UNIVERSITY HOSPITALS BIRMINGHAM NHS FOUNDATION TRUST
COUNCIL OF GOVERNORS
TUESDAY 20 MAY 2014

Title:	**QUARTERLY REPORT ON INFECTION PREVENTION AND CONTROL UP TO 31 MARCH 2014**
Responsible Director:	Philip Norman, Executive Chief Nurse and Executive Director for Infection Prevention and Control
Contact:	Dr Beryl Oppenheim, Director of Infection Prevention and Control Ext 16523

Purpose:	To provide the Council of Governors with information relating to infection prevention and control issues (including the reportable cases of MRSA bacteraemia, MSSA bacteraemia and episodes of *Clostridium difficile* infection) up to 31 March 2014.
Confidentiality Level & Reason:	None
Annual Plan Ref:	Strategic Aim 4 : Quality of Services
Key Issues Summary:	This paper sets out the position for the 2013/14 MRSA bacteraemia and *Clostridium difficile* infection trajectories and provides incidence of MSSA and *E. coli* bacteraemia within the Trust and supporting actions to ensure continued improved performance.
Recommendations:	The Council of Governors is asked to receive this report on infection prevention and control progress.

Approved by:	Philip Norman	**Date:** 9 May 2014

UNIVERSITY HOSPITALS BIRMINGHAM NHS FOUNDATION TRUST

COUNCIL OF GOVERNORS
TUESDAY 20 MAY 2014

QUARTERLY REPORT ON INFECTION PREVENTION AND CONTROL UP TO 31 MARCH 2014

PRESENTED BY THE EXECUTIVE CHIEF NURSE

1. Introduction

This paper provides a report on performance against the 2013/14 objectives for meticillin-resistant *Staphylococcus aureus* (MRSA) bacteraemia and *Clostridium difficile* infection (CDI), up to 31 March 2014. It provides an update on performance for meticillin-sensitive *Staphylococcus aureus* (MSSA) bacteraemia and outlines reporting requirements for *Escherichia coli* (*E. coli*) bacteraemia while identifying related infection prevention and control actions.

2. Executive Summary

The annual objective for MRSA bacteraemia is 0 avoidable cases. During March 2014 there was one Trust assigned unavoidable MRSA bacteraemia. For the financial year 2013/14 we have therefore had 5 Trust apportioned cases of MRSA bacteraemia, of which one was assigned as unavoidable and will not count towards any penalties.

The annual objective for CDI for 2013/14 is 56 cases. Performance for March was 5 Trust apportioned post 48 hour cases, all of which were reportable to Public Health England (PHE) in accordance with Department of Health guidance. For the financial year 2013/14 we therefore had 80 post 48 hour cases of CDI. However with agreement from commissioners all cases have been reviewed against avoidability criteria, those deemed unavoidable being excluded from consideration of local penalties. Of the 80 Trust apportioned cases, 64(80%) were considered unavoidable through this process. 16 cases were therefore deemed to be avoidable.

All incidences of MSSA and *E. coli* bacteraemia continue to be reported in line with the HPA mandatory reporting requirements.

3. Incidents of MRSA Bacteraemia

3.1 MRSA bacteraemias 2013/14

There was one case of Trust apportioned MRSA bacteraemia during March however this was deemed unavoidable on review with commissioners, Figure 1 shows the number of Trust apportioned cases of

MRSA against the monthly trajectory (April 2011 – March 2014). Monthly incidence of MRSA bacteraemias to end March 2014 is shown in Table 1.

Figure 1: Number of Trust apportioned MRSA cases at UHBFT against the monthly trajectory (April 2011-March 2014)

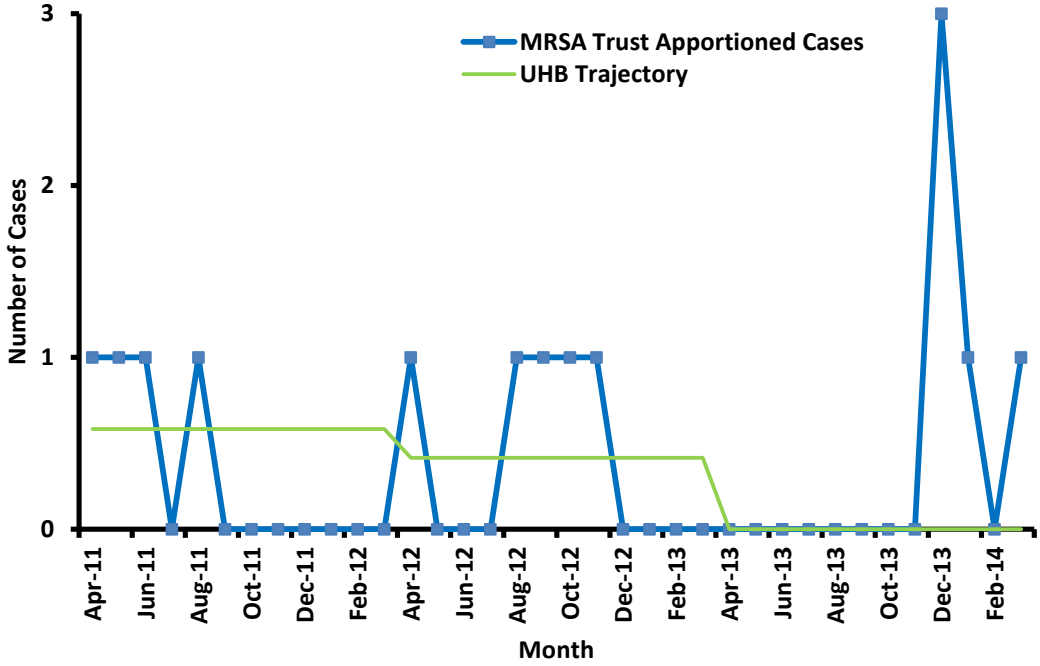


Table 1: Monthly number of MRSA bacteraemias at UHBFT up to 31 March 2014

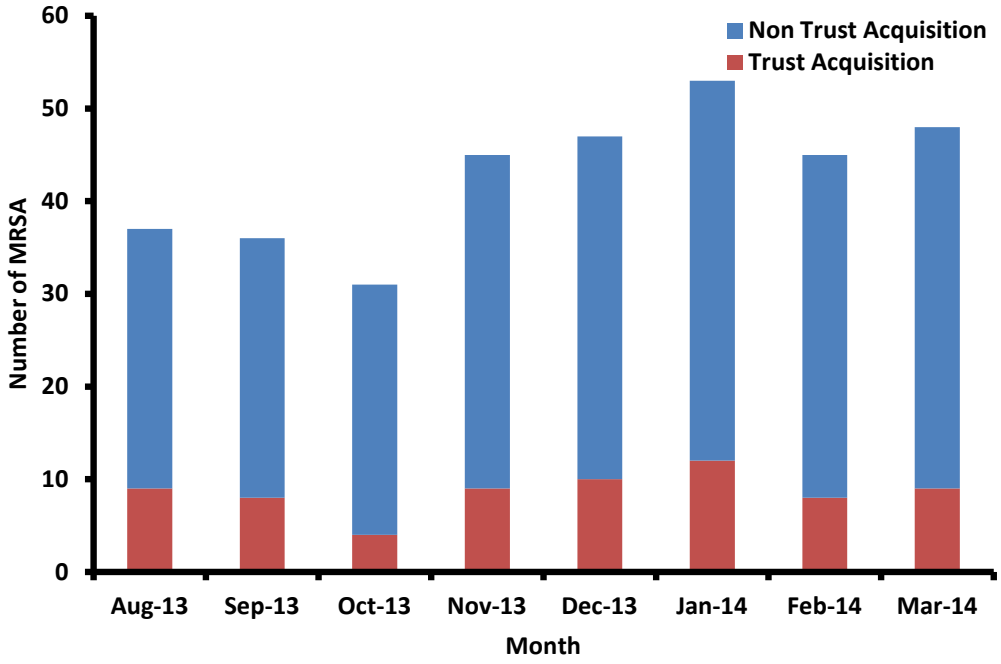
Month	Total bacteraemia	Time of bacteraemia acquisition?	
		Non Trust apportioned	Trust apportioned
April 2013	1	1	0
May 2013	0	0	0
June 2013	0	0	0
July 2013	0	0	0
August 2013	0	0	0
September 2013	0	0	0
October 2013	0	0	0
November 2013	0	0	0
December 2013	3	0	3
January 2014	1	0	1
February 2014	0	0	0
March 2014	1	0	1 (unavoidable)
Total	**6**	**1**	**5 (1 unavoidable 4 avoidable)**

Note: Objective for the financial year 2013/14 is zero avoidable cases.

3.2 MRSA acquisitions

MRSA bacteraemias are frequently associated with new MRSA acquisitions during inpatient episodes. Figure 2 shows the number of Non Trust and Trust acquired MRSAs from November 2013.

Figure 2: Number of Non Trust and Trust Acquisitions of MRSA (August 13 – current)



Note: A Non Trust acquisition refers to a patient's first MRSA isolate (new MRSA infection or colonisation) on admission to the Trust. A Trust acquisition refers to a patient previously identified as MRSA negative however has had a newly identified MRSA positive isolate (new MRSA infection or colonisation) during an inpatient episode.

3.3 Actions to improve performance for MRSA bacteraemia

The process for assignation and review of MRSA bacteraemias in 2014/15 will be the same as in 2013/14. Issues to be addressed as part of the learning from the recent cases include:

- Improving the clinical management and documentation of all invasive devices including central and peripheral cannulae, urinary catheters, nephrostomies and stents in accordance with Trust policies and procedures.
- Ensuring that all relevant staff are aware of patients' MRSA status and what the implications are.
- Ensuring the optimal management of all patients with MRSA colonisation and infection, including decolonisation treatment, prophylaxis during procedures, and treatment of infections.

4. Episodes of *C. difficile* Infection (CDI)

4.1 Current Figures

The annual CDI objective for 2013/14 was 56 cases. Performance for March 2014 was 7 reportable cases of which 5 were post 48 hours and attributable to the Trust. For the financial year 2013/14 we therefore had 80 post 48 hour cases of CDI. However with agreement from commissioners all cases have been reviewed against avoidability criteria, those deemed unavoidable being excluded from consideration of local penalties. Of the 80 Trust apportioned cases, 64 (80%) were considered unavoidable through this process, with 16 being considered avoidable.
For 2014/15 a similar system to this will be used to monitor CDI performance in England. We plan to analyse our own results for the year and refine our review tool for this current financial year.
Figure 3 shows the number of Trust apportioned cases of CDI against the monthly trajectory (April 2011 – current). Monthly incidence of CDI to date is shown in Table 2.

Figure 3: Number of Trust apportioned cases of CDI at UHBFT against the monthly trajectory (April 2011-current).

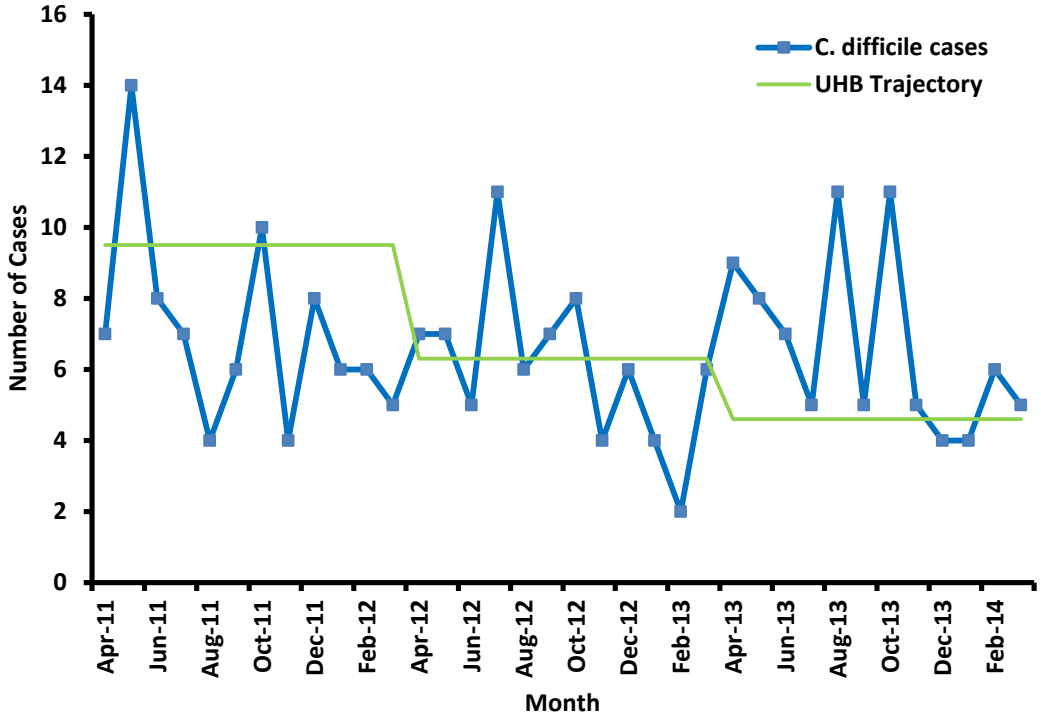


Table 2: Monthly number of CDI cases at UHBFT up to 31 March 2014

Month	Total number of CDI	Objective (Trust apportioned) Monthly/ annual)	Time of CDI acquisition		Commissioners reviewed unavoidable cases	Commissioners reviewed avoidable cases
			Pre	Post 48 hours (Trust apportioned)		
April 2013	10	4.6	1	9	7	2
May 2013	12	4.6	4	8	6	2
June 2013	9	4.6	2	7	6	1
July 2013	8	4.6	3	5	5	0
August 2013	18	4.6	7	11	7	4
September 2013	6	4.6	1	5	5	0
October 2013	16	4.6	5	11	9	2
November 2013	7	4.6	2	5	3	2
December 2013	10	4.6	6	4	3	1
January 2014	7	4.6	3	4	4	0
February 2014	14	4.6	8	6	5	1
March 2014	7	4.6	2	5	4	1
Total	**124**	**56 (56)**	**44**	**80**	**64**	**16**

Note: Following the introduction of a new review tool with local commissioners, unavoidable cases will be discounted for the purposes of locally agreed penalties. The final two columns of the above table provide details of the commissioners reviewed figures for all Trust apportioned cases of CDI.

4.2 Actions to improve performance for CDI 2013/14

We now need to carefully review lessons learnt from our review process to improve performance in future years. Particular immediate actions to focus on include:

- Reinvigorating the antimicrobial stewardship programme which includes: ensuring that antibiotic prescribing is in line with Trust guidelines; mandating the requirement for a written indication for every antibiotic prescription; and ensuring and documenting an early review of the continuing appropriateness of each prescription.
- Ensuring that systems are in place to minimise any chances of transmission of infection either from cases or carriers of CDI.
- Continuation of the rapid reviews by the Infection Prevention & Control team of any area reporting two or more cases of CDI.

4.3 Facilities Update

- The environmental monitoring of clinical areas through the monitoring audits continues to exceed the 95% compliance requirements.
- The department has supported the deep cleaning and reopening of one ward affected by Norovirus at the end of March.
- Back to the floor visits are being planned for the next three months with the facilities management teams.

5. Other Alert Organisms

5.1 Multiple resistant gram negative bacteria

There were no cases of carbapenemase producing Enterobacteriaceae, *Pseudomonas aeruginosa* or multi drug resistant *Acinetobacter* reported in March.

5.2 Meticillin-sensitive *Staphylococcus aureus* (MSSA) bacteraemia

Reporting of MSSA bacteraemia has been mandatory since 1 March 2011. Performance for March 2014 is 8 cases, 5 of which were Trust apportioned.

5.3 *E. coli* bacteraemia

From 1 March 2011, reporting of *E. coli* bacteraemia has been mandatory. *E. coli* is part of the normal bacterial flora carried by all individuals. It is the commonest cause of clinically significant bloodstream infection. *E. coli* bacteraemia represents a heterogeneous group of infections. Performance for March 2014 is 3 Trust apportioned and 19 non-Trust apportioned cases.

6. Outbreaks of Diarrhoea and Vomiting

There was one ward (Harborne) closed for an outbreak of diarrhoea and/or vomiting in March 2014. This was confirmed as being due to norovirus infection.

7. Serious Incidents Requiring Investigation (SIRI) related to Infection Prevention & Control

All MRSA bacteraemia, and CDI cases that result in death (Part 1 of the death certificate) or surgery, are reported as Serious Incidents Requiring Investigation (SIRIs). Those deaths on Part 2 of the certificate are of patients considered to have died *with* MRSA or CDI rather than *of* it. There have been no MRSA deaths reported on Part 1 or 2 of the death certificate for March 2014. However there has been one CDI death reported on Part 2 of the death certificate for March 2014.

8. Recommendations

The Council of Governors is asked to receive this report on infection prevention and control progress.

Mr Philip Norman
Executive Chief Nurse and Executive Director for
Infection Prevention and Control

9 May 2014

Appendix

Infection Prevention and Control Report

Explanation of the terms used in the report

Meticillin Resistant *Staphylococcus Aureus* (MRSA) – sometimes referred to as a 'superbug'

Staphylococcus aureus (also known as staph) is a common type of bacterium (bacteria or germ). It is often carried on the skin and inside the nostrils and throat, and can cause mild infections of the skin such as boils as well as much more serious infections.

MRSA is a form of *Staph aureus* which is resistant to many of the commonly used antibiotics. It is extremely rare for healthy people to carry this bug but it is found in around 1-2% of the population in the United Kingdom. Individuals who have MRSA on their skin and in their nose are described as being 'colonised', which does not usually cause harm to people who are healthy.

MRSA can cause infections such as blood stream infections and wound infections, particularly if there is an opportunity for the bacteria to enter the body such as a result of surgery (operation) or catheters (tubes or lines) going into veins. The transmission and risk of MRSA infection, including MRSA blood stream infection, can be addressed effectively if measures are taken to identify MRSA carriers as potential sources, then they are treated (with antibiotic body wash) to reduce the risk of transmission (referred to as decolonisation).

This requires screening of patient populations for MRSA carriage, either before or on admission to hospital, to identify carriers and implement a decolonisation regimen.

***Clostridium Difficile* Infection (CDI)**

Clostridium difficile is a bacterium present in the large bowel of approximately 10% of healthy individuals. It usually causes no problems. However, antibiotics given to treat other infections can suppress the "normal" bacteria in the bowel, leaving the *Clostridium difficile* bacteria to overgrow.

This overgrowth can lead to the production of toxins (poisons), which have an irritant effect on the gut (bowel), causing inflammation of the bowel. Patients can exhibit no symptoms at all, but commonly they have watery diarrhoea, abdominal (tummy) pain and sometimes fever, especially in the elderly and in people who are immunosuppressed (where the immune system is less effective in fighting diseases, for example in individuals who have cancer).

There is also the possibility of person-to-person spread. To prevent such spread, hand washing with soap and water is key, along with isolating the patient to prevent further spread (individual is cared for in single room which is referred to as 'source isolation'), appropriate antibiotic prescribing (used only when necessary) and for the shortest period that is appropriate and cleaning of the environment to remove *Clostridium difficile*

spores (an especially tough form of the bacteria) which may persist in the environment.

Meticillin Sensitive *Staphylococcus Aureus* (MSSA)
MSSA is the term used for the more antibiotic sensitive form of *Staph aureus* and is a common type of bacterium that can live harmlessly on the skin. Around 30 % of people carry *Staph aureus* in their nose or on their skin, causing them no harm. MSSA is not normally a risk to healthy people and the majority of people who carry it do not have symptoms and are not aware they are carrying it. People who have MSSA in their nose or on their skin are said to be 'colonised'.

Sometimes MSSA can cause wound infections including after surgery, abscesses or boils, which may take a long time to heal and can sometimes lead to blood poisoning.

Escherichia coli or *E. coli* infection
E. coli is the name of a germ, or bacterium that is present in the bowel of humans and animals.

There are many types of *E. coli*, and most of them are harmless. But similar to Clostridium Difficile Infection, some can cause problems and symptoms can include bloody diarrhoea. *E. coli* can also be a common cause of urinary and abdominal (tummy) infections including in patients in hospital and some of these cases can also lead to blood stream infections.

Carbapenemase producing Enterobacteriaceae (CPE)
Enterobacteriaceae are a family of bacteria that live in the gastro-intestinal tract (bowel and stomach) of humans and animals. They include bacteria such as *E coli* and Klebsiella. These bacteria are a common cause of infections such as urinary infections, abdominal (tummy) infections and blood stream infections.

A major threat to our being able to treat these infections has been the development in these bacteria of mechanisms to evade the action of antibiotics (bacteria becomes resistant to antibiotics).

Carbapenems are a very important class of antibiotics used to treat the most serious of infections, so bacteria with the ability to evade these groups are a particular threat to all aspects of modern medicine such as surgery, intensive care and organ transplantation.