This is part of our antifungal stewardship programme and was a service delivery objective as part of the CQUIN.

2. **Prescribing audits**

- External audits and CQUIN reporting was cancelled due to the COVID19 pandemic until at least Quarter 2 2020/21.
- A Trust wide point prevalence survey was due in February/March and we worked with the EPIC team to build an automated process. This will improve efficiency and allow easier local reporting and dissemination of results. The COVID19 pandemic interrupted this workflow and will implement in the next year.
- AMS dashboards are live since last year- detailing prescribing (and in the future we plan to record expenditure) of antimicrobials in relation to CQUIN targets and overall figures in collaboration with QI. This continues to be useful for targeted AMS communication and feedback to prescribers, as well as for wider consumption reporting.
- Audits on the clinical impact of the AMS rounds; epidemiology of positive blood cultures; and prescribing audits were presented to the AMS committee throughout the year.

3. **Resistance reporting**

- Individualised micro-susceptibility charts are in use; these are regularly reviewed in the AMS rounds
- A trustwide antibiogram has been developed; this will be used to inform the AMS team with regards to both ward level and trustwide resistance patterns. The

information presented in the antibiograms will also guide future developments and updates of Trust empirical antimicrobial guidelines to ensure we are using the most effective first line treatment.

**4. Education and Research**

- The AMS team have presented their work at the senior leadership team meeting where they drew particular focus on patient timeline which show usage and clinical response to prescribed antimicrobials, as well as promoting world antibiotic awareness week activities within the Trust and in partnership with Pfizer and their 'Bug Bus' in November 2019.
- Daily (Monday – Thursday) AMS ward rounds continue to increase presence of the AMS team on wards- and ad-hoc teaching occurs on each interaction to broaden wider awareness of AMS agenda.
- The members of the AMS team were involved in judging a nation-wide schools competition run by Pfizer for the second year in a row. The successful winners have been announced and prizes to be awarded during this year.
- More robust structured training has been developed for pharmacy staff, at induction, in preparation for the pre-registration exam and for the resident pharmacists.
- The inaugural START meeting occurred in July 2019 with great success. This was a national Paediatric AMS conference which led to the formation of the UK-PAS group. There is now a national email forum for paediatric stewardship in the UK which has developed as a result of the first START meeting. Unfortunately the upcoming START 2020 has been cancelled due to the COVID-19 pandemic but plans for START 2021 are ongoing.
- The team have been involved in numerous research projects including the following:
    - **a.** INHALE study which relates to the impact of rapid molecular results and antimicrobial stewardship in the intensive care environment
    - **b.** Phase 1 PK/PD studies into Isavuconazole and ceftazidime/avibactam
    - **c.** Co-STARS longitudinal cohort study into antibody levels to SARS-CoV-2

**CQUIN and Consumption Reporting**

Consumption data is no longer in a CQUIN and now forms part of standard contract; the AMS committee continue to monitor the dashboards on the intranet to ensure accurate consumption reporting to NHS England to ensure we meet the 1% reduction target.

The Medicines optimisation CQUIN is a high cost medicine CQUIN which involved targets surrounding antifungal usage. We were successful in our Q2 and Q3 CQUIN submissions which relate to antifungal stewardship with a focus on antifungal prescribing, outcomes, and fungal diagnostics in the laboratory.

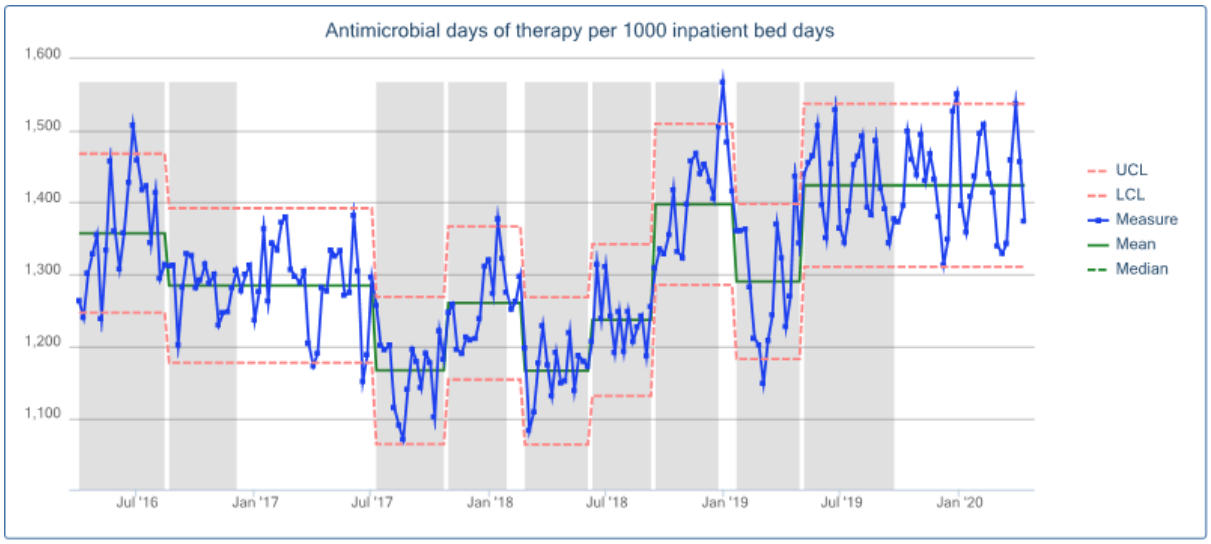
The AMS committee have continued to work alongside the Sepsis 6 committee to ensure that stewardship is a major element of new strategies for timely empiric antibiotic therapy. With the reformatting of Sepsis 6 services, this collaborative approach will need to be maintained. Caroline continues to liaise closely with the Sepsis 6 lead consultant and will attend the sepsis working group meetings to ensure continuity. Work by the sepsis teams and EPIC will enable better oversight of patients launched on this pathway.

The implementation of EPIC in April 2019 fundamentally changed the way we delivered our AMS programme and we are now in the optimization phase of EPIC. We have met with

EPIC to start generating variables required to run these reports as well as reports on AMS interventions made on the ward round. A ward note was designed to pull all aspects of the patient's infectious state into a note concisely; the AMS committee are working closely with EPIC analysts to build a useful audit tool to establish effective interventions and outcomes of AMS rounds. In March 2019 when the COVID-19 pandemic started, the AMS team swiftly implemented remote AMS ward round, utilising the power of EPIC and virtual ward rounds to enable continued input into all areas of the hospital.

Below examples of dashboard for antimicrobial consumption available on the intranet

a) Weekly reports




## 9.6 Sepsis

**Sepsis Report by Karyn Moshal and Jacquie Flynn**

This report on Sepsis and Sepsis 6 Pathway highlighted a number of areas for review, improvement or implementation. The development of the Sepsis Team, the Sepsis Nurse Role, improvement in the links between the Sepsis Team and the wards, reconstitution of the Sepsis Steering Committee, the updating of mandatory and other Sepsis training and education and facilitating a smoother Sepsis 6 pathway.

Research has shown that completing the six steps of the Sepsis 6 bundle within an hour of nursing observations has a significantly lower risk of mortality. The early warning system which had replaced CEWS (i.e PEWS) introduced a new patient deterioration scoring system which made a full set of observations a mandatory requirement.

For wards using Nerve centre, observations producing a PEWS score was at 99% which amounts to over 75% absolutely complete observations. With full observations no longer being mandatory, the percentage of observation sets producing a PEWS score now at around 65%, which is lower than it was prior to EPIC and at a similar level to what it had been with CEWS.

Since EPIC the completion of observations sets varies from ward to ward, with a high proportion of observation sets across all wards not generating a PEWS score. This inevitably means there is an

increased risk of missing an early opportunity for timely escalation and the prompt treatment of deteriorating patients.

Extremely concerning is that analysis has already shown there is a rise in patients identified through the Mortality Review Group (MRG) with a delay in recognition of deterioration/sepsis as being a modifiable factor at the time of/or in the lead up to death.

In addition to this, incomplete observations have a direct effect on the triggering of the sepsis 6 bundle. An incomplete set of observations could trigger Sepsis 6, but there will be fewer of them. Over 4000 patients required the bundle, but the bundle was not completed. If there isn't way to ensure this is all carried out within the designated time frame, which is essential for the bundle to work appropriately, patient safety is being compromised.

The introduction of EPIC, far from effecting an improvement, has led to failings in those parts of the system designed to ensure rapid escalation. The data analysis also highlighted that BPAs are being produced an hour or more after the observations have been recorded. This will result in patients who require a bundle not having this done in a timely way. It also revealed that in some cases large differences were noted between the time the first and last items in a nursing observation set are recorded. It is stated for about 1 in 23 of observation sets, the difference cited is over half an hour, with most of these over an hour. The differences between chart time and when the observations are actually entered are even more delayed. This is also impacted by the lack of timely access to a computer in the ward area. When all of "the Cows" are in use by ward staff, doctors doing ward rounds and other Allied Health professionals, this inevitably leads to retrospective recording.

The systems for entering observations on EPIC and triggering the Sepsis 6 Bundle urgently need be reviewed in light of the data collected, analysed and included in this report.

## Recommendations

Sepsis Team

Review the Sepsis Nurse/s role and what it should entail. The development of an outreach programme for the Sepsis Nurse/s to liaise with wards and a way to increase communication with nursing staff on the ground. The Sepsis Link Nurses Role or Sepsis Champion role on each ward. Their attendance of the Sepsis Committee meetings. Ward based and off ward teaching lead by the Sepsis Team in order to train the Sepsis Champions.

Sepsis Steering Committee

A review relating to the constitution of the Sepsis Steering group, to include formal representation from each directorate in the hospital who will feed back into the Directorate board, to help improve communication, to address queries from some sources regarding the relevance of Sepsis 6 to their patient groups, citing area specific protocols. To have everyone represented with a view to increase acceptance and investment in Sepsis 6 and for it to be used alongside and as part of local protocols.

Sepsis Training and Education

Sepsis e-learning on GOLD is in the process of being updated. It should also be linked to how Sepsis 6 is triggered on EPIC. However if the issues pertaining to Sepsis 6 on EPIC are not addressed it would be difficult to complete this.

Sepsis 6 Bundle Medications

To make the sepsis drugs more obvious on the ward, separating them from ward stock and to improve time to intervention with fluids and antibiotics. In the shorter term it is proposed there should be the introduction of simple red trays containing sepsis drugs, stored in ward drug cupboards.

EPIC and Triggering Sepsis 6

Observation set completion should be made mandatory in EPIC, as it was pre-EPIC (with excepted chart types but no isolated observations). If observations are added retrospectively, this should be made obvious in the front end of EPIC. It would also be important to address the lack of accessibility to computers within the ward area.

The opportunity for using automatic deterioration spotting tools is otherwise removed.

The reasons for marking "not sepsis" or "unsure" should be entered. Around 25,000 have been marked as 'not sepsis' or 'unsure'. This is expected behaviour, but the recording of reasons is often incomplete. 4331 BPAs were confirmed, therefore should be taken to the screen to complete the Sepsis 6 Bundle However, only 222 were completed. Over 4000 patients required the bundle but it was not completed. To return to the bundle, you need to know where it is located. For EPIC, can this stay on the screen until it is completed? Visibility of PEWS and the sepsis protocol / bundle is essential. Return to PSAG functionality / visibility and CET control room

### *9.7 Hospital cleaning*

See section above.

## **10 Occupational Health** Annual report for IC 2019-20

### Information from Lisa Liversidge, Head of Staff Health and Wellbeing

10:1 Occupational Health new starters

The Occupational Health Service is an in house service. All applicants on receipt of a conditional job offer are assessed by occupational health prior to commencement to ensure that they fulfil the requirements around immunisation status for healthcare workers as per the Green Book. Applicants are not cleared as fit to commence in post until we have received this information or undergone the required screening. During 2019/20 OH screened 1,705 pre-placement forms and undertook 2,959 blood tests to ensure appropriate levels of immunity. Approximately 1000 blood tests were undertaken as a part of the planned look back project to ensure that all GOSH Healthcare workers currently in post fulfil the requirements around immunisation status for healthcare workers as per the Green Book.

Staff Immunisations

The need for continued screening and immunisation for both measles and chicken pox 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 prior to commencement in post continue to be vaccinated. This includes administrative and clerical staff and other staff if they work in clinical areas.

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

A pertussis a booster vaccination continues to be offered to staff working in what is deemed to be a high risk area.

A combined total of 318 employment required immunisations (excluding flu vaccine) were administered during 2019/20

Influenza Vaccine

The Flu Planning group co-ordinated an active vaccination programme for all staff using vaccinators from OH as well as peer vaccinators. For the third year Occupational Health provided daily roving clinics in the clinical areas which were once again well received.

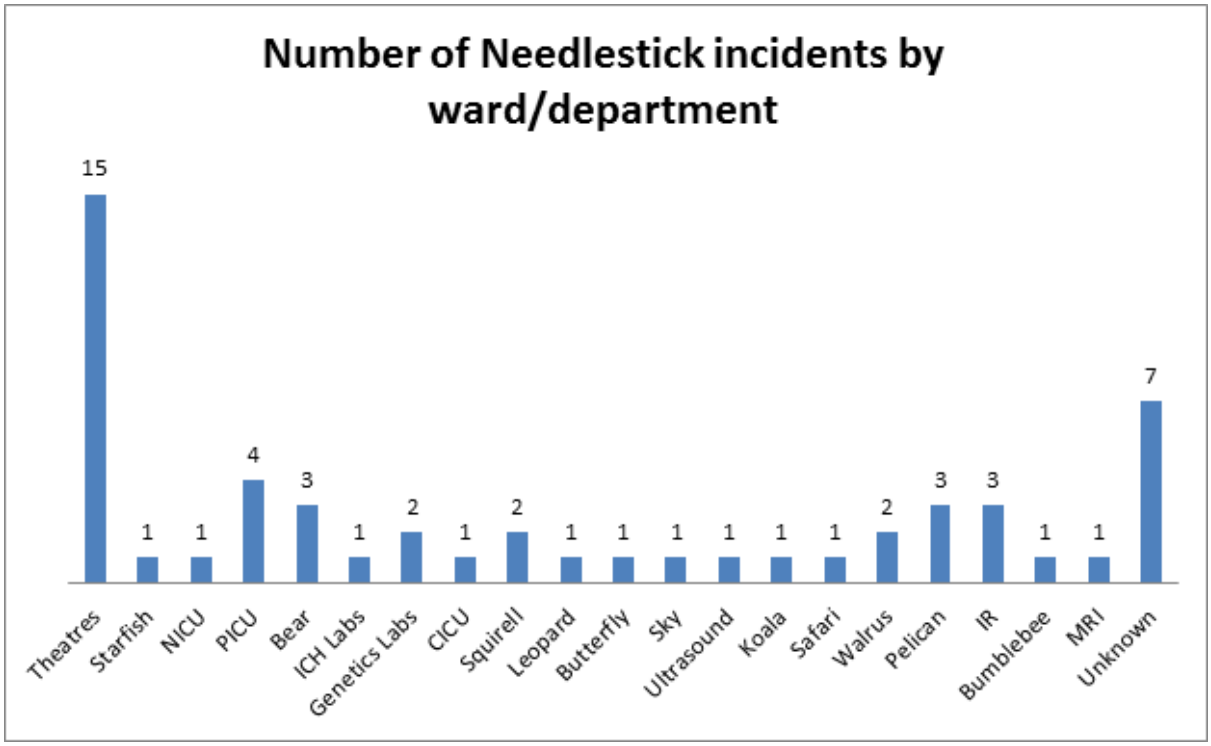
Final flu uptake figures for Healthcare Workers 2019/20 was at 59% compared to 61% 2018/19, 61% 2017/18, 62% 2016/17 and 48% 2015/16.

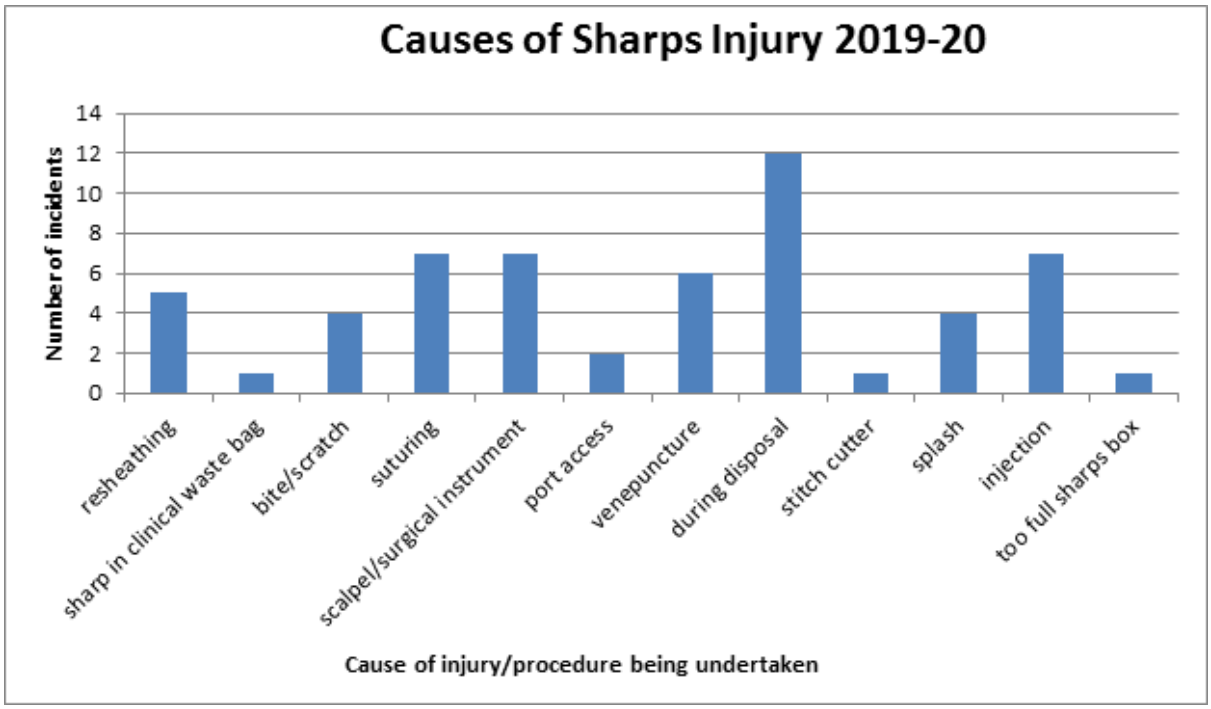
Uptake was disappointing despite active communication and roving clinics. The Flu Planning group have looked at what other Trusts have done to explore how we may improve uptake for 2020/21.

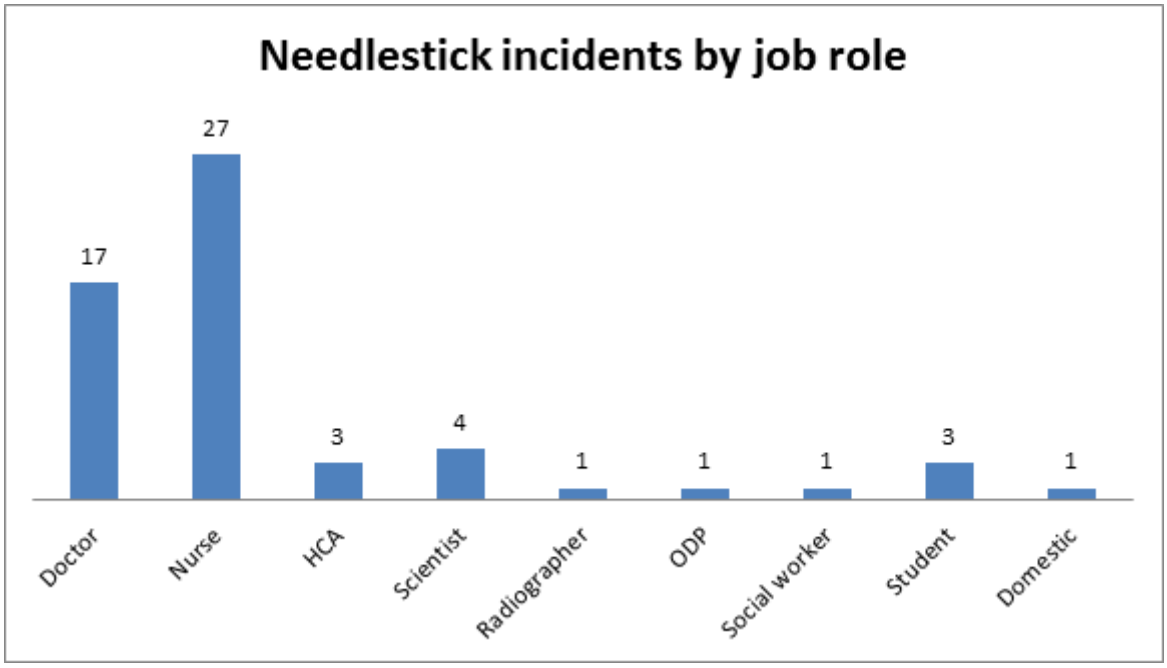
10.2 Exposure to blood borne viruses

During 2019/20 there were 57 attendances at OH following a needle stick injury compared with 65 attendances for 2018/19 and 91 attendances 2017/18.

It is pleasing to see the number of needle stick injuries continuing to reduce in line with the introduction of safer sharps within the Trust. The safe sharps working group continues to monitor the use of sharps within the Trust in line with the HSE Safe Sharps directive, recommending the use of safe alternatives where practicable to implement a safer alternative for paediatric use.


Number of Needlestick incidents by ward/department
15
1
1
4
3
1
2
1
2
1
1
1
1
1
1
2
3
3
1
1
7
Theatres
Starfish
NICU
PICU
Bear
ICH Labs
Genetics Labs
CICU
Squirell
Leopard
Butterfly
Sky
Ultrasound
Koala
Safari
Walrus
Pelican
IR
Bumblebee
MRI
Unknown


Causes of Sharps Injury 2019-20
Number of incidents
14
12
10
8
6
4
2
0
resheathing
sharp in clinical waste bag
bite/scratch
suturing
scalpel/surgical instrument
port access
venepuncture
during disposal
stitch cutter
splash
injection
too full sharps box
Cause of injury/procedure being undertaken




**11 Targets and Outcomes in 2019/20**

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

| | Target | Outcome | Comment |
|---|---|---|---|
| MRSA bacteraemia | Zero | 0 | 1 CAI |
| C. difficile infection | Less than 5 | 2<br>Lapse in care = 0 | C difficile infection remains rare |
| MRSA screening within 24 hours | 80% | 57% | Increase from 46% the previous year |
| MRSA admission screening ICUs | 100% (where screening appropriate) | No result | Work underway to restore this surveillance |
| MRSA colonisation acquisition | Zero | 16 | One definite linked cluster within cardiac |
| GOS acquired CVC related bacteraemia | < 1.3 / 1000 line days | 1.3 | Improving |
| CVC care bundle compliance | 90% | 47% | Below expectations, and not improved from last year. |
| Hand hygiene compliance | 95% | 78% | More accurate data; improving |
| Ventilator associated pneumonia | No target | | Limited surveillance on PICU |
| Root cause analysis of S. aureus bacteraemia | 100% | 100% by IPC team and clinical | Not all had full RCA by team.<br>Will incorporate in new Directorate IPCC structure |
| Surgical site infection surveillance | Some surveillance to be | Both divisions achieved | Proving difficult to run by Directorates (difficult to maintain with staff turnover). |

| | | | |
|---|---|---|---|
| | undertaken in all areas | | Reduction in surveillance due to EPR launch |
| Compliance with L1 induction training | 95% | 96% | Data for substantive staff; has increased from last year |
| Compliance with level 2 update | 95% | 89% | Data for substantive staff; has decreased from last year |

## 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 every three years. 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 through the GOLD system. 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.

**GOSH Payroll reporting audience** (Substantive staff,)

| | IPC L1 (Valid for 3 years) | IPC L2 (valid for 1 year) |
|---|---|---|
| | | |
| Compliance | 96% | 89% |

Training compliance has improved in level 1 but decreased in level 2 and remains below the target level set by the trust board.

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.

Other training carried out by the infection control team includes participation in delivery of the University Care Certificate, Newly Qualified Nurse training and the induction of student nurses. The team also provide teaching at local level to the wards when requested.

### 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 continues to be held quarterly and is 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 bi-annual 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 Prevention & Control (IPC) Team Annual work plan 2020/21** Submitted by Consultant Nurse IPC & DIPC
Shown here are the 10 essential from the Code of Practice. Work programmes are linked 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. |

Attachment V

**Part B -** Programme of work

New projects:

| Programme of Work of new project | Lead | Time frame | Progress to date | Action required | Hygiene code |
|---|---|---|---|---|---|
| Training- The team will review IPC level 1 & 2 training and create a training package for non-clinical patient facing staff | IPC Team | Summer 2019 | Level 1 and 1+ complete<br>Level 2- delayed due to covid-19- recommenced Aug 20 a | Level 2 to be completed | 6 |
| Surveillance- creation of a trust wide surveillance oversight group which will monitor all aspects of the surgical pathway . | IPC Team | Commence May 2018 | Held up due to divisional restructure and IPC team workload | Yes | 1, 6 |
| Ventilation- the team will work closely with the estates/ commissioning teams to create a standard user manual relating to ventilation for ward staff to use on occupation of wards | IPC team/ Commissioning | commence April 2018 | Manuals and user guides in place on an ad hoc basis across the trust. Format and content to be standardised in 19/20<br>First draft complete | Yes | 1, 9 |
| Cleaning- to work with the education | IPC team | Commence May 2018 | Plan to create training programme for clinical staff: | Yes- not completed due to IPC workload | 2 |

| | | | | | |
|---|---|---|---|---|---|
| team to create a training package so that staff know their responsibilities with preparing rooms for cleaning and how to check that rooms have been appropriately cleaned | | | • Band 7 development programme<br>• NIC<br>• Matron training<br>Non-registered staff:<br>• Floor managers<br>• Housekeepers/ HCA | | |
| Review the electronic filing system to ensure the system is clearly labelled and data is robustly stored | IPC PA | Commence Aug 2018 | Commenced and ongoing | Yes | 1 |
| Surveillance- All required data reported to PHE. RCA's currently taking place for HCAI Staphylococcus aureus infections<br>To be expanded to Gram negatives in 19/20 | IPC team/ Divisions | Commence Summer 2019 | Delayed due to covid- to be considered as part of 20/21 workload | | 1,3,5,8 |
| Response to covid-19 global pandemic | IPC team | Commenced Feb 2020 | Ongoing work as part of IPC team workload now | | |

Attachment V

Programme of work: Ongoing

| Programme of ongoing Work | Lead | Time frame | Progress to date | Action required | Hygiene code |
|---|---|---|---|---|---|
| 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. Update the care bundles to reflect any improvements made in care since they were introduced | IPC Team | Ongoing | | | 1, 6, 9, 10 |
| **Audits-** conduct regular audits with the facilities and clinical users to assess the environment and standard of cleaning | IPC Team/Facilities | Ongoing | | | 1, 2 |
| Audit- the team/IPC Links will audit compliance against policies in place across the trust should be monitored through audit. Examples of this include the isolation audit. | IPC team | Completed as part of IPC Link audit days | | | 1, 7 |
| Training- The IPC team will monitor and feedback training compliance with level 1 & 2 training | IPC Team | On-going | | | 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 | | Yes | |
| 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 |
| Work with the EPR teams to ensure the successful development and rollout of EPIC and RL solutions | IPC team/ EPR | Ongoing | | No-ongoing | 1, 2, 4, 9 |
| Water management- the team will co-ordinate the testing and management of appropriate water outlets for pseudomonas aeruginosa and legionella in close | IPC team | On-going | | | 1, 8, 9 |

| | | | | | |
|---|---|---|---|---|---|
| collaboration with the estates department. In addition the team will access and provide guidance on any other waterborne pathogens which may cause disease in patients/staff. | | | | | |
| 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. | | Yes- re-establish divisional IPC meetings | 1 |