

Report of	Infection Prevention and Control Team April 2018-March 2019
Paper Prepared By	Wayne Gilbert, Lead Infection Control Nurse/Senior Matron
Purpose of Paper	To report the activity of the infection prevention and control team
Action/Decision Required	For discussion and approval
Document application	Trust wide
Responsibilities for implementation	Trust wide
Date of revisions	Annually
Consultation process:	Infection prevention and control committee Patient Safety Committee
Approved by: The Infection Prevention and Control Committee	
Date:	17.4.19

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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 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 a decrease in the number of healthcare-associated *C.difficile* infections with the Christie coming in under trajectory at 14 cases. There have been five *C.difficile* cases which have been judged to represent lapses in care.

There have been increases in bloodstream infections during the year in particular *E.coli* bloodstream infections although there has been a reduction in post-48 hours healthcare-associated cases.

The *E.coli* reduction collaboration with the Royal Marsden Hospital and the Clatterbridge Cancer Centre has been our dominant quality improvement initiative this year with the results of our quality initiatives being showcased at a national event in Birmingham in March.

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.

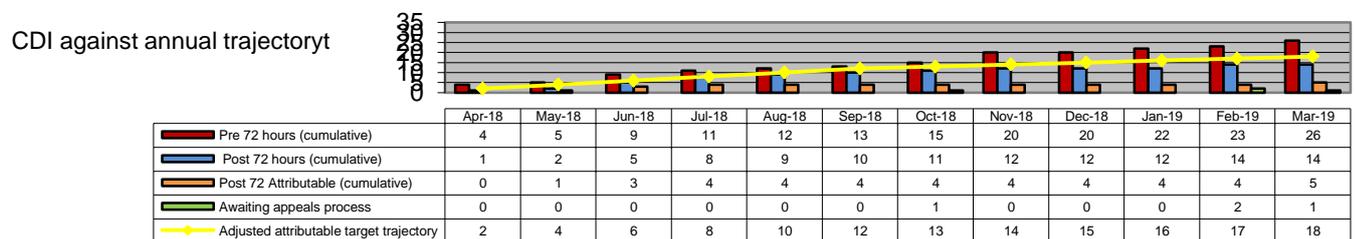
Microbiology cover is provided by Salford Royal NHS Foundation Hospital and there are medical staff on site 5 days a week attending handovers, ward rounds and undertaking antibiotic ward rounds. Dr

Paul Chadwick is the designated Infection Control Doctor for the Christie Hospital and also acts as Deputy Director of Infection Prevention and Control. The Director of Infection Prevention and Control is the Chief Nurse & Executive Director of Quality

2. Alert Organism Surveillance

2.1 Clostridium difficile infection

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



The *Clostridium difficile* infection (CDI) trajectory for 2018/19 was set by NHS England at 18 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.

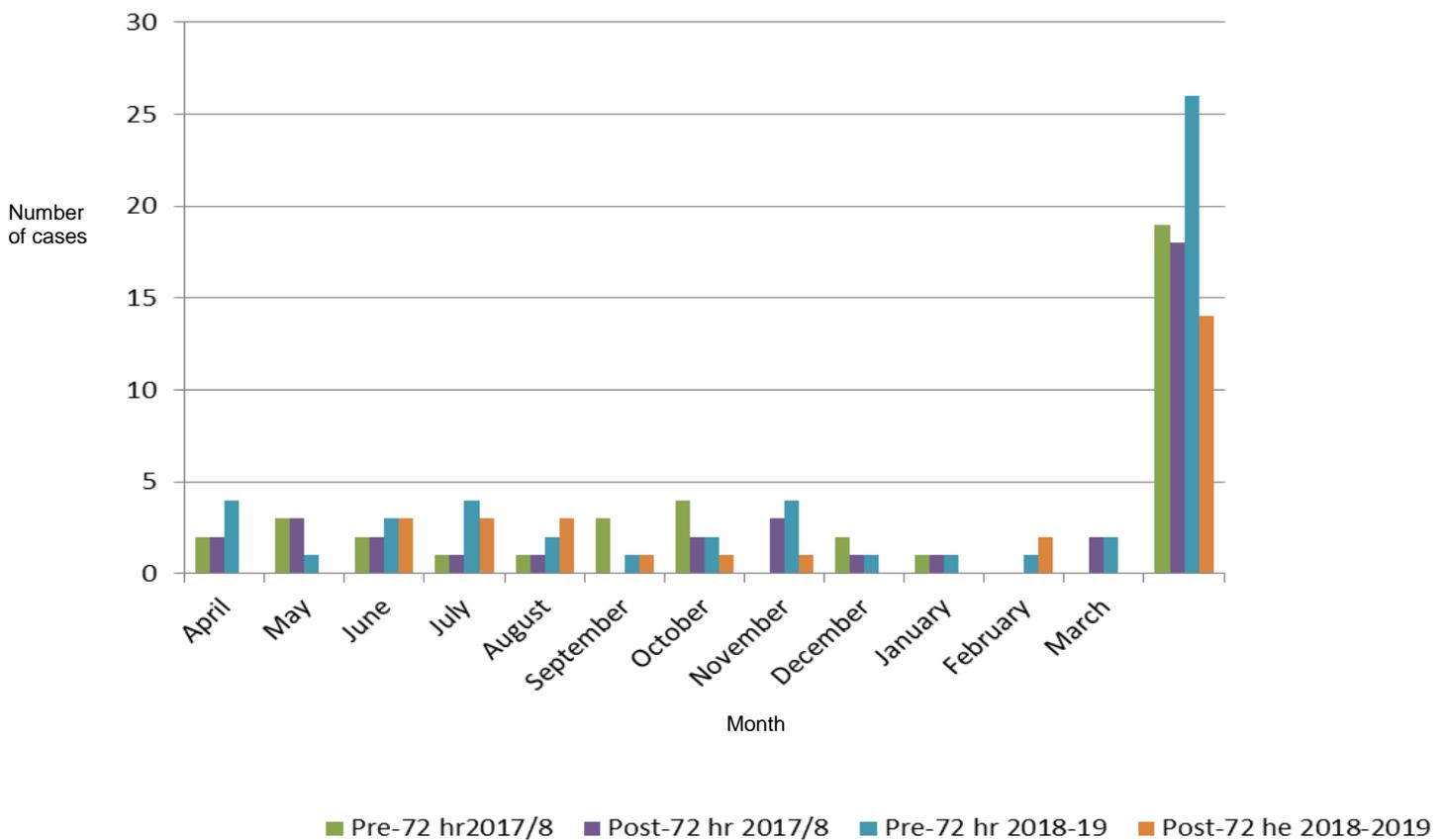
From 2019-2020, reporting requirements have changed with new definitions being introduced including the definition of an infection as being community-onset healthcare-associated and the replacement of seventy-two hours for healthcare-associated with forty-eight hours. The new trajectory for the Christie Hospital is thirty one (31)

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 for the second year running in the hospital with the Trust being below trajectory at fourteen (14) cases, although there have been five cases which have been judged to represent lapses in care. Period of increased incidence (PII)

Four of the above cases were associated with a period of increased incidence (PII) on a ward. There were five cases in this PII but the fifth one was judged not to represent a lapse in care. The PII was responded to with enhanced cleaning, education, resource allocation under the leadership of the Infection Prevention and control team and the matron for the ward. Lessons learnt from this incident were shared with the entire hospital.

Figure: 2 Pre and Post-72 hours CDT cases in The Christie Hospital 2017-2019



2.2 Meticillin resistant staphylococcus aureus (MRSA)

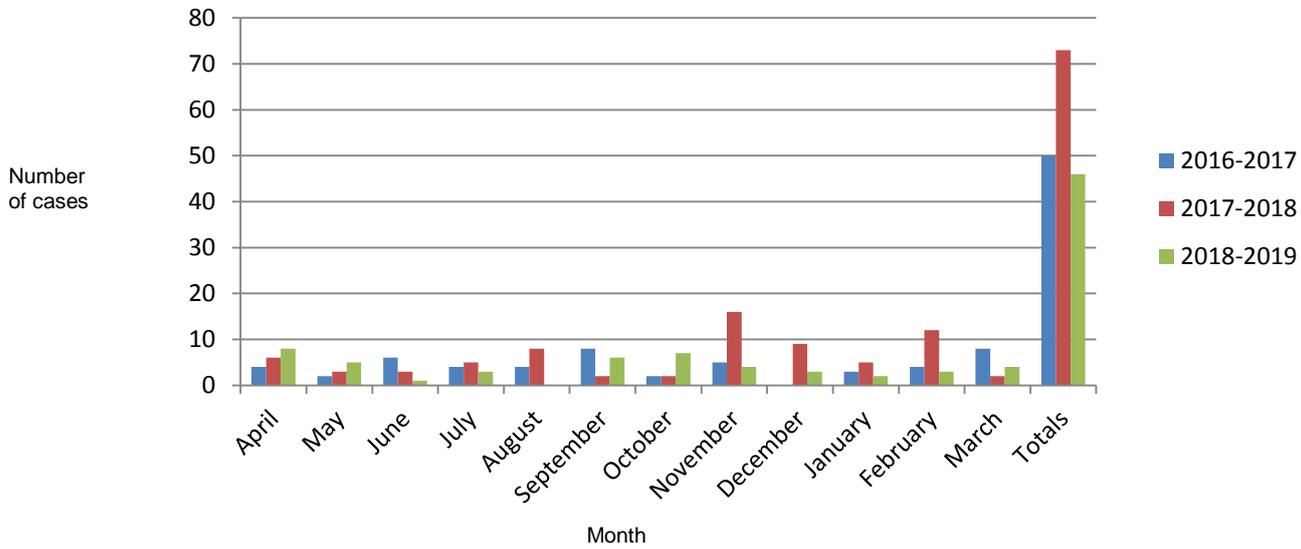
A total of 46 new cases of MRSA colonisations/infections were identified during the financial year. This represents a decrease from the previous year.

The majority of patients identified as MRSA positive are colonized and detected on MRSA admission/pre-op screening and not infected with the organism. 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, TCPC HTU 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 2016-2019



MRSA Blood stream infections

The Trust trajectory for MRSA bacteremia was 0 for the period 2018/19. The Trust has had one MRSA bloodstream infection during this period; down from three in 2017-2018. MRSA bloodstream infections at the Christie Hospital are no longer subject to the full attribution process as part of the Post Infection Review (PIR). However, a PIR is being conducted and lessons learnt will be fed back to relevant teams in the hospital.

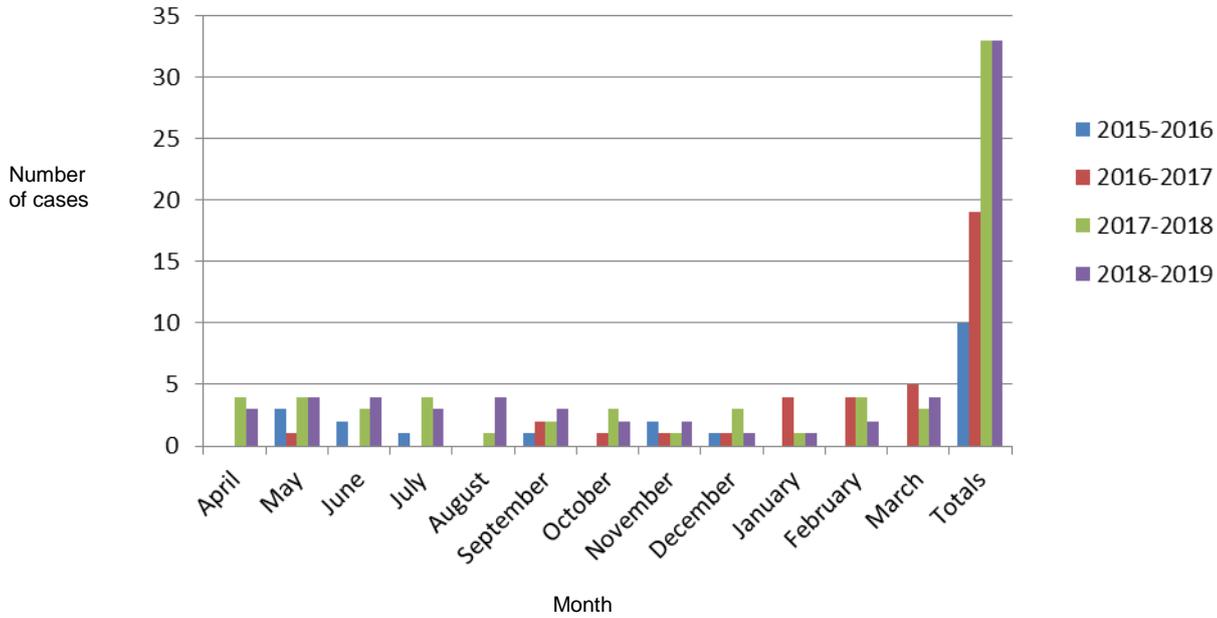
Period of Increased Incidence (PII)

In March 2019, there has been a period of increased incidence of MRSA on a surgical ward at the Christie Hospital involving three cases. This PII is currently being investigated by the Infection Prevention and Control team and appropriate actions will take place.

2.3 MSSA Bloodstream infections

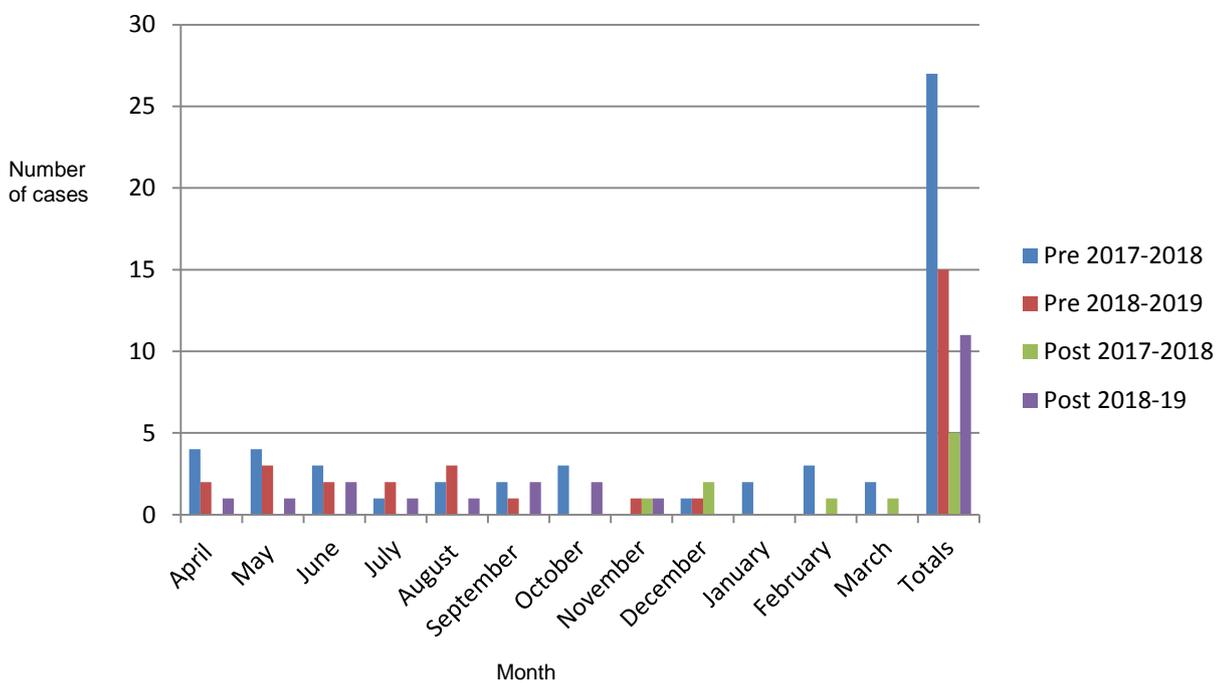
Meticillin-sensitive staph aureus (MSSA) bloodstream infections are part of the mandatory reporting of alert organisms to PHE. During 2017-2018 the IPC team has seen an increase in cases of MSSA bloodstream infections and after a review with clinical staff a modified skin decontamination regime was introduced for patients undergoing placement of central venous access device (CVAD) as many of the infections were considered to be associated with lines. The number of case for 2018-2019 is noted to be the same as the previous year as seen below in figure 5:

Figure 5: MSSA Bacteraemia 2015-2019



There has been a significant decrease in pre-48 hour (i.e. Community acquired) cases of MSSA bloodstream infection and this is likely due to the skin decontamination regime:

Figure 6: MSSA Bacteraemia Pre-48 and Post 48 hours 2017-2019

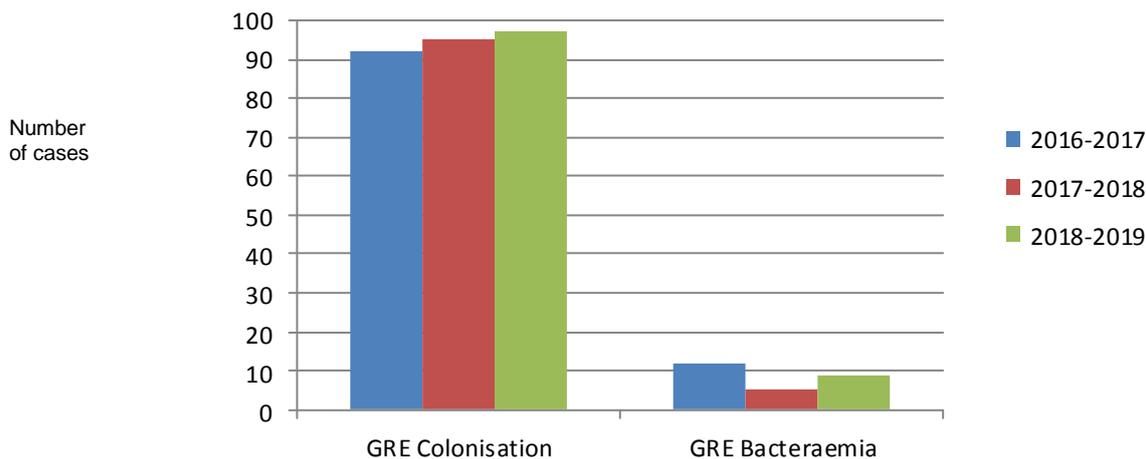


2.4 Glycopeptide resistant enterococci (GRE)

There have been ninety seven (97) colonisations (carriage without infection) with Vancomycin-resistant enterococcus (VRE) which is a small increase from the previous year

Figure 7 below shows that there has been an increase in bloodstream infections with VRE although they have not returned to the numbers of 2016-17.

Figure 7: GRE in the trust 2016/19



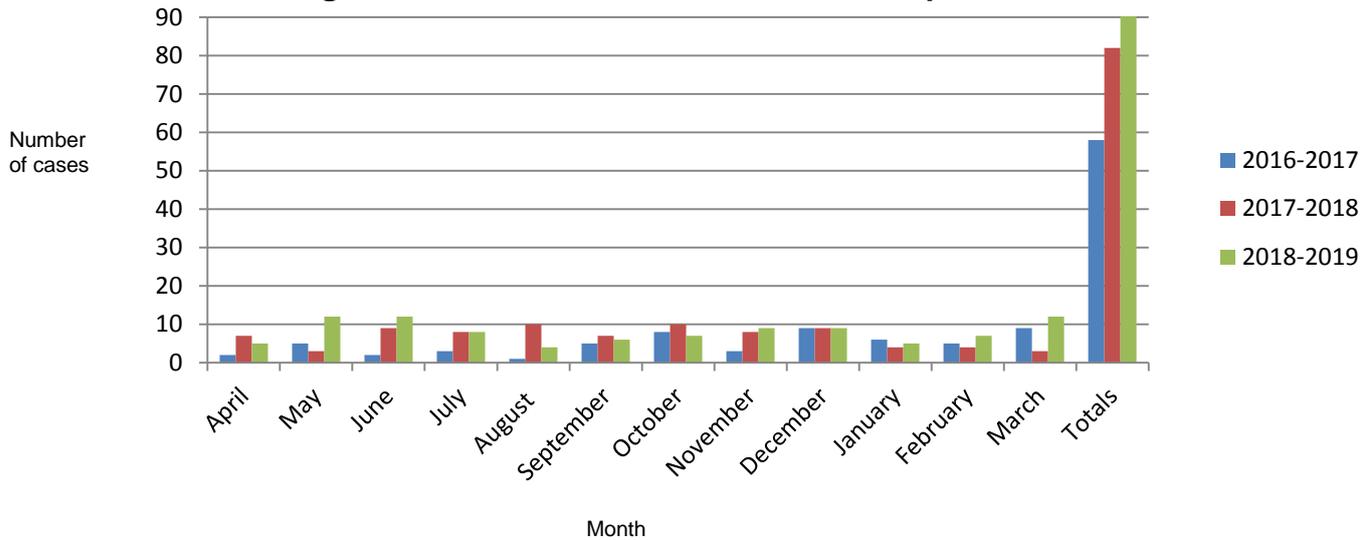
Glycopeptide (vancomycin, teicoplanin) antibiotics and linezolid are important agents in Haematology to treat Gram positive infections (Staphylococci, Streptococci, Enterococci) in neutropenic patients.

During 2017-2018 there was a cluster of cases of VRE in haematology which was associated with linezolid-resistant. There have only been two cases of linezolid-resistant VRE in the Trust during 2018-2019 with no onward transmission seen. When patients with these organisms are being nursed in the Christie Hospital they are placed on strict contact precautions even when they are not having diarrhea and the environment is decontaminated by the Deep Clean team when the patient is discharged as an additional precaution to avoid transmission.

2.5 *Escherichia coli* bacteremia 2016/19

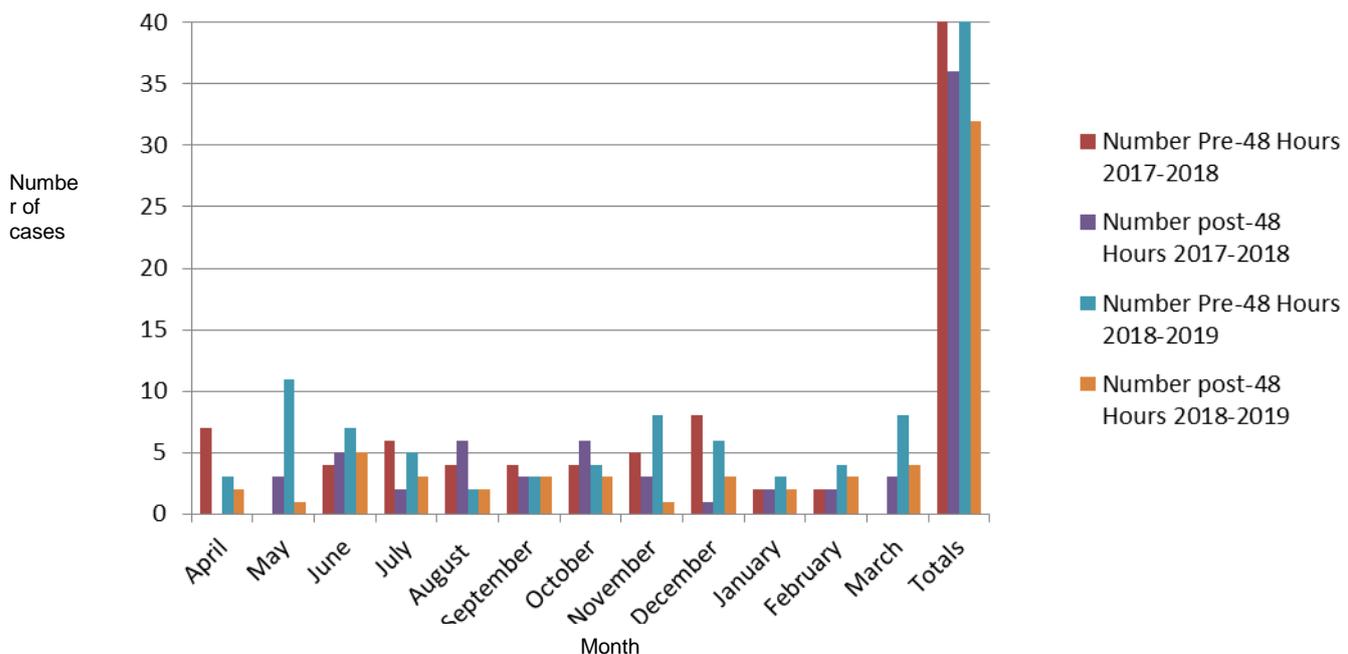
Figure 8 below shows the *E.coli* bacteraemias recorded in the Trust for 2016-2018. There have been ninety six (96) cases in 2018-2019 which is an increase from the previous year ,but a smaller increase from the one in 2016-17 to 2017-18- twenty four as opposed to fourteen.

Figure 8 : Ecoli bloodstream infections April 2016 to March 2019



These cases are categorised into community onset (pre-48 hour) and hospital acquired (post 48 hour) and when these are broken down as in figure 9 we can see that the majority of the increase was in community-acquired cases while there was a small decrease in hospital-associated cases:

Figure 9: E.coli bloodstream infections by pre-and post-48 hours April 2017 to March 2019



E.coli bacteremia reduction initiatives

E.coli bacteremia form part of a Department of Health (DH) reduction programme with an expected reduction of 20% by 2020 and have formed an important part of the team's works streams during the last year

During this year the collaborative project between the Royal Marsden Hospital, the Clatterbridge Cancer Centre and Barts Health has been in full swing. This project has organized enhanced surveillance of these bloodstream infections with the intent of finding additional risk factors for these infections in the oncology setting. Early results seem to suggest that Acute Kidney Injury (AKI) may have a significant impact in the acquisition of these infections and there was indeed a nationwide increase in cases during the warm summer months in 2018. The risk factor of systemic anti-cancer treatment (SACT) has also been added to the Public Health England (PHE) healthcare-associated infection database as a result of the work of this collaborative.

The Infection Prevention and control team at the Christie Hospital was involved with quality improvement (QI) work on a test ward at the Christie Hospital; using this targeted surveillance data to effect small test of change. Much of the focus of this work was on hydration and the team worked very successfully with the Sepsis and AKI Nurses on several initiatives during the course of the year.

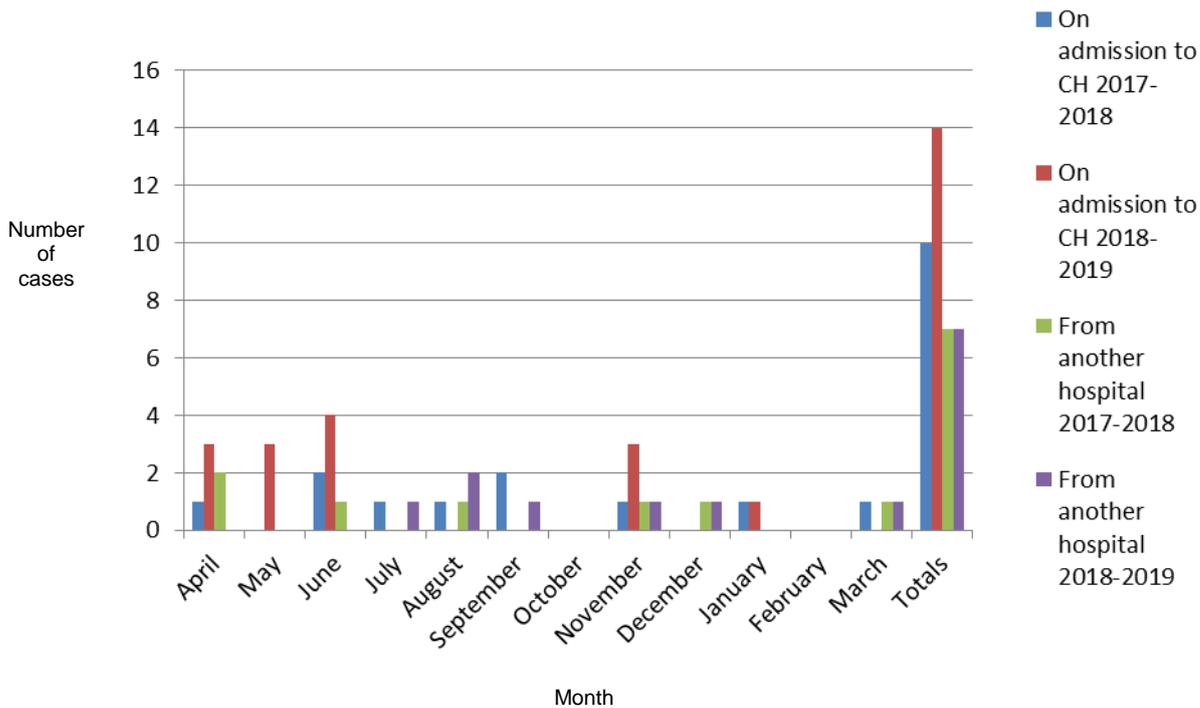
The Darzi fellow for this project remains in position until September 2019 and publication of the enhanced surveillance data is anticipated towards the end of the year.

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.

The team carried out training 2017-2018 around the importance of screening and there has been an increase in the number of positive swabs coming back on admission to the Christie Hospital, although number of cases still remains relatively small.

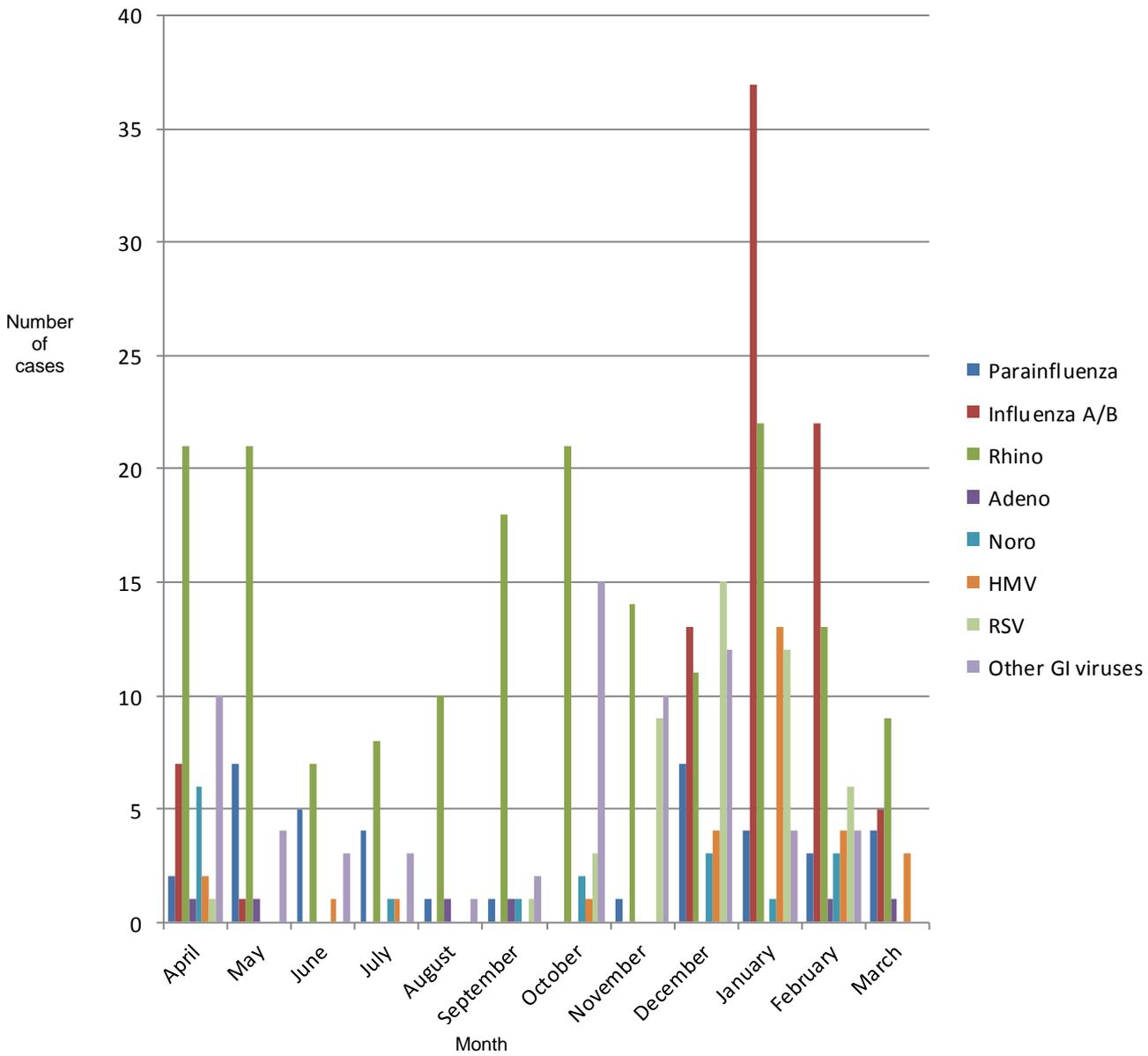
Figure 10: CPE positive results 2017-2019



2.7 Surveillance of viruses

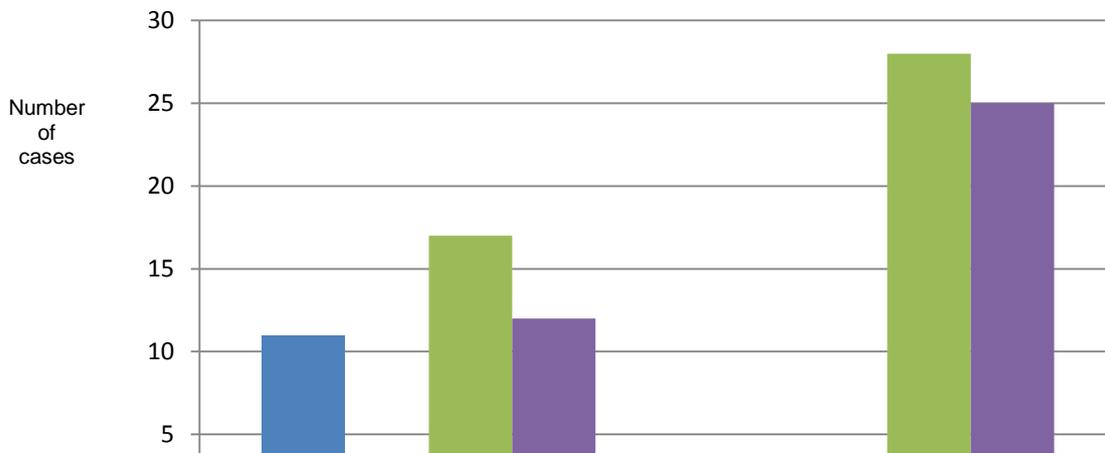
The majority of respiratory viruses are found in outpatients in particular the Haematology Day Unit (HTDU). Seasonal spikes occur during the influenza season and the number of cases reduces during the summer months. Like the rest of the country the Christie noted a spike of cases of influenza in January 2019, similar to the flu season in the rest of the country. January saw a spike in cases, many of whom were hospitalized. This increase in cases being hospitalized meant that there was more pressure on side rooms during January, which the Infection Prevention and Control team handled by regularly reviewing the patients in the side rooms.

Figure 11: Surveillance of viruses 2018-2019



2.8 Other bloodstream infections

Figure 10: Other bacteraemia 2015-2019 (Klebsiella data only from 2017)



The second year of klebsiella data collection has shown a small reduction in numbers of cases. Pseudomonas bloodstream infections have also reduced 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
- Multi-drug resistant organisms (e.g. AmpC producing organisms, CPEs, ESBLs)

2.10 Outbreaks

There have been no outbreaks of infection during 2018-2019 at the Christie Hospital.

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

2.12 Antimicrobial Resistance and Invasive Isolates

2.12.1 Blood culture isolates (bacteraemia) 2018-19

10,027 blood culture examinations were undertaken in 2018, an increase of 2.1% over the 9,816 sets processed in 2017. There were 779 positive sets: an overall positivity rate of 7.8%. (These figures include Christie Clinic, private patient 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 coagulase negative staphylococci and the *Streptococcus mitis* group. The units with the largest number of blood cultures collected were Palatine Ward (2,475) and the Oncology Assessment Unit (2162), with 171 and 147 positive sets respectively.

The number of Gram negative blood stream infections continues to increase nationally (English surveillance programme for antimicrobial utilisation and resistance (ESPAUR) 2018), although antimicrobial resistance rates have remained broadly stable. Nationally, the incidence of *Escherichia coli* bacteraemia increased year-on-year, from 32,405 cases in 2012 to 41,287 cases in 2017. 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). This poses both a national and local challenge.

Table 1. Most common isolates in bacteraemia (all patients & locations) 2016-18

Organism	No. of isolates (patients) 2016	No. of isolates (patients) 2017	No. of isolates (patients) 2018
Coagulase negative staphylococci	183 (115)	205 (132)	231 (141)
<i>Escherichia coli</i> *	97 (65)	147 (95)	139 (92)
<i>Staphylococcus aureus</i> *	17 (14)	78 (40)	76 (42)
MRSA	3 (3)	3 (2)	2 (1)
MSSA	14 (11)	75 (38)	74 (41)
<i>Enterococcus faecium</i>	65 (33)	82 (30)	59 (29)
<i>Streptococcus mitis</i> group	12 (7)	18 (16)	35 (20)
<i>Klebsiella pneumoniae</i>	45 (30)	38 (23)	25 (11)
<i>Pseudomonas aeruginosa</i>	22 (15)	35 (16)	24 (15)
<i>Enterobacter cloacae</i> group	14 (8)	8 (6)	23 (12)
<i>Candida glabrata</i>	5 (4)	6 (6)	18 (5)
<i>Streptococcus anginosus</i> group	2 (2)	3 (3)	15 (8)

* 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) 2017-18

Organism	No. of isolates (patients) 2017	No. of isolates (patients) 2018
Coagulase negative staphylococci	100 (50)	123 (59)
<i>Escherichia coli</i> *	61 (28)	37 (20)
<i>Streptococcus mitis</i> group	8 (7)	30 (15)
<i>Enterococcus faecium</i>	65 (18)	26 (11)
<i>Candida glabrata</i>	0 (0)	17 (4)
<i>Staphylococcus aureus</i> *	14 (5)	14 (8)
MRSA	0 (0)	0 (0)
MSSA	14 (5)	14 (8)
<i>Pseudomonas aeruginosa</i>	19 (7)	13 (7)
<i>Klebsiella pneumoniae</i>	10 (5)	13 (4)
<i>Enterobacter cloacae</i> complex	1 (1)	10 (3)
<i>Streptococcus salivarius</i> group	0 (0)	7 (5)

* 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) 2017-18

Organism	No. of isolates (patients) 2017	No. of isolates (patients) 2018
<i>Escherichia coli</i> *	31 (26)	41 (34)
Coagulase negative staphylococci	34 (27)	39 (29)
<i>Staphylococcus aureus</i> *	30 (16)	20 (13)
MRSA	0 (0)	1 (1)
MSSA	30 (16)	19 (12)
<i>Enterococcus faecium</i>	6 (5)	9 (6)
<i>Enterobacter cloacae</i> complex	2 (2)	3 (3)
<i>Klebsiella oxytoca</i>	1 (1)	3 (2)
<i>Klebsiella pneumoniae</i>	7 (7)	3 (2)
<i>Streptococcus mitis</i>	4 (4)	3 (2)
<i>Pantoea agglomerans</i>	1 (1)	3 (1)

* 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

The UK has a five-year national action plan (2019-2024) to:

- Reduce the need for, and unintentional exposure to, antimicrobials
- Optimise the use of antimicrobials

Invest in innovation, supply and access of new antimicrobial agents. These aims are underpinned by actions across 15 'content areas', ranging from reducing infection and strengthening stewardship to improving surveillance and boosting research. The plan also sets out measures of success to ensure progress towards the 20-year vision. These include:

- Halve healthcare associated Gram-negative blood stream infections
- Reduce the number of specific drug-resistant infections in people
- Reduce UK antimicrobial use in humans
- Reduce UK antibiotic use in food-producing animals
- Be able to report on the percentage of prescriptions supported by a diagnostic test or decision support tool by 2024

Between 2014 and 2017, the UK achieved a 6.1% reduction in the amount of antibiotics consumed in the UK (although the antibiotic consumption in secondary care has increased) and a 40% reduction in sales of antibiotics in UK food producing animals.

Information from ESPAUR (2018) shows that in England the proportion of isolates of *Escherichia coli*, *Klebsiella pneumoniae*, *Klebsiella oxytoca* and *Pseudomonas* spp. resistant to key antibiotics remained broadly stable between 2013 and 2017. The estimated total numbers of bloodstream infections caused by pathogens resistant to 1 or more key antibiotics increased from 12,250 in 2013 to 16,504 in 2017, a rise of 35%. The burden of antibiotic-resistant bloodstream infections is particularly marked for those caused by Enterobacteriaceae, particularly *E. coli*, as they are the infections with the highest incidence, comprising 84.4% of the total. The burden of resistant infections remains unchanged for Gram-positive infections. The proportion of enterococci reported as non-susceptible to glycopeptides remained stable over time, ranging from 15 to 18%. There was inter-species variation in glycopeptide non-susceptibility with only 2-3% of *Enterococcus faecalis* showing such resistance compared to 23-27% of *Enterococcus faecium*. The proportion of bloodstream isolates of *Streptococcus pneumoniae* non-susceptible to penicillin and macrolides remained fairly stable at 3-4% and 5-8%, respectively. Based on reporting to the national mandatory surveillance system, the proportion of *Staphylococcus aureus* that were methicillin-resistant *S. aureus* (MRSA) continued to decline year-on-year from 9.5% in 2012/13 to 6.6% in 2017/18.

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. Piperacillin-tazobactam plus gentamicin, or meropenem alone remain appropriate empirical choices for neutropenic sepsis.

Table 4. Gram negative resistance in blood isolates, 2016-18

Organism	Antibiotic	Susceptibility in Christie isolates 2016 (%)	Susceptibility in Christie isolates 2017 (%)	Susceptibility in Christie isolates 2018 (%)
<i>E. coli</i>	Co-amoxiclav	58	54	61
	Gentamicin	91	94	83
	Ciprofloxacin	73	66	62
	Pip-tazobactam	91	77	82
	Pip-taz + gent	-	-	100
	Meropenem	100	100	100
	ESBL positive	2	10	19
<i>K. pneumoniae</i>	Co-amoxiclav	60	79	84
	Gentamicin	87	97	84
	Ciprofloxacin	87	92	76
	Pip-tazobactam	91	79	84
	Meropenem	100	100	100
	ESBL positive	16	3	24
<i>P. aeruginosa</i>	Ceftazidime	95	97	100
	Gentamicin	100	100	100
	Ciprofloxacin	86	100	88
	Pip-tazobactam	95	94	100
	Meropenem	91	86	92

Note 1: Combined gentamicin + piperacillin-tazobactam susceptibilities not available for 2016/7

Note 2: Due to relatively small numbers, susceptibility patterns may appear to vary

For Gram positive infections, a cluster of linezolid and glycopeptide-resistant *Enterococcus faecium* occurred in Haematology patients during 2017-18. This was probably related to increased linezolid use during shortages of IV vancomycin. Isolates were mainly not genetically related, but all isolates contained the chromosomal G2576T 23S rRNA mutation. Shortages of antibiotics are an emerging global issue, with intermittent supply issues occurring internationally. This will make antimicrobial governance stewardship difficult and may lead to changing patterns of resistance.

Antimicrobial stewardship is monitored at the Christie through monthly antibiotic audits, introduced in 2018. During the early part of 2019 the antibiotic guidelines at the Christie have been extensively revised and updated, taking into account the antimicrobial resistance figures above. Key changes to the guidelines include: the introduction of detailed initial and maintenance dosing for IV vancomycin; updates to urinary tract infection regimens in line with NICE and PHE guidelines; more detail on cellulitis and respiratory infection guidelines; introduction of guidelines for intra-abdominal infections; and use of oral vancomycin first line for *Clostridium difficile* infection. The new guidelines will be released during the summer of 2019. It is planned that an application-based version will be introduced for use with mobile devices.

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:

$$\frac{\text{Total Number of yes answers}}{\text{Total number of yes and no answers}} \times 100$$

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.

New areas added in 2018-2019 include Haematology Ambulatory Care. Issues with radiotherapy continue to be addressed.

Figure 12: Infection Prevention and Control Audits 2017-2019

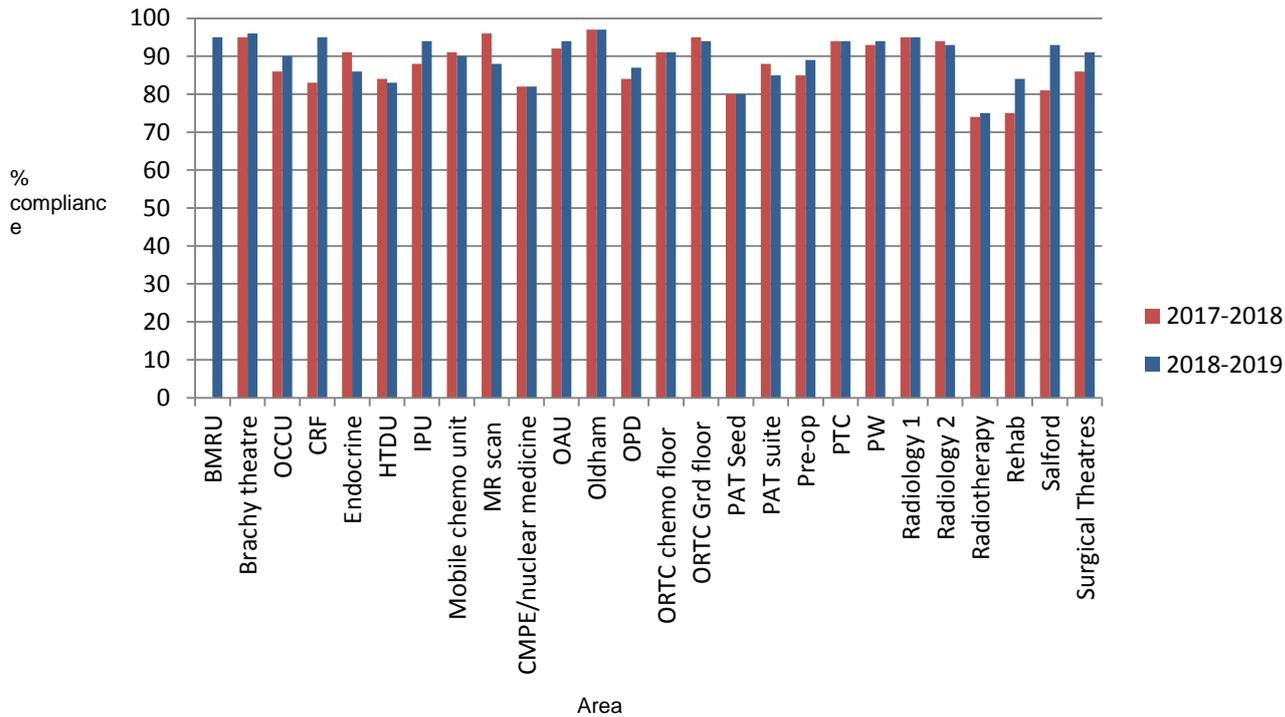
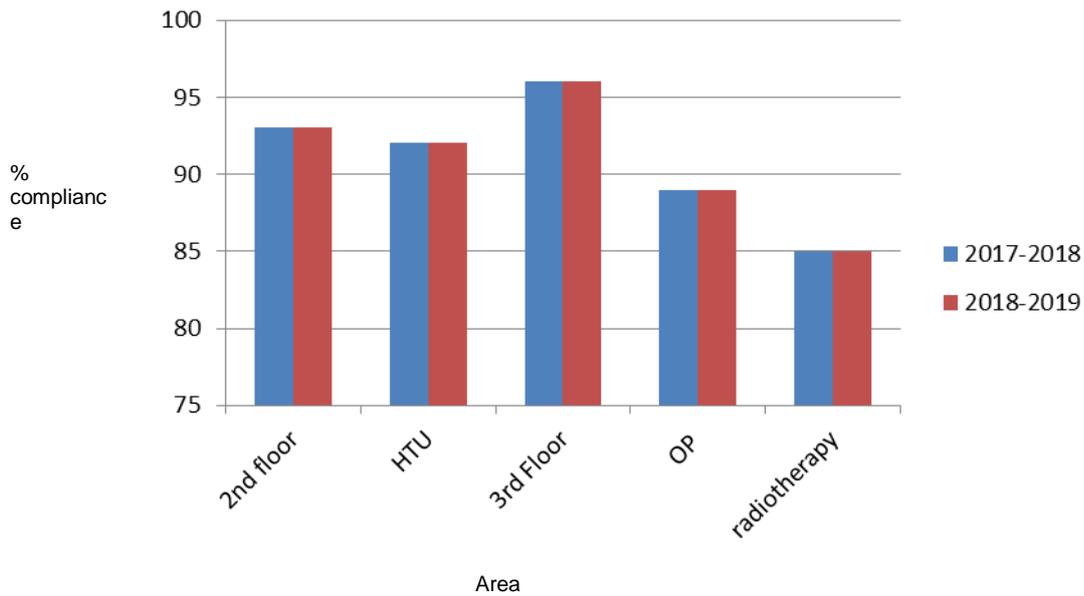


Figure 13: Infection Prevention and Control Audits TCPC 2017-2019



3.2 Frontline Ownership (FLO) Audits

In 2018-2019, 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, and has been extended to include auditing of IV devices.

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.

Hand Hygiene Compliance

Feedback about hand hygiene audits is given out monthly via the FLO audits.

For 2018-2019 The Christie Hospital achieved a hand hygiene compliance rate of 87.4% based on 9,545 observations.

For 2018-2018, The Christie Private care achieved a hand hygiene compliance rate of 96% based on 1,938 observations.

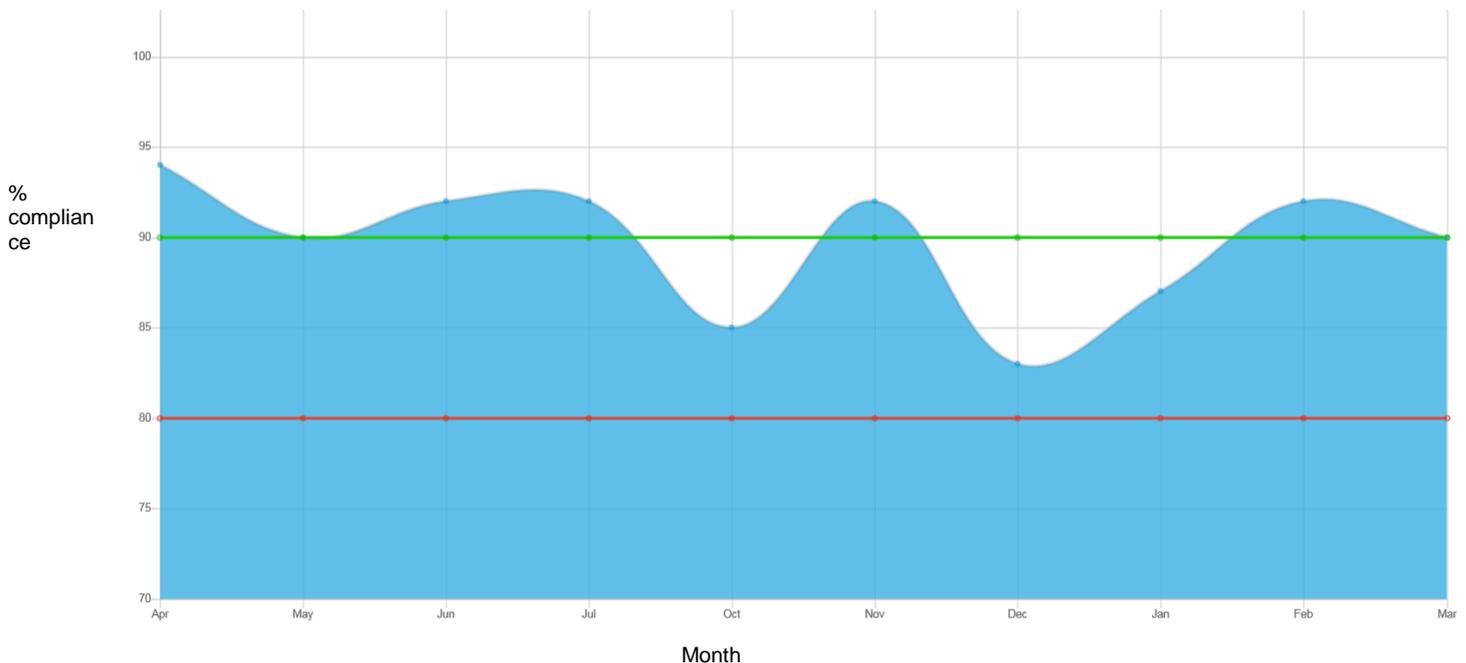
The team continues to push for ward and department ownership of hand hygiene auditing and improved quality of auditing standards.

3.3 Additional Audits

3.4.1 Transmission-based precautions audit

Figure 13 below represents compliance with ward staff of updating transmission-based precautions signage. This compliance data is completed monthly and is fed back to the wards monthly. Areas which show poorer compliance have to get staff to do the Transmission-base precautions work book and competency assessment:

Figure 14: Percentage compliance with transmission-based precautions signage in all areas audited April 2019-March 2019



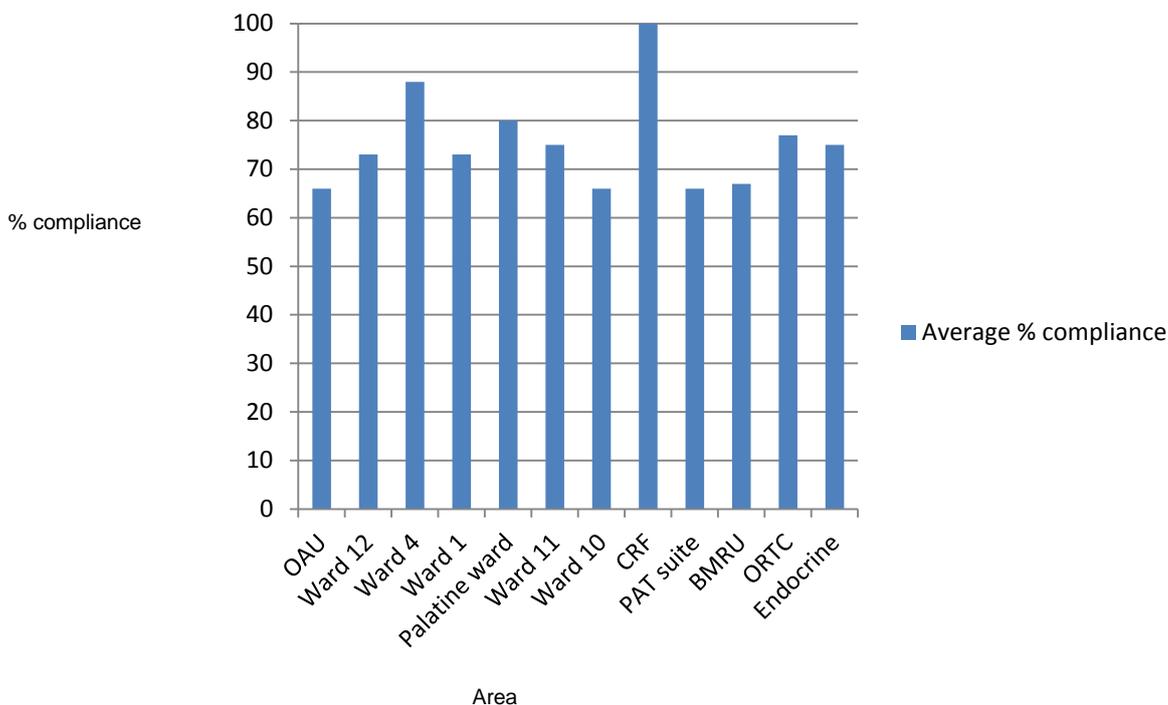
This audit was introduced as part of our quality improvement work on transmission-based precautions and is based on correctly indicating the right personal protective equipment to wear for each TBP on the signage.

3.4.2 Ultraviolet (UV) Marking Audits

As a new focus for 2018-2019 the Infection Prevention and Control team chose to focus ultraviolet marking on the decontamination of beds in conjunction with a quality improvement project aimed at improving bed cleaning.

Ultra violet marking (UVM) refers to the application of an ultraviolet marker on a piece of hospital equipment which fluoresces under fluorescent light and verifies the compliance of staff with cleaning protocols by confirming whether or not a surface has been cleaned. This audit is designed to give information about high risk points in an environment so that attention can be paid to them-it is not intended to provide negative feedback.

Figure 15: Ultraviolet (UV) Marking Audit Scoring 2018-2019



Appropriate remedial action was taken at the end of each audit and wards were provided with educational materials when scores went down.

3.4.3 HTU Technical Audits

Commencing in 2018, a member of the Infection Prevention and Control team has accompanied the Domestic Manager in doing weekly technical cleaning audits of the Haematology Transplant Unit (HTU), accompanied by the members of nursing staff and the Housekeeping Manager.

4. Education

4.1 Infection Control Champions



The Infection Control Champion programme continued into 2018-2019 with a number of half day study events and bi-monthly events for Champions. This year we also refreshed the role description for the Champions and made improvements to their orientation and training including a written assessment

A total of twenty two staff frontline staff attended these events which included topics such as *E.coli* bloodstream infection prevention.

Recruitment to the programme is ongoing and we currently have fifty five members of staff signed up as Champions including allied health professionals. This is up from last year when we had thirty five. This is due to the creation of new services and a change in approach to infection prevention and control audits which emphasizes a team approach.

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

4.2 Mandatory and other training

Infection Prevention and Control mandatory training is delivered mainly by eLearning, which has been harmonized with other hospitals in Manchester. The team also has a slot on the twice yearly medical inductions and teaches on the Nutritional Awareness study days. Additional mandatory training is available on request and this year the team has done the following training:

- An additional 71 staff received face to face mandatory IPC training
- Eighteen staff received training on hand hygiene
- Twenty for staff attended a directorate study which included an Infection Prevention and Control session
- Twenty three staff received training on transmission-based precautions.

5. Quality Improvement

5.1 Quality Improvement Projects

- Further development of the Out of Hours tool to ensure best quality care
- Improvements and additions to the Frontline Ownership tool
- Improved feedback to all areas of FLO audit and hand hygiene audits
- '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.
- Development of isolation quality audit
- Review and development of a new IPC audit tool
- *E.Coli* collaboration with the Royal Marsden and Clatterbridge including initiatives about:
-

- Improving patient hand hygiene
- Improving hydration
- Improving hand hygiene of staff
- Closer working with other nurse specialists

- The Infection Prevention and Control team runs a monthly Infection Prevention and Control Quality meeting (IPCQ) which remains a useful forum for dissemination of information and good practice. Colleagues from Estates and Facilities attend and one of the most positive achievements of this group was a new section on the HIVE intranet with helpful information about contacting the Deep Clean Team

5.2 Awareness Campaigns

- World Hand Hygiene Day May
- Infection Prevention and Control Week September
- Antimicrobial awareness day November
- *E.coli* reduction campaigns such a hydration week March

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

6. Estates and 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:

- Plans for demolition of the Paterson building
- Creation of a new Phlebotomy room
- New Christie satellite site at Macclesfield

The team has also provided assistance to the Facilities team in the review of cleaning at the Christie Hospital

7. Committees

The Infection Prevention and control Team sent representatives to the following meetings in 2018-2019:

- Health and Safety Committee
- Patient Safety Committee
- Medical Devices and Procurement Committee
- Infection Prevention and Control Committee
- GM Safety Committee
- Water Safety Group
- HTU Quality Meetings
- Nosocomial Infection Performance Review meetings (NIPR)
- Infection Prevention and Control Quality Meeting (IPCQ)
- Period of Increased Incidence meetings (PII)

- IV strategy Group
- Food safety group

8. Management of water systems

The water safety group 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.

Significant improvements have again been made in water management this year with around seventy positive samples at the beginning of the year and only two at the end of the year.

9. Conclusion

This year has seen the high profile collaboration with other cancer centres come to a conclusion which hopefully will leave us with a better idea of some of the risk factors which may predispose oncology patients to gram-negative bloodstream infections such as those caused by *E.coli*. Also notable for these bloodstream infections is while there has not been a reduction in them; there has been a reduction in numbers of cases which are associated with hospital acquisition.

The quality improvement work about this collaboration were presented to a national conference in Birmingham organized by NHS Improvement and well attended by senior colleagues from all over the country.

Also of note is the reduction in Post-72 hour cases of *C.difficile* infection to 14 cases. The introduction of new epidemiological definitions on 2019-2020 will see more cases being attributed to the hospital

Finally, in all areas of the hospital engagement with Infection Prevention and Control is improving, particularly when areas use a team based model of improving infection prevention on the frontline and we will continue to encourage this in 2019-20.