Public Health England

Protecting and improving the nation's health

Commentary on Annual Data on MRSA, MSSA, *E. coli* Bacteraemia and *Clostridium difficile* Infection from Independent Sector Healthcare Organisations in England: April 2015 to September 2015

Experimental statistics

5 April 2016

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. It does this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. PHE is an operationally autonomous executive agency of the Department of Health.

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Contents

Summary

This is the 12th 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 ninth publication of data on meticillin-sensitive *Staphylococcus aureus* (MSSA) bacteraemia, and the eighth publication of data on *Escherichia coli* bacteraemia.

A total of 6 cases of MRSA bacteraemia, 12 cases of MSSA bacteraemia, 66 cases of *E. coli* bacteraemia and 50 cases of CDI were reported for April 2015 to September 2015. These figures include all cases reported by the IS 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 is not “apportioned” into cases thought to have been associated with the particular IS hospital admission	Data are categorised 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 Data Capture System (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 among renal patients are excluded, pending a forthcoming publication	Cases among renal patients are not excluded

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 PHE. IS healthcare organisations providing regulated activities[1] undertake surveillance on HCAIs and report to 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 7 March 2016.

Presentation of data

- counts of MRSA, MSSA, and *E. coli* bacteraemia and CDI are presented by IS organisation[4] for the six month period from April 2015 to September 2015
- the modified IS denominator (bed-days plus discharges) is provided for the most recent financial year available (April 2014 to March 2015) as an indication of the size of each facility
- denominator data should not be used to calculate rates as insufficient data may lead to imprecise estimates
- 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 2015 as supplied to PHE
- the number of hospitals within an organisation is provided. This is correct as at 30 September 2015 and as supplied to PHE

The data tables only include data from those IS organisations that have reported at least once (either submitted a case(s) or have signed off their data as correct) for the reporting period (April 2015 to September 2015). Not all IS organisations included in the

[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] The reasons behind this are discussed in Commentary on Reporting of *C. difficile* infections and MRSA bacteraemia from the Independent Sector, published 2009.
[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.
[5] Large hospital: ≥50 beds, small hospital: <50 beds
[6] Where a group comprises more than one hospital type, all types are listed

data tables have been reporting for the entire period and data is provided for hospitals that may have opened or closed during the reporting period (Appendix 1). The publication is therefore not a comprehensive list of IS organisations. Cases among renal patients have been excluded pending a separate publication.

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.

Interpreting the data

What the data shows

- Table 1. Counts of MRSA bacteraemia by independent sector healthcare organisation; April 2015 to September 2015
- Table 2. Counts of *Clostridium difficile* infection by independent sector healthcare organisation; April 2015 to September 2015
- Table 3. Counts of MSSA bacteraemia by independent sector healthcare organisation; April 2015 to September 2015
- Table 4. Counts of *E. coli* bacteraemia by independent sector healthcare organisation; April 2015 to September 2015

What the data does not provide

- the data does not provide a basis for comparisons between different IS organisations due to their variable size and range of patients seen
- the data does 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].

[7] The reasons behind this are discussed in Commentary on Reporting of *C. difficile* infections and MRSA bacteraemia from the independent sector, published 2009.

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 has 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, while 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 that 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 that 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

Summary of the data

- data was extracted on 7 March 2016
- 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 6 MRSA bacteraemia cases were reported from April 2015 to September 2015 by the following organisations: BUPA Cromwell Hospital [3 cases]; HCA International [2 cases]; Glenside Hospital for Neuro Rehabilitation [1 case].
- all cases were reported via report form

CDI (Table 2)

- a total of 50 CDI cases were reported from April 2015 to September 2015 by the following organisations: BMI Healthcare (GHG) [10 cases]; BUPA Cromwell Hospital [4 cases]; HCA International [21 cases]; Nuffield Health [2 cases]; Spire Healthcare [7 cases]; Aspen Healthcare [1 case]; The London Clinic [2 cases]; The Hospital of St John & St Elizabeth [1 case]; Royal Hospital for Neuro-disability [2 cases]
- 48 cases were reported via report form

MSSA bacteraemia (Table 3)

- a total of 12 MSSA bacteraemia cases were reported from April 2015 to September 2015 by the following organisations: BMI Healthcare (GHG) [1 case]; BUPA Cromwell Hospital [4 cases]; HCA International [5 cases]; Spire Healthcare [1 case]; The London Clinic [1 case]
- All cases were reported via report form

E.coli bacteraemia (Table 4)

- a total of 66 *E. coli* bacteraemia cases were reported from April 2015 to September 2015 by the following organisations: BMI Healthcare (GHG) [10 cases]; BUPA Cromwell Hospital [6 cases]; HCA International [26 cases]; Nuffield Health [5 cases]; Ramsay Health Care UK [1 case]; Spire Healthcare [1 case]; Aspen Healthcare [2

cases]; King Edward VII Sister Agnes [1 case]; The London Clinic [13 cases]; The Hospital of St John & St Elizabeth [1 case]

- 60 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 2015 to September 2015)[8]

- HCA Harley Street at UCH and Harley Street at Queens started reporting August 2015
- HCA Leaders in Oncology Care (LOC) opened in September 2015

[8] Correct as at 30 September 2015 and as supplied to PHE