The Dudley Group
NHS Foundation Trust

INFECTION PREVENTION AND CONTROL REPORT

2016/17

CONTENTS

LIST OF ABBREVIATIONS

C.diff	Clostridium difficile
CQC	The Care Quality Commission – the integrated regulator of health and adult social care
DH	Department of Health
D and/or **V**	Diarrhoea and/or Vomiting
DIPC	Director of Infection Prevention and Control. An individual with overall responsibility for infection control and accountable to the registered provider
E-Coli	Escherichia coli
ESBL	Extended-Spectrum Beta-Lactamases (ESBLs) are enzymes that can be produced by bacteria making them resistant to cephalosporins e.g. cefuroxime, cefotaxime and ceftazidime - which are the most widely used antibiotics in many hospitals
GQC	Governance and Quality Committee
GRE	Glycopeptide-Resistant Enterococci
HCAI	Health Care Associated Infections
IPC	Infection Prevention and Control
IPCC	Infection Prevention and Control Committee
IPCLN	Infection Prevention and Control Lead Nurse
IPCT	Infection Prevention and Control Team
MRSA	Meticillin-resistant Staphylococcus aureus
MSSA	Meticillin-sensitive Staphylococcus aureus
OHD	Occupational Health Department
PLACE	Patient Led Assessment of the Care Environment
PPE	Personal Protective Equipment
SLA	Service Level Agreement
UTI	Urinary Tract Infection

1.0 EXECUTIVE SUMMARY

The Dudley Group NHS Foundation Trust is committed to ensuring that a robust infection prevention and control function operates within all clinical areas of the organisation which supports the delivery of high quality healthcare and protects the health of its service users and staff.

The Annual report seeks to provide assurance to the organisation with regards to the progress of the prevention, control and management of infection from April 2016 to March 2017.

2.0 INTRODUCTION

The Dudley Group NHS Foundation Trust recognises that the effective prevention and control of Healthcare Associated Infections (HCAIs) is essential to patient and staff safety and to the overall performance of the organisation.

The strategic approach to HCAI prevention and control is fundamental to the delivery of the Trust's organisational objectives in relation to patient safety, clinical governance and performance and is in accordance with The Health and Social Care Act 2008: Code of Practice on the prevention and control of infections and related guidance (revised 2015).

Effective infection prevention and control (IPC) systems and the development of a committed approach to learning will ensure that the Dudley Group NHS Foundation Trust continues to develop and improve the safety and quality of patient care.

Table 1

Health and Social Care Act 2008 - Code of Practice for health and adult social care on the prevention and control of infections.

The table below is the 'Code of Practice' for all providers of healthcare and adult social care on the prevention of infections under The Health and Social Care Act 2008. This sets out the 10 criteria against which a registered provider will be judged on how it complies with the registration requirements related to infection prevention. Not all criteria will apply to every regulated activity.

Compliance Criterion	What the registered provider will need to demonstrate
1	Systems to manage and monitor the prevention and control of infection. These systems use risk assessments and consider the susceptibility of service users and any risks that their environment and other users may post to them.
2	Provide and maintain a clean and appropriate environment in managed premises that facilitates the prevention and control of infections.

3	Ensure appropriate antimicrobial use to optimise patient outcomes and to reduce the risk of adverse event and antimicrobial resistance.
4	Provide suitable accurate information on infections to service users, their visitors and any person concerned with providing further support or nursing / medical care in a timely fashion.
5	Ensure prompt identification of people who have or are at risk of developing an infection so that they receive timely and appropriate treatment to reduce the risk of transmitting infection to other people.
6	Systems to ensure that all care workers (including contractors and volunteers) are aware of and discharge their responsibilities in the process of preventing and controlling infection.
7	Provide or secure adequate isolation facilities.
8	Secure adequate access to laboratory support as appropriate.
9	Have adhere to policies, designed for the individuals care and provider organisations that will help to prevent and control infections.
10	Providers have a system in place to manage the occupational health needs and obligations of staff in relation to infection.

3.0 INFECTION PREVENTION AND CONTROL ARRANGEMENTS

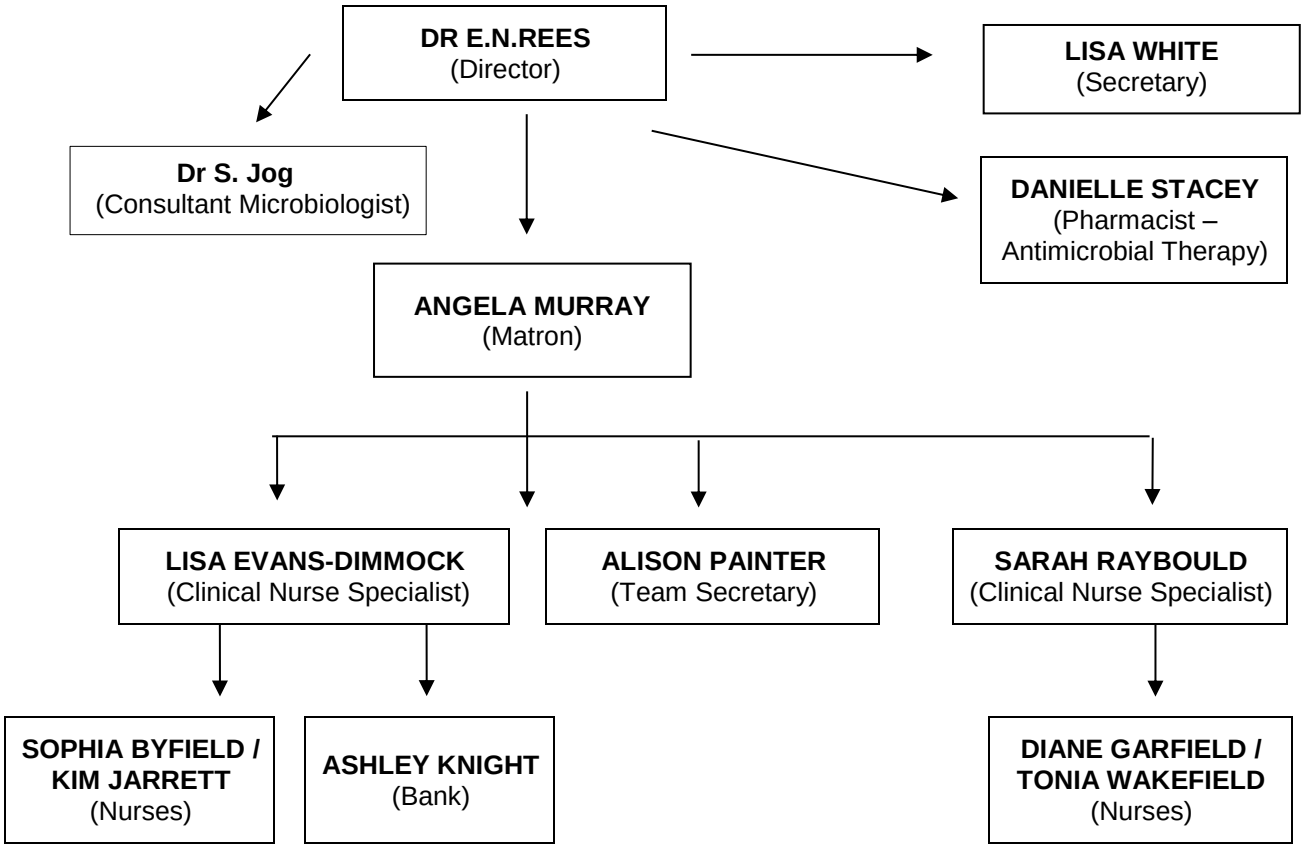
Within the Trust the DIPC role is within the portfolio of the Consultant Microbiologist / Infection Control Doctor. A key responsibility of the DIPC is to produce an annual report. Additional support is provided by the antimicrobial pharmacists, Consultant Microbiologist and Matron for Infection Prevention and Control.

The specialist infection, prevention and control nursing team provide education, support and advice to all Trust staff with regard to infection control matters and liaise regularly with patients and relatives to provide information on alert organisms, offering advice and reassurance when required.

INFECTION PREVENTION & CONTROL TEAM

Consultant Microbiologists / Infection Control Doctors

- Dr E.N. Rees
- Dr S. Jog



4.0 THE INFECTION PREVENTION AND CONTROL FORUM

The Infection Prevention and Control Forum meet quarterly and is chaired by the DIPC.

The purpose of the forum is to oversee compliance of the Health Act 2008 Code of Practice for the Prevention and Control of Healthcare Associated Infections. The Forum provides assurance that risks are appropriately managed and that appropriate arrangements are in place to achieve a safe clinical environment.

The membership of the forum is multidisciplinary and includes representatives from The Office of Public Health at Dudley Metropolitan Borough Council and Public Health England. This forum provides assurance to The Board that the infrastructure for infection prevention and control is in place. In addition to this there is representation from the Trusts private finance initiative partners.

5.0 SURVEILLANCE

The Department of Health requires mandatory surveillance of:

1. MRSA positive blood cultures (bacteraemia)
2. *Clostridium difficile* toxin positive results
3. MSSA positive blood cultures (bacteraemia)
4. E-coli positive blood cultures (bacteraemia)

The above are reported monthly via HCAI data capture system which is managed by Public Health England and signed off on behalf of the Chief Executive.

5.1 MRSA Bacteraemia

The NHS has set a zero tolerance approach to MRSA bloodstream infections. For the purposes of this report **zero** cases have been attributed to The Trust.

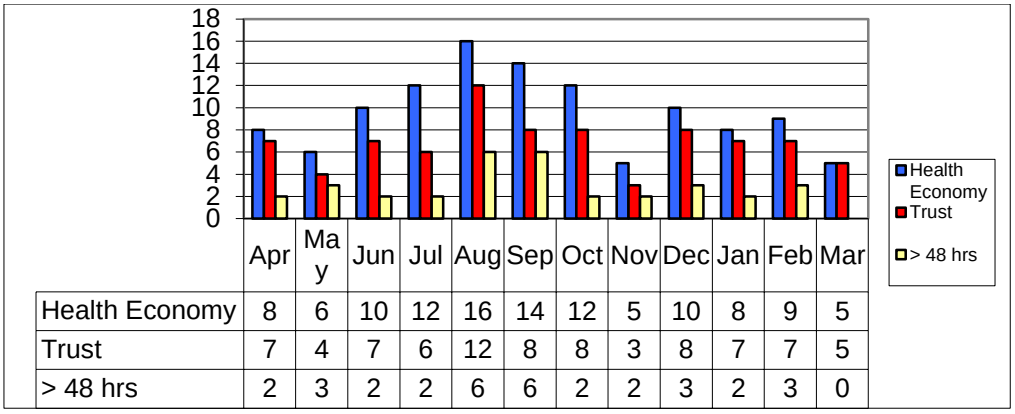
5.2 Clostridium difficile

The Trust reports all of Clostridium difficile toxin positive cases identified in the hospital laboratory. For this financial year we have reported a total of 33 cases of Clostridium difficile of which 13 have been recognised as being due to a lapse of care and attributed to the Trust. Themes for lapses in care were identified as antimicrobial stewardship, a reduction in the cleaning score and a delay in isolation of patients within 2 hours of onset of diarrhoea.

The antimicrobial pharmacist Additional training sessions have also been carried out through the year by the antimicrobial pharmacist. The Trust increased the cleaning audits in the affected areas and performance managed the issues identified via the PFI contract. The Infection Prevention and Control Team undertook targeted educational sessions to emphasise the requirement for timely isolation. The other cases are related to external factors.

The Trust objective was to have no more than 29 cases where a lapse in care was identified. All cases were scrutinised using a robust root cause analysis process in conjunction with the Office of Public Health Dudley Metropolitan Borough Council and Dudley CCG. The learning from these cases was shared across the organisation in order to improve practice.

The table below demonstrates the number of Clostridium difficile positive cases identified at The Dudley Group NHS Foundation Trust for this reporting period.

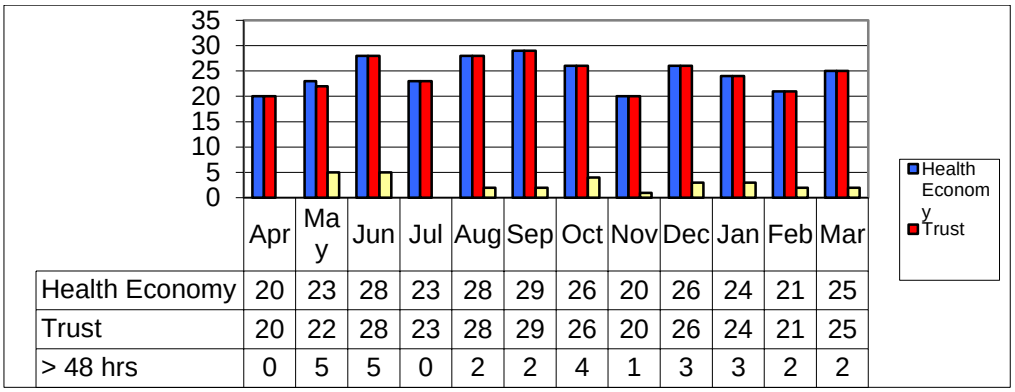


	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Health Economy	8	6	10	12	16	14	12	5	10	8	9	5
Trust	7	4	7	6	12	8	8	3	8	7	7	5
> 48 hrs	2	3	2	2	6	6	2	2	3	2	3	0

5.3 Escherichia Coli Bacteraemia.

Approximately three-quarters of E. coli bacteraemia occur before people are admitted to hospital. The Trust continues to fulfil its mandatory requirement and contributes to this enhanced national surveillance.

The table below demonstrates the number of E. coli positive cases identified at The Dudley Group NHS Foundation Trust for this reporting period. As of April 2017 the Trust will undertake enhanced surveillance of E. Coli bacteraemia as part of a whole health economy ambition to reduce Gram-negative bloodstream infections.

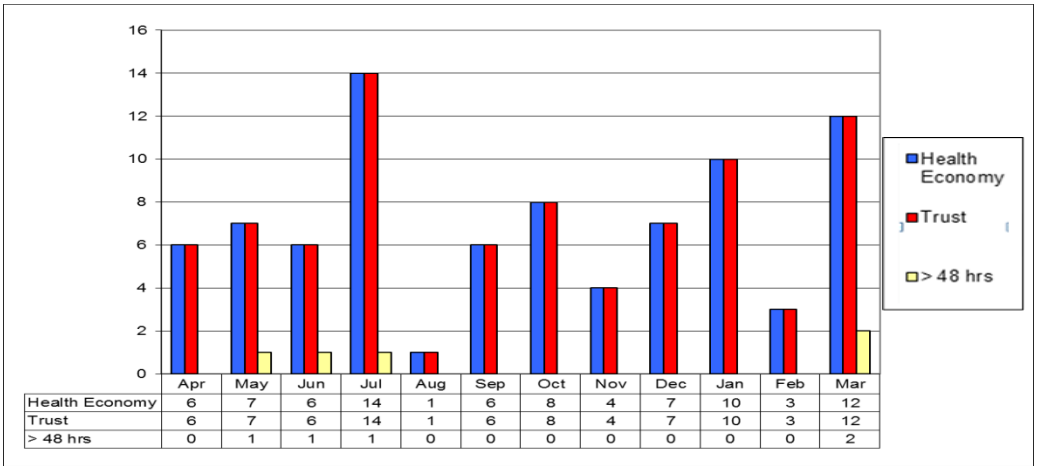


	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Health Economy	20	23	28	23	28	29	26	20	26	24	21	25
Trust	20	22	28	23	28	29	26	20	26	24	21	25
> 48 hrs	0	5	5	0	2	2	4	1	3	3	2	2

5.4 Meticillin Sensitive Staphyloccous aureus (MSSA) Bacteraemia.

MSSA is a type of bacteria which lives harmlessly on the skin and in the nose, in approximately one third of people. MSSA usually causes no problems, but can cause an infection when it gets the opportunity to enter the body. This is more likely to happen in people who are already unwell. MSSA can cause local infections such as abscesses or boils and it can infect any wound that has caused a break in the skin e.g. surgical wounds. The Trust continues to fulfil its mandatory requirement and contributes to this enhanced national surveillance

The table below demonstrates the number of MSSA bacteraemia cases identified at The Dudley Group NHS Foundation Trust for this reporting period. 6 of the cases had been inpatients for more than 24 hours. One patient was admitted with sepsis, one was related to soft tissue infection. All patients had peripheral lines in situ. The Infection Prevention and Control Team delivered training in conjunction with the clinical skills team to reinforce the policy on the insertion and ongoing care of peripheral lines.



	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Health Economy	6	7	6	14	1	6	8	4	7	10	3	12
Trust	6	7	6	14	1	6	8	4	7	10	3	12
> 48 hrs	0	1	1	1	0	0	0	0	0	0	0	2

6.0 SURGICAL SITE SURVEILLANCE

In April 2004 it became a mandatory requirement to carry out surveillance in Orthopaedic surgery. Each Trust should conduct surveillance for at least one orthopaedic category for one period within the financial year. The four orthopaedic categories are:

- Hip Replacements
- Knee Replacements
- Repair of Neck of Femur
- Reduction of long bone fracture

Public Health England undertakes surveillance of surgical site infections annually. In total there are 17 surgical categories, including mandatory orthopaedic data. The data for the remaining categories are submitted on a voluntary basis.

The table below identifies the mandatory surveillance undertaken in 2016/2017 at the Dudley Group Foundation Trust. One surveillance period was undertaken from July to September 2016 focusing on knee replacement surgery and then a further surveillance period was undertaken in October to December 2016 focusing on hip replacement surgery.

Type of Surgery	Total number of Operations	Total number of Inpatient/ readmissions SSI's	Trust Percentage Rate	National average percentage rate.
Knee Replacement Surgery (July - September 2017)	95	1	1.1%	1.5%
Hip Replacement Surgery (October - December 2017)	87	0	0%	1.1%

One surgical site Infection was identified during the knee replacement module and was identified as a superficial infection following the patient's readmission to hospital.

Following microbiological swabbing staph aureus (MSSA) was identified in the patients wound.

No cases of surgical site infection were identified in the hip replacement surveillance period October to December 2017.

7.0 OUTBREAKS / PERIOD OF INCREASED INCIDENCE (PII)

Untoward Incidents and Outbreaks 2016-17
Incidents and outbreaks occurring in 2016/17 were reported to the hospital Infection Prevention and Control Forum throughout the year. Different outbreaks/incidents demand different responses but are managed with precision and collaborative working between the multi-disciplinary teams across the health economy. Please see information below for more detail.

Clostridium Difficile
In August 2016 there was a period of increased incidence on the medical high dependency ward, during which 2 patients had confirmed Clostridium Difficile. A thorough investigation was undertaken and the area was deep cleaned and staff education was delivered by the Infection Control team. Further laboratory testing confirmed that the cases were not linked. There have been no further related cases on the ward to date.

In October 2016 there was a period of increased incidence on the gastroenterology ward, during which 2 patients had confirmed Clostridium difficile. A thorough investigation was undertaken; no lapses in care were identified. Areas on ward were deep cleaned. Further laboratory testing confirmed that the cases were not linked. There have been no further related cases on the ward to date.

In September 2016 Clostridium difficile was reported as a cause of death on a patient's death certificate, as required from Public Health England a thorough investigation was undertaken and working closely with the Office of Public Health, education was delivered to General practitioners regarding antimicrobial prescribing.

In February 2017 there was a period of increased incidence on a surgical ward during which 2 patients had confirmed Clostridium Difficile. A thorough investigation was undertaken and ward cleaning audits were increased and staff education was delivered by the Infection Control team. Further laboratory testing of samples was inconclusive. There have been no further related cases on the ward to date.

Norovirus
Norovirus is a self-limiting diarrhoea and vomiting bug that usually lasts 48-72 hours and is more prevalent in the winter months.

In January 2017 on our Elective / Trauma Orthopaedic ward Norovirus was confirmed. 1 patient was confirmed positive and there were several unconfirmed cases. In order to contain spread the ward was closed for 2 days, with deep cleaning undertaken. Symptoms were reported promptly and outbreak contained therefore a short duration with good outbreak education and management at ward level. Signage was in place at

key entrances and the Infection Prevention nurses were available weekends to support staff while on site testing helped with prompt identification of the virus.

Tuberculosis (TB)
In March 2017 there was an incident of pulmonary TB admitted to an open ward. Contact tracing of staff and patients was completed and no transmission was identified.

Outbreak Neonatal Unit
In December 2017 laboratory testing identified an organism that has potential to harm neo-nates; therefore screening of all other babies within the unit was undertaken. To prevent further spread or any harm, the unit closed to external transfers from other hospitals until further laboratory testing had been completed, this was inconclusive. Enhanced ward cleaning and close collaboration with Public health England ensured the unit re-opened promptly.

8.0 AUDIT

Saving Lives Audit

The Saving Lives programme (DH, 2008) was introduced to support healthcare providers in reducing healthcare associated infections. It identified high-impact interventions (HIIs) relating to areas of clinical practice where patients are at increased risk of infection, with the aim of reducing variations in care. The Saving Lives Audit within the Trust is undertaken on a monthly basis.

This system can be accessed by Heads of Nursing, Matrons and Lead Nurses enabling users to review and monitor individual performance.

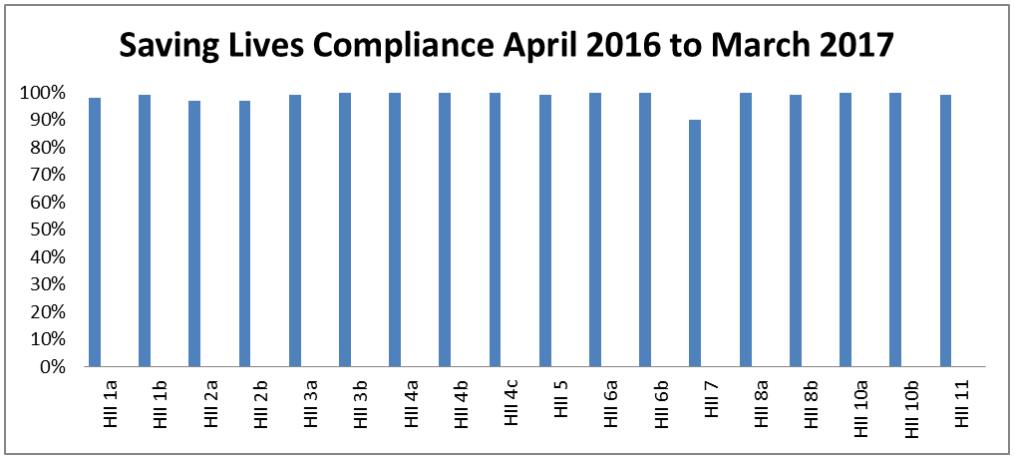
Areas that submit scores of less than 95% are required to complete an action plan to identify how they will rectify the overall score and how this will be cascaded across the areas.

The HIIs audits include:

- HII 1a CVC Insertion
- HII 1b CVC Ongoing Care
- HII 2a Peripheral Lines Insertion
- HII 2b Peripheral Lines Ongoing Care
- HII 3a Renal Dialysis Insertion
- HII 3b Renal Dialysis Ongoing Care
- HII 4a Surgical Site Pre Op
- HII 4b Surgical Site Intraoperative
- HII 4c Surgical Site Post Op
- HII 5 Reducing Ventilation associated pneumonia
- HII 6a Urinary Catheter Insertion
- HII 6b Urinary Catheter Ongoing Care
- HII 7 C.difficile
- HII 8a Clinical equipment Decontamination Infect

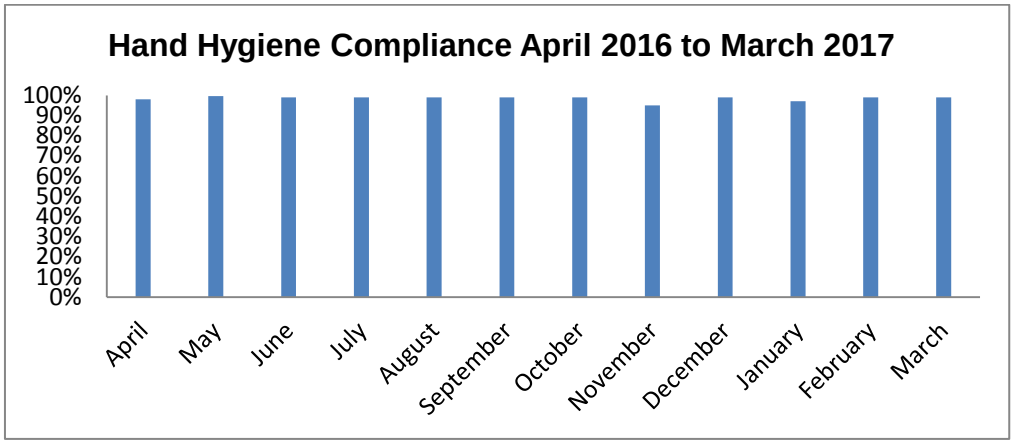
- HII 8b Clinical equipment Decontamination Non Infected
- HII 10a Chronic Wounds: Wound care
- HII 10b Chronic Wound Patient Management
- HII 11 Enteral Feeding

The graph below demonstrates overall Trust compliance with Saving Lives Audits for the year April 2016 to March 2017.



Hand Hygiene Audit

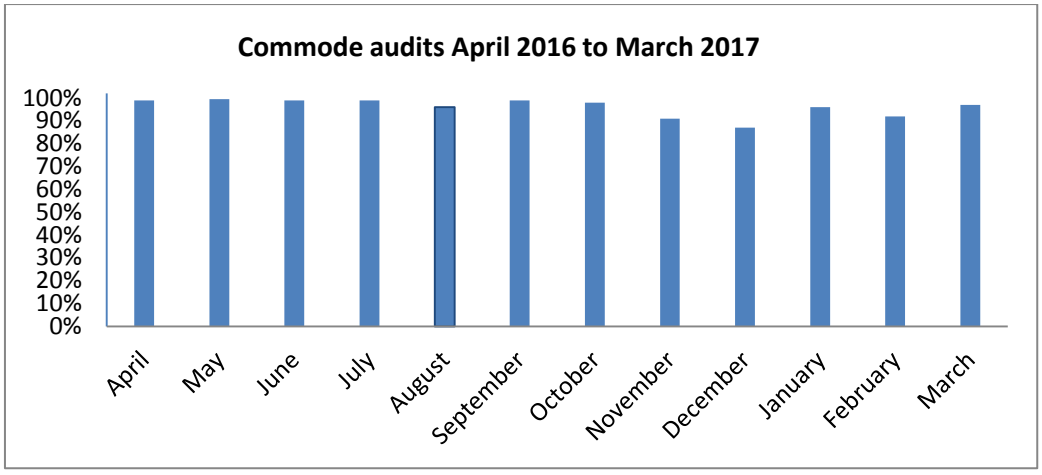
Hand hygiene continues to be a top priority in the Trust. Monthly audits of hand hygiene compliance are undertaken. The Trust target for hand hygiene compliance rates is 95%.



Commode Audit

Monthly commode audits are undertaken to ensure the condition and the cleanliness of commodes are monitored. Broken commodes are removed and replaced as necessary.

The graph below demonstrates overall Trust compliance for commode audits for the year April 2016 to March 2017.

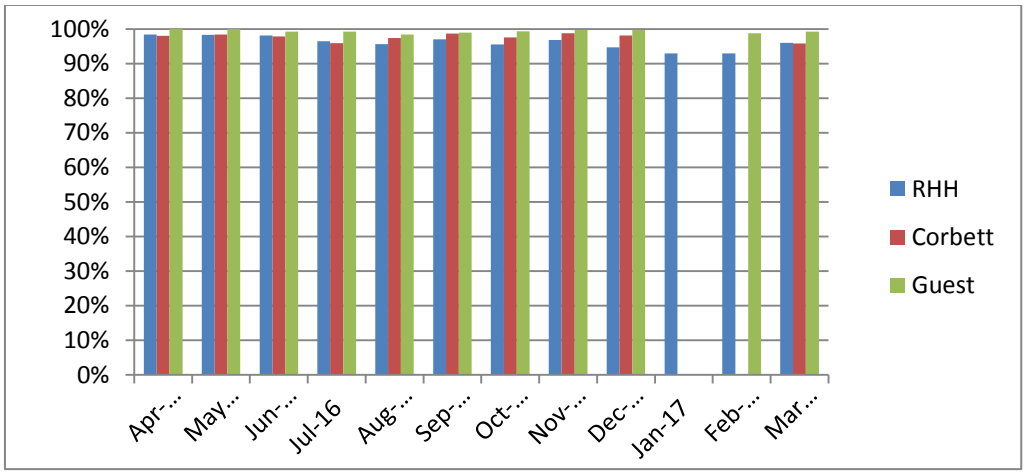


9.0 ESTATES & FACILITIES

9.1 Environmental Audits

The Trust recognises its duty to provide safe and clean environments where patients, staff and other visitors can expect to be protected from the risk of Infection. The environmental cleaning service is provided by Interserve (Facilities Management) Ltd (IFM) as part of the Trusts PFI contract with Summit Healthcare (Dudley) Ltd (Summit). The contract is managed by the Trusts Facilities and Property Development Department. Environmental audits are undertaken by the Trust Auditors in partnership with IFM and clinical staff.

The table below outlines the weighted cleaning scores for The Trust for this reporting period.



Following the successful trial of a combined Housekeeper/Domestic Service on Wards B4 and C5, the service was rolled out to the majority of inpatient areas at Russells Hall Hospital commencing September 2016. The service was designed to improve the coverage and responsiveness of both the environmental cleaning and inpatient catering service delivered by IFM at ward level. However, shortly after the full introduction of this service, the Trust Facilities Management Audit Team identified deterioration in cleaning scores across a number of areas. In response to this the Trust increased the cleaning audits in the affected areas and applied the performance management mechanisms

within the PFI contract. This resulted in cleaning scores improving which continue to be closely monitored and further action taken where necessary.

The Trust utilises hydrogen peroxide vapour as an additional method of cleaning for areas where infections have been identified. A machine releases a fine vapour (Hydrogen peroxide 4.9%) into the atmosphere in a sealed environment. The vapour kills a wide variety of micro-organisms. There is an on-going rolling programme of fogging in clinical areas.
Discussions are currently underway with Summit and IFM to establish costs to transfer the Hydrogen peroxide vapour service into the PFI Contract

9.2 Place 2016

Patient-Led Assessments of the Care Environment (PLACE) is a system of assessing the non-clinical aspects of patient care and replaced Patient Environment Action Team (PEAT) inspections as from April 2013. All Trusts are required to undertake these inspections annually to a prescribed timescale.

As the name suggests the PLACE team is led by Patient Assessors, who make up at least 50 per cent of the assessment team with the remainder being Trust and Summit Healthcare Staff. The inspection covers wards, outpatient areas, communal areas and external areas and generates scores under the following categories:

- Cleanliness
- Food
- Privacy, Dignity and Wellbeing
- Condition Appearance and Maintenance
- Dementia
- Disability

PLACE by its very nature is a snap shot of one day and can be influenced either way by what is seen on the day where ultimately the Patient Assessors can decide what areas are assessed. At the end of the assessment period, Patient Assessors are required to complete their own assessment form on how the overall assessment has been undertaken. This includes questions such as were their views taken on board and was sufficient time given to undertake the assessment etc.

The PLACE Scores for 2015 / 2016 were as follows.

	2015 Score	2016 Score
Cleanliness	99.06%	99.14%
Food (Combined)	86.08%	80.74%
Food (Organisational)	75.19%	83.46%
Food (Ward)	88.47%	80.01%
Privacy, Dignity and Wellbeing	85.87%	84.01%
Condition, Appearance and Maintenance	94.97%	96.59%
Dementia	74.13%	80.95%

10.0 ANTIBIOTIC STEWARDSHIP

Antimicrobial Stewardship Report 2016-17
This paper provides an update and an assurance of compliance with standards set out by Health and Social care IPC code of practice for Antimicrobial stewardship, Department of Health "Start Smart then Focus" and NICE NG15 (2015) Antimicrobial Stewardship: systems and processes for effective antimicrobial medicines use.

CQUIN: Antimicrobial Resistance and Antimicrobial Stewardship
For 2016-17 Dudley participated in the national CQUIN: Antimicrobial Resistance and Antimicrobial Stewardship. The goal of this CQUIN was to reduce antibiotic consumption with a focus on antimicrobial stewardship and ensuring antibiotic review within 72 hours. Indiscriminate and inappropriate antibiotic prescribing has been identified as a key driver for antibiotic resistance therefore the CQUIN aimed to reduce total antibiotic usage and usage of key broad-spectrum antibiotics and ensure antibiotics are appropriately reviewed after initiation.

The antibiotic consumption targets and local achievements are detailed in table 1.

Table 1 (based on Fingertips AMR data Aug 2017)

Indicator (per 1000 admissions)	Target reduction	Reduction achieved
Total Antibiotic consumption	1%	6%
Total carbapenem consumption	1%	1.9%
Total piperacillin / tazobactam consumption	1%	22%

Dudley also achieved all four milestones for antibiotic review within 72 hours, with a final result of 90.2% of antibiotic prescriptions receiving a review within 72 hours.

In order to further the excellent achievements to date, the Trust has recruited an additional sepsis nurse and antimicrobial pharmacist to support initiatives to improve sepsis and stewardship.

Prescribing Standards
Compliance with antimicrobial guidelines continues to improve at Dudley. For Q4 of 2016/17, the Trust achieved 92% compliance with antimicrobial guidelines, an increase from 86% in the previous year.

Documentation of indication and stop/review dates is monitored regularly. Documentation of indication on the drug chart is 76% (regional average 73%) and duration/review date is 60% (regional average 62%).

Antimicrobial Consumption
For data collected by quarterly point prevalence surveys, prevalence of antibiotic use was 39% in Q4 2016-17 (**down 10%** on Q4 2015-16) and IV antibiotic usage was 17% (**down 33%** on Q4 2015-16). 40% of these are on IV antibiotics for longer than 72 hours. The regional average for IV antibiotic prevalence is 20%, therefore a figure of 17% at Dudley represents prudent use of IV antibiotics. Due to the much smaller

number of patients being initiated on antibiotics and receiving intravenous antibiotics, a 40% continuation in IV antibiotics is representative of those who most need to continue with IV therapy. The prevalence of patients on antibiotic courses longer than 7 days is just 5.3% in Dudley compared with a regional average of 7.3%.

When compared with National consumption data reported on Public Health England Fingertips, Dudley falls in the 2nd lowest percentile for total antibiotic usage (4197 Defined Daily Doses (DDDs)/1000 admissions vs. 4656 DDDs/1000 admissions for Dudley and national average, respectively).

National consumption compared with 17 peers using Define benchmarking software shows DGH **1%** below the mean for IV antibiotics per 1000 Trust beds for 2016-17. DGH are **6%** below the mean for higher Clostridium difficile risk antibiotics.

Updated/new Guidelines
Several new guidelines were added in 2016-17 including an antifungal therapy guideline, a sepsis first dose guide and maternal sepsis. Many of the existing guidelines were reviewed and updated to reduce broad spectrum antibiotic usage and address global antibiotic shortages. Guidance is produced between the microbiology and pharmacy departments with input from the relevant specialties. Clinician engagement in guideline compliance is clear from the excellent rate of compliance demonstrated in the audits.

Education and Training
Mandatory training for clinicians in antimicrobial prescribing and stewardship continues to take place. All doctors new to the Trust are provided with antimicrobial training at induction. Better Training Better Care for FY1 and FY2 doctors in Antimicrobial Prescribing received excellent feedback from the participants. Additional training sessions have also been carried out through the year when guideline changes have occurred.

11.0 EDUCATION AND TRAINING

Mandatory Training
Mandatory Training is training that has been identified by the trust as those that cover the risk management subjects that are required by all employees.

Infection Control is identified as a mandatory core subject that all employees are required to receive. The Infection Control training is required on a 3 yearly basis and has a Key Performance Indicator (KPI) of 90%.

In order to support staff with training the DGFT are committed to developing a 70/20/10 learning approach. The model provides a framework of learning opportunities; this is broken down as indicated below:

70% - Experience and experiential learning on the job through day to day tasks/activities
20% - Learning from peers and colleagues within a social exposure, this could be within a team environment or learning from those that are more experienced
10% - Learning from specific courses or education programs

Infection Control Team delivers training sessions during Trust induction and Mandatory refresher training each month to various staff groups across the Trust. Following the session there is a requirement for all staff to complete a competency test, and the pass rate for this is 80%.

Staff also have access to an eLearning module for Infection control which can be located on the Learning and Development Page of the hub. It is also necessary for staff to complete a competency test if they choose to complete the session via this route and again the pass rate is 80%.

The table below indicates the mandatory training figures for Infection Prevention and Control the period 2016/2017. In order to support wards and departments to achieve the KPI this year, additional mandatory training sessions have been commenced so that staff can attend on Wards and departments in order to complete their mandatory infection control training.

	Infection Control – Clinical	**Infection Control – Non Clinical**
Division	>=90% >=80%	>=90% >=80%
Corporate / Mgt	80%	88%
Medicine & Integrated Care	83%	88%
Surgery	82%	89%
Trust Compliance	**82.8%**	**88.6%**

12.0 POLICIES

The Infection Prevention and Control Team have an on-going programme of policy. All policies are reviewed in consultation with Public Health England, The Office of Public Health in Dudley and Dudley CCG.

Policies reviewed:

- Decontamination and Decontamination of Medical Devices
- MRSA Screening. Emergency and Elective Admissions Policy

13.0 CONCLUSION

The prevention of healthcare associated infection remains a top priority for the public, patients and staff. All staff are targeted by education and training programmes alongside clinical visits with the aim to improve clinical practice, the healthcare environment, patient safety and ultimately the patient experience.

The Infection Prevention and Control Team do not work in isolation and the commitment for infection prevention and control that is demonstrated at all levels within the organisation is crucial to maintain high standards in the future.

Acknowledgement of thanks for contributors: Miss A Murray, Matron Infection Prevention and Control, Mr A Rigby, Head of Facilities Services and Miss D Stacey, Antimicrobial Pharmacist.