



Public Health
England

Protecting and improving the nation's health

Quarterly epidemiological commentary

Mandatory MRSA, MSSA, Gram-negative bacteraemia and *C. difficile* infections data (up to April to June 2020)

September 2020

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, research, 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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Data included in this quarterly epidemiological commentary

This document contains quarterly, national-level epidemiological commentaries for Methicillin-resistant *Staphylococcus aureus* (MRSA), Methicillin-sensitive *Staphylococcus aureus* (MSSA), *Escherichia coli* (*E. coli*), *Klebsiella* spp. and *Pseudomonas aeruginosa* (*P. aeruginosa*) bacteraemia and *Clostridioides difficile* (CDI) infections. This includes analyses on counts and incidence rates of all cases and hospital-onset (previously referred to as trust-apportioned) cases of MRSA, MSSA, *E. coli*, *Klebsiella* spp. and *P. aeruginosa* bacteraemia and *C. difficile* infection.

The terminologies; ‘trust-apportioned’ and ‘not trust-apportioned’ have been updated to ‘hospital-onset’ and ‘community-onset’ respectively. Please note that this is only a change in the description of those terms and not a change in the methodology for apportionment.

All data tables associated with this report are included in an [accompanying OpenDocument spreadsheet](#).

Revisions to data included are covered by a data-specific [revisions and correction policy](#).

Citation to PHE, HCAI & AMR division is required. Citation: Public Health England. Quarterly epidemiology commentary: mandatory MRSA, MSSA and Gram-negative bacteraemia and *C. difficile* infection in England (up to April to June 2020) London: Public Health England, September 2020.

COVID-19 and this data

Counts of cases for the most recent quarter (April to June 2020) are lower than would be expected. It is clear that the global pandemic of COVID-19 is having an effect on the number of cases reported to the surveillance of BSI and CDI. From an analysis of voluntary microbiology surveillance, there has also been a reduction in the number of cases of other bloodstream infections, not only those covered by the mandatory surveillance. This leads us to conclude that fewer blood cultures are being reported in general.

In response to the pandemic, all elective procedures in hospitals have been cancelled. As a result, the population is less exposed to healthcare and as a result, fewer people are developing healthcare associated infections. Alternatively, it is also possible that

testing for these infections and their reporting is deprioritised. If that is the case, we may expect cases to return to closer to the expected value over time. Surveillance for CDI and BSI remains mandatory, and PHE continue to expect NHS acute trusts to report all cases to the surveillance programme. Additionally, hospital onset denominator data for Q1 2020 relies on the same quarter of the previous year as a proxy, as such this proxy number may be higher than the true value and thus creating artificially low rates of infection.

It is therefore important to consider these limitations when reading the following report.

Further information

This publication forms part of the range of National Statistics outputs routinely published by Public Health England (PHE) which include monthly and annual reports on the mandatory surveillance of MRSA, MSSA and *E. coli*, *Klebsiella* spp. and *P. aeruginosa* bacteraemia and *C. difficile* infections (CDI).

Annual report output

Further epidemiological analyses by financial year can be found in PHE's [annual epidemiological commentary](#).

Monthly report outputs

The following reports are produced by PHE on a monthly basis.

MRSA bacteraemia:

- counts of all reported, hospital and community-onset cases of MRSA bacteraemia by organisation

MSSA bacteraemia:

- counts of all reported, hospital and community-onset cases of MSSA bacteraemia by organisation

E. coli bacteraemia:

- counts of all reported, hospital and community-onset cases of *E. coli* bacteraemia by organisation

Klebsiella spp. bacteraemia:

- counts of all reported, hospital and community-onset cases of *Klebsiella* spp. bacteraemia by organisation

P. aeruginosa bacteraemia:

- counts of all reported, hospital and community-onset cases of *P. aeruginosa* bacteraemia by organisation

CDI:

- counts of all reported, hospital and community-onset cases of CDI by organisation

Data for this report was extracted from PHE's healthcare associated infections data capture system (HCAI DCS) on 29 July 2020.

Epidemiological analyses of Gram-negative bacteraemia data

E. coli bacteraemia

The incidence rate of all reported *E. coli* bacteraemia continued to increase each year since the initiation of the mandatory surveillance of *E. coli* bacteraemia in July 2011 until December 2019 (figure 1a). This was primarily driven by the increase in the rate of community-onset cases (table S1a). In contrast, the incidence rate of hospital-onset cases has remained relatively stable within the same period (figure 1b). Since January 2020, the rates of both community and hospital onset infections has reduced sharply as a result of the global pandemic.

Between July to September 2011 and April to June 2020, the count of cases and the incidence rate of all reported cases of *E. coli* bacteraemia increased by 0.2% from 8,275 cases to 8,293 and from 61.8 to 59.1 cases per 100,000 population. Similarly, over the same period, the count of community-onset cases increased by 11.0% from 6,279 to 6,972, while the incidence rate increased 5.9% from 46.9 cases per 100,000 population to 49.7.

The incidence rate of hospital-onset cases decreased 33.8% between July to September 2011 and April to June 2020 from 23.6 per 100,000 bed-days (n=1,996) to 15.3 per 100,000 bed-days (n=1,321).

The sharp reduction in *E. coli* reporting due to the global pandemic can, in part, be shown by comparing the most recent quarter (April to June 2020) to the same period in the previous year (April to June 2019), which shows a 24.3% decrease in the count of all reported cases from 10,961 to 8,293, while the incidence rate decreased 24.3% from 78.1 per 100,000 population to 59.1. Hospital-onset *E. coli* bacteraemia cases decreased 31.3% from 1,922 to 1,321 which corresponded to an incidence rate decrease of 31.3% from 22.3 to 15.3 per 100,000 bed-days. Community-onset *E. coli* bacteraemia cases decreased 22.9% from 9,039 to 6,972 per 100,000 bed-days, while the community-onset incidence rate decreased 22.9% from 64.4 per 100,000 population to 49.7 (figure 1a and 1b, table S1).

There is a strong seasonality to the incidence of all-reported *E. coli* bacteraemia cases, with the highest rates observed between July to September of each year. There is less evidence of the same seasonality among hospital-onset cases, though a summer peak is observed in financial years 2015/16, 2016/17, 2018/19 and 2019/20.

Figure 1a: Quarterly rates of all reported *E. coli* bacteraemia: July to September 2011 to April to June 2020

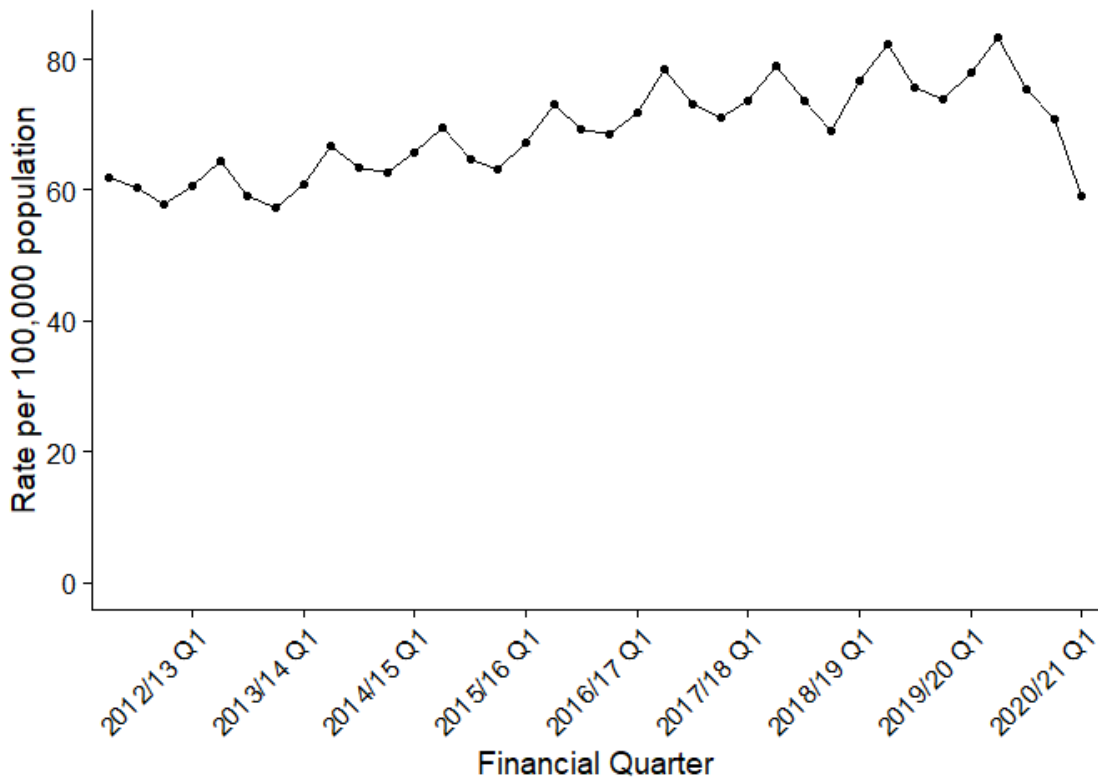
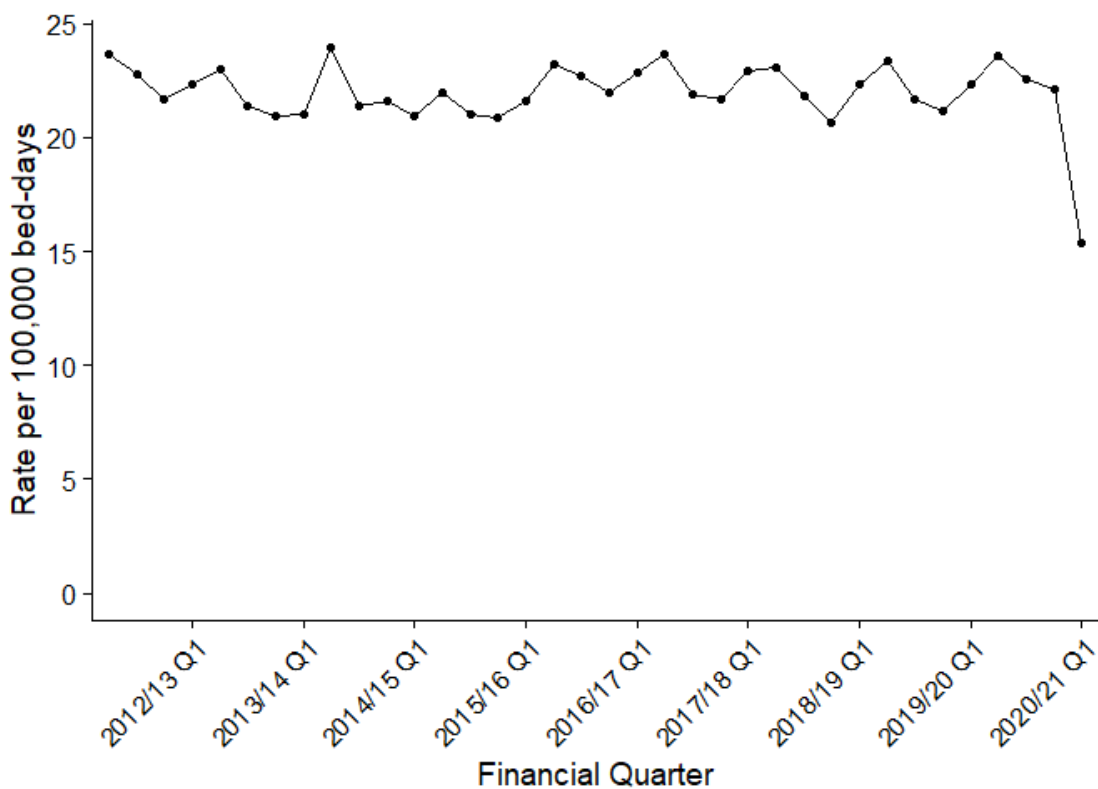


Figure 1b: Quarterly rates of hospital-onset *E. coli* bacteraemia: July to September 2011 to April to June 2020



Klebsiella spp. bacteraemia

Between April to June 2017 and April to June 2020, there was a 2.0% increase in the count from 2,348 to 2,395 and a 0.8% increase in the incidence rate of all reported *Klebsiella* spp. bacteraemia cases from 16.9 to 17.1 cases per 100,000 population respectively (figure 2a). The count and the incidence rate of community-onset cases also decreased by 3.0% from 1,678 to 1,627 cases and by 4.2% from 12.1 to 11.6 cases per 100,000 population respectively. Over the same period, the count and the incidence rate of hospital-onset cases increased by 14.6% from 670 to 768 cases and by 14.7% from 7.8 cases per 100,000 bed-days to 8.9 respectively (figure 2b).

The lower levels of reporting due to the global pandemic can, in part, be shown by comparing the most recent quarter (April to June 2020) to the same period in the previous year (April to June 2019), which shows a 5.9% decrease in the count of all reported cases from 2,546 to 2,395, while the incidence rate decreased 5.9% from 18.1 per 100,000 population to 17.1. Hospital-onset *Klebsiella* spp. cases increased 2.7% from 748 to 768 which corresponds to an incidence rate increase of 2.7% from 8.7 to 8.9 per 100,000 bed-days. Community-onset *Klebsiella* spp. cases decreased 9.5% from 1,798 to 1,627, while the community-onset incidence rate decreased 9.5% from 12.8 to 11.6 per 100,000 population (table S2).

During April to June 2020, 70.1% (1,679)/(2,395) of all reported *Klebsiella* spp. bacteraemia were caused by *K. pneumoniae*, a decrease from 73.0% in the same quarter in the previous year (April to June 2019). Over the same period 17.6% (421/2,395) were caused by *K. oxytoca* in April to June 2020, an increase from 16.2% in the same quarter in the previous year (April to June 2019).

Figure 2a: Quarterly rates of all reported *Klebsiella* spp. bacteraemia by species: April to June 2017 April to June 2020

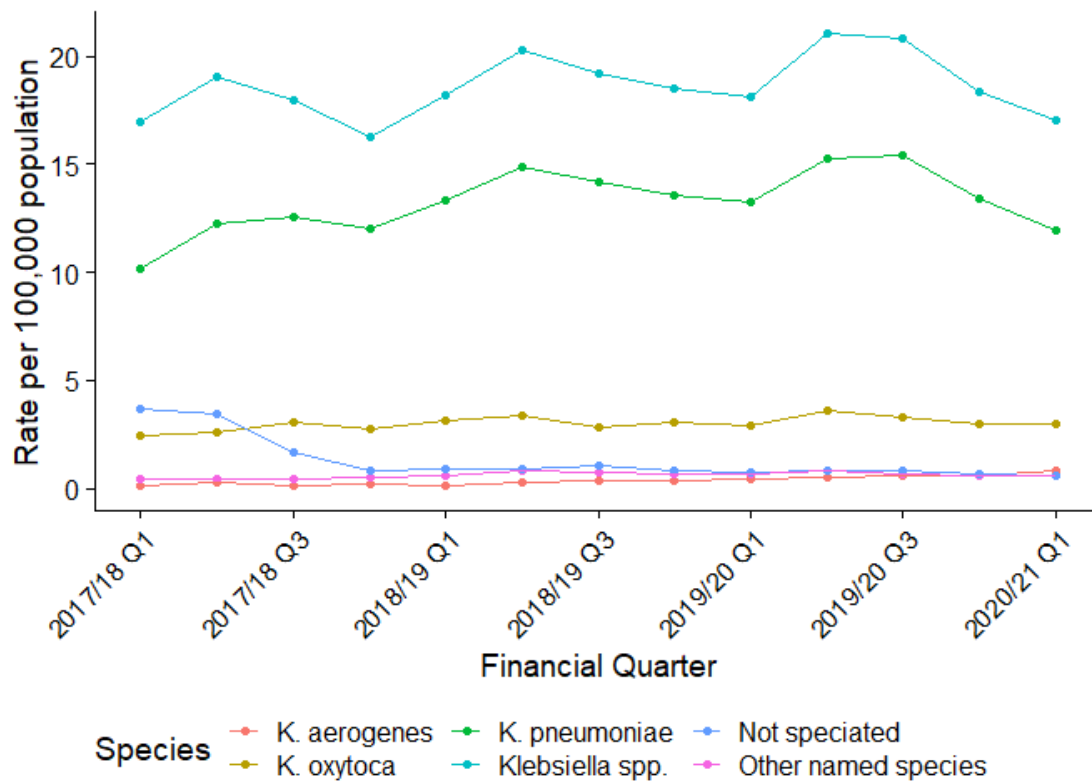
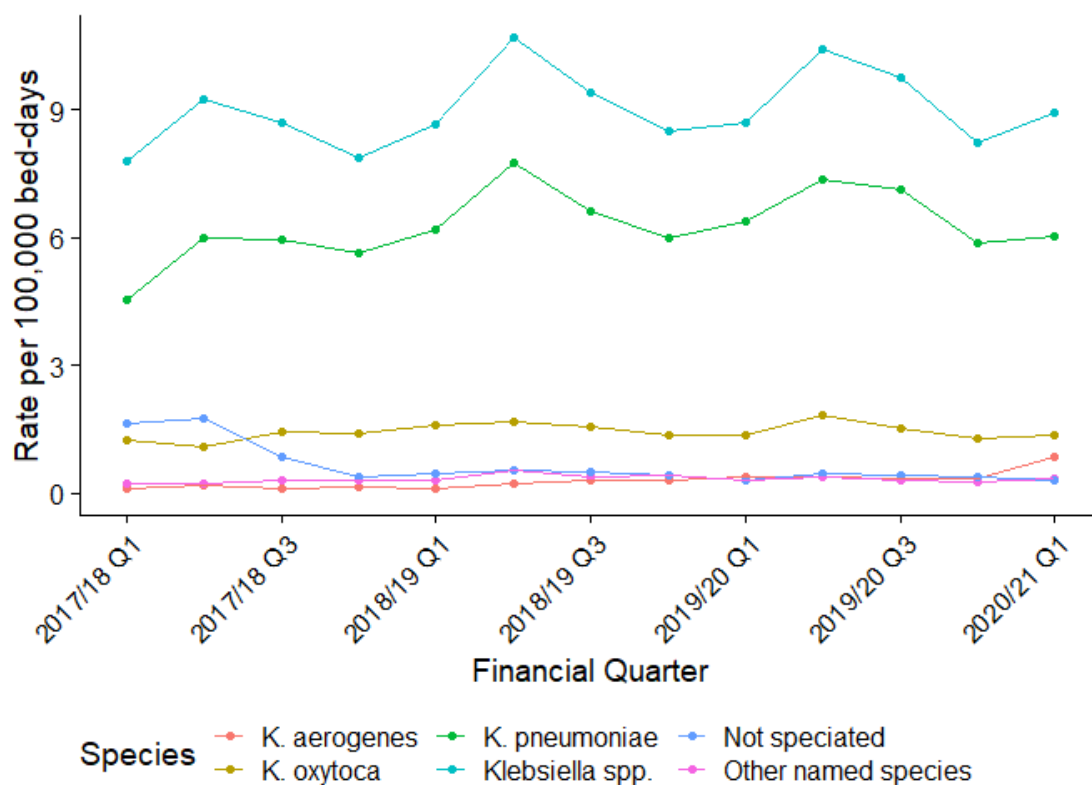


Figure 2b: Quarterly rates of hospital-onset *Klebsiella* spp. bacteraemia: April to June 2017 to April to June 2020



Pseudomonas aeruginosa bacteraemia

Between April to June 2017 and April to June 2020, there was a 13.1% decrease in the count and a 14.2% decrease in the incidence rate of all reported *P. aeruginosa* bacteraemia cases from 1,012 to 879 and from 7.3 to 6.3 cases per 100,000 population respectively (figure 3a). The count and the incidence rate of community-onset cases also decreased by 8.9% from 638 to 581 cases and by 10.0% from 4.6 to 4.1 cases per 100,000 population respectively. Over the same period, the count and the incidence rate of hospital-onset cases decreased by 20.3% from 374 to 298 cases and by 20.3% from 4.3 to 3.5 cases per 100,000 bed-days respectively (figure 3b).

It is possible to show the effects the global pandemic has had on reporting by comparing the most recent quarter (April to June 2020) to the same period in the previous year (April to June 2019), which shows a 17.7% decrease in the count of all reported cases from 1,068 to 879, while the incidence rate decreased 17.7% from 7.6 to 6.3. Hospital-onset *P. aeruginosa* cases decreased 25.1% from 398 to 298 which corresponds to a decrease in the incidence rate of 25.1% from 4.6 to 3.5 per 100,000 bed-days. Community-onset *P. aeruginosa* cases decreased 13.3% from 670 to 581 per 100,000 population, while the community-onset incidence rate decreased 13.3% from 4.8 to 4.1 per 100,000 population (table S3).

There is evidence of seasonality to the incidence of all-reported *P. aeruginosa* bacteraemia cases, with the highest rates observed in July to September of each year. Due to this seasonality, trends of *P. aeruginosa* and the limited data points available the results need to be interpreted with caution.

Figure 3a: Quarterly rates of all reported *P. aeruginosa* bacteraemia: April to June 2017 to April to June 2020

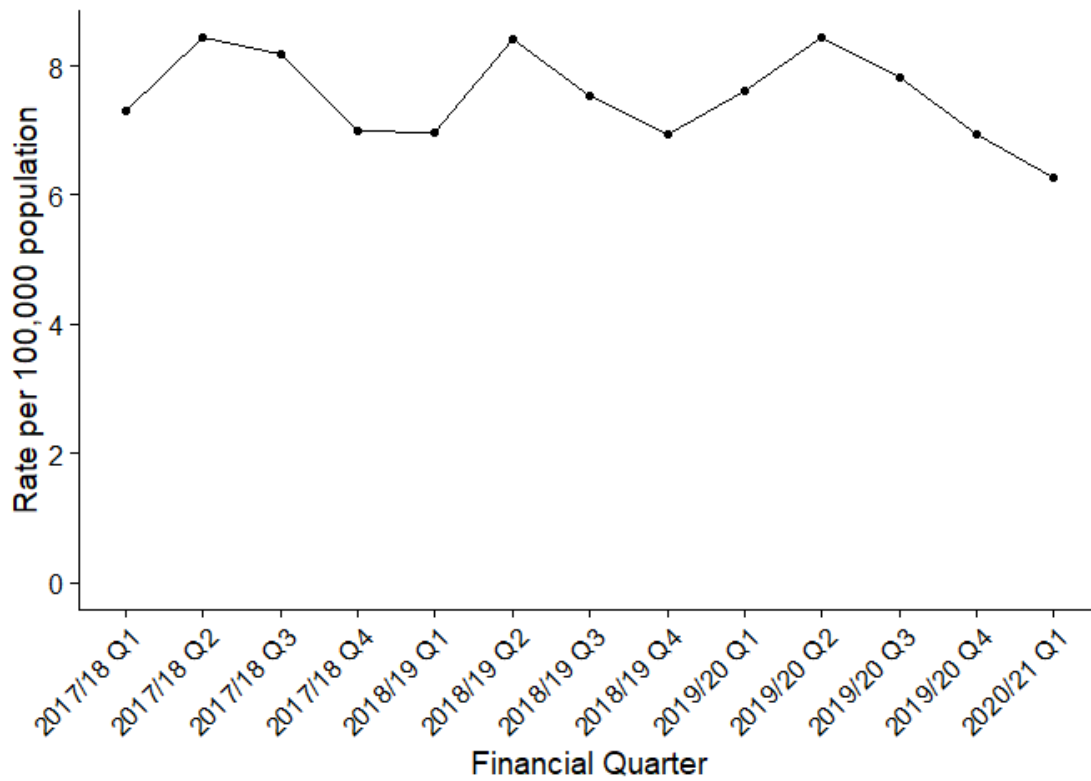
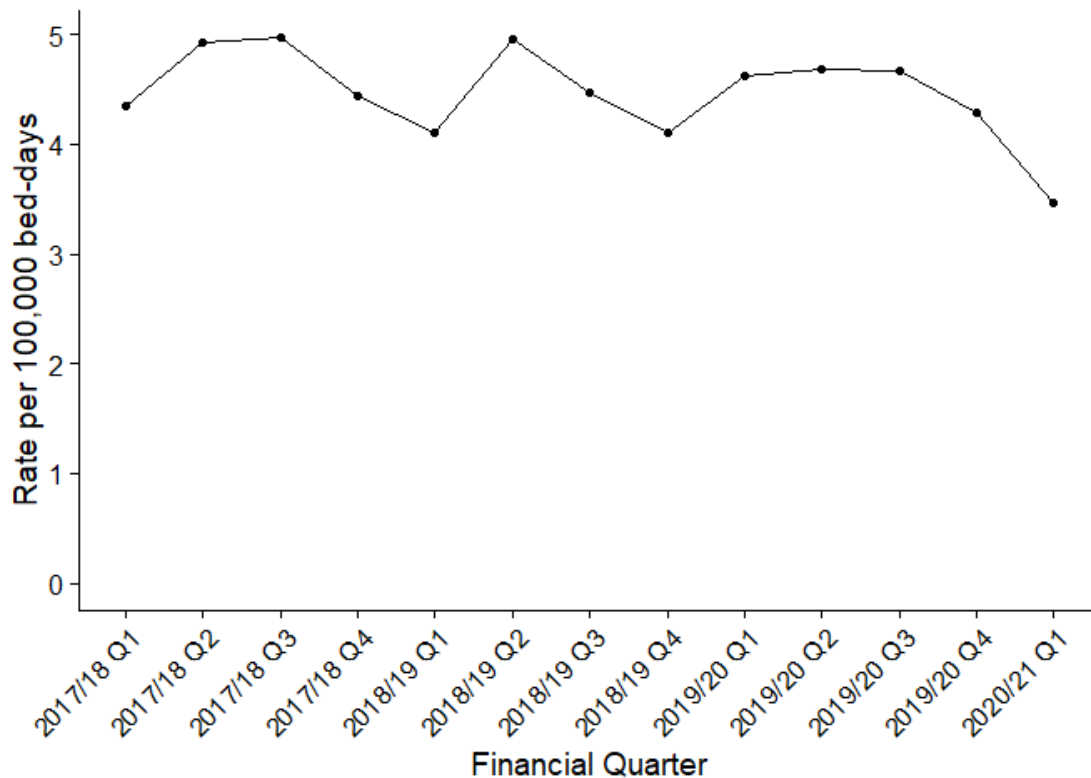


Figure 3b: Quarterly rates of hospital-onset *P. aeruginosa* bacteraemia: April to June 2017 to April to June 2020



Epidemiological analyses of *Staphylococcus aureus* bacteraemia data

MRSA bacteraemia

There has been a considerable decrease in the incidence rate of all reported MRSA bacteraemia since the enhanced mandatory surveillance of MRSA bacteraemia began in April 2007 (figures 4a, table S4a). The incidence rate of all reported cases fell by 85% from 10.2 cases per 100,000 population in April to June 2007 to 1.5 cases per 100,000 in January to March 2014. The rate has subsequently decreased to 1.3 cases per 100,000 population between January to March 2014 and April to June 2020.

A similar trend was observed with the incidence rate of hospital-onset cases (figures 4b, table S4a). There was a steep decrease of 79% from 4.9 cases per 100,000 bed-days in April to June 2008 to 1.0 January to March 2014. Subsequently, between January to March 2014 and April to June 2020, the rate has subsequently decreased to 0.7 cases per 100,000 bed-days.

MRSA has remained broadly similar in the periods since the start of the global pandemic. Comparing the most recent quarter (April to June 2020) to the same period in the previous year (April to June 2019) shows a 1.7% decrease in the count of all reported cases from 181 to 178, while the incidence rate remained stable at 1.3 cases per 100,000 population. The count of hospital-onset MRSA bacteraemia cases increased 9.6% from 52 to 57 which corresponds to an increase in the incidence rate of 9.6% from 0.6 to 0.7 per 100,000 bed-days. Community-onset MRSA bacteraemia cases decreased 6.2% from 129 to 121, while the community-onset incidence rate remained stable at 0.9 cases per 100,000 population (table 4a).

Figure 4a: Quarterly rates of all reported MRSA bacteraemia: April to June 2007 to April to June 2020

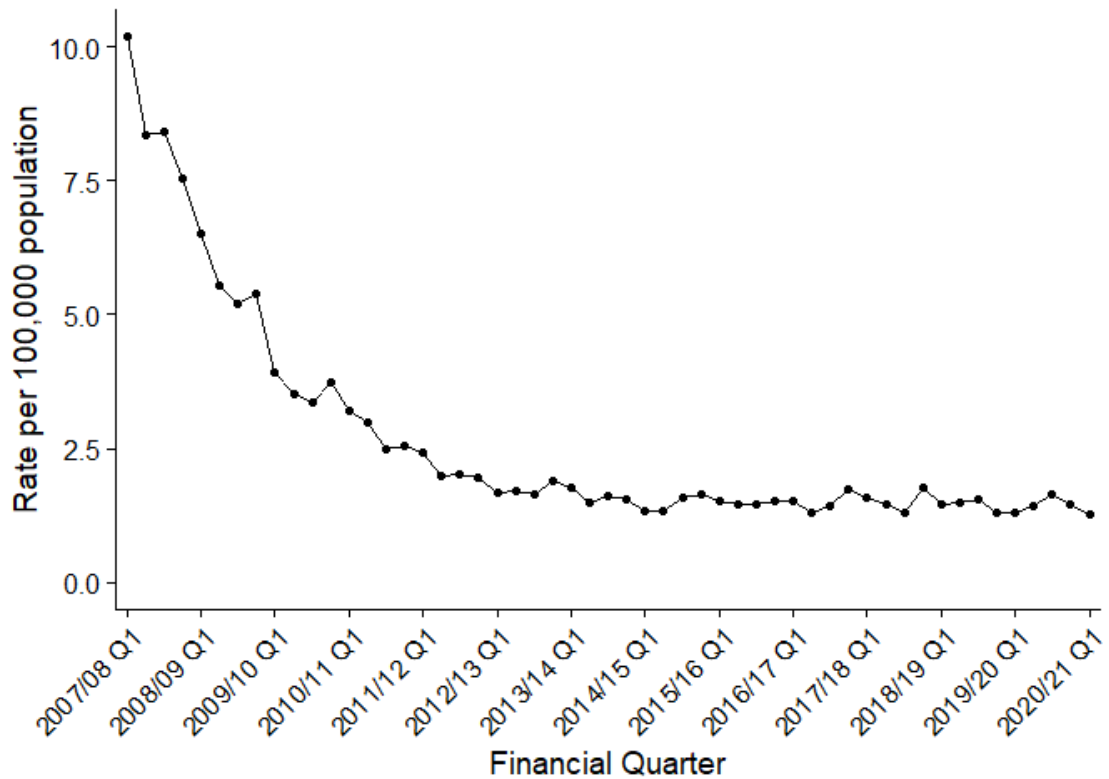
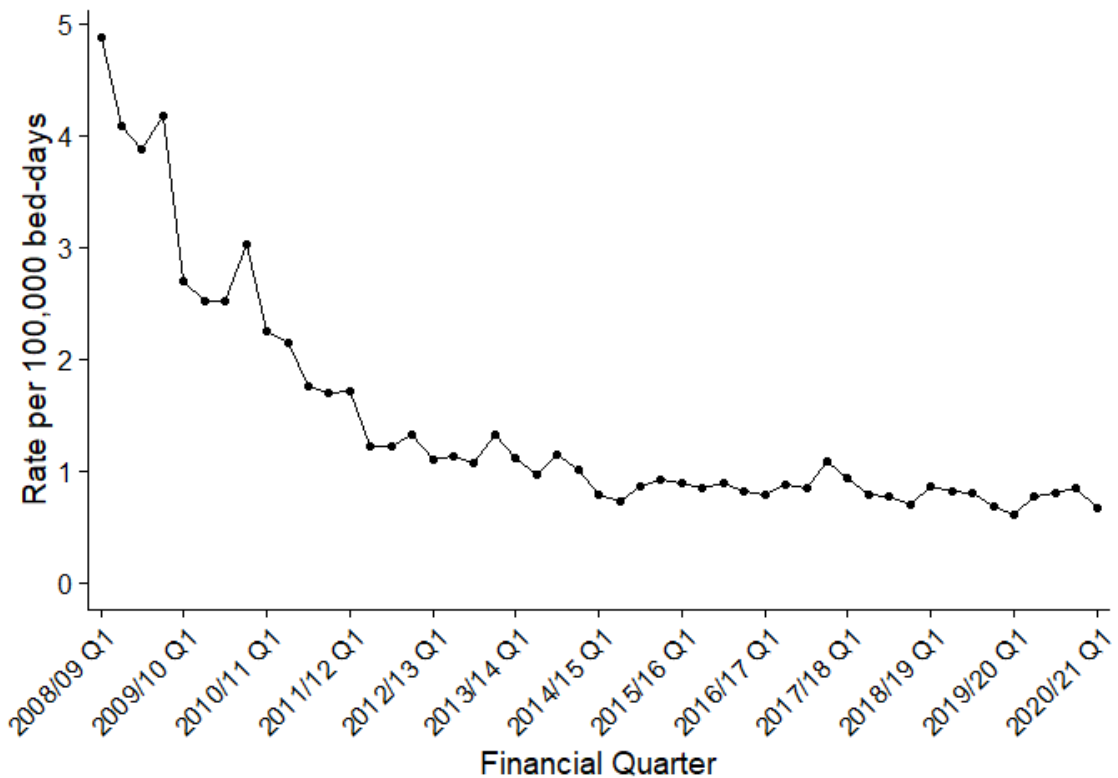


Figure 4b: Quarterly rates of hospital-onset MRSA bacteraemia: April to June 2008 to April to June 2020



MSSA bacteraemia

Since the mandatory reporting of MSSA bacteraemia began in January 2011 there has been a general trend of increasing counts and incidence rates. The count of all reported cases of MSSA bacteraemia increased by 23.7% from 2,199 to 2,721 between January to March 2011 and April to June 2020. This was accompanied by a 15.5% increase in incidence rate from 16.8 per 100,000 population to 19.4 (figure 5a, table S5).

These increases are primarily driven by the increase in community-onset cases. Between January 2011 and April to June 2020, the count and the incidence rate of community-onset cases increased by 43.2% and 33.6% respectively from 1,464 to 2,096 cases and from 11.2 to 14.9 cases per 100,000 population. Over the same period, the count of hospital-onset cases decreased by 15.0% from 735 to 625 cases, while the incidence rate decreased 13.0% from 8.4 to 7.3 cases per 100,000 bed-days (figure 5a and 5b, table S5a).

To demonstrate the reduced levels of reporting associated with the COVID-19 pandemic, we can compare the most recent quarter (April to June 2020) to the same period in the previous year (April to June 2019), which shows an 11.0% decrease in the count of all reported cases from 3,058 to 2,721, while the incidence rate decreased 11.0% from 21.8 to 19.4 cases per 100,000 bed-days. Hospital-onset MSSA bacteraemia cases decreased 26.5% from 850 to 625 which corresponds to an incidence rate decreased of 26.5% from 9.9 to 7.3 per 100,000 bed-days. Community-onset MSSA bacteraemia cases decreased 5.1% from 2,208 to 2,096, while the community-onset incidence rate decreased 5.1% from 15.7 to 14.9 per 100,000 population.

Figure 5a: Quarterly rates of all reported MSSA bacteraemia: January to April 2011 to April to June 2020

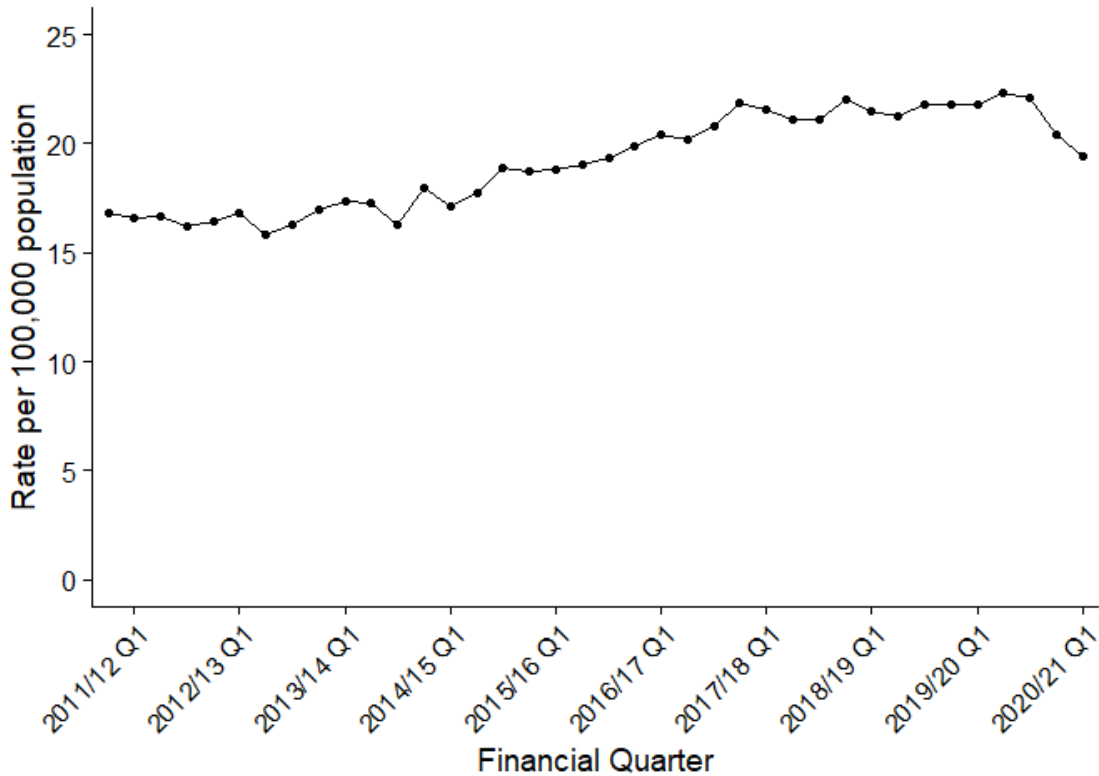
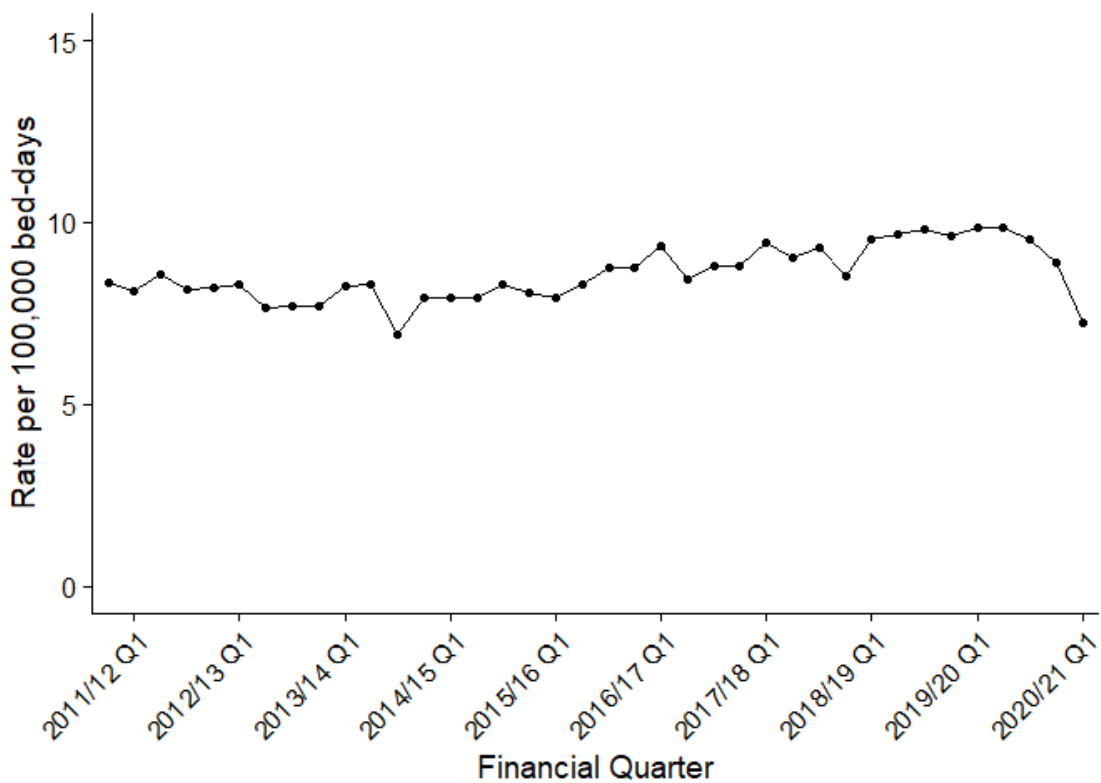


Figure 5b: Quarterly rates of hospital-onset MSSA bacteraemia: January to April 2011 to April to June 2020



Epidemiological analyses of *Clostridioides difficile* infection data

Since the initiation of *C. difficile* (CDI) surveillance in April 2007, there has been an overall decrease in the count and associated incidence rate of both all-reported and hospital-onset cases of CDI (figure 6a, 6b and table S6a).

Most of the decrease in the incidence rate occurred between April to June 2007 and January to March 2012 with a 78% decrease in all-reported cases of CDI from 16,864 to 3,711 cases and an associated 79% reduction in incidence rate from 131.6 cases per 100,000 population to 27.9. Subsequently, between January to March 2012 and April to June 2020, the count of all-reported cases decreased 25.2% from 3,711 to 2,774 cases and the incidence rate reduced by 29.2% from 27.9 cases per 100,000 population to 19.8.

There were similar, but greater, reductions among hospital-onset CDI cases with an 85% reduction in count of cases between April to June 2007 and January to March 2012 from 10,436 to 1,613 cases and 84% reduction in the incidence rate from 112.5 per 100,000 bed-days to 18.2. This was followed by a further 45.6% decrease in the count of cases from 1,613 to 877 cases and a decrease of 43.9% in the incidence rate from 18.2 cases per 100,000 bed-days to 10.2 between January to March 2012 and April to June 2020.

Compared to other collections under mandatory surveillance it is not clear how much the COVID-19 pandemic has affected counts and rates of CDI. The most recent quarter (April to June 2020) compared to the same period in the previous year (April to June 2019) shows a 10.3% decrease in the count of all reported cases from 3,093 to 2,774, while the incidence rate decreased 10.3% from 22.0 cases per 100,000 population to 19.8. However, for all cases, the incidence rate has fluctuated between 18.8 cases per 100,000 and 26.1 cases per 100,000 cases in the last three years. Hospital-onset CDI cases decreased 18.5% from 1,076 to 877 which corresponds to a decrease in the incidence rate of 18.5% from 12.5 cases per 100,000 bed-days to 10.2. Again, rates of hospital-onset CDI have fluctuated in recent years and it is not clear how much the COVID-19 pandemic has affected rates. Community-onset CDI cases decreased 5.9% from 2,017 to 1,897, while the community-onset incidence rate decreased 5.9% from 14.4 per 100,000 population to 13.5.

Figure 6a: Quarterly rates of all reported *C. difficile*: April to June 2007 to April to June 2020

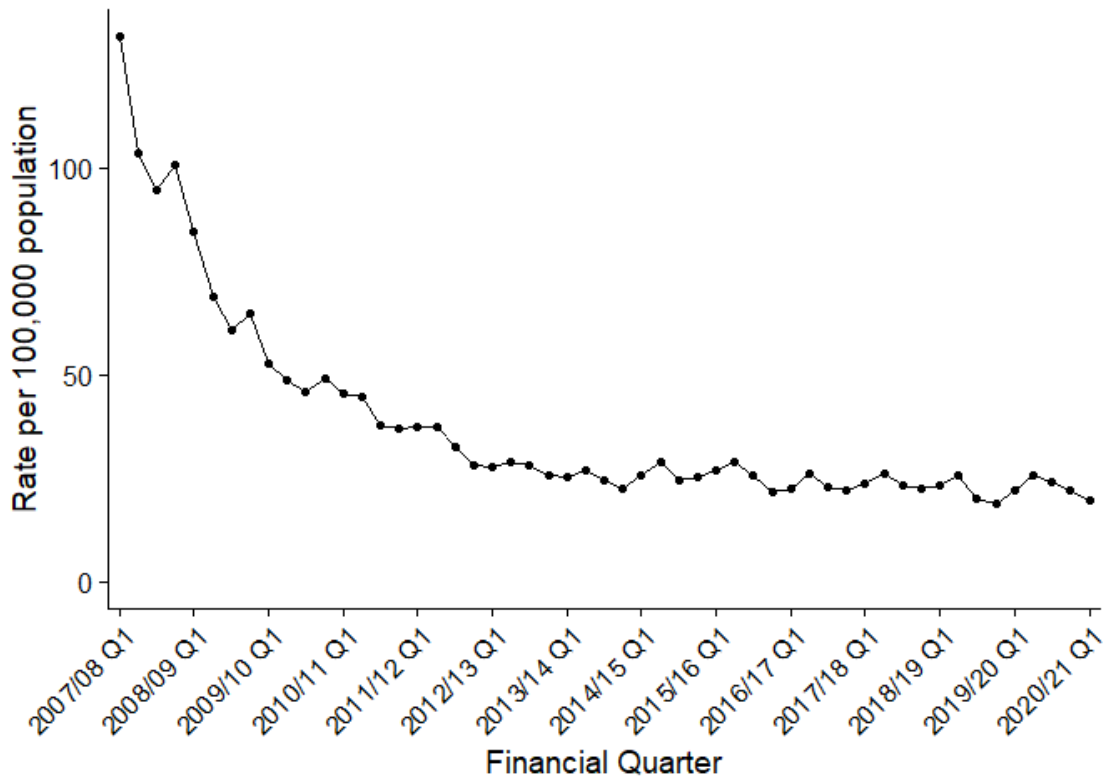
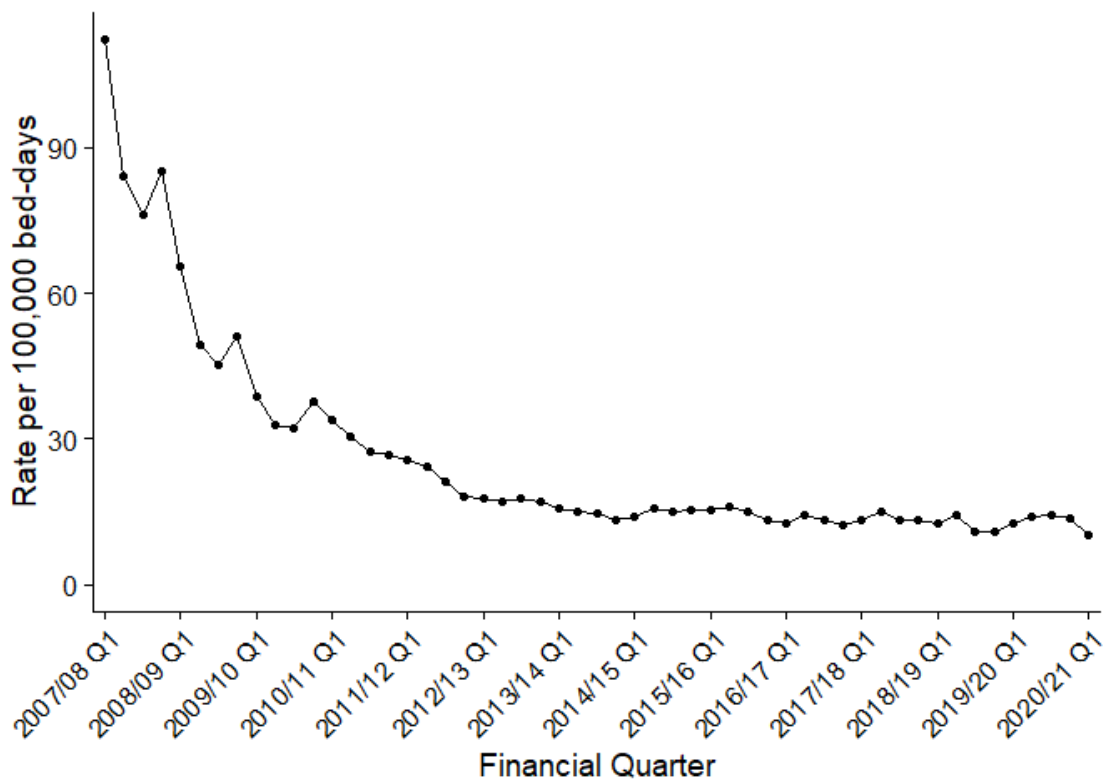


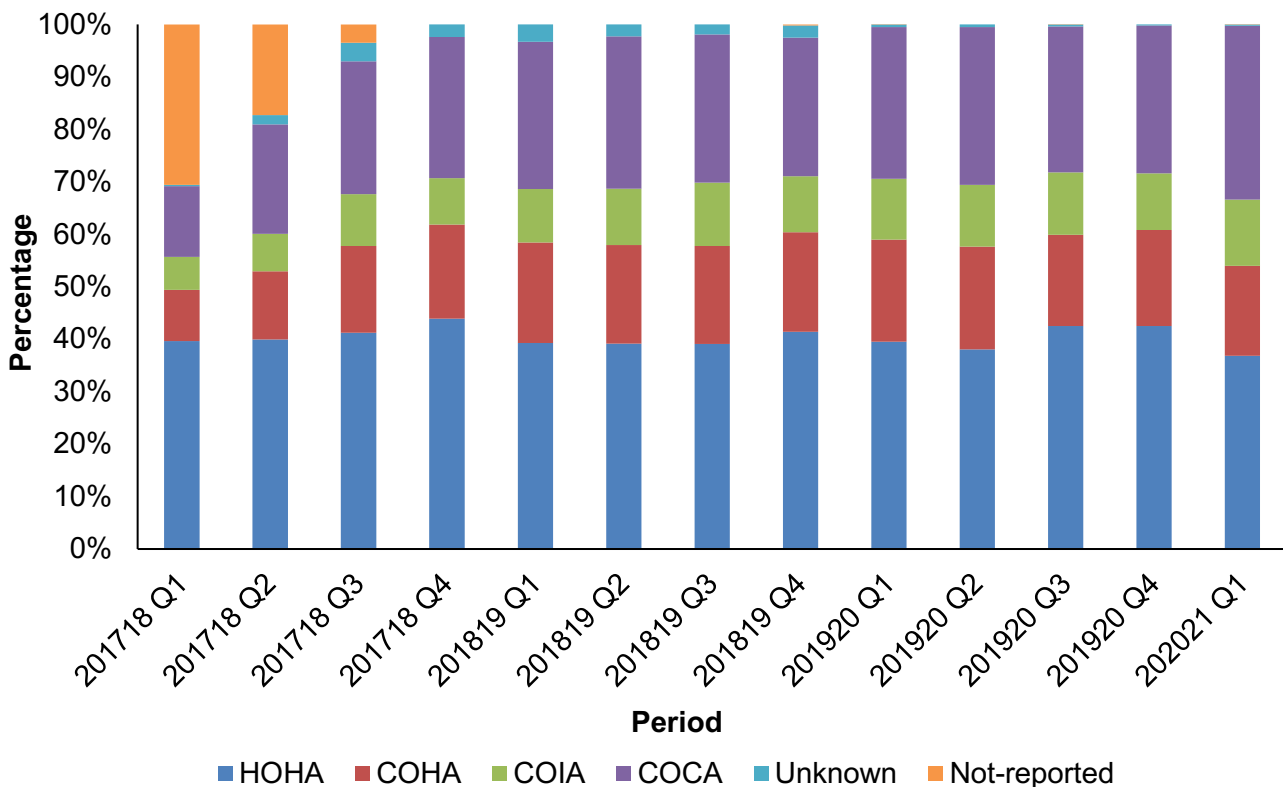
Figure 6b: Quarterly rates of hospital-onset *C. difficile*: April to June 2007 to April to June 2020



From April 2017, the HCAI DCS has included questions relating to prior trust exposure to the same acute trust reporting the CDI case. These additional, mandatory, items help align English CDI surveillance with definitions used by the European Centre for Disease Prevention and Control (ECDC) and Centers for Disease Control and Prevention (CDC) in the USA. Cases are now categorised as: Healthcare-Onset, Healthcare Associated (HOHA), Community-Onset, Healthcare Associated (COHA), Community-Onset, Indeterminate Association (COIA) or Community-Onset, Community Associated (COCA). Cases where prior admission details were recorded as ‘Don’t know’, are assigned as ‘Unknown’ and those with missing information as ‘missing information’.

Between April to June 2017 and April to June 2020 the largest proportion of cases were HOHA. While there have been some fluctuations, the proportion has remained broadly stable at around 40% of all cases. Over the same period, COCA cases increased from 13.4% to 33.1% of all CDI, although most of this increase was observed during 2017/18, this is the largest percentage of COCA for any period that has been observed. COHA cases have increased from 9.7% to 17.2% of all CDI, with most of the increase being observed during 2017/18. COIA cases have increased from 6.3% to 12.6% of all CDI. It should be noted much of the increase observed is likely due to an increase in data quality as shown by the sharp decline of cases with missing data (figure 6b Table S6b).

Figure 7: CDI rates by prior trust exposure April 2017 – June 2020



Appendix

Bed-day data

For bacteraemia and CDI, the average bed-day activity reported by acute trusts via KH03 returns is used to derive the bed-day denominator for acute trust incidence rate rates (assigned and apportioned). As of Q1 2011/12, bed-day data has been available on a quarterly basis and has been used as such for Q2 2011/12 to Q4 2019/20. This data is available at: www.england.nhs.uk/statistics/statistical-work-areas/bed-availability-and-occupancy/bed-data-overnight/

Amendments to the published figures on KH03 included the following.

Q1 2020/21 bed-day data was not available at the time of writing this report; therefore, bed-day data for the same quarter of the previous year (Q1 2019/20) was used as a proxy for this quarter.

In Quarterly Epidemiological Commentaries published prior to 1 December 2015, April to June 2014 to October to December 2014 quarterly KH03 figures for one acute trust (RWD) had a percentage change of more than 20% compared with the previous quarter and the same quarter in the previous year. As a result, it was replaced with the KH03 data of the same quarter in the previous year (April to June 2013 to October to December 2013).

However, PHE has reviewed its policy for processing KH03 data. Data irregularities identified have been flagged with colleagues at NHS England (data owners of the KH03 dataset). Until we receive confirmation that any identified change in the occupied overnight bed-days for an acute trust is anomalous, PHE now uses the data as published in the KH03 dataset. This affects all reports published since 1 December 2015 and incidence rate rates published prior that time will differ slightly as a result. For the KH03 data used to calculate rates included in this report to be consistent over the full-time period, previously amended KH03 data for trust United Lincolnshire Hospitals (RWD) for FY 2014/2015 has been altered to reflect that published in the KH03 dataset. Please note that this could lead to slight differences in hospital- onset/assigned rates when compared with publications prior to 1 December 2015.

Missing data for acute trusts in the KH03 returns will continue to be processed as before, where the KH03 return for the same quarter from the previous year will be used as a proxy. The following acute trusts were thus affected:

- Moorfields Eye Hospital NHS Foundation Trust (RP6) 2007/08 and 2008/09 KH03 figures: replaced with 2006/07 KH03 figure
- Rotherham NHS Foundation Trust (RFR): 2009/10 and April-June 2010 to April-June 2011 KH03 figures: replaced with 2008/09 KH03 figure
- Sheffield Teaching Hospitals NHS Foundation Trust (RHQ) April-June 2010 to April-June 2011 KH03 figures: replaced with 2009/10 KH03 data
- The Princess Alexandra Hospital NHS Trust (RQW) April-June 2014 and October- December 2014 KH03 figures: replaced with April-June 2013 to October- December 2013 KH03 figures, respectively
- Ipswich Hospital NHS Trust (RGQ) January-March 2016 KH03 figure: replaced with January-March 2015 figures
- West Suffolk NHS Foundation Trust (RGR) April-June 2016 to October-December 2016 and April-June 2017 KH03 figures: replaced with April-June 2015 to October-December 2015 KH03 figures
- Gloucestershire Hospitals NHS Foundation Trust (RTE) October-December 2016 to January-March 2017 KH03 figures: replaced with October-December 2015 to January-March 2016 KH03 figures

The KH03 data used for this report was published on 21st May 2020. This includes revisions of previously published KH03 data and so these data may differ from those used in earlier reports.

Population data

National incidence rates are calculated using 2007 to 2018 mid-year resident population estimates which are based on the 2011 census for England (2020 estimates are based on 2019 mid-year estimates).

Definitions

Bacteraemia hospital-onset (trust-apportioned) cases:

Include patients who are (i) in-patients, day-patients, emergency assessment patients or not known; AND (ii) have had their specimen taken at an acute trust or not known; AND (iii) specimen was taken on or after day 3 of the admission (admission date is considered day 'one'). Cases that do not meet these criteria are categorised as community-onset (not-trust apportioned).

CDI hospital-onset (trust-apportioned) cases:

Include patients who are (i) in-patients, day-patients, emergency assessment patients or not known; AND (ii) have had their specimen taken at an acute trust or not known; AND (iii) specimen was taken on or after day 4 of the admission (admission date is

considered day 'one'). Cases that do not meet these criteria are categorised as community-onset (not-trust apportioned).

Historically, reports published before September 2017 have used the term 'trust-apportioned' to describe cases meeting the above conditions for apportionment and 'not trust-apportioned' for those that do not. Moving forward, these terminologies have been updated to 'hospital-onset' and 'community-onset' respectively. Please note that this is simply a change in terminology and does not constitute a change in the methodology for apportionment.

Prior Trust Exposure

From April 2017, reporting trusts were asked to provide information on whether patients with CDI had been admitted to the reporting trust within the three months prior to the onset of the current case. This allows a greater granulation of the healthcare association of cases.

Cases are split into one of six groups:

Hospital-onset healthcare-associated - Date of onset is > 2 days after admission (where day of admission is day 1).

Community-onset healthcare-associated - Date of onset is ≤ 2 days after admission and the patient was admitted to the trust in the 4 weeks prior to the current episode

Community-onset indeterminate association - Date of onset is ≤ 2 days after admission and the patient was admitted in the previous 12 weeks, but not the previous 4 weeks prior to the current episode.

Community-onset community-associated - Date of onset is ≤ 2 days after admission and the patient had not been admitted to the trust in the previous 12 weeks prior to the current episode.

Unknown 3 months - The reporting trust answered "Don't know" to the question regarding admission in the 3 months prior to the current episode.

All unknown - The reporting trust did not provide any answer for questions on prior admission.

Total reported cases:

This is the total count of infections for each organism as of the date of extraction. Please note that for *C. difficile*, this count excludes those from patients less than 2 years old.

Episode duration:

The length of an infection episode is defined as 14 days for MRSA, MSSA, *E. coli*, *Klebsiella* spp. and *P. aeruginosa* bacteraemia and 28 days for CDI, with the date of specimen being considered day 'one'.

Incidence rate calculations:

MRSA, MSSA and *E. coli*, *Klebsiella* spp., *P. aeruginosa* bacteraemia, and CDI population incidence rate (episodes per 100,000):

This incidence rate is calculated using the mid-year England population and is

$$= \frac{n \text{ episodes}}{\left(\frac{\text{mid-year population for England}}{\text{days in quarter}} \right)} \times 100,000$$

MRSA, MSSA and *E. coli*, *Klebsiella* spp., *P. aeruginosa* and CDI hospital-onset incidence:

This incidence rate is calculated using KH03 average bed-day activity (see [bed-day data](#) above) and is calculated as follows:

$$= \frac{n \text{ episodes}}{\text{average KH03 beds per day} \times \text{days in quarter}} \times 100,000$$

Graphs and percentage change calculation:

Please note that percentage changes in rate have been calculated using raw rate figures while those presented in the tables and commentary have been rounded to one decimal place. Similarly, graphs included in this report were plotted using raw rates figures. The raw rate figures are included in the accompanying [Quarterly Epidemiological Commentary's accompanying data](#).

Quarters:

In publications prior to March 2016, all references to quarterly data are based on calendar year definitions and NOT financial year definitions, that is:

- Q1 2014: April to June 2014
- Q2 2014: April to June 2014
- Q3 2014: July to September 2014
- Q4 2014: October to December 2014

However, for all subsequent publications, including this one, all references to quarterly data are based on financial year definitions and NOT calendar year definitions, that is:

- Q1 2014/15: April to June 2014
- Q2 2014/15: July to September 2014
- Q3 2014/15: October to December 2014
- Q4 2014/15: April to June 2015