

Infection Prevention & Control Annual Report

Trust Board	Item: 11
Date: 1 st December 2020	Enclosure: F
Purpose of the Report: The report is presented to the Trust Board in order to: <ul style="list-style-type: none"> • Provide assurance of the Trust's compliance with the Health and Social Care Act 2008 (DH, 2015) during 2019/20. • keep the Trust Board informed of Infection Prevention & Control performance over the year. This is in addition to the key infection control performance measures which are reported through the Trust governance framework at each Trust Board meeting. • Highlight the aspects of good performance in the previous year, with regards to infection control and areas for further improvement. • Highlight the key areas of focus for 2020/21. 	
For: Information <input checked="" type="checkbox"/> Assurance <input checked="" type="checkbox"/> Discussion and input <input type="checkbox"/> Decision/approval <input type="checkbox"/>	
Sponsor (Executive Lead):	Sally Brittain Director of Nursing and Quality; Director of Infection Prevention & Control (DIPC)
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Risk Implications – Link to Assurance Framework or Corporate Risk Register:	Assurance Framework
Legal / Regulatory / Reputation Implications:	Health and Social Care Act 2008 (DH, 2015)
Link to Relevant CQC Domain: Safe <input checked="" type="checkbox"/> Effective <input type="checkbox"/> Caring <input type="checkbox"/> Responsive <input checked="" type="checkbox"/> Well Led <input checked="" type="checkbox"/>	
Link to Relevant Strategic Theme:	Quality
Document Previously Considered By:	Infection Prevention & Control Committee
Recommendations: Board members are requested to note the content of the report and priority areas for the coming year.	

ANNUAL REPORT
INFECTION PREVENTION & CONTROL
2019 / 2020



1. Executive Summary

Introduction and Purpose

The Trust has a statutory responsibility to be compliant with The Health and Social Care Act 2008 (DH, 2015). A requirement of this Act is for the Board of Directors to receive an annual report from the Director of Infection Prevention and Control (DIPC). This report details Infection Prevention and Control Team (IPCT) activity from April 2019 to March 2020, with an assessment of performance against national targets for the year.

Key Points:

- There were four Trust-apportioned meticillin-resistant *Staphylococcus aureus* (MRSA) bacteraemia cases reported against the national zero tolerance. Learning points from the Post Infection Review (PIR) have been progressed.
- There were 23 HOHA and six COHA *Clostridium difficile* toxin (CDT) cases reported in total this year, with six being classed as a lapse in care. Due to COVID-19 there are still five that require assessment for lapse in care by the CSU, however four of the cases have no learning and one had a late stool specimen.
- There were six Trust-apportioned meticillin-sensitive *Staphylococcus aureus* (MSSA) bacteraemia cases against no national target. PIR has been completed on each case and actions put into place where learning has been identified.
- The Trust reported 155 *Escherichia coli* (*E. coli*) bacteraemia cases in total, with 18 Trust apportioned cases. This is a reduction in the 26 Trust apportioned cases reported last year.
- In January 2020 the IPCT had their first query from ED regarding a possible Wuhan novel coronavirus case (now referred to as COVID-19). The Trust started testing patients on 29.01.20. The first positive case in the Trust was admitted on the 08.03.20 and the Trust recorded 180 cases of COVID-19 during March 2020.
- There were a total of 284 Influenza (flu) cases this year and these were predominantly Influenza A (72%) with the rest being Influenza B. Most cases (89%) were non-Trust apportioned. The Trust used the Point of Care Test again this year which was invaluable in terms of fast diagnosis and bed management. However this was discontinued on 13.03.20 this year due to COVID-19.
- There were 173 confirmed cases of Norovirus this year, with the majority occurring from October to December 2019 (48 cases) and from January to March 2020 (95 cases).
- There were 76 Vancomycin-resistant Enterococci (VRE) cases this year including 17 in the Intensive Care Unit (ITU).
- There were two cases of carbapenemase-producing *Enterobacteriaceae* (CPE) in the Trust this year. Work is ongoing to improve screening compliance.
- The Trust considers itself to be compliant with The Health and Social Care Act 2008 (DH, 2015) and the team continue to monitor this through the Infection Control Annual Plan.
- Hand hygiene and bare below the elbow compliance has been audited on a monthly basis by the infection control link practitioners. The Trust target for hand hygiene compliance remains at 95% (green), which 91% of areas have achieved, with just 9% achieving an amber score (70 – 95%) and no areas with red scores (<70%).
- The Trust participated in the surgical site infection surveillance system (SSISS) again this year for repair of neck of femur from July-September 2019 which demonstrated a 0% infection rate, and from October to December 2019 which demonstrated an infection rate of 1.6%.

2. Infection Prevention & Control Arrangements

Table 1 Infection Prevention & Control Team (IPCT)

Fran Brooke-Pearce	CNS Infection Prevention & Control (CNS IP&C)	1.0 WTE
Shona Henderson	CNS Infection Prevention & Control (CNS IP&C)	0.6 WTE (0.4 WTE as Decontamination Lead)
Vicky Wells	Infection Control Nurse (ICN)	1.0 WTE
Nicola Pratelli	Infection Control Audit & Surveillance Nurse	11 hours per week
Elli Demertzi	Consultant Microbiologist/Infection Control Doctor	3 PA's
Sally Brittain	Director of Infection Prevention & Control (DIPC)	

Infection Prevention & Control Committee (IPCC)

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

Table 2 Attendance at the IPCC - Terms of Reference Requirements

Required	09.04.19	16.07.19	22.10.19	11.02.20*
Director of Nursing/ DIPC (chair)	Present	Present	Present	Present
CNSs Infection Prevention & Control	Present	Present	Present	Present
Consultant Microbiologist/ Infection Control Doctor	Present	Apologies	Present	Present
Infection Control Nurse	Apologies	Present	Present	Apologies
IC Audit & Surveillance Nurse	N/A	Present	Present	Apologies
Head of Nursing	Apologies	Present	Present	Apologies
Public Health England representative	Present	Present	Present	Present
Facilities Manager/ Estates Manager/ ISS Manager	Present	Present	Apologies	Present
Health & Safety Adviser	Apologies	Apologies	Apologies	Apologies
Clinical Audit Representative	Present	Absent	Absent	N/A
Occupational Health Representative	Present	Present	Absent	Present
Matron (one to attend to represent matrons group)	Present	Present	Present	Present
Antibiotic Pharmacist	Present	Present	Apologies	N/A
CSU Clinical Infection Prevention & Control Lead	Present	Apologies	Apologies	Apologies

*Re-scheduled from 28.01.20 this meeting was about COVID-19 Management.

Reporting line to the Trust Board

The IPCT reports directly to the DIPC, who is the Trust Director of Nursing and Quality. The DIPC meets regularly with the Chief Executive, chairs the Infection Prevention and Control Committee (IPCC) and the Patient Safety & Risk Committee and is a member of the Quality Assurance Committee (QAC) and Serious Incident Group (SIG) and attends the Audit Committee.

The IPCT provides reports for and presents at Patient Safety and Risk Management Committee. Monthly updates were provided for the Trust Board Report and the IPCT gave support to Business Intelligence in checking figures prior to uploading to Public Health England.

IPCT Liaison with Service Lines

Representatives from the Service Lines attend the IPCC meetings and report back at Service Level Governance Meetings.

Infection Control Support to the Wards

The IPCT continued to 'flag' new cases of infection in the patient CRS notes and phone results through to the clinical areas.

Three times a week the team review all patients with infection control flags and discuss screening or treatment with the nurse in charge of each ward, in order to expedite removal of flags and therefore releasing side rooms back into operation. This activity stopped however in February 2020 due to the emergence of COVID-19.

Bay closures continued to be discussed where applicable with clear plans communicated for timescales for cleaning and re-opening bays. The matron / nurse in charge of the ward remained responsible for reporting infection control activity in their own areas back to the bed meetings.

Collaborative working with Community Services/ Service Level Agreements

The IPCT continue to work with the community in the following ways:

- The Consultant Microbiologists provide Infection Control cover for Your HealthCare (Kingston), Hounslow & Richmond Community Healthcare Alliance & Royal Hospital for Neuro-disability.
- The IPCT provide infection control advice, an annual environmental infection control audit, and access to Trust policies and guidelines for Princess Alice Hospice in Esher. The audit did not take place this year due to the emergence of COVID-19.
- The IPCT have a service level agreement in place with the Private Patients Unit (on site).
- The IPCT liaise with the community Infection Control Nurses when required.
- The IPCT liaise with Public Health England (PHE) / South London Health Protection Team / North East London Commissioning Support Unit when required.

Decontamination Group

The IPCT attend quarterly Decontamination Group meetings chaired by the Infection Control Doctor. The purpose of the group is to ensure that reusable medical devices are effectively decontaminated:

- in accordance with published standards
- in fit-for-purpose premises
- by trained and competent staff
- in adherence to manufacturer's validated guidance, which is reflected in local procedures.

The Decontamination Group was previously accountable to the Health and Safety Committee, but this has now changed to the IPCC need to either use full name or initials (don't mind which!).

Antibiotic Stewardship Group

The Antibiotic Stewardship Group (established in February 2013) continues to promote excellence in antimicrobial prescribing. This group reports to the ICCM and the Drugs and Therapeutics Group. This year work completed included:

- Working towards the 2019/2020 antibiotic and antifungal stewardship CQUINs, which were put on hold during quarter four due to COVID with a plan to re-start next year. The results were as follows:
 - Antibiotic prophylaxis in elective colorectal surgery. In quarters one, two and three compliance was 87%, 94% and 90% respectively against a target of 90%.
 - Reviewing the proportion of antibiotic prescriptions for patients who are being treated for a lower UTI and determining compliance with national guidance. In quarter 1, 65% of patients achieved CQUIN compliance with a target of 90%. In quarter two, 81% of patients achieved CQUIN compliance with a target of 80%. In quarter three, 70% of patients achieved CQUIN compliance against a target of 80%
 - Antifungal stewardship:

- An audit of antifungal prescribing was completed in line with an agreed implementation plan for improving antifungal stewardship.
- The use of diagnostics in the management of patients with antifungal disease was reviewed.

Full achievement was awarded for this CQUIN in quarters one to three with 100% of patients on IV antifungals having regular reviews by the antimicrobial stewardship team. The Trust demonstrated low usage of IV antifungals compared with other Trusts in the UK.

- Guideline development:
 - A review and update of The Trust Empirical Antibiotic Guidelines was completed in January 2020.
 - The Trust Antifungal Guidelines were reviewed and updated in October 2019.
 - The Royal Hospital for Neuro-disability Antimicrobial guidelines were reviewed and updated.
 - Collaborative working with primary care pharmacists in order to update both Richmond and Kingston GP group antimicrobial prescribing guidelines.
 - New Malaria Guidelines were developed.
- NICE Gap analyses relevant to antimicrobials were completed to ensure our antimicrobial guidelines are in line with NICE Guidelines.
- Reports on antibiotic expenditure and antibiotic consumption for the financial year 2019-20 were completed with a plan to reduce identified high usage antibiotic consumption (for instance, ertapenem) and expenditure.
- Implementing a training and education programme for health care professionals; teaching was delivered to pharmacists, junior doctors, and non-medical prescribers.
- Ongoing review of new antimicrobial agents, agreeing strategies for their use and monitoring their effectiveness in the Trust. Bezlotoxumab was added to the formulary in September 2019 - this is a monoclonal antibody for the prevention of reoccurrence of *Clostridium difficile* infection in patients at high risk of re-infection.
- Antimicrobial stewardship meetings with the quorum members of the antimicrobial Stewardship Group on 2/10/19, 16/10/19, 27/11/19 and 10/1/20.
- Completion of an Antimicrobial resistance report on urinary isolates (ED/AAU) July/December 2019.
- Daily antimicrobial stewardship ward rounds (including ITU) with all patients on carbapenems, antifungals or those with a bacteraemia or *Clostridium difficile* associated diarrhoea included on the daily ward round list. The ward rounds helped to reduce course lengths, promoted step down to narrower spectrum agents or oral antibiotics when clinically appropriate, and kept overall consumption of antimicrobials as low as possible. Areas of high antibiotic usage were targeted and reviewed on a regular basis.
- Contributed to the *Clostridium difficile* PIRs. Audits of antimicrobial prescribing were carried out on both Blyth ward and Kennet wards due to a Pii. The audits demonstrated that antibiotics were being prescribed appropriately in accordance with guidelines.
- In collaboration with the urology department, an audit on all pyelonephritis admissions was completed, with an aim to understand whether there was an association with a confirmed bacteraemia and whether antibiotic management / in-patient stay was correct.

Other Meetings

Members of the IPCT attend a number of Trust and external meetings:

- Medical Devices Committee
- PLACE / Matrons ACE
- Water Safety

- Decontamination Group
- Nursing, Midwifery and AHP Board
- London Neonatal Operational Delivery Network Infection Control and Prevention Task & Finish Group
- DIPC Forum
- Waste meeting

3. **Targets and outcomes**

The Health and Social Care Act 2008 (DH, 2015) provides Trusts with a code of practice for the prevention and control of healthcare associated infections (HCAIs) and makes clear their statutory responsibilities. Each Trust is expected to have sufficient systems in place to apply evidence-based protocols and to comply with the relevant provisions of the document so as to minimise risk of infection to patients, staff and visitors. The Trust considers itself to be compliant with this document.

The Infection Control Nurse continues to carry out infection control spot checks on a rolling programme and works closely with the link practitioners to ensure that aspects of the Health and Social Care Act are in place.

4. **Mandatory Reporting of Healthcare Associated Infections (HCAI)**

Over the past year the Trust Business Intelligence Team (BIT), following sign off by the DIPC, reported the following HCAI statistics to PHE:

- Meticillin-resistant *Staphylococcus aureus* (MRSA) bacteraemia rates.
- Meticillin-sensitive *Staphylococcus aureus* (MSSA) bacteraemia rates.
- *Clostridium difficile* toxin (CDT) HOHA and COHA positive infection rates.
- Trust apportioned *Escherichia coli* (*E. coli*) bacteraemia rates.

Mandatory HCAI surveillance results have been reported via the quarterly report to IPCC and QIC, and to the Trust Board by the DIPC. Post Infection Reviews (PIRs) of cases have been presented to SLM and SIG in order to facilitate learning. The Trust reports Serious Incidents (SIs) related to infection control and outbreaks of infection, and there were no SIs relating to infection prevention and control this year.

5. **Trust Reportable Healthcare Associated Infections**

Meticillin-resistant *Staphylococcus aureus* (MRSA) Bacteraemia

The total number of Trust-apportioned MRSA bacteraemia (blood stream infection) cases for the year was four against a ceiling target of zero. Cases are deemed Trust-apportioned if the blood cultures are taken on or after the third day of admission. PIR was carried out on the positive case and presented to Service Line Meeting (SLM) and SIG in order to facilitate shared learning.

One case in quarter one was not screened for MRSA on admission despite meeting the criteria. The patient was screened on admission to ITU and found to be MRSA positive. Learning regarding admission screening was addressed on the admitting ward.

Three cases occurred in quarter 3. Case one PIR demonstrated that there was no documentation of the venous blood culture site or that an aseptic technique had been used to take the blood cultures. Case two PIR demonstrated that there was no documentation of asepsis on intravenous cannula insertion and a delay in commencing decolonisation protocol following the positive MRSA result. Documentation asepsis on insertion is being addressed through the IV auditing programme (see section 9) and an action plan regarding decolonisation protocol was put into

place on the ward. Case three had a long history of MRSA colonisation and came into the Trust colonised on this occasion. A PICC line had been inserted and asepsis on insertion had been documented, VIP scores had been monitored and were zero, however the line tip had not been sent for culture upon removal.

In order to ensure PIR learning a meeting was held during quarter three by the Deputy Director of Nursing, the Head of Patient Safety, Governance and Risk and the CNS Infection Control and extra actions were agreed and added to the existing process for learning from PIR, which include the following:

- The final PIR version usually sent to the nursing and clinical teams will be copied to the HON who will ensure that the PIR goes to the appropriate meetings and that the learning loop is closed.
- All completed PIR's will go to the Cluster PRM and Divisional PRM. All PIR's will be acknowledged at SIG but those with learning will be presented by the clinical / nursing teams.
- Patient Safety and Risk will continue to be copied into the final PIR version email in order to facilitate presentation at SIG.
- Junior Doctors to be reminded of the importance of documenting blood culture site and asepsis during blood culture training.
- The IPCT continue to check all patient infection 'flags' on CRS three times a week to ensure that screening and decolonisation is occurring as required.
- The IPCT have discussed the importance of MRSA screening and decolonisation with the Link Practitioners.

Meticillin-sensitive *Staphylococcus aureus* (MSSA) Bacteraemia

There were six Trust-apportioned MSSA bacteraemia cases reported this year. There is no national benchmark or annual threshold set for MSSA bacteraemia rates. Learning identified from PIR undertaken were generated into action plans. Two cases required improvements in documentation of VIP scoring and asepsis on insertion of the device. Two cases required improvements in documentation of blood culture taking.

***Clostridium difficile* Toxin (CDT)**

In April 2019 changes were made to the *Clostridium difficile* toxin reporting algorithm (NHS Improvement, 2019):

- Adding a prior healthcare exposure element for community onset cases;
- Reducing the number of days to apportion hospital-onset healthcare associated cases from three or more to two or more days following admission.
- Cases were to be assigned as follows:
 - Hospital Onset Healthcare Associated (HOHA): cases that are detected in the hospital two or more days after admission;
 - Community Onset Healthcare Associated (COHA): cases that occur in the community (or within two days of admission) when the patient has been an inpatient in the trust reporting the case in the previous four weeks;
 - Community Onset Indeterminate Association (COIA): cases that occur in the community (or within two days of admission) when the patient has been an inpatient in the trust reporting the case in the previous 12 weeks but not the most recent four weeks;
 - Community Onset Community Associated (COCA): cases that occur in the community (or within two days of admission) when the patient has not been an inpatient in the trust reporting the case in the previous 12 weeks.

The process for Lapse in Care review remained the same and informed local contractual decisions regarding the requirement for penalties. The Trust had an allowance of 45 lapses in care for 2019-2020.

There were 29 Trust-apportioned CDT positive cases in total this year, with 23 HOHAs and six COHAs. Out of the 24 cases assessed so far by the North East London Commissioning Support Unit Infection Control Nurse Specialist there were six 'lapses in care'. The lapses in care were due to: antibiotic prescribing in four cases, late stool samples in three cases, PPI and laxatives not reviewed in two cases and documentation in one case. The further five cases will be reviewed in due course.

There were three cases in quarter two in Blyth ward and another case in this ward in quarter three. The initial two cases prompted a Period of Increased Incidence (Pii) (DH, 2009) in Blyth ward which consisted of enhanced cleaning of the whole ward for a prolonged period, weekly auditing of hand hygiene, PPE use, isolation, environmental cleaning and antibiotic prescribing. Ribotyping results and admission dates/position in the ward has demonstrated that the four cases were not due to cross infection.

Where learning has been identified the clinical and nursing teams have implemented action plans which they have presented to Service Line Meeting (SLM) and Serious Incident Group (SIG).

One case sadly died and the cause of death was recorded on the death certificate as:

- 1a) *C. difficile* colitis
- 2) Frailty of old age, dementia.

However, PIR has demonstrated that the patient had demonstrated a favourable response to *C. difficile* treatment, but a general decline with a move to palliative care. This case is currently being investigated as a Serious Incident (SI).

In December 2019 there were two *C. difficile* toxin positive cases in Kennet ward, both with the same ribotype. However further investigation into patient movements in the ward has ruled out cross infection between the two.

Gram Negative Blood Stream Infections

In 2017 the Secretary of State for Health launched an important ambition to reduce healthcare associated Gram-negative bloodstream infections by 50% by 2021 (NHS Improvement 2017). The initiative started with *E. coli* bacteraemias, and this was then extended to include *Pseudomonas aeruginosa* and *Klebsiella species*. However, it has been acknowledged that this has been unachievable and the timespan has now been increased. The most recent government paper (DH 2019) outlining the UK's five-year national action plan (2019–2024) for tackling antimicrobial resistance with reference to the planned 20 year vision includes the following targets, to:

- Halve healthcare associated Gram-negative blood stream infections;
- Reduce the number of specific drug-resistant infections in people by 10% by 2025;
- Reduce UK antimicrobial use in humans by 15% by 2024;
- Reduce UK antibiotic use in food-producing animals by 25% between 2016 and 2020 and define new objectives by 2021 for 2025; and
- Be able to report on the percentage of prescriptions supported by a diagnostic test or decision support tool by 2024.

***Escherichia coli* (*E. coli*) Bacteraemia**

The Trust reported a total of 155 cases of *E. coli* bacteraemia this year. This number includes 137 non-Trust apportioned cases, and 18 Trust apportioned cases which is a decrease of Trust apportioned cases from the 26 reported last year. 11 cases had a primary focus in the urinary tract and the Matrons and the IPCT have continued to be involved in the South West London cross sector improvement work regarding catheter care.

***Pseudomonas aeruginosa* / *Klebsiella species* Bacteraemia**

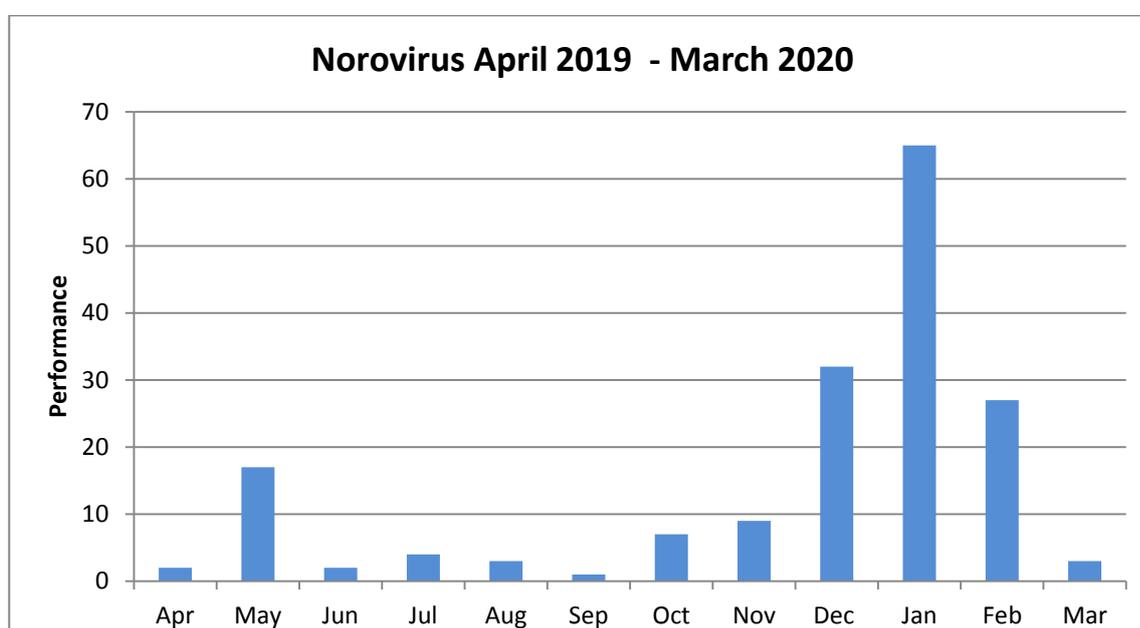
The Trust reported one Trust apportioned case of *Pseudomonas aeruginosa*; and eight Trust apportioned cases of *Klebsiella species* this year.

6.0 Outbreaks and Incidents

Norovirus

There were 173 confirmed cases of Norovirus this year, with the majority occurring from October to December 2019 (48 cases) and from January to March 2020 (95 cases). During this time the IPCT carried out daily checks for all affected wards. This included checking individual patients in affected areas for symptoms; determining patient isolation, patient cohorting and bay closure requirements; requesting required specimens and liaising closely with the ward nurses in charge and the bed management team. The CNSs also provided weekend cover when required.

Graph 1 Norovirus numbers per month at Kingston Hospital

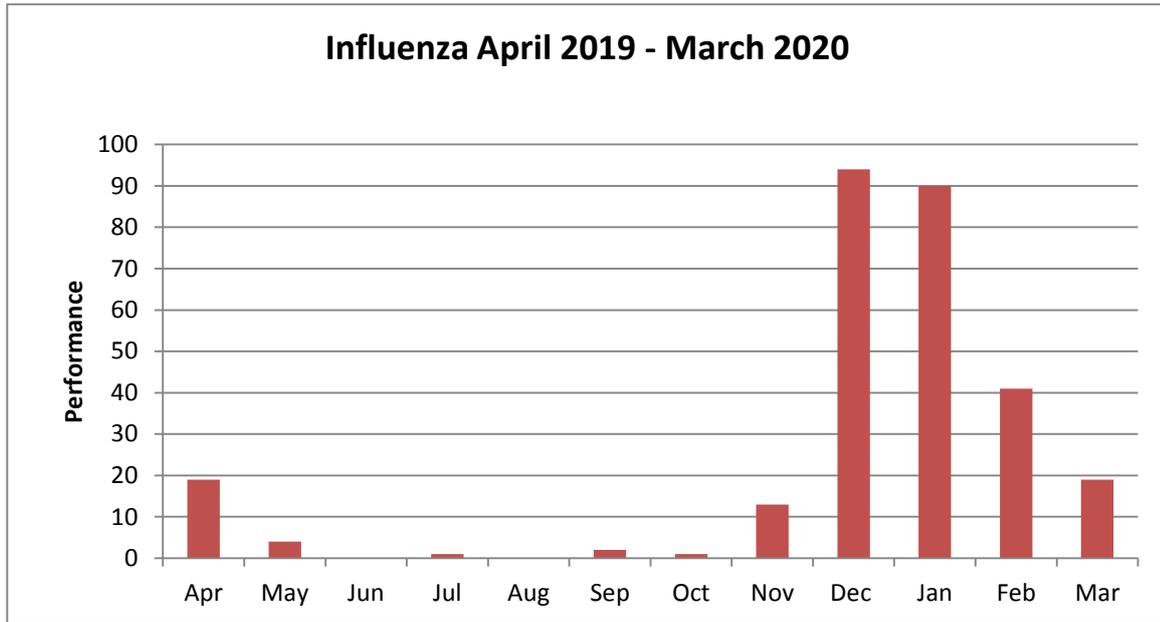


Influenza (Flu)

Flu point of care testing (POCT) was re-commenced in the Emergency Department (ED) and in the Acute Assessment Unit (AAU) during the latter part of December 2019. Flu POCT gives a result in 20 minutes of taking the throat swab.

The total number of flu cases this year was 508 and these were predominantly influenza A. Most cases (96.5%) arrived at the Trust with symptoms. Furthermore, 50% of cases were discharged straight home from ED once diagnosed and other health risks had been ruled out. Positive cases were prescribed flu treatment where applicable and contacts of positive cases were prescribed prophylactic treatment where appropriate. The IPCT followed up cases and provided advice on management of flu positive in-patients / those requiring admission to the Trust and management of contacts of positive cases.

Graph 2 Influenza (A&B) numbers per month at Kingston Hospital



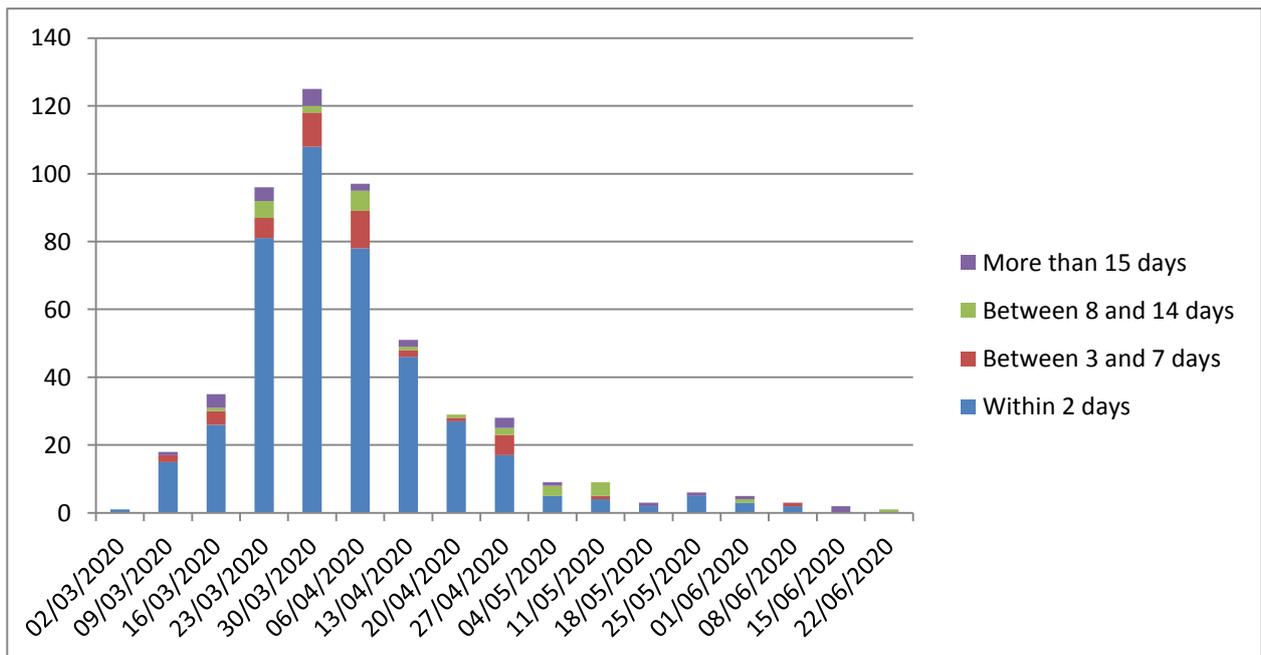
COVID-19

In January 2020 the IPCT had their first query from ED regarding a possible Wuhan novel coronavirus case (now referred to as COVID-19). The Trust started testing patients on 29.01.20.

The first positive case in the Trust was admitted on the 08.03.20 and the Trust recorded 180 cases of COVID-19 during March 2020.

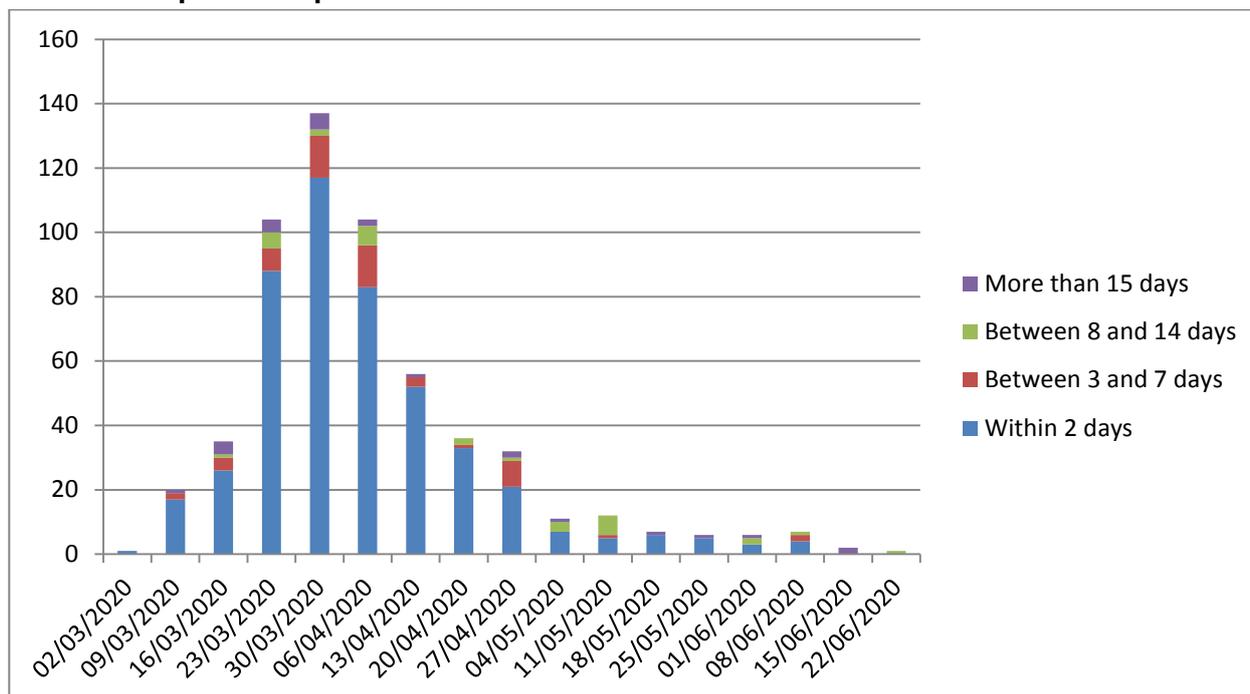
Graphs 3 and 4 demonstrate numbers in the Trust per month from the first case in March until June 2020.

Graph 3 Number of positive cases per week with admission date to first positive specimen date



Indeterminate results were all treated as positive cases.

Graph 4 Number of positive and indeterminate cases per week combined, with admission date to first positive specimen date



During March 2020 the Trust moved from the planning phase to the escalated phase with the setting up of strategic and tactical command in gold and silver from Monday 16th March 2020.

The Trust Infection Control Doctor was the lead COVID-19 adviser who was responsible for providing COVID-19 related advice within the Trust and for GPs in the Kingston and Richmond Clinical Commissioning Groups (CCGs). She was also part of the Trust Clinical Advisory Group (CAG) during the escalated phase (from 13.03.20).

During quarter four 2019 – 2020 the work of the IPCT included:

- Followed guidance from PHE and ensured that new information / changes to practice were acted upon immediately and communicated throughout the hospital. The team consistently responded to queries and questions regarding COVID-19.
- Developed the first version of a Trust infection control guideline for COVID-19 on 24.01.20. This contained clear instructions regarding initial assessment, screening and specimen taking, PPE, isolation of patients, cleaning, waste, linen, uniform/scrub wear for staff, patient transport, visiting etc. The guideline was updated frequently and communicated via the daily messages as changes occurred.
- Worked closely with the Emergency Planners and attended the daily COVID-19 planning meetings in ED. Developed posters with instructions for the public entering the Trust.
- Attended the daily planning meeting chaired by the Director of Operations and attended by the Director of Nursing.
- Attended ED, AAU, maternity, theatres and other areas as required to provide support regarding PPE and infection control measures. Provided support to ED receptionists, radiographers, the pharmacy team and others on the risks of infection and PPE use.
- Were involved in the development of a number of COVID-19 Standard Operating Procedures (SOP's).
- Provided advice and support for the development of the COVID-19 testing POD.
- Were responsible for reporting COVID-19 numbers of cases in the first instance until Business Intelligence took over.
- Developed a COVID-19 spreadsheet and system for phoning through positive results. Results were phoned by the Consultant Microbiologists with the help of two executive PAs.

- Organised and carried out mask fit testing every day (including some nights and weekends) with other trained staff using the new Portacount machine, prioritising key staff working in ED, AAU, Hamble, ITU, endoscopy, radiology and any members of staff carrying out aerosol generating procedures.
- Liaised regularly with the Trust purchasing team with regards to PPE supplies.
- Liaised regularly with the Trust Occupational Health department regarding testing of symptomatic staff and self-isolation guidelines.
- Carried out infection control training for staff re-deployment sessions.

Work continued into the next financial year and this will be reported in the next Annual Report (April 2020 – March 2021).

Vancomycin-resistant Enterococci (VRE)

There were 76 VRE cases this year including 17 in the Intensive Care Unit (ITU).

During quarter one there were three cases in ITU with two cases having the same typing which could suggest cross infection. The ITU Matron and Link Practitioner developed an action plan that concentrated on hand hygiene and cleaning in the unit. During quarter two there were three cases with no overlaps in terms of time / position in the unit.

In quarter three there were six new cases and one previous positive case in ITU which prompted an investigation where it was discovered that several patients overlapped in terms of the time period that they were in the unit. A further action plan was put into place:

- Isolation clean plus curtain change for the whole unit;
- Replacement of all pillows throughout the unit;
- Increased equipment cleaning audits (weekly);
- Increased hand hygiene audits (weekly);
- Close monitoring of further cases.

During quarter four there were five cases in ITU. A lookback at all patients in the Trust who tested positive for VRE from 01.02.20 identified 19 patients with multiple patient locations. HDU bay beds 14 and 16 had each been occupied by three patients with VRE. An isolation clean of the entire unit was arranged, plus a focus on equipment decontamination and pillow checking. On 20.02.20, four patients who were screened for VRE in ITU on 17.02.20 tested positive. Weekly hand hygiene audits were implemented and a meeting was held. It was acknowledged that the unit had been very busy during the COVID-19 pandemic and that sessional use of PPE could not be excluded as a contributory factor. The importance of changing gloves and aprons between patients, plus hand hygiene, were reiterated.

VRE cases will no longer be typed automatically - this will only be carried out upon special request, for example in outbreak situations.

Measles

There were eight cases of measles this year. The Trust action card for measles was activated for all cases and actions included immediate isolation and investigation for any possible patient contacts. 'Warn and inform' letters were sent to patient contacts and their GP's where required. Staff contacts were referred to Occupational Health and Wellbeing. During quarter three a member of staff who had worked in ED for two days was reported by PHE as a probable measles case. This was a 'breakthrough infection' and it was advised that very immunocompromised patient contacts should be the priority for identification for post exposure prophylaxis, which can be given after 6 days. One patient was identified and was given prophylaxis in ED on 24.12.19.

Scabies

There were three cases of scabies this year with one case each in Kennet, Hardy and Canbury wards. Patients with suspected scabies are isolated and staff are advised to wear gloves and

gowns. An urgent dermatology review is requested as soon as possible. Prior to these measures, any staff having had direct (skin to skin) contact and experiencing signs and symptoms are advised to report to the Occupational Health and Wellbeing Department as early as possible.

There was one case of scabies in a father of a new born infant delivered here. The father had already received treatment himself but following consultation with a paediatrician it was advised that the mother and baby should also have prophylactic treatment.

In June a patient was diagnosed with crusted scabies and 173 contacts were initially investigated. Four patients were in the hospital at the time and received prophylactic treatment (one patient refused and staff monitored the patient). 30 patients fitted the criteria for follow up and 'warn and inform' letters were sent to them and their GPs advising the need for prophylactic treatment. There were 16 patients who were past the incubation period however they and their GPs were sent 'warn and inform' letters advising that they were now unlikely to develop scabies but that any skin problems should be reported to their GP.

Following on from this on 01.07.19 a patient who had been a contact of the case in June was admitted from a care home into ED, AAU and Blyth ward and was found to have crusted scabies. A total of 12 patient contacts were followed up on this occasion with two 'warn and inform' letters to discharged patients, and ten in-patients given prophylactic treatment. Occupational Health and Wellbeing co-ordinated staff prophylactic treatment, which coincided with the first case.

Group A Streptococcus (GAS)

There were a total of 45 GAS and six invasive GAS cases this year. All cases were risk assessed using the Trust IPCT GAS Action card and where applicable advice was given regarding treatment, isolation, cleaning and contact tracing. Staff contacts of were informed of the need for heightened awareness of the signs and symptoms of GAS for 30 days.

Chickenpox and Shingles

This year there were nine cases of confirmed varicella zoster virus. Patients were isolated and contacts were identified to establish immunity to chickenpox as per Trust action card. Staff contacts were referred to Occupational Health and Wellbeing.

In quarter three there was a case of shingles in a staff member and following investigation it was established that the staff member had not had contact with any patients. Staff contacts were referred to Occupational Health and Wellbeing.

Panton-Valentine Leukocidin (PVL) *Staphylococcus aureus* (SA)

In July 2019 there was a patient on Cambridge ward with PVL SA in a wound. This case was followed up and all patient contacts had been discharged at the time of the positive result, resulting in 23 warn and inform letters being sent to them and their GP's.

Endophthalmitis

In October 2019 a patient had an intravitreal injection at Kingston Hospital. Two days later the patient attended St Georges Hospital complaining of loss of vision and mild pain. This was investigated and specimens demonstrated no growth. The patient was treated and followed up. Root cause analysis demonstrated that the correct practices had been followed at all times and no actions were identified.

Mumps

There were nine cases of mumps this year. There was one case in quarter one in a 20 year old patient who visited AEC very briefly. Risk assessment was carried out and patient contacts investigated. Staff contacts were referred to Occupational Health and Wellbeing. There were four

cases of mumps in quarter three and a further four cases in quarter four. Each patient and their contacts were followed up. Advice was given regarding contacts and staff, with letters sent to patient contacts and their GP where required.

7. Mask Fit Testing

The Health and Safety Executive (HSE, 2019) document INDG479 recommends that staff required to wear high level respiratory protective equipment (an FFP3 mask) for some infections and/or procedures such as TB and/or aerosol generating procedures (AGP's), should be mask fit tested to ensure that they are using a well-fitting mask in order to achieve maximum protection. The Trust has historically used a qualitative method of testing as this was the only available method of testing. Mask fit testing was already on the Trust Risk Register due to failure of compliance using this method.

In August 2019 the IC CNS put a business case forward for a new and improved quantitative method of mask fit testing. The Full Support Portacount machine is a much simpler, quicker and more pleasant way of testing, and it was anticipated that this would increase compliance due to improved attendance at fit testing sessions and better pass rates due to the method of testing. Included in the business case was purchase of the Full Support Easimask FSM18 mask as a superior mask in terms of a better seal around the face and an ability to fit a more diverse range of face shapes. It was agreed to purchase the Portacount machine and the masks for high risk areas in the Trust.

The Portacount machine arrived in the Trust on 06.02.20 which enabled the team to provide a much faster, more robust and efficient mask fit testing service in the Trust at the beginning of the COVID-19 pandemic.

This year the ICN and IC Surveillance Nurse have carried out mask fit testing for staff and have trained a few other key members of staff in the Trust to fit test. Mask fit testing has been available almost every day (including some evenings, nights and weekends) and continues.

Two Risk Assessments remain on the Trust Risk Register. One is regarding the difficulty in fit testing and passing every member of staff on every FFP3 mask delivered to the Trust (during the pandemic the Trust had little choice in the type of FFP3 masks being delivered) and the other covers the period of time when the Trust was unable to provide fit testing (20.03.20 – 28.04.20) due to a national shortage of FFP3 masks (in line with surrounding trusts masks were preserved for the clinical areas only and staff were reminded how to perform the 'fit check').

There has been a small minority of staff who have repeatedly failed the mask fit test using different types of masks. For these members of staff and for those unable to shave (for religious reasons) the Trust purchased a number of 'hoods' which are suitable for use instead of an FFP3 mask. The Trust has also sourced other types of FFP3 masks such as a re-usable type of mask in order to facilitate successful mask fit testing for staff.

8. Surveillance

Surgical Site Infection Surveillance Service (SSISS)

The Trust participated in the surgical site infection surveillance system (SSISS) again this year for repair of neck of femur from July-September 2019 which demonstrated a 0% infection rate, and from October to December 2019 which demonstrated an infection rate of 1.6%.

9. Hand Hygiene Compliance

Hand Hygiene Audits

The Department of Health (DH) Saving Lives hand hygiene audits have been carried out by the infection control link practitioners on a monthly basis. Auditing was reduced slightly during March 2020 due to COVID-19. The Trust target for hand hygiene compliance remains at 95%, and out of

the audits undertaken 91% of areas achieved the target, with just 9% achieving an amber score (70 – 95%) and no areas with red scores (<70%). There were no scores under 84%. Please refer to Appendix 1.

Bare below the elbow (BBE)

The Trust continues to monitor compliance with the DH initiative 'Bare below the elbow' with all staff working in clinical areas. Compliance is monitored during hand hygiene audits and staff are advised to directly challenge poor practice and escalate to the DIPC / Medical Director if necessary.

10. Asepsis and Intravenous (IV) Device Care

Link Practitioner Intravenous (IV) Audit

Following identified actions from PIR and in order to ensure optimal compliance with documentation on insertion and care of IV devices, it was decided that the Link Practitioners working in clinical areas with IV devices would commence auditing on a monthly basis. The work commenced in July 2019 and replaced the Link Practitioner equipment audits which were already covered by the Heads of Nursing and Audit and Surveillance Nurse.

The work included 10 observations each of insertion data documentation and care data documentation on the intravenous chart in CRS. Follow-up of non-compliant members of staff was expected. The audit was scored and rag rated each month. Initial poor scores improved in most areas, however the auditing lessened towards the end of the financial year due to COVID-19. Scores can be seen in Appendix 2. This work is set to continue into next year.

Closed System for IV Devices

In February this year a Consultant Anaesthetist expressed concern regarding a Medical Device Alert regarding all brands of IV extension sets with multiple ports. The CNS for IC investigated and found that there were four recommendations:

- Consider if an IV extension set with multiple ports is appropriate for intended use and be aware of alternatives.
- Where appropriate, consider using IV lines with one-way valves to prevent back-tracking (examples of one-way valves are: check, non-return or anti-reflux valves or anti-siphon/anti-free-flow valves).
- Apply clamps (where available) to lines not in use.
- Be aware that needle-free connectors are not one-way valves and will allow back-tracking when connected to IV devices.

Following initial discussion and consideration of the recommendations, it was decided to change the product currently used in the Trust. The Vygon Bionector successfully went through the Medical Devices Committee and the company carried out training for all staff in clinical areas using these devices, and are providing on-going training.

IV Line Labels

Following the IV device audit of 2018 where it was discovered that there is room for improvement in IV line labelling there had been a number of unsuccessful trials of using labels for dating IV giving sets. This year the IC CNS designed a label and recruited the company Vygon to make and supply them. The labels are now available in the wards / clinical areas. Vygon talked to staff about the labels during their Bionector training sessions and the IPCT promoted use of the labels with the Link Practitioners, and during ward rounds and teaching sessions. Use of line labels will be assessed in the next IV audit.

11. Saving Lives Initiative / High Impact Interventions (HIIIs)

The Infection Control Link Practitioners continue to carry out monthly audits from the DH 'Saving Lives High Impact Interventions programme (DH, 2014). This includes auditing hand hygiene; peripheral line insertion and care; urinary catheter insertion and care; and isolation practices.

Aspects of the Saving Lives audit scores can be viewed on Nursing and Midwifery Quality Scorecard and are disseminated to the divisions via the Infection Control Quarterly Report. The ITU also carry out aspects of the HIs regarding ventilator associated pneumonia / tracheostomy and central venous access devices via ICNARC (Intensive Care National Audit Research Centre).

The IPCT and Business Intelligence Team worked together to incorporate some of the new elements in the updated DH Saving Lives programme (DH, 2017), which commenced in April 2019.

12. Care of the Environment

Infection Control Ward Checks

The ICN and IC Audit and Surveillance Nurse have been carrying out Infection Control spot checks in clinical areas again this year. The environment and equipment are checked and any cleaning or maintenance actions are reported through the helpdesk. Support was given regarding any concerns staff had and areas were re-visited where necessary to ensure compliance. Infection control subjects such as screening, specimen taking, bare below the elbow and the importance of VIP scoring etc were discussed with the ward staff during the visits.

Trust Cleaning Services

ISS Mediclean continue to use a microfibre cleaning system, supplemented with Chlorclean (a chlorine-based detergent) for isolation rooms and in outbreak situations. Cleaning scores are routinely recorded as a quality indicator. Trust Curtain Changing guidelines are in place, with curtains dated when changed. The schedule for the rolling programme is available in each ward area as are the dates of any ad-hoc curtain changes requested by staff.

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

ISS Mediclean have provided extra cleaning due to infections as requested by the IPCT.

Equipment Cleanliness Audits

A Head of Nursing and the ICN / IC Audit and Surveillance Nurse have been carrying out equipment cleaning audits on a monthly basis, looking at ten key pieces of equipment and generating a percentage score, which is colour coded. Scores have improved and results are demonstrated in Appendix 3. As the year has progressed other areas have been added to the list. The Infection Control Link Practitioners not auditing IV devices have also continued to carry out their own monthly equipment audits.

Environmental Audit

The following rooms were assessed for their suitability to undertake minor operative procedures:

- Kingston Private Patient Unit March 2020
- Wolverton Centre procedure room March 2020
- **Minor ops audit tool OPD room 16 19.03.20**
-
- Raynes Park Health Centre treatment rooms (Intravitreal injections) September 2019

The IPCT completed environment audits and made recommendations for improvement in the following areas:

- NNU ANTT audit July 19
- SSD reaudit August 2019
- KSC itchens Nov 19

Other Audits

The IPCT contributed to the PEG audit undertaken by the Gastro team.

13. Decontamination

One of the CNS Infection Prevention & Control is the Trust Decontamination Leader two days per week. A full Decontamination Annual Report is available upon request.

14. New Builds / Refurbishments

The IPCT provided expert guidance on new builds and refurbishments throughout the year.

The Built Environment

The IPCT provided input to the fire stopping project throughout the Trust, the refurbishment of theatres, radiology, the planned refurbishment of Sir William Rous Unit (SWRU) and Worcester ward, and the delivery of the ED urgent care centre. Audits were completed for the pain room in main theatre, the assisted conception unit procedure room, various clinical rooms in REU and at Raynes Park Health Centre to assess these areas suitability for proposed increases in activity.

Planned Refurbishment

The IPCT advised on room specifications, fixtures fittings and finishes throughout the transformation of the former microbiology lab into an extended outpatient department, plus the planned refurbishments in ITU, SWRU, Radiology, Princess Alexandra Wing, ED majors and resus, Maternity, plus the conversion of Claremont ward on Esher Level 7 into an endoscopy suite. In accordance with infection control guidance new flooring was installed in the Assisted Conception Unit to enable the facility to be used for minor operations.

15. Infection Control Staff Training

Face to face training sessions for new staff on corporate induction were provided by the team. Infection Control classroom based training has been delivered on induction training for the new band 2 and band 5 nurses. The team continue to support training for volunteers. Additional training has been supplied when requested. Face to face training sessions were put on hold during the COVID-19 pandemic.

Infection Control Day in September 2019

A three day event was arranged by the Head of Nursing for Unplanned Care including Infection Control, falls management and wound care. The Infection Control Link Practitioners were charged with carrying out infection control activities within their own clinical areas and were judged by the IPCT and the HON. There were some very impressive ideas for raising staff knowledge about infection control, which were tweeted throughout the day and included power point presentations, poster boards, quizzes and games, an algorithm and poster, hand hygiene cakes, and infection control and sepsis videos. Gift vouchers were awarded to the best three – one each in Hardy ward, ED and AAU/AEC.

16. Policy/ Guideline Review

There are around 70 Infection Control policies/ procedures/ guidelines available on the Trust intranet. All have been updated this year as required and ratified through the Infection Control Committee. Compliance is monitored against some via the DH Saving lives initiative and audit project work. A brand new guideline for COVID-19 was developed this year and updated as required.

17. Further Infection Prevention & Control Initiatives

London Neonatal Operational Delivery Network Infection Control and Prevention Task & Finish Group

One of the CNSs joined this forum, which was established to produce pan-London infection control guidance for neonatal units, specifically focussing on resistant organisms with a view to facilitating safe transfer and repatriation between units.

DIPC Forum

Dr Elli Demertzi attends the London DIPC Forum meeting every quarter where all new NHS Improvement / PHE initiatives and CQUINs regarding *C. difficile* infection, Gram negative sepsis, Antibiotic Resistance and Antimicrobial Stewardship and emerging Infection Control issues are presented and discussed.

Link Practitioners

The Trust currently has Infection Control Link Practitioners in each clinical area. This person is allocated one day every two months specifically for infection control responsibilities including carrying out the Saving Lives audits and ensuring best practice regarding infection control in their own areas. Quarterly study days, in which the Link Practitioner business meeting is incorporated, continued until the March 2020 meeting, which was cancelled due to COVID-19. Instead the IPCT provided information to the group for sharing in their own areas.

Infection Prevention & Control Information for Patients, Relatives and Visitors

Infection Prevention & Control is included on the Trust website for patients, relatives and visitors. Included on the website are leaflets on VRE, CPE, ESBL, Flu and Norovirus having been approved by the Patient information Review Group and Communication Team. Information sheets on reducing the risk of infection whilst in hospital, respiratory syncytial virus (RSV) and diarrhoea and vomiting are also available.

18. Summary and Conclusion

Over the past year the IPCT has:

- Provided optimum guidance and support regarding the management of COVID-19 in the Trust, working closely with the Emergency Planners and others in the Trust, using continually updated information from PHE. Set up a system for contact tracing COVID-19 positive cases.
- Carried out PIR on COVID-19 cases to ensure learning where necessary.
- Carried out mask fit testing on members of staff.
- Continued to manage outbreaks and incidents of infection, including high numbers of norovirus and Influenza this year.
- Observed improvements in practice regarding IV insertion and care documentation following new Link Practitioners auditing and the provision of new line labels.
- Organised an 'Infection Control Day' as requested by the HON, enticing some very inspirational ideas by the infection control Link Practitioners.
- Maintained improved hand hygiene scores with no red rated compliance scores (below 70%) and demonstrating mostly green scores (above 95%) for the year.
- Continued close monitoring of equipment cleaning to ensure improvements.
- Carried out SSIS and demonstrated low levels of infection.
- Trained new members of staff on Corporate Induction and Band 2 and 5 New Nurses Induction.

- Supported building and refurbishment projects throughout the Trust and advised on the suitability of environments for clinical activity, in accordance with published guidance.
- Strengthened the Decontamination agenda and provided greater visibility and assurance on decontamination practices and problems across the Trust.

19. Recommendations / Key Priorities for 2019/2020

Priorities for 2020-2021.

- Continue to monitor for COVID-19 cases and provide the most up to date information on its prevention and control.
- Continue to ensure that mask fit testing is provided.
- Continually monitor and ensure best practice in infection control in order to have measures in place for the aim of meeting infection rate targets set by the DH.
- Observe and work towards MRSA / MSSA bacteraemia / new *C. difficile* targets as set by PHE, ensuring that PIR is carried out and monitored by the clinical / nursing teams through SLM and SIG, to ensure learning where applicable.
- Continue to manage infection outbreaks and incidents efficiently in order to keep our patients, staff and visitors as safe as possible whilst maintaining hospital functioning. Liaise with PHE / CSU where required regarding outbreaks and incidents.
- Continue to flag patients on CRS with a new reported infection on a daily basis and advise staff regarding management of the infections. Carry out POCT for suspected flu patients during the summer months when the machine is in the POC lab. Oversee POC testing in ED and AAU alongside the POC team during the winter months.
- Ensure that patients with known infections are managed appropriately by checking all in-patient infection flags two to three times a week; advising staff of screening / treatment requirements in order to remove infection risk flags where possible and thereby facilitating release of side rooms. Continue to work towards optimal screening of patients for MRSA, CPE, VRE etc. and prompt stool sampling in accordance with DH requirements.
- Complete on-going work to ensure the best care of intravenous devices in order to prevent infections, ensuring conclusion of the IV audit action plan and further monitoring.
- Monitor hand hygiene and bare below the elbow score audits and facilitate improvements where required.
- Monitor the environment in clinical areas in terms of infection control by carrying out monthly equipment audits; and environmental spot checks on a rolling programme.
- Survey surgical site infection as part of the Surgical Site Infection Surveillance Service, carrying out six months of orthopaedic surveillance as a minimum.
- Aim to ensure that staff are adequately protected against certain respiratory infections by improving the numbers of staff passing the mask fit test.
- Provide infection control training to new and existing members of staff where required.
- Provide support to the Matrons in the Trust working collaboratively with other areas in the Catheter Care of Practice project.
- Work in tandem with Estates, Maintenance and Capital Projects to ensure that the fixtures, fittings and finishes of new builds and refurbishments are reflective of the relevant Health Technical Memoranda and Health Building Notes, to provide the optimum environment in which to deliver care ensuring that the risk of infection to patients during works projects is minimised throughout.
- Work towards inspiring a group of effective Infection Control Link Practitioners, who are responsible for day to day infection control matters in their own areas of work.
- Continue to attend and support meetings and groups (Matrons ACE, PLACE, Medical Devices Group, Water Safety, SIG, Nursing and Midwifery Board, etc.).

- Further progress the Decontamination agenda.
- Start Phase One of OPAT, a weekly virtual MDT attended by a Consultant Microbiologist, Medical Consultant, Antimicrobial Pharmacist and community nurses. All patients that have been discharged on IV antimicrobials will be reviewed and monitored, liaising with the clinical team where appropriate.
- Participate in the antimicrobial therapy CQUIN for next year which involves appropriate antibiotic prescribing for a UTI in adults aged over 16 years.

20. References, sources and further reading

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Appendix 1

Hand Hygiene 2019 – 2020 per Month by Clinical Area

Ward / Area	Apr 19	May 19	Jun 19	Jul 19	Aug 19	Sep 19	Oct 19	Nov 19	Dec 19	Jan 20	Feb 20	Mar 20
ED (Emergency Department)	96.9%	94.9%	88.8%	92.9%	94.9%		96.9%	96.9%	95.8%	94.9%	93.0%	
ED – (Paediatrics)	96.9%		84.0%					99.0%			99.0%	99.0%
Acute Assessment Unit (AAU)	92.0%	92.0%	92.7%	94.0%	96.9%	94.0%	93.0%	94.0%	94.0%	95.0%	94.0%	95.0%
AEC (Ambulatory Emergency Care)	100.0%	100.0%				100.0%						
Alex ward	100.0%		94.8%	96.0%	97.8%	95.9%		100.0%	100.0%	100.0%	98.0%	100.0%
Astor ward	98.0%	97.5%	97.0%	95.6%	97.5%	100.0%	97.5%	97.0%	97.7%	96.0%	98.9%	95.0%
Audiology Department	98.0%	97.0%	100.0%	97.0%	97.0%	96.9%	100.0%	98.0%	98.0%	97.0%	100.0%	99.0%
Blyth ward	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Bronte ward	98.0%	98.0%		97.0%	98.0%	98.0%	98.0%	98.0%		99.0%	99.0%	99.0%
Cambridge ward	100.0%	100.0%	100.0%	100.0%	100.0%	98.0%	99.0%	100.0%	100.0%	99.0%	99.0%	
Canbury ward	100.0%	100.0%	100.0%	100.0%	98.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Derwent ward	99.0%	99.0%	99.0%	98.0%	99.0%	98.0%	99.0%	99.0%	99.0%	99.0%	97.9%	
Day Surgery Unit (DSU)	100.0%		100.0%	100.0%	100.0%	100.0%				100.0%	100.0%	
Hamble ward	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		100.0%		
Hardy ward		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		
Isabella ward	94.9%	96.8%	95.0%	93.9%	94.7%	98.0%	93.0%	97.0%	97.0%	97.0%		99.0%
Intensive Care Unit (ITU)	99.0%	98.9%	97.8%	98.9%	97.9%	96.8%	98.9%	99.0%	97.9%	97.9%	97.9%	97.9%
Keats ward	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		100.0%	100.0%	100.0%
Kennet ward	98.7%	97.7%	99.0%	100.0%	92.0%	100.0%	100.0%	100.0%	100.0%	99.0%	99.0%	
Main Theatres	98.0%	99.0%	99.0%	96.4%	90.0%	98.0%	100.0%	98.9%		91.5%	85.7%	93.9%
Maternity - Delivery Suite	100.0%	100.0%	97.9%	100.0%			96.0%	100.0%	100.0%	100.0%	100.0%	97.9%
Maternity - Malden Suite	100.0%	99.0%	98.0%	100.0%	100.0%	100.0%	100.0%	90.0%	98.0%	97.0%	100.0%	95.0%
Maternity - Thameside Antenatal	100.0%	100.0%	100.0%	100.0%	100.0%	97.6%	100.0%	100.0%	97.6%	97.7%	100.0%	
Maternity - Thameside Postnatal	96.0%	100.0%	99.0%				97.7%	100.0%	100.0%	98.0%		100.0%
Maternity - Transitional Care	100.0%	100.0%	100.0%	97.3%	96.9%	95.9%	94.0%	100.0%	95.9%	99.0%	96.0%	
Maternity - Worcester	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Neonatal Unit (NNU)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Ophthalmology - REU	100.0%	96.9%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Princess Alexandra Wing (Dental)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Radiology	95.8%	100.0%	100.0%	95.8%	93.9%	95.8%	89.4%	95.8%	95.7%	100.0%	95.8%	
Sunshine ward	100.0%		100.0%	100.0%	100.0%	100.0%	99.0%	99.0%	100.0%	100.0%		100.0%

Appendix 2 Monthly IV Documentation Audits

Ward / Area	Insertion / Care	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020
ED	Insertion		60%	85%	55%	65%	20%		100%	
Alex	Insertion	55%	50%	100%	85%	85%	100%		100%	85%
	Care	100%	100%	95%	95%	100%	100%		100%	100%
Astor	Insertion	40%	60%	80%	95%	80%	100%	75%	56%	33%
	Care	45%	90%	100%	100%	95%	70%	100%	85%	100%
Blyth	Insertion	75%	75%	100%	93%	94%	90%	88%	95%	75%
	Care	70%	100%	100%	100%	100%	100%	100%	100%	100%
Kennet	Insertion				75%		92%	75%		70%
	Care				50%		60%	100%		90%
Bronte	Insertion	100%	70%	90%	90%	30%	89%			
	Care	100%	100%	100%	100%	95%	90%			
Derwent	Insertion	50%	50%	75%	80%		50%	66%	22%	
	Care	45%	70%	45%	50%		45%	55%	60%	
Hardy	Insertion	65%	80%	80%	29%	64%	100%	75%	100%	57%
	Care	10%	90%	100%	100%	95%	100%	100%	100%	100%
Hamble	Insertion	70%	90%	90%	90%		90%	60%	90%	90%
	Care	80%	85%	95%	95%		100%	100%	70%	80%
Keats	Insertion	80%	60%	80%	100%	62%	100%	75%	65%	80%
	Care	70%	70%	90%	85%	93%	70%	90%	85%	90%
AAU	Insertion	25%	70%	80%	80%	60%	100%	100%	100%	100%
	Care	70%	80%	90%	90%	100%	100%	100%	100%	100%
Cambridge	Insertion	100%	95%	90%	100%	100%	70%	89%	100%	100%
	Care	100%	100%	100%	100%	90%	100%	70%	100%	100%
Canbury	Insertion	50%	45%	75%	100%	85%	93%	88%	100%	
	Care	100%	100%	100%	100%	100%	100%	100%	100%	
Isabella	Insertion	45%	65%	100%	88%	100%	100%		80%	100%
	Care	80%	100%	100%	90%	100%	100%		100%	100%
Paediatrics	Insertion	100%	100%	100%	40%	60%	70%	80%	70%	
	Care	100%	100%	100%	100%	100%	100%	100%	100%	
ITU	Insertion	90%	90%	100%	100%	100%	80%	100%	100%	
	Care	100%	100%	100%	100%	100%	100%	100%	100%	
KHT Private Unit	Insertion			100%	100%	100%	100%	100%	100%	
	Care			100%	100%	95%	100%	100%	90%	

Appendix 3 Equipment Cleaning Monthly Audits

Ward / Area	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019	Sep 2019	Oct 2019	Nov 2019	Jan 2020	Feb 2020
ED Majors	40%	40%	70%	90%	80%	60%	100%	90%	40%	100%
Resus	40%	40%	50%	90%	80%	80%	100%	100%	30%	90%
SDEC	100%	90%	90%	100%	90%	90%	100%	100%	40%	100%
UTC	90%	90%	80%	90%	90%	90%	100%	90%	80%	100%
RAP	50%	80%	100%	90%	100%	100%	90%	90%	90%	100%
ED (Paeds)	40%	70%	60%	90%	90%	60%	100%	70%	40%	100%
Alex	100%	90%	100%	90%	90%	90%	90%	90%	100%	100%
Astor	100%	80%	90%	100%	90%	80%	90%	100%	90%	100%
Blyth	100%	40%	80%	80%	80%	100%	90%	80%	70%	90%
Kennet	90%	80%	80%				90%	90%	100%	90%
Bronte	100%	30%	70%	80%	90%	90%	100%	100%	80%	100%
Derwent	90%	90%	80%	90%	60%	70%	100%	100%	100%	100%
Hardy	100%	80%	90%	90%	50%	90%	100%	100%	100%	90%
Hamble	80%	80%	80%	80%	80%	70%	90%	80%	100%	80%
Keats	80%	90%	100%	100%	90%	90%	100%	90%	100%	100%
AAU	55%	65%	50%	90%	75%	75%	70%	80%	95%	70%
Cambridge	80%	80%	80%	70%	90%	40%	100%	90%	90%	80%
Canbury	50%	100%	90%	90%	80%	60%	80%	100%	90%	80%
Isabella	70%	90%	60%	90%	70%	30%	90%	70%	80%	80%
OPD L4	90%	90%	100%	100%		80%	100%		100%	
OPD ENT	80%	80%	70%	90%	60%	90%	80%		90%	
SWRU	100%	90%		100%		100%	100%		80%	
Phlebotomy	100%	80%	80%			100%	90%		90%	
Gynae OPD	90%	100%		90%	100%	60%	80%		70%	80%
Dental	70%	90%	80%	80%	90%	90%	100%	100%	80%	100%
Sunshine	80%	100%	80%	100%	70%	100%	100%	90%	100%	100%
Dolphin	90%	90%	70%	100%	60%	90%	90%	100%	100%	100%
Maternity TC		100%	90%	60%	80%	90%	80%		100%	
TSPN		80%	60%	80%	80%	100%	100%		100%	
TSAN		100%	70%	100%	100%	90%	100%		100%	
Malden		90%	60%	60%	90%	100%	100%		80%	
Delivery		100%	90%	70%	60%	100%	100%		100%	
Worcester		60%	70%	100%	100%	100%	100%		100%	
NNU		90%	90%	90%	60%	100%	100%		70%	
REU	70%	100%	60%	90%	90%	90%	70%	90%	70%	100%
ITU	60%	90%	100%	100%	90%	40%	90%	90%	90%	100%
Pre-assess	90%	80%	70%	80%	40%	70%	90%	90%	90%	80%
Radiology	60%	90%	67%	90%	90%	40%	100%		100%	90%
ACU	100%	100%	80%	100%	100%	90%	90%	100%	100%	100%
Haem Day	80%	90%	100%	90%	70%	100%	100%	100%	90%	
MDU	80%		80%	90%	closed	80%	80%	60%	100%	100%
DSU	80%	70%	80%	70%	80%	100%	90%	70%	100%	100%
Endoscopy	70%	70%	80%	70%	60%	100%	80%	90%	100%	90%
AEC	60%		80%		70%	70%				
KPH		90%	70%	90%	100%	90%	90%	100%	100%	90%

RAG Rating **Red 50% and below; Amber 60 - 70%; Green 80% and above** (scores re-adjusted September 2019).

December 2019 – audits not completed as hospital running over capacity.
 March 2020 – audits not completed due to COVID-19.

Appendix 4 Glossary of terms

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

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

Biopatch – a small disc applied to the intravenous insertion site containing Chlorhexidine Gluconate to reduce the risk of infection while the absorbent foam draws discharge away from the catheter site.

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

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

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

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

CRS - the NHS Care Records Service is a service provided by NHS Connecting for Health for the National Health Service in England which provides mobile patient records and documentation.

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

E.coli – (*Escherichia coli*) bacteria that are normal flora of the intestine with some strains having the ability to cause infection in other areas of the body (i.e. blood, urine). *E.coli* are also becoming an important reservoir of extended-spectrum beta-lactamases (ESBLs) which are multiple antibiotic resistant.

Gram negative blood stream infection - an infection in the blood stream caused by Gram-negative bacteria such as *Escherichia coli*, *Klebsiella* and *Pseudomonas aeruginosa*.

Group A Streptococcus - (GAS) is a bacterium which can colonise the throat, skin and anogenital tract. It can cause a diverse range of skin, soft tissue and respiratory tract infections. GAS can occasionally cause infections that are extremely severe, such as necrotising fasciitis. Invasive GAS (iGAS) is when the bacteria are found in the blood stream i.e.by taking blood cultures.

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

Hepatitis A – an acute viral illness.

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

Intravenous device - a device inserted into the vein for giving medications or fluids (including cannula and central line).

Klebsiella – bacteria that are normal flora of the intestine but can cause opportunistic infections elsewhere in the body (i.e. blood, urine)

‘Lapse in Care’ – a term used with regards to *Clostridium difficile* toxin positive patients when there has been an aspect of care or treatment outlined in hospital policy (or guidelines) that has not been adhered to.

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

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

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

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

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

Panton-Valentine Leukocidin (PVL) MRSA / *Staphylococcus aureus* (SA) - Some strains of MRSA or SA (see above) are more likely to cause infections than others i.e. they are more virulent. Strains that produce a toxin called Panton-Valentine Leukocidin (PVL) are more likely to cause infections, particularly of the skin.

Patient 'Flag' – a system of alerting staff to important information regarding a patient in their CRS records.

PEG tube - a percutaneous endoscopic gastrostomy tube is an endoscopic tube that is passed into a patient's stomach through the abdominal wall, most commonly to provide a means of feeding when oral intake is not adequate.

Pertussis – whooping cough, a respiratory infection.

Pseudomonas – gram negative bacteria that are common in the environment but which can cause clinical infection particularly in people with diabetes or those who are immunocompromised.
Pseudomonas aeruginosa

Scabies - is an intensely itchy and contagious skin infestation which can be passed from one person to another by touching.

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

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

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