The Robert Jones and Agnes Hunt NHS Orthopaedic Hospital

NHS Foundation Trust

Subject/Title	Infection Prevention and Control Annual Report 2014/15
Executive Responsible	Jayne Downey, Director of Infection Prevention and Control
Paper prepared by (if	
different from above)	

	For Information	
Nature of Report	For Discussion	
	For Approval	\checkmark

Category of Item	Strategic Direction and Development Performance and Governance	√
Context	Previous Board discussion	\checkmark
	Link to National Policy	\checkmark
	Link to Trust's Strategic Objectives	\checkmark
	Risk if no action taken	

Executive Summary	This report outlines the activities of the Trust relating to infection control for the year April 2014 to March 2015. The aim of the report is to present infection prevention and control activity within Trust and review accountability arrangements, policies and procedures relating to infection control, audit, surveillance and education.
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Executive Overview

It is with great pleasure that we present our Infection Prevention and Control Annual Report for 2014/15.

Once again, the Trust has so much to be proud of – this report demonstrating the continued high standards sustained in infection control.

During 2014/15, the Trust has maintained excellent healthcare associated infection (HCAI) rates. There were no cases of MRSA bacteraemia, two cases of Clostridium Difficile Infection, and surgical site surveillance shows rate of infection lower than the national average.

In recognition of the role all staff play in infection prevention and control, education has been delivered at all levels across the organisation. This report demonstrates that a standard programme of infection prevention, including hand hygiene, cleaning standards and personal protective equipment, is complimented by specialist training when needed – in response to the increased prevalence of Carbapenamase Producing Enterobacteriacae (CPE) at the Trust.

Recognising the importance of infection prevention and control, the Trust continues to undertake surveillance of all infections, which is supported the availability of a regular wound clinic for all patients as required in order to support and review post-operative wound management.

As part of the Trusts vision to be a leading centre high quality, sustainable orthopaedic and related care, The STAR (**S**ustaining Quality **T**hrough **A**ssessment & **R**eview) performance assessment framework has been introduced as a measure of quality, providing evidence against national standards.

The STAR initiative incorporates robust infection prevention and control standards, including evidence of Link meetings and audit results, which are displayed on STAR quality boards in each ward area, providing assurance to patients and visitors of the robust Infection Prevention and Control measures across the Trust.

The trust board fully recognised the importance and positive impact that good infection prevention performance has on patient experience and their safety. The Trust has made patient safety its number one priority having infection prevention as its founding principle. The challenge of 2015/16 remains to maintain low rates of HCAI and to continue to improve practice to ensure the best care for all patients.

Key Achievements



The Team

Jayne Downey

Director of Infection Prevention and Control

Dr Graham Harvey

Consultant Microbiologist, 1 programmed activity (4 hours/week) is agreed with Shrewsbury and Telford Hospital Trust for provision of this service. 24h infection control advice is available from the on-call consultant microbiologist (3 programmed activity sessions cover in hours and on call)

Sue Sayles

Infection Prevention and Control Sister (1 WTE) Band 7

Mary Offland

Surgical Site Surveillance Nurse (0.8 WTE) Band 5

Sian Evans

Infection Control Administrator (0.43 WTE) Band 2

The Infection Prevention and Control Team (IPCT) are represented at the following Trust meetings:

Quarterly Monthly Quarterly Monthly Quarterly Quarterly Monthly Quarterly Ad-Hoc

Infection Control Committee
Infection Control & Tissue Viability Link
Clinical Effectiveness Committee
Medicines Management Committee
SNAHP Forum
Band 6 Forum
Water Group
PLACE Team
Medicine Divisional Meeting
Health and Safety Committee
Root Cause Analysis

The IPCT is also represented at the following external meetings:

DIPC Lit (Local Implementation Team)	Monthly
Clinical Quality Review (CQR)	Monthly
Infection Prevention and Control Nurses Forum	Every 3 months

The Role

Infection Prevention and Control has many roles throughout the organisation





Infection control advice is available during office hours (09.00 – 17.00) from the Infection Prevention & Control Team and 'on-call' via the duty Microbiologist at SaTH.

Committee

The Infection Control Committee (ICC) meets quarterly and is chaired by the DIPC. A much wider group of key stakeholders including theatre representation attend this meeting to discuss future issues and solutions around infection prevention and control, cleanliness and wider environmental improvements and policies.

Table 1 shows the attendance at the ICC 2014 – 15

	15/04/14	08/07/14	28/10/14	13/01/15
Director of Infection Prevention & Control (Director of Nursing)(Chair)	✓	✓		~
Deputy Director of Nursing	✓	✓	✓	~
Consultant Microbiologist (Infection Prevention & Control Dr)	~	✓	~	~
Infection Prevention and Control Sister	✓	✓	✓	✓
Quality & Safety Matron	✓			✓
Consultant Physician	✓	✓	✓	
Consultant in Communicable Disease Control & Public Health England				~
Antimicrobial Pharmacist	✓	✓	✓	✓
Facilities Manager (Representing Estates & Facilities)	1	1	~	~
Matron, Surgery & Surgical Services	✓	√	✓	✓
Matron, Medicine & Rehabilitation and Diagnostics	✓	✓	✓	
Consultant Surgeon		✓		
Theatres Manager			✓	
Health, Safety and Risk officer				~
Head of Infection Prevention and Control, Shropshire County Commissioning Group and Telford & Wrekin County Commissioning Group (IPC – SCCG & TWCCG)			~	~

Links

Strong links, both internally and externally, allow the IPC team to adapt a local health economy approach, and encourage standardisation of practice



Support

Microbiology

Working arrangements in the Microbiology laboratory have been established to facilitate seven-day testing and reporting for *Clostridium difficile* toxin, Methicillin resistant *Staphylococcus aureus* (MRSA), and *Norovirus*.

There are good communications systems between the laboratory the IPC team, ward staff, from the Microbiology laboratory attending outbreak meetings to provide current detection information & the regular IPCT meetings. The information on ward issues is then communicated to staff in the laboratory to enable better prioritisation. The use of real-time information about alert organisms allows the epidemiological and surveillance data to be effectively managed.

<u>Reports</u>

During the year the DIPC has produced quarterly reports which update the Infection Control Committee as well as the Trust Board in Infection Control and Cleanliness matters. The DIPC reports directly to the Chief executive.

BUDGET ALLOCATION

Whilst the Trust has no separate budget allocation for infection control, it has utilised appropriate budgets and funding to support ongoing improvements.

Funding for specialist training and attendance at required external meetings is provided for specialist practitioners/ clinicians as well as ward staffing.

PROGRAMME OF WORK

The infection prevention and control programme of work identifies the key objectives for the team in the year 2014 – 2015.

The IPC team is currently on track to achieve the objectives as set out in the programme of work, next on the agenda is the review of staff information leaflets, which will be updated in line with the policies as they are revised



Education

Mandatory training in infection prevention and control is a requirement for all Trust staff including clinical, non-clinical staff and contractors.

The Trust uses an e-learning system to deliver consistent annual training to staff, and the IPCN provides induction training to all new-starters. Medical staff also have quarterly updates from the Infection Control Nurse.



The Training figures for 2014 – 2015 are shown in table 2.

Completion of Infection Control from 1st March 2014 to 31st March 2015															
Courses require completion annually	Total number of staff overall to		Number of staff completing module each month								ompleted ng	a %			
Module Name	complete based on organisational TNA	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Total no's co traini	Total as
Infection Control	1036	45	53	49	49	57	46	67	79	105	130	111	107	898	87%

It is the responsibility of the ward/departmental managers to ensure that annual updates via e-learning are completed by all staff, this is in line with the Trusts training needs analysis document.

The Infection Control Team updated the content and delivery of the e learning module, in line with the learning and development policy; this ensures that the most up to date evidence based practice is being advocated across the Trust.

Policy

In 2014, the infection control policy was re organised to become a more user friendly document; consisting of one core policy and a library of SOP's. The first 10 SOP have been drafted for approval, the programme will continue through 2015/16.



Reportable HCAIs

Public Health England requires mandatory surveillance of the following types of infection:

- > Clostridium difficile
- MRSA bacteraemia
- > MSSA bacteraemia
- E-coli bacteraemia
- > Glycopeptide Resistant Enterococcal (GRE) bacteraemia
- > Norovirus
- > Carbapenemase-producing Enterobacteriaceae (CPE)
- Surgical Site Infections (Orthopaedics)
- > MRSA Outbreak

Clostridium Difficile

Clostridium difficile is the main cause of antibiotic associated diarrhoea that is seen at RJAH. As a HCAI, rates of *C. difficile* are monitored by Public Health England, through mandatory surveillance data supplied by on a monthly basis by all Trusts. However only cases where the sample was taken more than 72 hours after admission are considered attributable to the trust.

A lot of work is ongoing to reduce the incidence of *Clostridium difficile* Infection (CDI) across the local health economy and a task and finish group for Shropshire and Telford has been formed and an action plan produced. This includes– education of medical staff around antibiotic prescribing, the instigation of antibiotic ward rounds, increased cleaning frequencies when there is a case of *C. difficile*, rapid isolation of these patients and the emphasis on the use of the *C. difficile* care plan in the hospital. There is a robust reporting mechanism and RCA process around *C. difficile*. All cases of patient's with *C. difficile* are visited by the IPCN on a daily basis to ensure the correct infection control measures are in place in hospital. The Microbiologist also reviews the patient to ensure they are on the correct treatment regime and all the necessary precautions are in-place.

The Trust reports all cases of C difficile diagnosed in the hospital laboratory to Public Health England. Our target for C difficile cases had dropped over the past few years from 2 cases to zero in 2012/13. Our target for C difficile in 2013/14 was to have no trust apportioned cases in patients over the age of 2 years. This was an extremely challenging target as it represented a 100% reduction over the previous year's total of 2 cases. We ended our year with 2 trust apportioned cases so unfortunately were unable to achieve our target.

It has been recognised nationally that it is becoming more and more difficult to continue to reduce C difficile cases as 5 to 10% of older patients carry C difficile in the bowel as part of their "normal flora". If they then require antibiotics to treat an infection this may cause the C difficile to multiply and cause diarrhoea. However it is vital that we continue to prevent avoidable cases. Trusts are now only penalised for cases where there was found to be a "lapse in care" such as cross infection or innappropiate antibiotic prescribing. We carry out a root cause analysis on each case to identify the likely cause and any remedial actions that may reduce future infections. These are fed back to the wards and clinicians. Followign investigation, the two RJAH apportioned cases were antiobiotic related.

MRSA bacteraemia

The Trust participates in the Mandatory Enhanced Surveillance Scheme (MESS) and has accumulated robust information on the local pattern of this HCAI. The data covers MRSA detected in blood cultures only and does not include MRSA carriage rates. There continues to be no cases of MRSA bacteraemia.

MRSA Screening Compliance

The Trust achieved an overall annual compliance of 99.95%

There is an expectation from the PHE for 100% MRSA screening compliance. However, the Shropshire Clinical Commissioning Group have advised a threshold of 95%

MSSA Bacteraemia

MSSA, or Methicillin Sensitive Staph aureus, is the more common sensitive strain of Staph aureus. Up to 25% of us are colonised with this organism. Mostly it causes us no problems but it is a frequent cause of skin, soft tissue and bone infections. As with its more resistant cousin, MRSA, sometimes the infection can escape into the bloodstream producing a "bacteraemia" ie bacteria in the blood. Unlike MRSA, the majority of the infections will be acquired in the community, and are not associated with health care. However, some may arise as a consequence of health care, and like MRSA, it can arise from infected peripheral and central intravenous lines, and other health care interventions. We have been asked by the Department of Health to report all MSSA bacteraemia cases, whether acquired in the community or in hospital, so that we can review the sources and identify potentially avoidable cases.So far no targets have been set and we do not have easily comparable information with other hospitals. However interventions to further reduce infections are being put into place as we gain new information.

The number of cases of MSSA bacteraemia remains fairly static with 3 cases in 2013/14, compared with 4 in 2012/13 and 3 in 2011/12. In the 3 cases the samples were taken more than 2 days after admission and therefore the infections have been acquired in the trust.

All cases are reviewed by the consultant microbiologist to find the source of infection. A root cause analysis is performed on cases acquired in the trust.

E. coli bacteraemia

E. coli is an organism we all carry in our gut, and most of the time it is completely harmless. There is a particular strain, E. coli O157, which can cause food poisoning, but it is rare and most strains do not cause any symptoms while being carried in the gut. Instead ordinary E. coli forms part of our "friendly" colonising gut bacteria. However when it escapes the gut it can be dangerous. E. coli is the commonest cause of blood stream infections (bacteraemias) in the community. The most frequent problem it causes is a urinary tract infection, but it can also cause infections in the abdomen such as gallbladder infections or following perforations of the bowel. As E. coli bacteraemia cases have been rising nationally and internationally over the last few years, the Department of Health has asked us to report all these infections and to see how many may be associated with contact with health care. As with MSSA no targets have been set but we act on any obvious preventable cause to reduce health care acquired cases.

For E. coli we assess each case to see if it may be health care acquired rather than

simply going by the "48 hour rule" ie considering that any cases that arise more than 48 hours after admission are likely to be health care acquired. This rule is not very reliable for E. coli.

We had 8 cases in E coli bacteraemia in 2013/14 compared with 4 in 2012/13. This follows the national pattern of a continuing rise in cases. The majority of cases (4 cases 50 %) the commonest source of the bloodstream infection was a urinary infection –, these 4 cases all related to a urinary catheter (CAUTI) with the infection arising during their current admission.

3 patients were infected during their previous admission at another acute trust and were pre 48hr- all having urinary catheters insitu; the fouth patient was community acquired.

As demonstrated above, the most frequent health care related risk factor is the presence of a urinary catheter

Both RJAH and the local health economy are working to reduce urinary catheter related infection. This will be achieved by monitoring compliance with correct technique during insertion of the catheter and ongoing management. As with intravenous lines we also need to avoid using catheters except where essential and remove them as soon as possible.

Glycopeptide Resistant Enterococcus (GRE)

There have been no cases of GRE bacteraemia at RJAH Orthopaedic Hospital in surveillance period April 2014 – March 2015.

Norovirus

During March, there were two outbreaks of Norovirus within the Trust, resulting in one ward closure.

Several beds were kept vacant during this outbreak, as there was an inability to seal bays to enable cohorting of patients; therefore the entire wing had to be closed. One solution would be installing glass doors across each bay to enable cohorting of symptomatic patients.

CPE

Due to a National and International increase in the cases of hospital acquired Carbapenamase producing enterobacteriacae (CPE) an acute toolkit issued has been launched by Public Health England. This has been discussed at Trust board, and has been identified as a risk on the Trust's risk register.

The guidance provides a toolkit for the early detection, management and control of CPE, and highlights the requirements of rectal screening patients from abroad and intercity hospitals across the UK.

Incident description and consequences

A patient who sustained a spinal cord injury in India was transferred from Warrington to RJAH for rehabilitation. The patient was a known carrier of Carbapenamase-producing Enterobacteriaeae (CPE) and was isolated in a side room. Following three negative screens, the patient was brought out of isolation and nursed in a four-bedded bay under robust infection prevention and control precautions.

A second patient, who had no travel history, was transferred from University Hospital North Staffordshire, for rehabilitation. A rectal swab was not taken as the patient did not meet the criteria as per the CPE toolkit.

A routine weekly urine test on both patients isolated an Enterobacter species, which produced a Carbapenemase (CPE). These two specimens were referred to PHE Healthcare Associated Infections, Colindale, for identification. An incident meeting was convened with PHE, which reviewed the two cases, microbiological investigations, control measures and practices, in order to develop a hypothesis for the incident. The PHE confirmed that the two samples were identical strains.

Root causes

- > Potential cross infection from relatives
- > Potential cross infection from shower chairs
- > Potential error in ward labelling of specimens

As CPE is a new multi resistant gram negative bacterium that has arrived in the UK. The scale of the problem is unknown but is a serious problem across the globe. All levels of staff require training into what is CPE and the potential consequences for both the patients and the trust if there is an outbreak

The following measures have been implemented:



Surgical Site Surveillance

Total Hip Replacements

WWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW	Surgical Site Infection Surveillance Service						
Category	Hip replacement						
Data between	Jan-2014 and Dec-2014						
Hospital Robert Jones and Agnes Hunt Hospital [138]							
% oberations infected	2014 Q2 2014 Q3	2014 Q4					

For the year 2014 – 15, RJAH performed 1632 clean total hip replacements, with a 0.4% infection rate compared to the national average of 1% (of hospitals that do not complete post discharge surveillance)

			ALL SSI Inpatient & re-admissions								
Trend for the se	Trend for the selected period										
	No. operations	P ques No	atient tionnaire	nt Inpatient & naire readmissions		Post discharge confirmed		Patient reported		All SSI *	
Year and Period		Given	% complete	No.	%	No.	%	No.	%	No.	%
2014 Q1	391	0	0.0	2	0.5	0	0.0	0	0.0	2	0.5
2014 Q2	397	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2014 Q3	442	0	0.0	3	0.7	0	0.0	0	0.0	3	0.7
2014 Q4	402	0	0.0	1	0.2	1	0.2	0	0.0	2	0.5
*All SSI = Inpatient & readmission, post discharge confirmed and patient reported											

Total Knee Replacements



	No. operations	P ques No.	Patient questionnaire No.		Inpatient & readmissions		Post discharge confirmed		Patient reported		All SSI *	
Year and Period		Given	% complete	No.	%	No.	%	No.	%	No.	%	
2014 Q1	353	0	0.0	3	0.8	0	0.0	0	0.0	3	0.8	
2014 Q2	354	0	0.0	2	0.6	2	0.6	0	0.0	4	1.1	
2014 Q3	355	0	0.0	1	0.3	0	0.0	0	0.0	1	0.3	
2014 Q4	376	0	0.0	2	0.5	0	0.0	0	0.0	2	0.5	
"All SSI = Inpatient & readmission, post discharge confirmed and patient reported												

For the year 2014 – 15, RJAH performed 1438 clean total knee replacements, with a 0.7% infection rate compared to the national average of 1.1% (of hospitals that do not complete post discharge surveillance)

Spinal Surgery

Nublic Health England

Surgical Site Infection Surveillance Service

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Trend in rate of \$\$I Category Spinal surgery

 Data between
 Jan-2014 and Dec-2014

 Hospital
 Robert Jones and Agnes Hunt Hospital [138]



For the year 2014 – 15, RJAH performed 579 clean total hip replacements, with a 0.3% infection rate compared to the national average of 1.5% (of hospitals that do not complete post discharge surveillance)

*All SSI = Inpatient & readmission, post discharge confirmed and patient reported

Safer Sharps Initiative

The recent EU directive 2010/32/EU-The Safer Sharps Directive has been introduced to the Trust, with the initiation of a Safer Sharps Working Group. The purpose of this group is to review and evaluate when and where sharps are used across the Trust, and look at where sharps use is not actually required, and seek needle free alternatives.

The working group has been divided into key user groups in order to undertake a review of all sharps used throughout the Trust, and complete individualised risk assessments:



In 2014, a work plan was developed for the group including:

- Staff newsletter
- Promotional Poster
- Safer Sharps zones identified in theatre
- Survey to be completed on survey monkey
- Table top evaluation day



Audit

Infection Contol Nursing Association (ICNA)

The results of the above categories remain above 95%.



High Impact Interventions



The overall compliance of the High Impact Intervention audits, which include peripheral cannula, central/PICC lines, urinary catheters and cleaning and decontamination, remained above 98%. The HII – Prevention of Surgical Site Infection is now part of the audit programme.

Hand Hygiene



The overall compliance of 96.15 %, against a target of 95%, is a 1% increase in compliance against last year's figures, the number of audits completed has increased by just under 1000 over the year, which demonstrates that hand hygiene awareness is increasing across the Trust.

Staff Group	Compliance Score 2013/14	Compliance Score 2014/15
Nurse	98.73%	98.73%
Doctor	93.05%	91.79%
HCA	96.92%	98.04%
Other	87.19%	92.91%
Overall trust Compliance	95.25%	96.15%
Total Number of Hand Hygiene Audit Completed	3242	4231





Sub Groups

STAR

Infection Prevention and Control is one of the key standards of the Sustaining Quality through Assessment and Review (STAR) assessment programme, introduced in 2013. The STAR programme has raised the profie of infection prevention and control across the Trust, and improved accountability for IPC across wards and departments.



Tissue Viability

The Tissue Viability Link Group works very closely with the Infection Control Link Group, increasing knowledge sharing with regards to wound dressings, pressure ulcer prevention, and the SSKIN bundle.

Discussion points during 2014 – 15 included:

- Tissue Viability Conference
- Wound Assessment Charts
- > Sorbarderm and other Skin Protectants
- Leg Ulcers
- Convatec







Link Group

Topics of discussion in 2014-15



Cleanliness

Cleaning – Monitoring & Assurance

All staff recognise the importance of cleaning, none more so than the Trust's 58 dedicated housekeeping staff and our 2 deep cleaners. Housekeepers are assigned to their own Wards and Departments that they consistently service; they become part of that areas team taking ownership and pride in the cleanliness standard.





Understanding how the monitoring process works, the Housekeepers welcome the auditing team into their area, the team constantly confirm the high standard of cleanliness and catch those areas that need improving early on. The Trust consistently performs above the National Cleanliness target, set by our risk profile, of 86% cleanliness and even exceeds the internal Target of 94%. The chart below shows how the Trust has maintained a year average of **98.1%**





Patients, visitors and staff alike see the hard work being done by the Housekeepers, for assurance the Trust publicly displays, at the entrance of every Ward and Department, a signing off sheet to confirm when a room was last cleaned and how the cleaning was carried out. Also displayed on every Ward's STAR quality board is the cleanliness score the Ward achieved during the last month.

Deep Cleaning

The deep cleaning service is now provided by the Trust's own team. By training our own staff the department has been able to reinvest savings from the contract back into new equipment, including high pressure steaming technology. The team are now qualified to work at height, allowing a more encompassing level of service to be provided. By operating out of hours the work is completed more efficiently and without disruption to the patient and department



Cleaning – Patient Feedback

Our own audit feedback is backed up by patient feedback. The Trust PALS team have comment cards from over 3,200 patients. Responding to the question "Did you feel the Ward environment was clean?" 94.9% of patients said this was "always" the case and a further 4.6% felt it was "mostly" the case. All responses have been reviewed and where suggestions have been made, the request has been actioned.

Conclusion

The year 2014/15 was another successful period in maintaining low levels of healthcare acquired infection (HCAI), and meeting all the targets set by the Public Health England and the Clinical Commissioning Group at RJAH Orthopaedic Hospital NHS foundation Trust.

Lessons learned from the increase in incidence of CPE this year have been implemented, and should ensure best practice in the future, to prevent reoccurrence.

For 2014/15, RJAH strives to keep infection prevention and control high on the agenda at all levels of the Trust in order to continue to put our patients care first, the infection risk from CPE will prove to be a challenge for the Trust in the near future.

Jayne Downey Director of Infection Prevention and Control May 2015