



Public Health
England

Protecting and improving the nation's health

***Staphylococcus aureus* (MRSA and MSSA) bacteraemia: mandatory surveillance 2017/18**

Summary of the Mandatory Surveillance
Annual Epidemiological Commentary
2017/18

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-leading science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health and Social Care, and a distinct delivery organisation with operational autonomy. We provide government, local government, the NHS, Parliament, industry and the public with evidence-based professional, scientific and delivery expertise and support.

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Summary

Meticillin-resistant (MRSA) and Meticillin-sensitive (MSSA) data has been published (12 July 2018) as part of the Department of Health and Social Care's mandatory surveillance programme for healthcare-associated infection. [1]

Newly published data includes:

- annual (April 2017 to March 2018) counts and rates of MRSA bacteraemia by acute trust and clinical commissioning group (CCG)
- annual (April 2017 to March 2018) counts and rates of MSSA bacteraemia by acute trust and clinical commissioning group (CCG)

Summary points on *S. aureus* bacteraemia

A total of 12,784 *Staphylococcus aureus* bacteraemia cases were reported to PHE in 2017/18 through both the meticillin resistant *S. aureus* (MRSA) bacteraemia and meticillin-susceptible *S. aureus* (MSSA) bacteraemia surveillance schemes. This represents a 3.7% increase in the numbers of bacteraemias caused by *S. aureus* from 2016/17 (n = 12,324) and a 29.4% increase from 2011/12 (n = 9,883) when MSSA reporting was made mandatory.

In 2017/18, 6.6% (n = 846) of *S. aureus* bacteraemia reports were caused by MRSA. This is a 41.4% decrease from 2011/12, in which 11.3% (n = 1,116) of reports were caused by MRSA and a 1.1% decrease from 2016/17 in which 6.7% (n = 825) of reports were caused by MRSA. At its peak MRSA bacteraemias accounted for approximately 40% of all *S. aureus* bacteraemia cases in England.[2]

Summary points on MRSA bacteraemia

Total reports

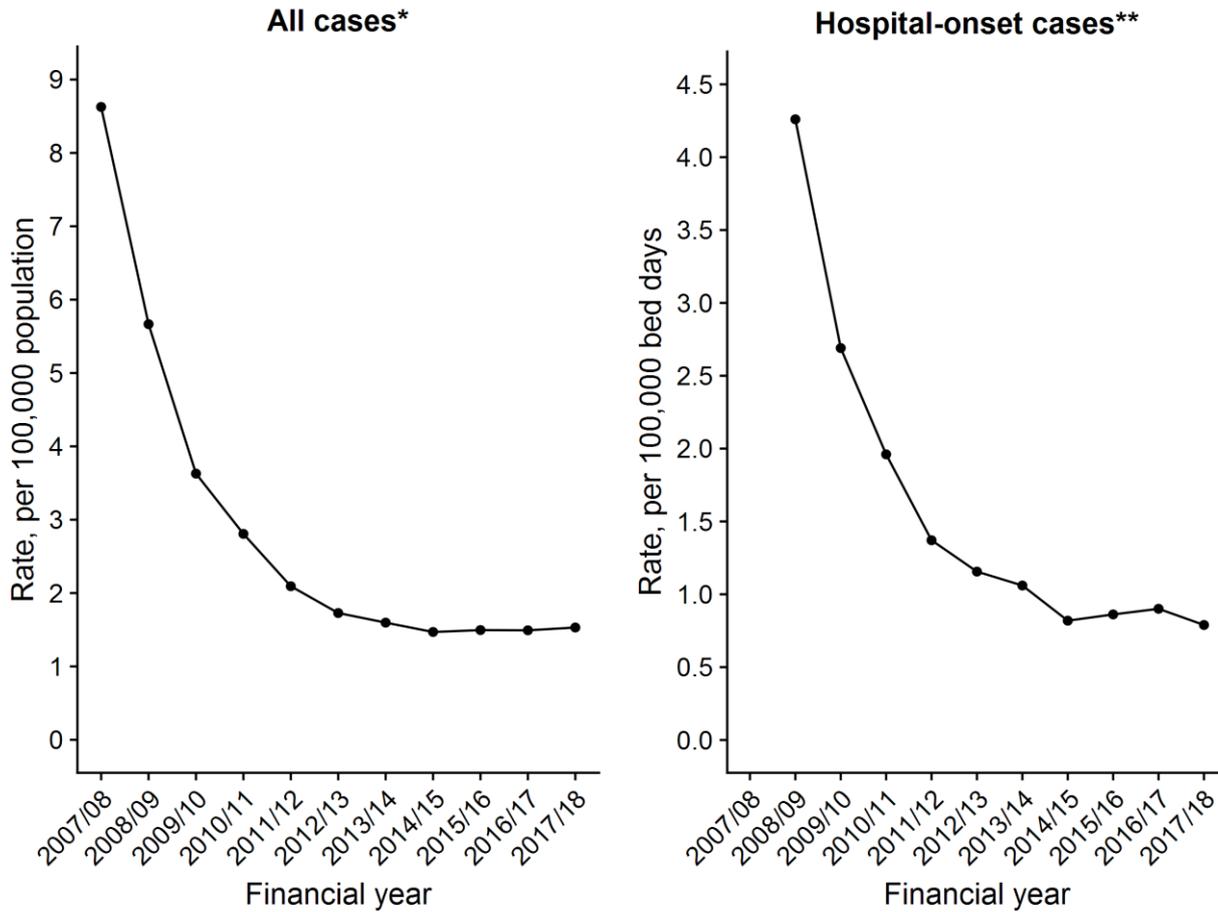
A total of 846 cases of MRSA bacteraemia were reported by acute NHS Trusts in England between 1 April 2017 and 31 March 2018. This is an increase of 2.5% from 2016/17 (n = 825), and a decrease of 81% from 2007/08 (n = 4,451). Figure 1 shows the trends in rates of MRSA cases for all cases and hospital-onset cases from 2007/08 to 2017/18. The rate of all MRSA cases per 100,000 population, per year has fallen from 8.6 in 2007/08 to 1.5 in 2017/18.

Trust-assigned reports

Between 1 April 2013 and 31 March 2018, MRSA bacteraemia cases were reported by the outcome of the Post Infection Review (PIR) assignment process. Between 1 April 2013 and 31 March 2014, the PIR process separated cases into those that were trust-assigned and those that were CCG-assigned. From 1 April 2014, an additional category was added to the PIR process to take into account the complex nature of the MRSA bacteraemias being reported. This created the 'Third Party' assignment group. Prior to the introduction of the PIR process, cases were reported according to groups in the apportioning algorithm, categorising cases by their time to onset in relation to patient on the date of admission, patient location and the date of the specimen. Since only four years of PIR data are available, of which the first year's categorisation differed to the most recent three, this report will also present cases grouped according to the old apportioning algorithm.

The PIR data show a consistent decline in the rates of CCG-assigned cases from 0.8 cases per 100,000 population in 2013/14 to 0.4 cases per 100,000 population in 2017/18. In contrast, rates of trust-assigned MRSA bacteraemias fell from 1.2 cases per 100,000 bed days in 2013/14 to 0.9 in 2014/15, after which trust-assigned rates remained steady at 0.8 in 2017/18. The rate of Third Party assigned cases has increased from 0.2 per 100,000 population to 0.6 per 100,000 population. Some of the decline in rates of CCG-assigned cases and trust-assigned cases will be due to the introduction of Third Party assignment, which resulted in some cases that would have been otherwise assigned to either an acute Trust or CCG, being assigned to the new category

Figure 1: Trends in the rate of MRSA bacteraemia in England



* * Mid-year population estimates for 2017/18 were not available at time of publication and so population data for 2016/17 were used as a proxy.

** Bed day data were not available for quarter 4 of FY 2016/17 (January to March, 2016/17). As a result, the 2016/17 bed day data is an aggregate of quarters 1, 2 and 3 of 2016/17 and quarter 4 of 2015/16.

Summary points on MSSA bacteraemia

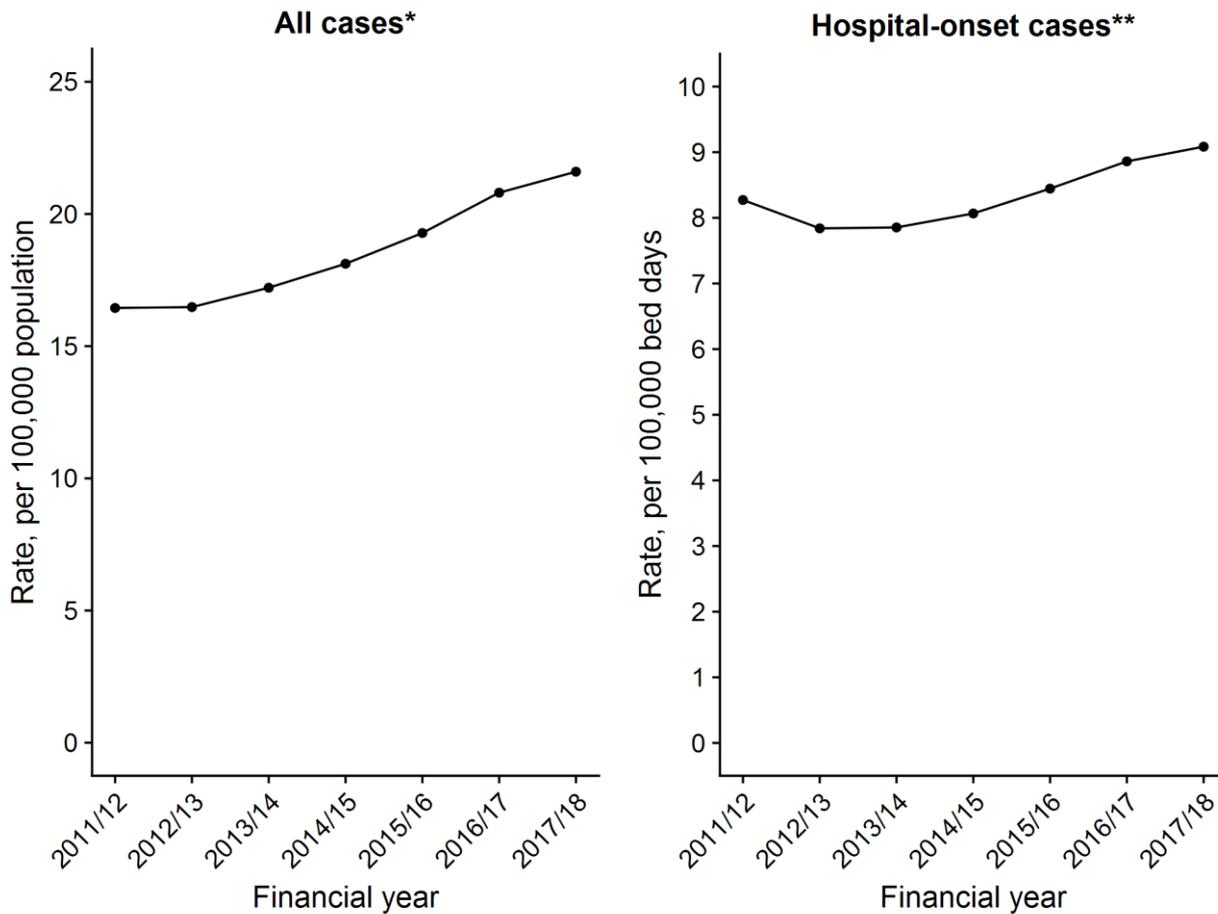
Total reports

A total of 11,938 cases of MSSA bacteraemia were reported by NHS acute Trusts in England between 1 April 2016 and 31 March 2018. This is an increase of 3.8% from 2016/17 (n = 11,499), and an increase of 36.2% from 2011/12 (n = 8,767). Figure 6 shows the trends in rates of MSSA cases for all cases and hospital-onset cases from 2011/12 to 2017/18. The rate of all MSSA cases per 100,000 population, per year has risen from 16.4 in 2011/12 to 21.6 in 2017/18.

Hospital-onset reports

Of the 11,938 total cases reported in FY 2017/18, 3,153 were hospital-onset (9.1 per 100,000 bed days). Similar to the all-MSSA case rate, the incidence rate for hospital-onset MSSA cases has increased steadily (from 7.8 in 2012/13 to 9.1 in 2017/18, a change of 15.9%).

Figure 2: Trends in the rate of MSSA bacteraemia in England



*Mid-year population estimates for 2017/18 were not available at time of publication and so population data for 2016/17 were used as a proxy.

** bed day data were not available for quarter 4 of FY 2017/18 (January to March, 2017/2018). As a result, the 2017/18 bed day data is an aggregate of quarters 1, 2 and 3 of 2017/18 and quarter 4 of 2016/17.

Notes

This publication forms part of the range of National Statistics outputs routinely produced by PHE. Further detailed epidemiological analyses of MRSA bacteraemia, MSSA bacteraemia, Gram Gram-negative bacteraemias and CDI data can be found in both the Quarterly Epidemiological Commentaries[3] and the Annual Epidemiological Commentary, 2017/18 data.[3] The Annual Epidemiological Commentary for FY 2017/18 contains analyses equivalent to previous years, including counts and rates per financial year by age, sex and region (NHS England Local Office).

References

- [1] Public Health England, "MRSA, MSSA and E. coli bacteraemia and CDI: annual report," July 2018. [Online]. Available: <https://www.gov.uk/government/statistics/mrsa-mssa-and-e-coli-bacteraemia-and-c-difficile-infection-annual-epidemiological-commentary>.
- [2] Johnson AP, Pearson A, Duckworth G. Surveillance and epidemiology of MRSA bacteraemia in the UK. *J Antimicrob Chemother* 2005; 56:455-462.
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- [4] Public Health England, "Annual epidemiological commentary: MRSA, MSSA and E. coli bacteraemia and C. difficile infection data, up to and including financial year April 2017 to March 2018," Public Health England, London, 2018.