The Christie NHS
NHS Foundation Trust

Title: Annual report of the infection prevention and control team April 2017-March 2018

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Owner (author): Name: Wayne Gilbart
Job title: Lead Infection Prevention and Control Nurse/Senior Matron

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Approved by: The Infection Prevention and Control Committee

Date:

Contents

Executive Summary

This report details the activities of the Infection Prevention and Control Team (IPCT) to ensure that The Christie Hospital NHS Foundation Trust is compliant with the The Health and Social Care Act 2008: code of practice on the prevention and control of infections and related guidance (updated 2015) and associated Care Quality Commission (CQC) guidance.

This year has seen increases in some conditions such as *E.coli* bloodstream infections and MSSA bloodstream infections but has seen reductions in others such as *C.difficle* pre and post-72 infections and bloodstream infections caused by GRE.

Quality improvement projects have continued this year with the development of the new Out of hours advice matrix as well as hand hygiene auditing becoming embedded in all areas of the hospital.

While the hospital has not met its five percent reduction targets set by the Director of Infection Prevention and Control (DIPC) last year, ownership of infection prevention and control is being taken by frontline areas and the Healthcare-associated reduction group (HAIR) has become a vital collaboration for introducing new initiatives in the hospital.

1. Current staffing levels

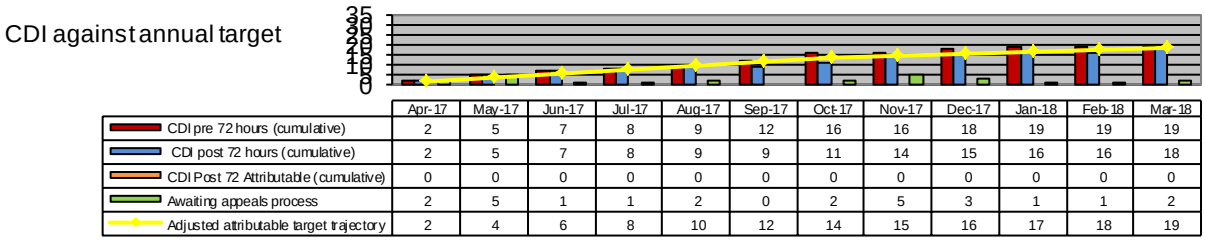
The IPCT consists of 1 WTE band 8A lead nurse and 1 WTE band 7 infection prevention and control nurse specialist and 1 WTE Band 6 infection control nurse. The team is supported by 1 WTE band 4 Admin/surveillance assistant.

Microbiology cover is provided by Salford Royal NHS Foundation Hospital and there are medical staff on site 5 days a week attending rounds and antibiotic ward rounds. Dr Paul Chadwick is the designated Infection Control Doctor for the Christie Hospital and also acts as Deputy Director of Infection Prevention and Control.

2. Surveillance

2.1 Clostridium difficile infection

Figure 1: All cases of *Clostridium difficile* infection (CDI) against yearly target



	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18
CDI pre 72 hours (cumulative)	2	5	7	8	9	12	16	16	18	19	19	19
CDI post 72 hours (cumulative)	2	5	7	8	9	9	11	14	15	16	16	18
CDI Post 72 Attributable (cumulative)	0	0	0	0	0	0	0	0	0	0	0	0
Awaiting appeals process	2	5	1	1	2	0	2	5	3	1	1	2
Adjusted attributable target trajectory	2	4	6	8	10	12	14	15	16	17	18	19

The *Clostriduim difficile* infection (CDI) trajectory for 2017/18 was set by NHS England at 19 cases

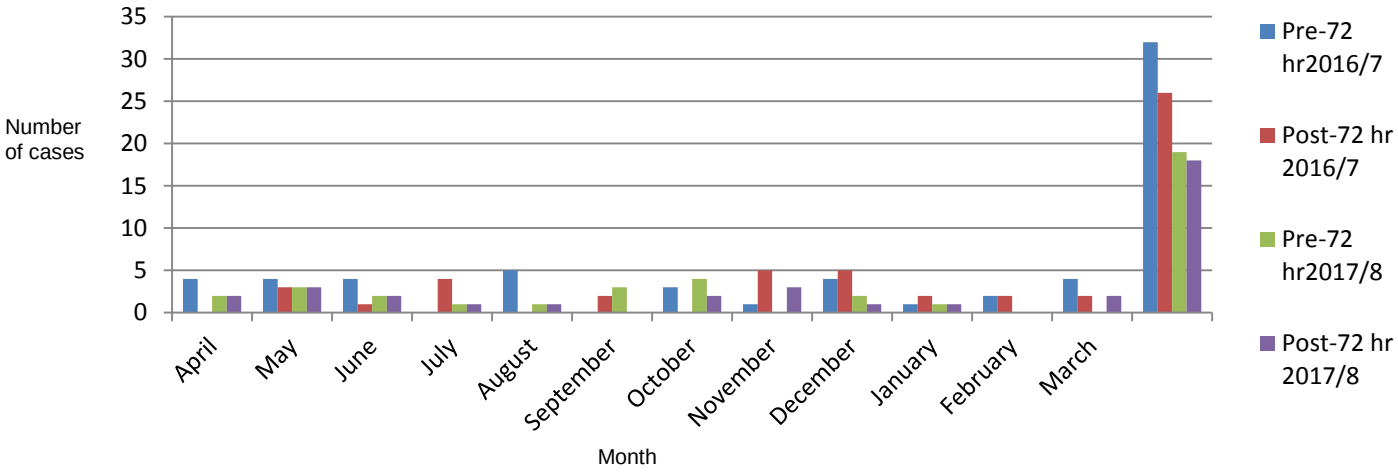
All cases of CDI have a surveillance definition applied to them and are identified as being pre and post 72 hours of admission. Any cases that meet the definition as being 72-hours post-admission are assessed by a member of the staff and a root cause analysis (RCA) is initiated. Cases that are categorized as being pre-72 hours are referred to the relevant community team for RCA.

Cases are discussed at the monthly Nosocomial Infection Performance Review (NIPR) meeting chaired by the DIPC and attended by the infection control doctor, relevant pharmacist, the infection prevention and control nurses, clinical commissioner and nursing and medical staff that cared for the patient. All cases are reported by the Infection Prevention and Control (IPC) team on the Public Health England (PHE database)

Figure two below shows the pre and post-72 hour cases by month.

There has been a decrease in the number of post-72 hour cases of *Cdifficile* infection in the hospital with the Trust being below trajectory and there have been no cases which have been considered to represent a lapse in care:

Figure: 2 Pre and Post-72 hours CDT cases in The Christie Hospital 2016/18



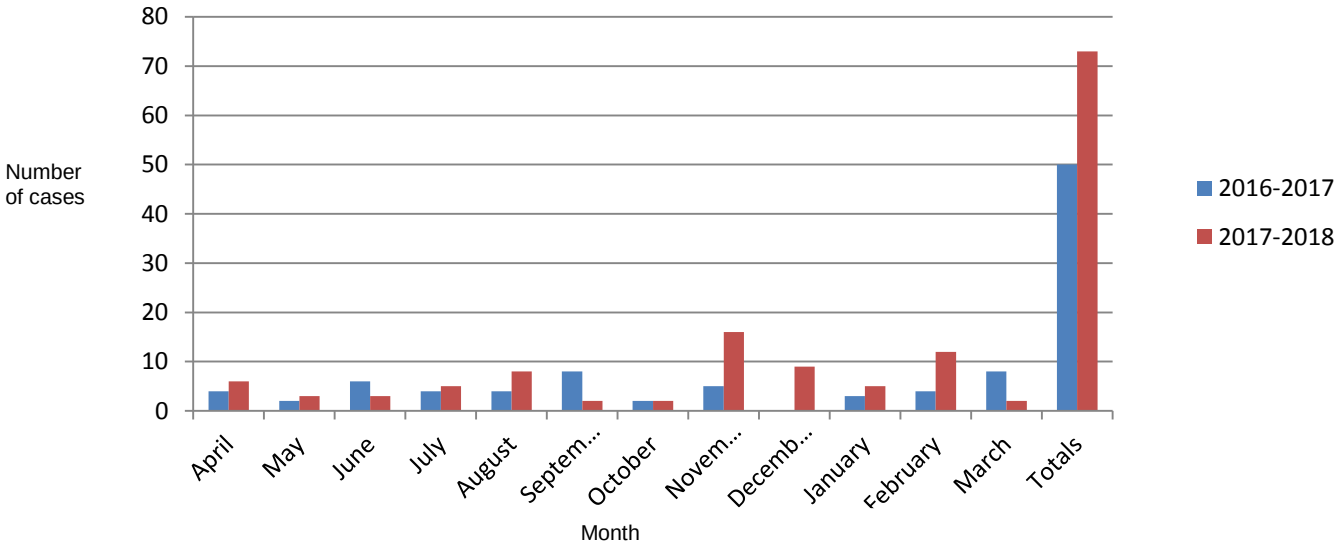
2.2 Meticillin resistant staphylococcus aureus (MRSA)

A total of 73 new cases of MRSA colonisations/infections were identified during the financial year. This represents an increase from the fifty cases the year before although this may be due to increased compliance with the screening process.

The majority of patients identified as MRSA positive are colonised and not infected with the organism and found on admission. The Trust screens all patients for MRSA as follows:

- Elective admissions to the trust
- Admitted patients
- Day cases-including procedures
- Inter-hospital transfers
- Emergency admissions
- All patients admitted to Palatine ward and/or the Oncology Critical Care Unit (OCCU) will be screened on admission and weekly thereafter.
- All patients admitted to the Young Oncology Unit (YOU)

Figure 4: MRSA cases 2016-2018



MRSA Blood stream infections

The Trust trajectory for MRSA bacteremia was 0 for the period 2017/18.The Trust has had three MRSA bloodstream infections which were associated with the Trust. All of these underwent a post-infection review (PIR).The Trust appealed the attribution of one of the bacteremia to the Trust but an independent review upheld the decision.

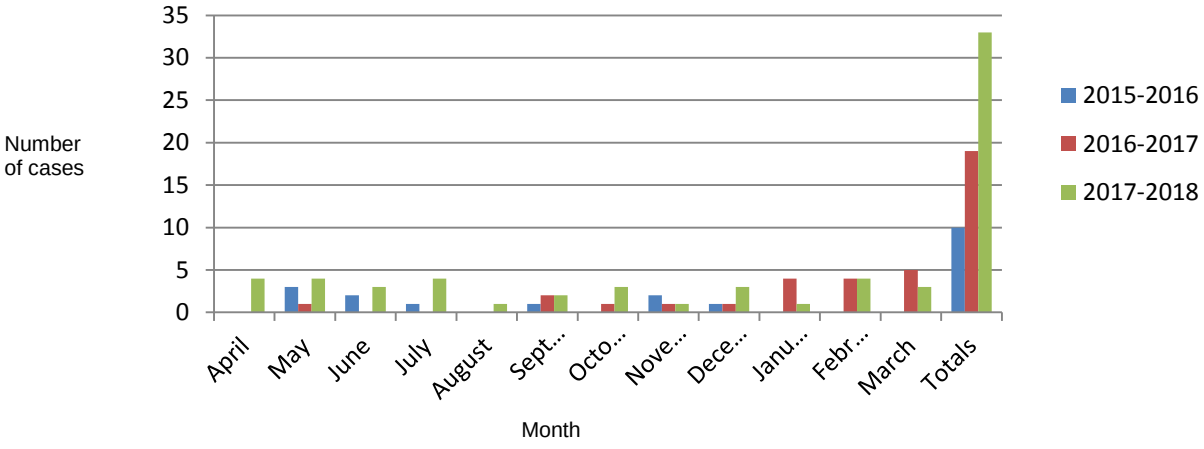
The results of the PIRs undertaken were distributed to relevant stakeholders in the Trust by the IPC via such mechanisms as the senior nurse meeting.

2.3 MSSA Bloodstream infections

Meticillin-sensitive staph aureus (MSSA) bloodstream infections are part of the mandatory reporting of alert organisms to PHE and were also included in the Trust target of a five percent reduction in healthcare-associated infections for 2017-2018.

During 2017-2018 the IPC team has seen an increase in cases of MSSA

Figure 5: MSSA Bacteraemia 2015-2018



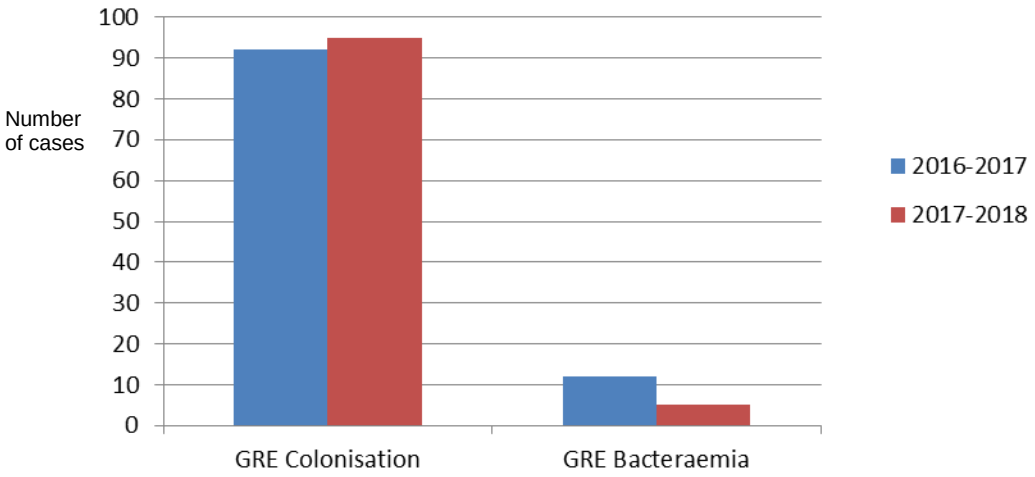
This increase in cases prompted some genetic typing in June of 2017 and there was no evidence of transmission within the hospital. The Director of Infection Prevention has been leading on a review of these cases which will lead to recommendations for practice which should see a reduction in cases for the next financial year.

2.4 Glycopeptide resistant enterococci (GRE)

There have been ninety five (95) colonisations with Vancomycin-resistant enterococcus (VRE) which is a small increase from the previous year

Figure 6 below shows that there has been over a fifty percent reduction in GRE bloodstream infections from the previous year.

Figure 6: VRE in the trust 2016/18



Glycopeptide (vancomycin, teicoplanin) antibiotics and linezolid are important agents in Haematology to treat Gram positive infections (Staphylococci, Streptococci, Enterococci) in neutropenic patients. During 2017-2018, linezolid-resistant enterococci have been isolated from patients on Palatine ward (PTW).

Investigation

The laboratory information system was interrogated to identify all linezolid and vancomycin resistant enterococci in Christie Hospital patients since February 2016. Isolates were confirmed as linezolid and vancomycin-resistant by the reference laboratory, PHE Colindale and the resistance mechanism for linezolid was determined by molecular investigations. The list of patients affected is shown below.

Eight patients had linezolid and vancomycin-resistant *Enterococcus faecium* (LGREFM) isolated. These were mainly from faeces samples in patients with diarrhoea (where vancomycin-resistant enterococci are sought for infection control purposes), however 3 patients had LGREFM isolated from urine samples. A further patient with LGREFM has been treated only at the Christie Clinic and has not been included in these figures.

Implications for Infection Prevention and Control

Although *Enterococcus faecium* is of relatively low pathogenicity, this organism can cause infections in immune compromised patients. Given also the importance of linezolid and glycopeptides to Haematology antimicrobial therapy regimens, and the lack of effective alternative agents to treat

LGREFM, it is important that further spread of these organisms is prevented. Advice from the reference laboratory is that the G2576T rDNA mutation is a recognised resistance mechanism in Enterococci and is not transmissible between different strains. Therefore, if there is a problem with cross-infection locally, these patient isolates are likely to the same strain (PFGE type). Further typing results are awaited.The infection control team has advised that patient colonised/infected with LGREFM must be isolated in a single room with strict contact precautions and the room deep cleaned after use. This cluster of cases will continue to be monitored – we have not identified any new cases since 17th February.

2.5 *Escherichia coli* bacteremia 2016/18

Figure 7 below shows the *E.coli* bacteraemias recorded in the Trust for 2016-2018. There have been eighty two cases in 2017-2018 which is an increase from fifty four cases the previous year.

Figure 7: Ecoli bloodstream infections April 2016 to March 2018

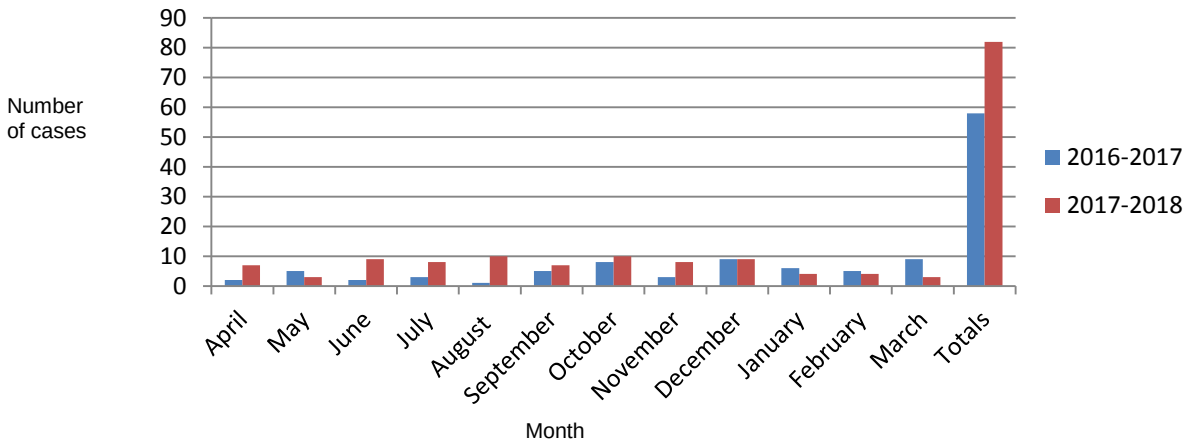
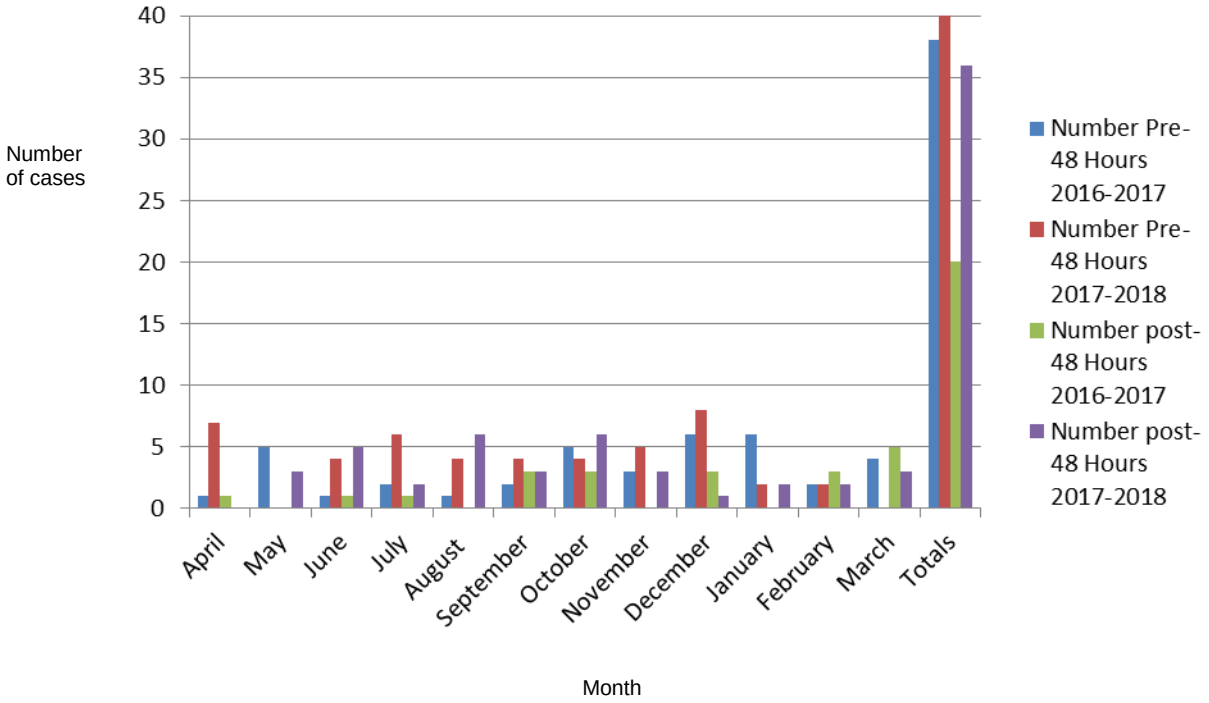


Figure 8: *E.coli* bloodstream infections by pre-and post 48 hours April 2016 to December 2017



E.coli bacteraemias are included in the trust healthcare-associated infection reduction targets of 5% for 2017-2018 and form part of a Department of Health (DH) reduction programme with an expected reduction of 20% by 2020.

The Christie Infection Prevention and Control (IPC) team have been participants in the Manchester-wide group looking at reducing *E.coli* bloodstream infections and have participated in an analysis of all our cases from 2010 to present to identify quality improvement projects. These have included point prevalence audits of catheter-associated infection and patient hand hygiene. The IPC also completes the enhanced fields for *E.coli* in the Public Health England (PHE) database.

In the latter part of 2017-2018 the Christie has begun collaboration with the Royal Marsden Hospital in London to look at reducing *E.coli* bloodstream infections in the context of specialist cancer hospitals. This will include workshops, peer reviewing of cases and the appointment of a Darzi fellow to look at the issue in 2018-2019.

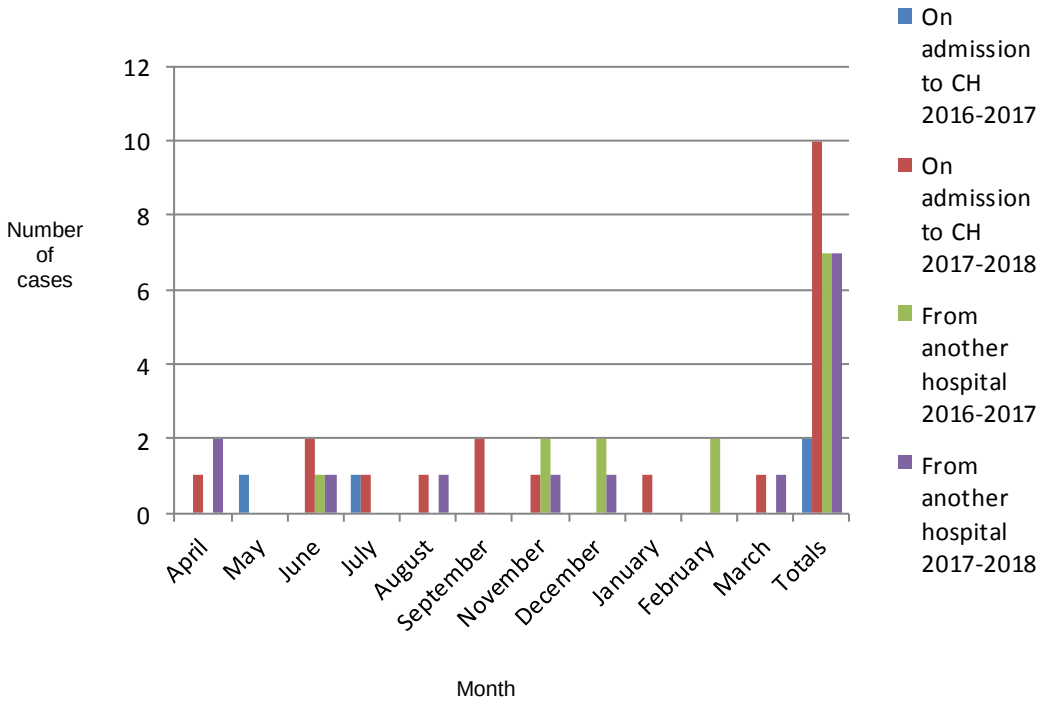
2.6 Carbapenemase-producing enterobacteriaceae (CPE)

The Christie introduced CPE screening in April 2017 based on a risk assessment if the patient had been in a hospital with high prevalence such as Wythenshawe or Manchester Royal Infirmary (MRI) or if the patient had been in a hospital abroad.

Initial numbers of screens was very low so the ICP team carried out training in areas such as the Oncology Assessment Unit (OAU) and now monitors number of patients who meet the screening criteria in areas such as Palatine ward.

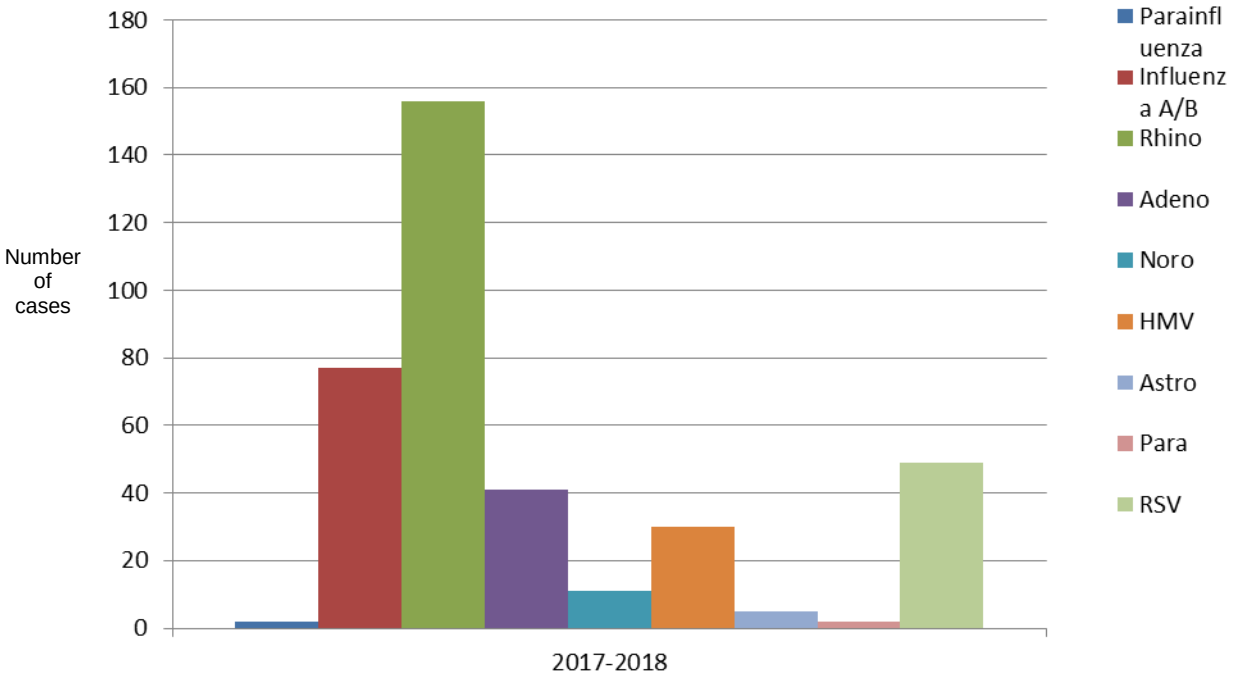
Numbers of CPE positive patients being identified in the Christie Hospital have remained small.

Figure 8: CPE positive results 2016-2018



2.7 Surveillance of viruses

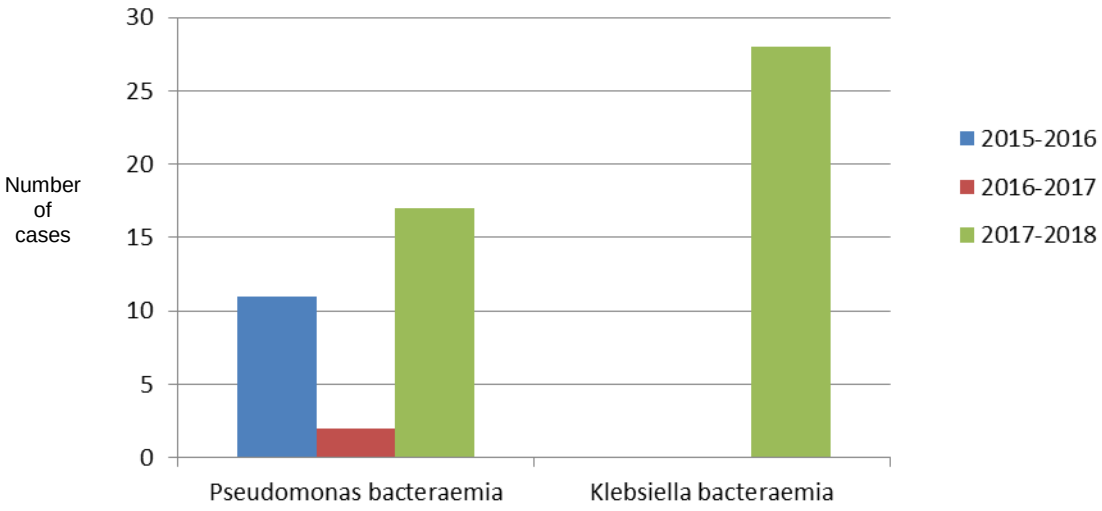
Figure 9: Surveillance of viruses 2017-2018



The majority of respiratory viruses are found in outpatients in particular the Haematology Day Unit (HTDU). Seasonal spikes occur during the influenza season and the number of cases reduces during the summer months. Like the rest of the country the Christie noted a spike of cases of influenza in the last part of flu season. All patients with influenza were appropriately nursed on transmission-based precautions in side rooms.

2.8 Other bloodstream infections

Figure 10: Other bacteraemia 2015-2017 (Klebsiella data only from 2017)



Like all other acute hospitals in the UK, the Christie now reports klebsiella bloodstream infections to Public Health England. There has been an increase in pseudomonas bloodstream infections from the previous year.

2.9 Other alert organism surveillance.

In addition to the organisms above, surveillance is undertaken on other organisms as they arise including:

- Tuberculosis
- Haemolytic streptococci
- Varicella zoster virus
- G-I viruses
- Multi-drug resistant organisms (e.g. AmpC producing organisms, CPEs, ESBLs)

2.10 Outbreaks

In August 2017, there was a small cluster of cases of gastro-enteritis cases on ward 12. This mostly affected staff and there were only cases among two patients. The ward was closed briefly and the situation was well handled.

In November and December 2017, there was a period of increased incidence (PII)/outbreak on ward 10 in November and December 2017 with eight cases of MRSA (four from wounds, three from urine and one from an MRSA screen) in the same geographical area of the ward.

The response of the Infection Prevention and Control team and the ward has been vigorous and has included additional cleaning from the Deep Clean team, increased managerial presence, hand hygiene auditing and the outbreak being discussed at the Surgical Directorate meeting.

2.11 Other surveillance systems

2.11.1 Catheter-associated urinary tract infection (CAUTI) surveillance
Surveillance of catheter associated urinary tract infections is monitored weekly through a point prevalence audit undertaken by the IPCT. The Trust has very small numbers of CAUTI's and none were identified as being attributed to the Trust

2.11.2 Surgical Site Surveillance (SSI)

In 2017-2018 surgical site surveillance was taken over by junior medical staff under the supervision of senior surgical staff.

2.12 Antimicrobial Resistance and Invasive Isolates

2.12.1 Blood culture isolates (bacteraemias) 2017

9175 blood culture examinations were undertaken in 2017, an increase of 15% over the 7972 sets processed in 2016. There were 821 positive sets in 429 patients: an overall positivity rate of 8.9%. (These figures include Christie Clinic locations). Table 1 shows the frequency of isolation of the 10 most common organisms in patients with positive cultures and includes both community-acquired and hospital-acquired infections. The list of organisms is similar to last year, with the largest increases being for *Staphylococcus aureus* (MSSA) and α-haemolytic streptococci. The units with the largest number of blood cultures collected were Palatine Ward (2601) and the Oncology Assessment Unit (2042), with 264 and 162 positive sets respectively (tables 2 and 3).

The number of Gram negative blood stream infections continues to increase nationally (English surveillance programme for antimicrobial utilisation and resistance (ESPAUR) 2017), although antimicrobial resistance rates have remained stable. Nationally, the incidence of *Escherichia coli* bacteraemia increased year-on-year, from 32,405 cases in 2012 to 40,272 cases in 2016, an overall increase over the five-year period of 24.3%. We have also seen a local increase of *E. coli* bacteraemias compared to last year and work has started to implement measures aimed at reducing the incidence. Halving the numbers of healthcare-associated Gram-negative bloodstream infections (GNBSIs) by March 2021 is a key government ambition, announced as a key action in Lord O'Neill's Review of Antimicrobial Resistance (AMR).

Table 1. Most common isolates in bacteraemia (all patients & locations) 2016-17

Organism	**No. of isolates (patients) 2016**	**No. of isolates (patients) 2017**
Coagulase negative staphylococci	**183 (115)**	**205 (132)**
*Escherichia coli**	**97 (65)**	**147 (95)**
*Staphylococcus aureus**	**17 (14)**	**78 (40)**
MRSA	**3 (3)**	**3 (2)**
MSSA	**14 (11)**	**75 (38)**
Enterococcus faecium	**65 (33)**	**82 (30)**
α-haemolytic streptococcus	**9 (7)**	**36 (24)**
Klebsiella pneumoniae	**45 (30)**	**38 (23)**
Pseudomonas aeruginosa	**22 (15)**	**35 (16)**
Streptococcus mitis group	**12 (7)**	**18 (16)**
Enterococcus faecalis	**15 (12)**	**10 (10)**
Rothia mucilaginosa	**5 (3)**	**13 (9)**

** Results are not deduplicated as per national Mandatory HCAI data, so figures will not correspond with MRSA/MSSA bacteraemia figures and trajectories reported elsewhere.*

Table 2. Most common isolates in bacteraemia (Haematology patients) 2017

Organism	**No. of isolates (patients) 2016**	**No. of isolates (patients) 2017**
Coagulase negative staphylococci	**103 (52)**	**100 (50)**
*Escherichia coli**	**33 (18)**	**61 (28)**
Enterococcus faecium	**42 (17)**	**65 (18)**
α-haemolytic streptococcus	**7 (5)**	**27 (15)**
Pseudomonas aeruginosa	**7 (5)**	**19 (7)**
Rothia mucilaginosa	**5 (4)**	**13 (7)**
Streptococcus mitis	**10 (6)**	**8 (7)**
Klebsiella pneumoniae	**17 (9)**	**10 (5)**
*Staphylococcus aureus**	**6 (3)**	**14 (5)**
MRSA	**1 (1)**	**0 (0)**
MSSA	**5 (2)**	**14 (5)**
Stenotrophomonas maltophilia	**2 (1)**	**10 (3)**

** Results are not deduplicated as per national Mandatory HCAI data, so figures will not correspond with MRSA/MSSA bacteraemia figures and trajectories reported elsewhere.*

Table 3. Most common isolates in bacteraemia (Oncology Admissions) 2017

Organism	**No. of isolates (patients) 2017**
Coagulase negative staphylococci	**34 (27)**
*Escherichia coli**	**31 (26)**
*Staphylococcus aureus**	**30 (16)**
MRSA	**0 (0)**
MSSA	**30 (16)**
Klebsiella pneumoniae	**7 (7)**
Enterococcus faecium	**6 (5)**
α-haemolytic streptococcus	**5 (5)**
Propionibacterium acnes	**5 (5)**
Streptococcus mitis	**4 (4)**
Acinetobacter ursingii	**4 (3)**
Streptococcus pneumoniae	**4 (3)**

** Results are not deduplicated as per national Mandatory HCAI data, so figures will not correspond with MRSA/MSSA bacteraemia figures and trajectories reported elsewhere.*

2.12.2 Resistance in blood culture isolates

Information from ESPAUR (2017) covers the five-year period 2012-16 and shows that the proportion of *Escherichia coli* isolates resistant to ciprofloxacin (18.1-18.7%), third-generation cephalosporins (10.8-12.4%) and gentamicin (9.3-10.1%) has remained stable nationally. Resistance to piperacillin/tazobactam, which had increased year-on-year, from 9.6% in 2012 to 11.6% in 2015, has showed a marginal increase to 11.8% in 2016, while resistance to co-amoxiclav, which had increased from 37.3% in 2012 to 42.3% in 2015 decreased to 40.8% in 2016. The proportions of bloodstream isolates of *E. coli* showing multi-resistance have also remained stable in the range of 3-5%. Higher rates of resistance were seen in London than other regions of England and Wales.

The overall proportions of isolates of *K. pneumoniae* resistant to individual key antibiotics generally remained stable between 2012 and 2016, with resistance to ciprofloxacin, third-generation cephalosporins, gentamicin and carbapenems fluctuating within the ranges 10.0-11.5%, 11.1-12.3%, 7.1-8.9% and 0.8-1.5%, respectively. Resistance to piperacillin/tazobactam, which had increased year-on-year from 13.3% in 2012 to 18.6% in 2015, showed a slight reduction to 17.8% in 2016. Similarly, resistance to co-amoxiclav, which had increased year-on-year from 19.7% to 28.4% between 2012 to 2015, decreased slightly to 27.5% in 2016. The proportions of bloodstream isolates of *K. pneumoniae* resistant to combinations of antibiotic classes also remained stable between 2012 and 2016, in the range of 3-8%. In 2016, 2.2% of *K. pneumoniae* blood culture isolates from the London region were resistant to carbapenems, while the proportion of resistant isolates from the North of England was 0.8%.

Resistance of *Pseudomonas* spp. to ciprofloxacin, ceftazidime, piperacillin/tazobactam, gentamicin and to carbapenems remained stable during 2012 to 2016. In 2016, ciprofloxacin resistance across England and Wales ranged between 8 and 10%, while resistance to ceftazidime, piperacillin/tazobactam, meropenem and gentamicin varied within the ranges of 6 to 8%, 10 to 12%, 9 to 14% and 3 to 6%, respectively.

Christie hospital susceptibility patterns in Gram negative organisms (*E. coli, K. pneumoniae* and *P. aeruginosa*) are shown in table 4. We have high rates of resistance to commonly used broad-spectrum oral agents, co-amoxiclav and ciprofloxacin. Over the last year, resistance in *E. coli* appears to have increased to co-amoxiclav, ciprofloxacin and piperacillin-tazobactam while resistance in *K.pneumoniae* appears to have increased to piperacillin-tazobactam, but reduced to other classes of antimicrobial agents. These results should be interpreted with caution due to 1) relatively low numbers of blood isolates locally and 2) a change of antimicrobial susceptibility testing methodology in 2017 (following amalgamation of British into European guidelines).

Table 4. Gram negative resistance in blood isolates, 2016-17

Organism	Antibiotic	Susceptibility in Christie isolates 2016 (%)	Susceptibility in Christie isolates 2017 (%)
E. coli 97 isolates 2016 147 isolates 2017	Amoxicillin Co-amoxiclav Gentamicin Ciprofloxacin Piperacillin-tazobactam Meropenem ESBL positive	**34** **58** **91** **73** **91** **100** **2**	**26** **54** **94** **66** **77** **100** **10**
K. pneumoniae 45 isolates 2016 38 isolates 2017	Co-amoxiclav Gentamicin Ciprofloxacin Piperacillin-tazobactam Meropenem ESBL positive	**60** **87** **87** **91** **100** **16**	**79** **97** **92** **79** **100** **3**

P. aeruginosa 22 isolates 2016 35 isolates 2017	Ceftazidime Gentamicin Ciprofloxacin Piperacillin-tazobactam Meropenem	**95** **100** **86** **95** **91**	**97** **100** **100** **94** **86**

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3. Audits

3.1 Infection Prevention and Control Team Environmental Audits

Infection Prevention and Control environmental audits are a requirement of the *Code of Practice for the prevention of healthcare-associated infection (*Health and Social Care Act 2008-updated 2015).

The standards used in the audit use the most up to date guidance and incorporate the latest standards and guidelines as well as incorporating the Infection Prevention Society's Quality Improvement Tools.(2015)

Scoring

In line with Department of Health (DH) initiatives, compliance categorisation has been incorporated into the scoring system to provide a clear indicator of compliance. The allocation of compliance levels is based on the scores obtained. The scoring system is worked out using the DH formula:

$$\frac{\textbf{Total Number of yes answers}}{\textbf{Total number of yes and no answers}} \textbf{ X100}$$

The score is then categorized into a compliance level against infection control standards:

Full Compliance	85%+	Audit again within one year
Partial Compliance	76 – 84%	Audit again within 6 months
Minimal Compliance	75% or less	Audit again within 3 months

After every audit an action plan is issued and the area has three months to return it to the IPCT. Poorly performing areas are re-audited again according to the matrix above and are assisted to complete as much as their action plan including mitigating interventions if something cannot be achieved.

In 2017-2018, the Infection Prevention and Control (IPC) team has expanded its audit programme including the mobile chemotherapy unit and outreach sites for the first time.

Table 5: IPCT annual audit programme

Area Audited	Score	Compliance
Bury Chemo Outreach	93%	FULL
BMRU	95%	FULL
Brachy theatre	95%	FULL
OCCU	86%	FULL

CRF	83%	PARTIAL
Endocrine	91%	FULL
HTDU	84%	PARTIAL
IPU	88%	FULL
Mobile chemo unit	91%	FULL
MR scan	96%	FULL
CMPE/nuclear medicine	82%	PARTIAL
OAU	92%	FULL
Oldham	97%	FULL
OPD	84%	PARTIAL
ORTC chemo floor	91%	FULL
ORTC Grd floor	95%	FULL
PAT Seed	80%	PARTIAL
PAT suite	88%	FULL
Pre-op	85%	FULL
PTC	94%	FULL
PW	93%	FULL
Radiology 1	95%	FULL
Radiology 2	94%	FULL
Radiotherapy	74%	MINIMAL
Rehab	75%	MINIMAL
Salford	81%	PARTIAL
Surgical Theatres	86%	FULL
Ward 1	90%	FULL
Ward 10	87%	FULL
Ward 11	87%	FULL
Ward 12	93%	FULL
Ward 4	89%	FULL
WMIC	82%	PARTIAL

3.2 Frontline Ownership (FLO) Audits

In 2017-2018, the IPCT continues to use the FLO audit to encourage frontline ownership of infection prevention and control at ward level. The tool has been reviewed during the year to make it more user friendly.

The aim of the FLO audit is to provide ward managers and matrons/senior managers that staff are adhering to the best possible infection prevention and control practices.

The audit covers ten areas crucial for infection prevention and control and based on best available evidence and policy, as well as hand hygiene audits.

The FLO audit tool is completed monthly and results are feedback to the ward/department team to action any non-compliant issues. A whole hospital document is also produced by the IPCT for senior nurses which looks at common themes for improvement purposes.

Themes identified during the year have highlighted among others sharps safety, storage issues and patient hand hygiene which have been addressed at a ward level.

<u>Hand Hygiene Audits</u>

Feedback about hand hygiene audits is given out monthly via the FLO audits. For 2017-2018 the Christie Private Care facilities achieved a hand hygiene audit compliance of **83%** based on 6143 observations of hand hygiene practice from Infection Control Champions and members of the Infection Prevention and Control team. The area that required the most improvement was hand hygiene after being in contact with the patient environment.

3.3 Ultraviolet (UV) Marking Audits

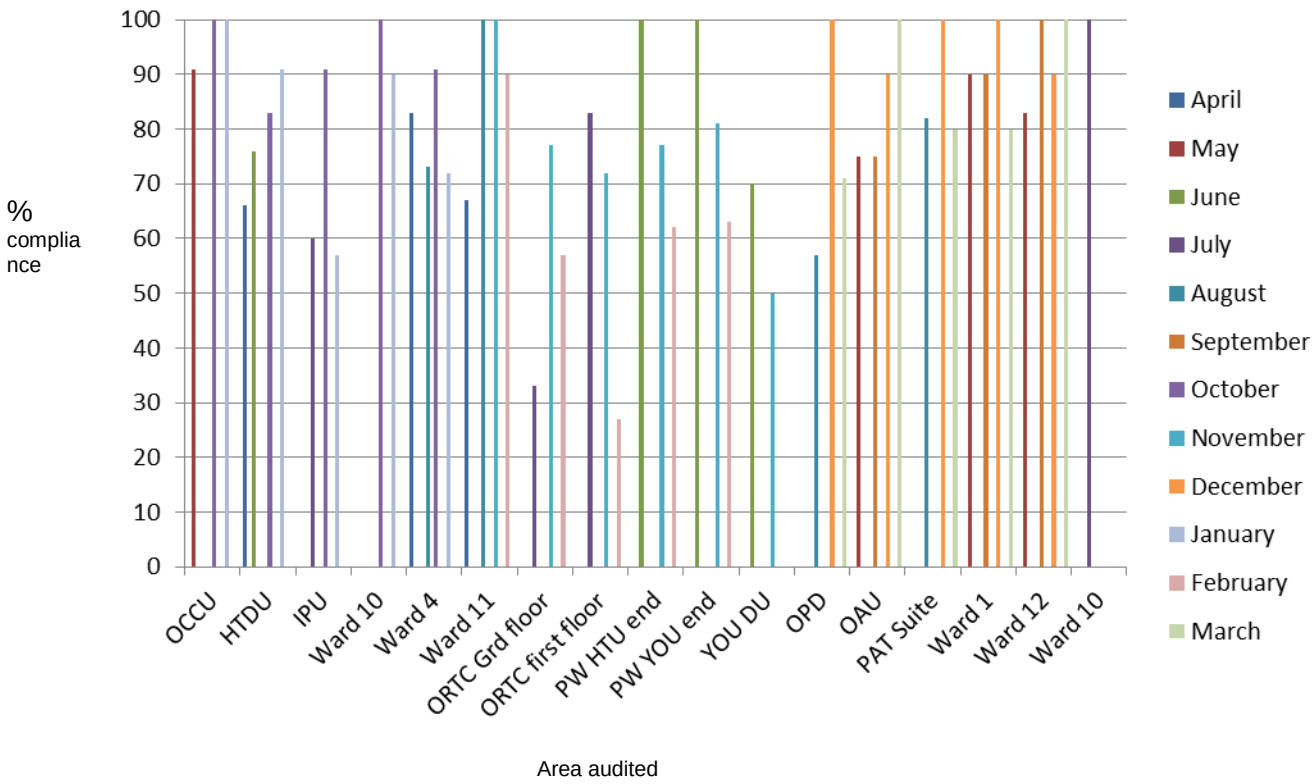
In 2017-2018, the IPC team continued its programme of marking dirty utility rooms in all areas of the trust with UV marks to monitor environmental cleanliness.

Ultra violet marking (UVM) refers to the application of an ultraviolet marker on a surface in a hospital ward which fluoresces under black light and verifies the compliance of domestic staff with cleaning protocols by confirming whether or not a surface has been cleaned.

Generally a UV marker is placed on various locations in a clinical area which are considered high use- they are then reviewed 24-48 hours later to see if they have been effectively cleaned and scored to produce an audit result. See below for an example of a UV marker and the equipment required to apply it:

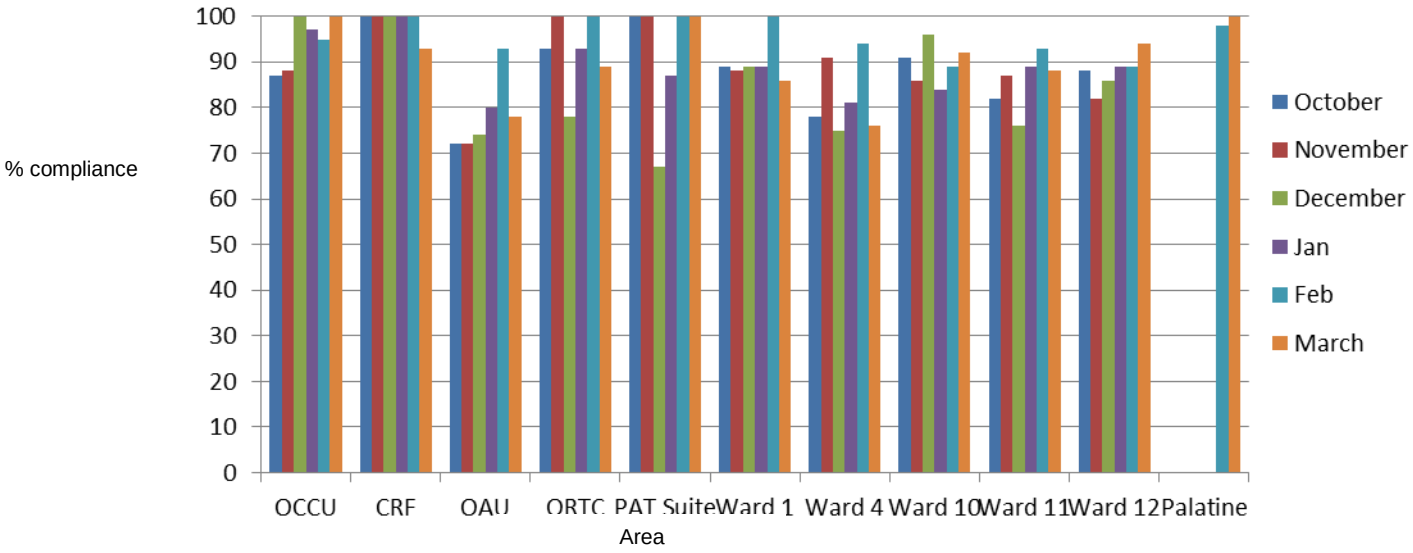
These techniques are generally used in conjunction with traditional methods of auditing cleanliness which rely on visual checks to provide reliable data on the effectiveness of cleaning in clinical areas. Results are given to cleaning supervisors and ward managers so that remedial action can be taken and used for education purposes

Figure 11 Percentage Compliance results by month from UV Marking audits 2016-2017



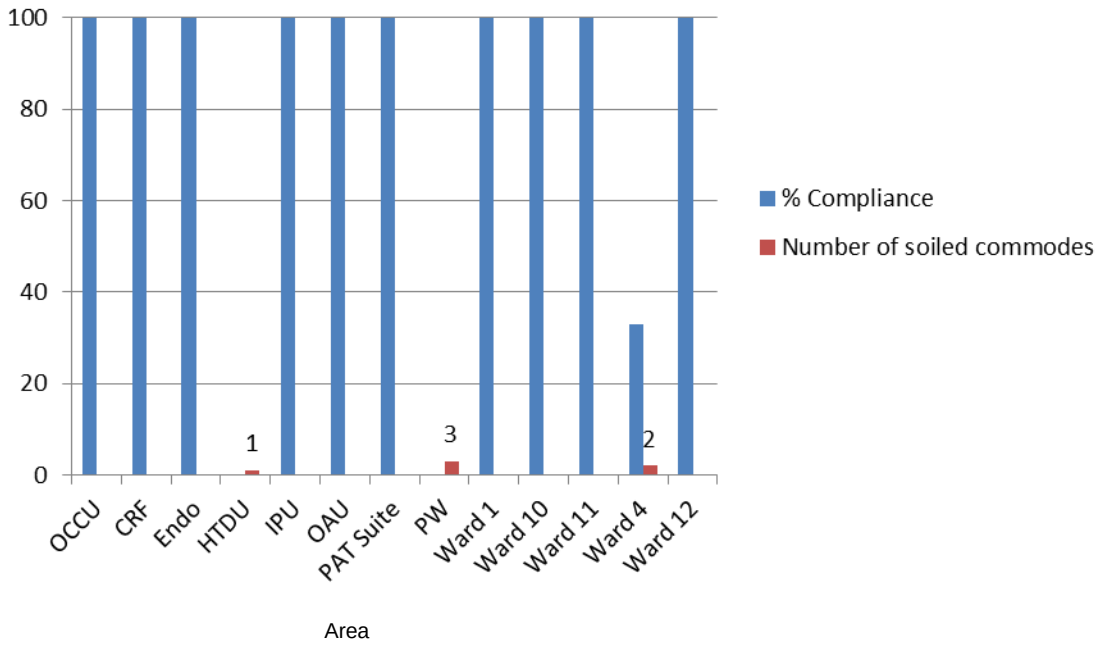
3.4 Additional Audits

Figure 12: Percentage compliance with transmission-based precautions signage in all areas audited October 2017-March 2018



This audit was introduced as part of our quality improvement work on transmission-based precautions and is based on correctly indicating the right personal protective equipment to wear for each TBP on the signage.

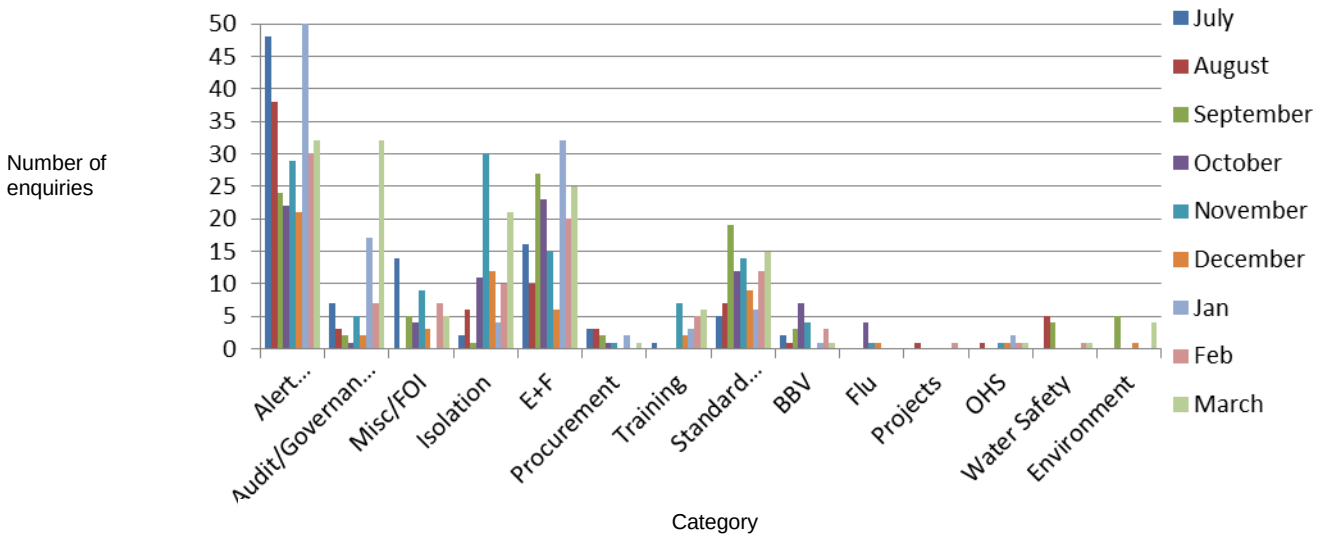
Figure 13: Commode audit undertaken in October 2017



Appropriate action was taken at the time of the audit to rectify any soiled commodes.

4. IPC Team Reactive work

Figure 14: IPCT Reactive work July 2017-March 2018 by category



Since July 2017 the IPCT has been recording and categorizing all reactive work (Phone calls, advice by email and in person) in order to inform future work and topics of interest for newsletters and education sessions. This week also led to the creation of the IPC |Out of Hours advice matrix.

5. Education

5.1 Infection Control Champions

The Infection Control Champion programme continued into 2017-2018 with a number of half day study events and master classes for Champions. A total of thirty five frontline staff attended these events which included topics such as CPE screening and risk assessment in infection prevention and control.

Recruitment to the programme is ongoing and we currently have thirty five members of staff signed up as Champions including allied health professionals.

The Champions have been linked with the Infection Prevention and Control Nurse (IPCN) for their particular area to provide coaching and ongoing support. IPCNs have also assisted Champions by providing feedback for their Nursing and Midwifery Council (NMC) revalidation where appropriate

5.2 Mandatory and other training

The IPCT provides education on the combined essential training day for all staff and volunteers. During 2017-2018, the IPCT also provided tailored training to an additional 50 members of staff.

The Infection Prevention and Control Team (IPCT) also carried out hand hygiene training for 142 members of staff during September and October.

6. Quality Improvement

6.1 Quality Improvement Projects

- Trial of digital assurance framework on ward 11 for hand hygiene. This was published during 2017-2018 in the American Journal of Infection Control: https://www.ncbi.nlm.nih.gov/pubmed/29079136

- Development of the isolation priority matrix into an Out of hours assistant which gives clear advice and risk assessment guidelines

- 'Good job' cards-staff engagement project to engage staff when good practice is seen. These can be used for feedback for NMC revalidation and are entered into a monthly competition.

- Monthly prize for most improved ward for infection prevention and control

- Review and production of a new ID worn card for PPE to be worn for transmission-based precautions

- Creation of new signage for transmission-based precautions and audit of the same

- Development of posters for staff detailing the importance of being bare below the elbow for hand hygiene

- Development of poster detailing what to do when dealing with a suspected case of *C.difficile.*

- Education/poster campaign to reduce inappropriate items being thrown down clinical hand wash sinks.

- Development of a poster detailing what masks to wear for what respiratory infections

- Purchase of MEG hand hygiene auditing tool which has become embedded in all ward and areas for local hand hygiene auditing and feedback.

- Introduction of IPC surveillance assistant and additional auditing of transmission-base precautions compliance and CPE screening.

- Pilot central line surveillance project on the Palatine unit.

- Healthcare-associated reduction group (HAIR) has become auseful collaborative for all staff and the IPC team and will continue into 2018-2019 as the Infection Prevention and Control Quality group.

6.2 Awareness Campaigns

- World Hand Hygiene Day May
- Infection Prevention and Control Week September
- Antimicrobial awareness day November

The team has run competitions, provided prizes and campaign materials to all areas in the hospital during these campaigns.

7. Facilities

The IPCT continues to provide advice and monitor construction and maintenance work across the Trust. The risk of aspergillus infection to immunocompromised patients is assessed prior to the start of any works with regular assessments being conducted throughout.

The IPCT provide specialist advice at the start of any schemes to estates, the architects, the builders and contractors.

During the past year the IPCT have been extensively involved in providing advice and monitoring of:

- Proton Beam
- Integrated Procedure Unit (IPU)
- Outpatients Department

8. Committees

The Infection Prevention and control Team send representatives to the following meetings:

- Health and Safety Committee
- Medical Devices and Procurement Committee
- Infection Prevention and Control Committee
- GM Safety Committee
- Pathology Lab Safety Committee
- Drugs and Therapeutics Committee
- Water Safety Committee
- HTU Quality Meetings
- Nosocomial Infection Performance Review meetings
- Cleaning Operational Group
- HAIR group

9. Management of water systems

The water safety committee meets quarterly and reports to the infection prevention and control committee. Infection Prevention and control also meets monthly with the Estates and Facilities supervisor for water management to look at water sampling issues and remedial actions being taken.

During 2017-2018 there has been significant steps in the field of water safety with samples from the monthly programme showing no pseudomonas positive outlets as we go into 2018-2019.

10. Conclusion

At the start of 2017-2018, the DIPC set a five percent target for reduction of all mandatory reported organisms. The year has actually seen a rise in bloodstream infections but as a Trust we have remained below our trajectory for *Cdifficile* infections.

The IPC has gone from strength to strength in the last year with the appointment of an IC Surveillance Assistant who has assisted with audit of practices such as transmission-based precautions as well as assisting with new projects like central line surveillance.