Public Health England

Commentary on annual data on MRSA, MSSA and *E. coli* bacteraemia and *Clostridium difficile* infection (April 2014 to September 2014) from Independent Sector Healthcare Organisations in England (Experimental Statistics)

April 8th 2015

1. Summary

This is the tenth publication of healthcare associated infection (HCAI) surveillance data on meticillin-resistant *Staphylococcus aureus* (MRSA) bacteraemia and *Clostridium difficile* infection (CDI) from Independent Sector (IS) healthcare organisations. This also includes the seventh publication of data on meticillin-sensitive *Staphylococcus aureus* (MSSA) bacteraemia, and the sixth publication of data on *Escherichia coli* bacteraemia.

A total of 7 cases of MRSA bacteraemia, 10 cases of MSSA bacteraemia, 68 cases of *E. coli* bacteraemia and 30 cases of CDI were reported for April 2014 to September 2014. These figures include all cases reported by the Independent Sector and do not take into account whether or not the infection was thought to be associated with the Independent Sector organisation or not. This document summarises the data and discusses key caveats. In addition the summary of key differences between the NHS and IS should be considered (Table 1).

Table 1. Summary of key differences between the NHS and IS

Independent Sector Organisations	NHS acute Trusts
Data are not "apportioned" into cases thought to have been associated with the particular IS hospital admission.	Data are categorized into "Trust apportioned" and "non Trust apportioned" cases. "Trust apportioned" cases are those thought to have been associated with a given NHS Trust during a given hospital admission.
Primarily elective patient-mix	Broad patient-mix including emergency based treatments
Constantly changing facility list	Mainly static list of providers
Large number of specialist facilities	Mainly general acute facilities
Organisations may comprise geographically diverse hospitals	Mainly local clusters of hospitals
Not all organisations/hospitals capable of reporting using the web-enabled DCS preventing capture of patient level data	All NHS Trusts capable of reporting using the web-enabled DCS
Rates calculated using bed-days plus discharges due to the high proportion of day cases compared to the NHS	Rates calculated using bed-days (occupied beds at midnight)
Cases amongst renal patients are excluded, pending a forthcoming publication	Cases amongst renal patients are not excluded

2. Introduction

Today sees the latest in a series of publications of HCAI surveillance data on MRSA, MSSA and *E. coli* bacteraemia and CDI reported by IS healthcare organisations to Public Health England. IS healthcare organisations providing regulated activities[1] undertake surveillance on HCAIs and report to Public Health England (PHE) as specified in the Code of Practice[2].

Patient level data is provided to PHE via the secure Data Capture System (DCS). In addition manual returns (email notifications) are submitted to PHE by those organisations not able to access the DCS[3]. Data for this publication was extracted on 11th March 2015.

3. Presentation of data

- Counts of MRSA, MSSA, and *E. coli* bacteraemia and CDI are presented by IS organisation[4] for the six month period April 2014-September 2014.

[1] see: http://www.legislation.gov.uk/uksi/2010/781/contents/made

[2] The Health and Social Care Act 2008 (2010). Code of Practice on the prevention and control of infections and related guidance. Department of Health. Gateway Reference: 14808

[3] Please contact independentsector@phe.gov.uk for further information.

[4] An IS organisation can comprise a group of hospitals owned by one company or a single hospital. It is possible to identify a group versus a hospital using the "number of hospitals in organisation" field.

- The modified IS denominator (bed-days plus discharges) is provided for the most recent financial year available (April 2013-March 2014) as an indication of the size of each facility. This cannot be used to calculate a rate as the numerator and denominator are for different time periods.

- The hospital type (large hospital, small hospital[5], NHS treatment centre, diagnostic centre seeing mainly day case patients and women's health) is listed for the hospital(s) within a group; this indicates the type of service(s) provided[6]. This is correct as at 30 September 2014 as supplied to PHE.

- The number of hospitals within an organisation is provided. This is correct as at 30 September 2014 and as supplied to PHE.

The data tables only include data from those IS organisations which have reported at least once (either submitted a case(s) or have signed off their data as correct) for the reporting period (April 2014 to September 2014). Not all IS organisations included in the data tables have been reporting for the entire period and data is provided for hospitals which may have opened or closed during the reporting period (Appendix 1). The publication is therefore not a comprehensive list of IS organisations. Cases amongst renal patients have been excluded pending a separate publication.

4. Duplicate reporting between the IS and NHS

Data entered onto the DCS by the NHS and IS are collected in two parallel systems. Please contact PHE for information on the de-duplication process.

5. Interpreting the data

5.1 What the data shows

- Table 1. Counts of MRSA bacteraemia by Independent Sector Healthcare Organisation; April 2014 to September 2014.

- Table 2. Counts of *Clostridium difficile* infection by Independent Sector Healthcare Organisation; April 2014 to September 2014.

- Table 3. Counts of MSSA bacteraemia by Independent Sector Healthcare Organisation; April 2014 to September 2014.

- Table 4. Counts of *E. coli* bacteraemia by Independent Sector Healthcare Organisation; April 2014 to September 2014.

[5] Large hospital: >=50 beds, small hospital: <50 beds

[6] Where a group comprises more than one hospital type, all types are listed

5.2 What the data do not provide

- The data do not provide a basis for comparisons between different IS organisations due to their variable size and range of patients seen.
- The data do not provide a basis for reliable comparison of data on MRSA, MSSA or *E. coli* bacteraemia and CDI between the IS and NHS

A full discussion of these issues is presented elsewhere[7].

6. Specific Data Caveats

Below is a list of specific caveats to be considered in relation to the published data:

Data quality

- Not all IS organisations have signed off their data or submitted data for the reporting period therefore we cannot be certain that data presented for these organisations is accurate. IS organisations that have incomplete data for the time period are indicated in the data tables with a blue highlight.

Duplicate entries

- Data have only been de-duplicated against the NHS dataset for cases reported via the DCS. It is possible that cases reported via report forms also represent duplicate reports with the NHS. Additionally, NHS number, which is one of the variables used to de-duplicate records, is not always known for patients treated in the IS so potential duplicate records entered onto the DCS may not be identified.

Organisational Changes

- Some IS organisations included in the data tables may have not been open for the entire reporting period, whilst others may have closed over this time. This may reduce the count of MRSA, MSSA and *E. coli* bacteraemia and CDI in such IS organisations compared to those which have been open for the whole period. However they will also reduce the denominator information provided so any rate calculated still has validity over the shorter period. Such organisations are listed in Appendix 1.
- Some IS organisations who previously had access to the DCS have not been able to access the online system to enter cases and sign off data. Where PHE is aware of this problem such organisations are offered email notification as an alternative form of reporting.

[7] Please contact independentsector@phe.gov.uk for further information.

7. Summary of the Data

- Data was extracted on 11 March 2015.
- 25 organisations have reported at least once for the time period, 12 of which are groups of more than one hospital and the remaining 13 single hospitals.

MRSA bacteraemia (Table 1)

- A total of 7 MRSA bacteraemia cases were reported from April 2014 to September 2014 by the following organisations: Glenside Hospital for Neuro Rehabilitation [1 case]; HCA International [6 cases]
- All cases were reported via report form.

CDI (Table 2)

- A total of 30 CDI cases were reported from April 2014 to September 2014 by the following organisations: BMI Healthcare (GHG) [2 cases]; HCA International [17 cases]; Nuffield Health [3 cases]; Royal Hospital for Neuro-disability [1 case]; Spire Healthcare [3 cases]; The London Clinic [4 cases].
- 26 cases were reported via report form.

MSSA bacteraemia (Table 3)

- A total of 10 MSSA bacteraemia cases were reported from April 2014 to September 2014 by the following organisations: BMI Healthcare (GHG) [1 case]; HCA International [1 case]; Nuffield Health [2 cases]; Ramsay Health Care UK [2 cases]; Spire Healthcare [2 cases]; The London Clinic [2 cases].
- 6 cases were reported via report form.

***E. coli* bacteraemia (Table 4)**

- A total of 68 *E. coli* bacteraemia cases were reported from April 2014 to September 2014 by the following organisations: Aspen Healthcare [1 case]; BMI Healthcare (GHG) [1 case]; BUPA Cromwell [7 cases]; HCA International [28 cases]; King Edward VII Sister Agnes [1 case]; Nuffield Health [11 cases]; Spire Healthcare [6 cases]; The Hospital of St John and St Elizabeth [2 cases]; The London Clinic [11 cases].
- 52 cases were reported via report form.

APPENDIX 1 List of IS hospitals which opened, closed, changed ownership or ceased reporting during the reporting period (April 2014 to September 2014)[8].

The Kent Institute of Medicine and Surgery (KIMS) opened in April 2014

Serco Ltd transferred their prison-related healthcare services to other providers during August and September 2014

[8] Correct as at 31st September 2014 and as supplied to PHE