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 October to December 2020)

March 2021

Contents

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* infection (CDI). 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 CDI.

All data tables associated with this report are included in an OpenDocument spreadsheet.

Revisions to data included are covered by a data-specific revisions and correction policy.

Citation to PHE, HCAI and 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 October to December 2020) London: Public Health England, March 2021.

COVID-19 and this data

Counts of cases for the most recent 3 financial quarters (April to June, July to September and October to December 2020) are generally 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 bloodstream infections (BSI) (particularly *E. coli*) and CDI. In addition, analysis of voluntary laboratory surveillance data has shown a reduction in the number of cases of other bloodstream infections. This leads us to conclude that fewer blood cultures are being reported in general, rather than a surveillance programme specific ascertainment problem.

It is possible that testing for these infections and their reporting was deprioritised. If that is the case, cases may be expected to return closer to the expected value over time. Surveillance of CDI and BSI remains mandatory, and PHE continues to expect NHS acute trusts to report all eligible cases to the surveillance programme.

In response to the pandemic, elective procedures in hospitals were initially cancelled although began to resume over the summer. As a result, the denominator (overnight

bed-days) was much lower over these periods than would otherwise be expected. In some instances, increasing rates of hospital-onset infection have been observed, despite a decrease in the total counts of infections. At the time of writing this report, it is still unclear the exact reasons for this increase in hospital-onset cases although efforts are being made to better understand the phenomenon.

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 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-onset cases, community-onset cases, healthcare associated and community associated MRSA bacteraemia by organisation.

MSSA bacteraemia

Counts of all reported, hospital-onset cases, community-onset cases, healthcare associated and community associated MSSA bacteraemia by organisation.

E. coli bacteraemia

Counts of all reported, hospital-onset cases, community-onset cases, healthcare associated and community associated E. coli bacteraemia by organisation.

Klebsiella spp. bacteraemia

Counts of all reported, hospital-onset cases, community-onset cases, healthcare associated and community associated Klebsiella spp. bacteraemia by organisation.

P. aeruginosa bacteraemia

Counts of all reported, hospital-onset cases, community-onset cases, healthcare associated and community associated P. aeruginosa bacteraemia by organisation.

CDI

Counts of all reported, hospital-onset cases, community-onset cases, healthcare associated and community associated CDI by organisation.

Data for this report was extracted from PHE's healthcare-associated infections data capture system (HCAI DCS) on 7 March 2021.

Epidemiological analyses of Gram-negative bacteraemia data

E. coli bacteraemia

The incidence rate of all reported *E. coli* bacteraemia has increased each year since the initiation of the mandatory surveillance of *E. coli* bacteraemia in July 2011 to the start of the COVID-19 pandemic in April to June 2020 (Figure 1a). This was primarily driven by the increase in the rate of community-onset cases (Table S1a). Since the start of the pandemic, the total cases and rates and community-onset cases and rates have fallen but are still higher than the start of the period. In contrast, the incidence rate of hospital-onset cases has remained relatively stable within the same period (Figure 1b).

Between July to September 2011 and October to December 2020, the count of cases and the incidence rate of all reported cases of *E. coli* bacteraemia increased by 12.1% from 8,275 cases to 9,275 and from 61.8 to 65.4 cases per 100,000 population. Similarly, over the same period, the count of community-onset cases increased by 19.1% from 6,279 to 7,479, while the incidence rate increased by 12.4% from 46.9 cases per 100,000 population to 52.7.

Between July to September 2011 and October to December 2020, the count of hospital-onset cases decreased by 10.0% from 1,996 to 1,796. In contrast, there has been an increase in the incidence rate of hospital-onset cases of 0.5% between July to September 2011 and October to December 2020 from 23.6 per 100,000 bed-days to 23.7. This contrast between the change in counts and rates of hospital-onset infections can, in part be explained through the reduction of hospital activity as a result of COVID-19 pandemic.

When comparing the most recent quarter (October to December 2020) to the same period in the previous year (October to December 2019) there is a 13.2% decrease in the count of all reported cases from 10,685 to 9,275, while the incidence rate also decreased by 13.2% from 75.3 per 100,000 population to 65.4. Community-onset *E. coli* bacteraemia cases decreased by 13.9% from 8,690 to 7,479, with the community-onset incidence rate decreasing by the same percentage (13.9% from 61.3 per 100,000 population to 52.7, Figures 1a and 1b, Table S1).

Furthermore, hospital-onset *E. coli* bacteraemia cases decreased by 10.0% from 1,995 to 1,796. However, incidence rate increased by 5.4% from 22.5 to 23.7 per 100,000 bed-days. It is important that these figures be interpreted with caution. Since the start of the COVID-19 global pandemic, the total count and rate of *E. coli* bacteraemia cases

declined due to reduced hospital activity but the rate of hospital-onset case has increased compared to the previous year.

In previous years, 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. Care is required in interpreting 2020 to 2021 as we have seen a reduction in cases and hospital activity.

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

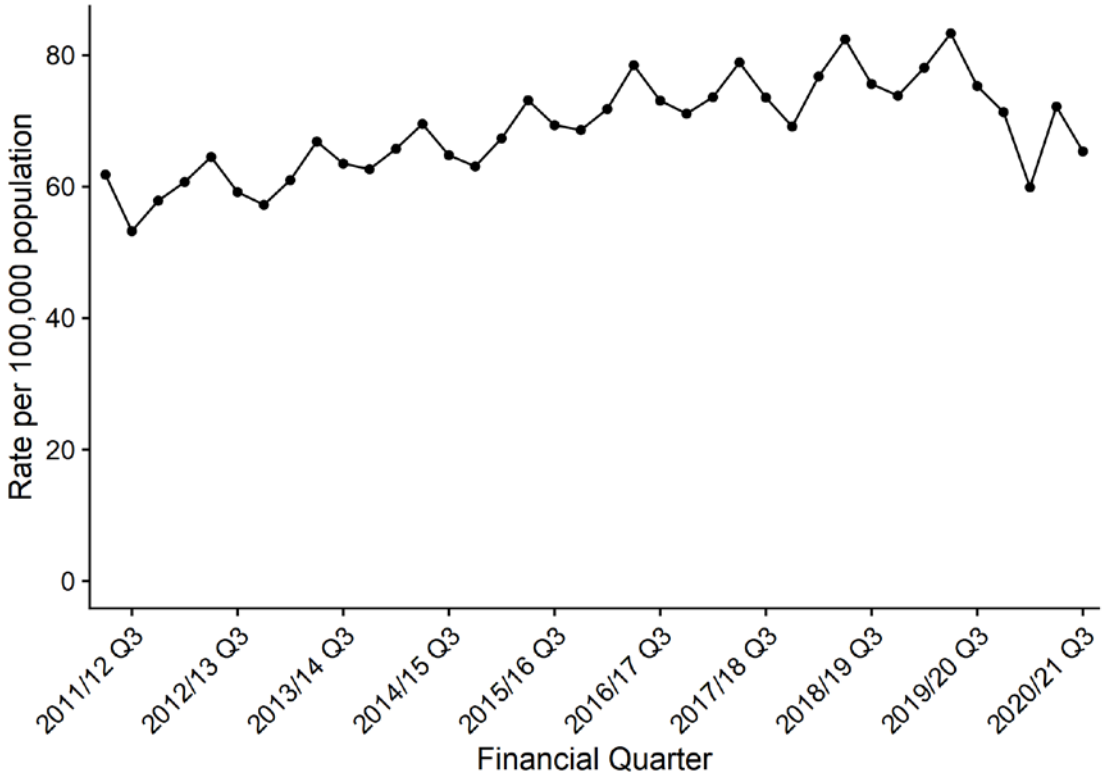
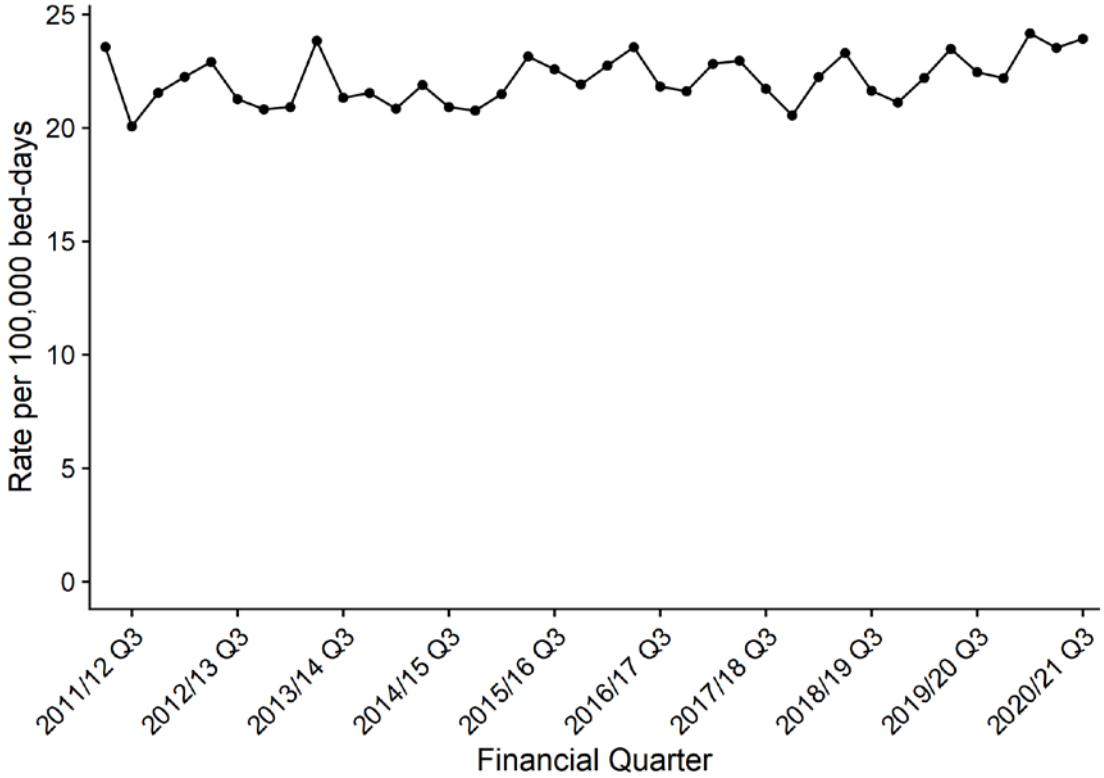


Figure 1b: Quarterly rates of hospital-onset *E. coli* bacteraemia: July to September 2011 to October to December 2020



Klebsiella spp. bacteraemia

Between April to June 2017 and October to December 2020, there was a 23.7% increase in the count of all reported *Klebsiella spp*. bacteraemia cases from 2,348 to 2,905 and a 20.9% increase in the incidence rate from 16.9 to 20.5 cases per 100,000 population respectively (Figure 2a). The count of community-onset cases also increased by 11.8% from 1,678 to 1,876 cases, while the incidence rate increased by 9.3% from 12.1 to 13.2 cases per 100,000 population respectively. Over the same period, the count and the incidence rate of hospital-onset cases increased by 53.6% from 670 to 1,029 cases and by 75.0% from 7.8 to 13.6 cases per 100,000 bed-days respectively (Figure 2b). The sharp rise in hospital-onset counts and rates is a recent development and is currently under investigation.

Comparing the most recent quarter (October to December 2020) to the same period in the previous year (October to December 2019) shows a 1.5% decrease in the count of all reported cases from 2,950 to 2,905, with the same decrease in rate from 20.8 to 20.5 per 100,000 population. Hospital-onset *Klebsiella spp*. cases have increased sharply by 19.1% from 864 to 1,029 corresponding incidence rate increased by 39.5% from 9.7 to 13.6 per 100,000 bed-days. Community-onset *Klebsiella spp*. cases decreased 10.1% from 2,086 to 1,876, with rates decreasing by the same percentage (10.1% reduction from 14.7 to 13.2 per 100,000 population, Table S2).

During October to December 2020, 72.1% (2,095/2,905) of all reported *Klebsiella spp*. bacteraemia were caused by *Klebsiella pneumoniae*, a decrease from 74.1% in the same quarter in the previous year (October to December 2019). Over the same period, the percentage of cases caused by *Klebsiella oxytoca* increased to 17.2% (499/2,905) in October to December 2020 from 15.9% in the same quarter in the previous year (October to December 2019).

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

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

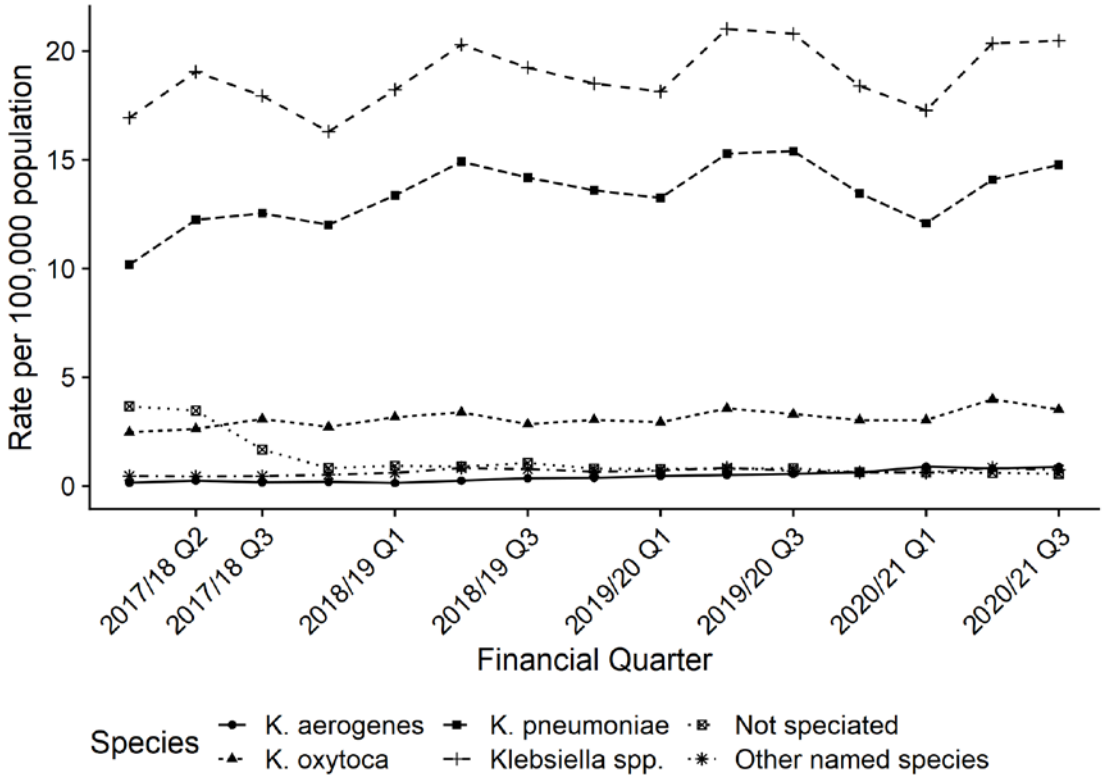
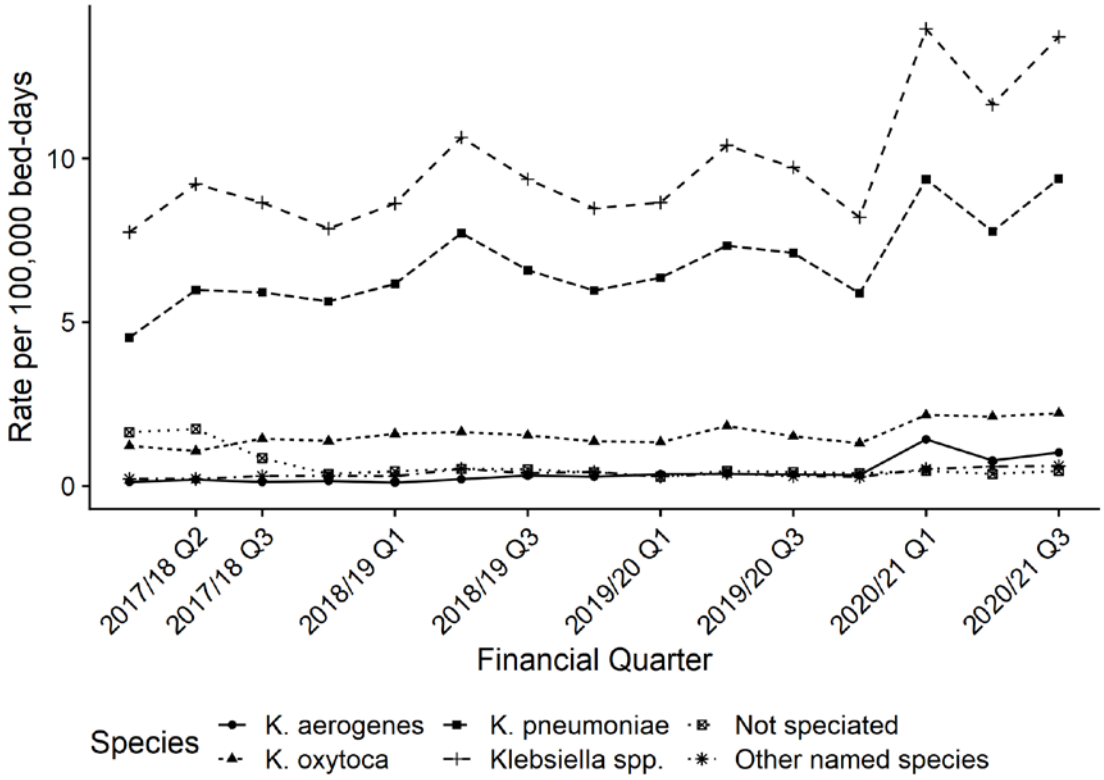


Figure 2b: Quarterly rates of hospital-onset *Klebsiella* spp. bacteraemia: April to June 2017 to October to December 2020



Pseudomonas aeruginosa bacteraemia

Between April to June 2017 and October to December 2020, there was a 10.2% increase in the count of all reported *P. aeruginosa* bacteraemia cases from 1,012 to 1,115 and a 7.7% increase in the incidence rate from 7.3 to 7.9 cases per 100,000 population respectively (Figure 3a). The count and the incidence rate of community-onset cases also increased by 5.2% from 638 to 671 cases and by 2.8% from 4.6 to 4.7 cases per 100,000 population respectively. Over the same period, the count and the incidence rate of hospital-onset cases increased by 18.7% from 374 to 444 cases and by 35.3% from 4.3 to 5.9 cases per 100,000 bed-days respectively (Figure 3b).

Comparing the most recent quarter (October to December 2020) to the same period in the previous year (October to December 2019) shows a 0.5% increase in the count of all reported cases from 1,110 to 1,115, while the incidence rate increased 0.5% from 7.8 to 7.9. Hospital-onset *P. aeruginosa* case counts, like those for *Klebsiella spp*., increased sharply (7.5%) from 413 to 444, which corresponds to an increase in the incidence rate increase of 25.9% from 4.6 to 5.9 per 100,000 bed-days. Similarly to *Klebsiella spp*., the underlying causes for these increases other than changes resulting from the pandemic response, are currently unknown. Community-onset *P. aeruginosa* cases decreased 3.7% from 697 to 671 per 100,000 population, while the community-onset incidence rate decreased 3.7% from 4.9 to 4.7 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 October to December 2020

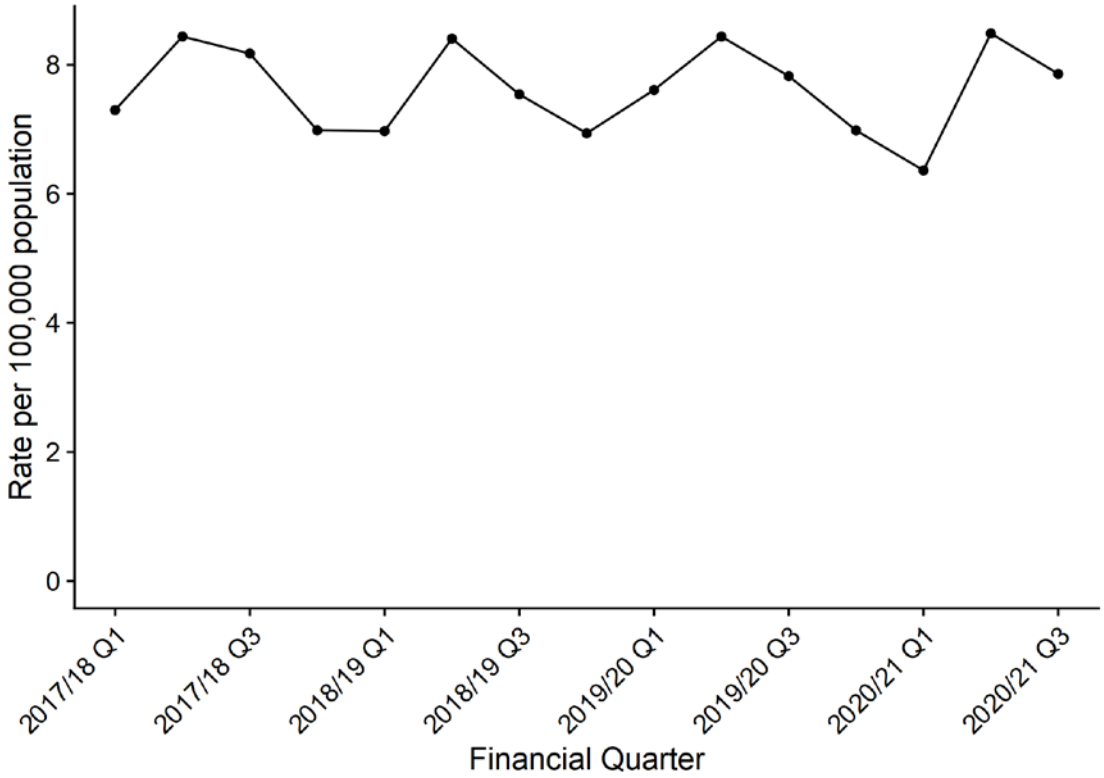
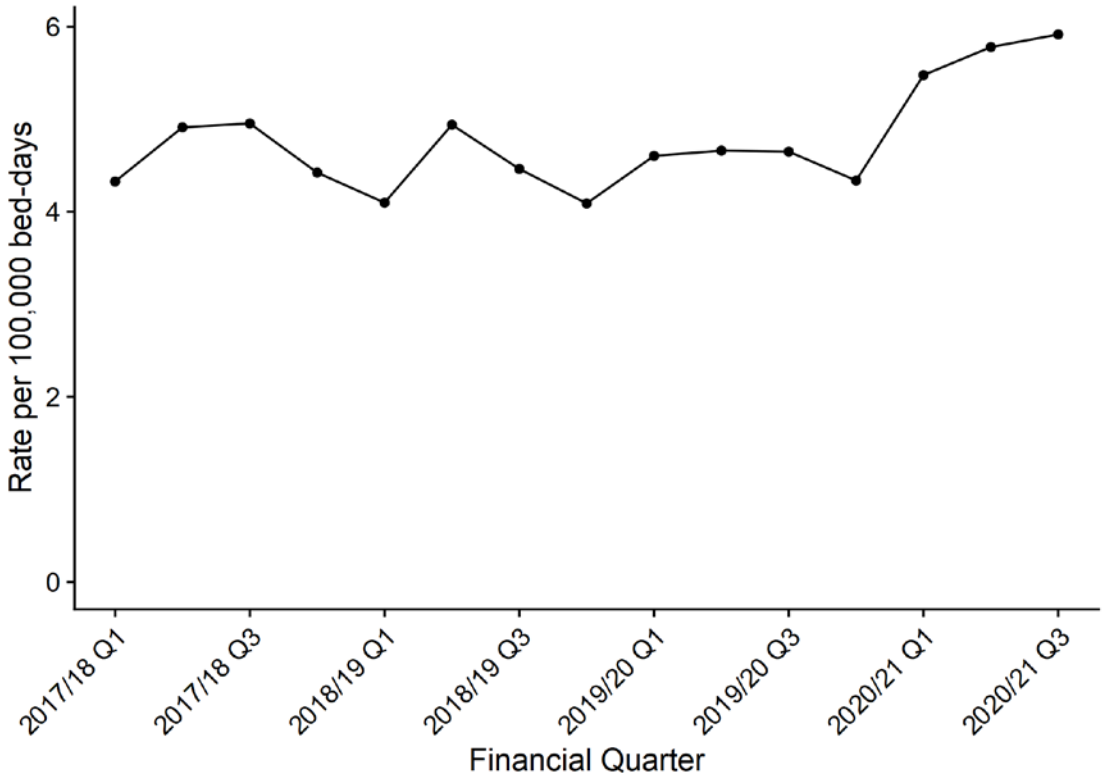


Figure 3b: Quarterly rates of hospital-onset *P. aeruginosa* bacteraemia: April to June 2017 to October to December 2020



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 1.2 cases per 100,000 population between January to March 2014 and October to December 2020.

A similar trend was observed with the incidence rate of hospital-onset cases (Figures 4b, Table S4a). There was a steep decrease of 79.0% from 4.9 cases per 100,000 bed-days in April to June 2008 to 0.9 January to March 2014. Subsequently, between January to March 2014 and October to December 2020, the rate has decreased to 0.9 cases per 100,000 bed-days.

The effect of the COVID-19 pandemic on MRSA incidence is evident when comparing the most recent quarter (October to December 2020) to the same period in the previous year (October to December 2019) which shows a 29.2% decrease in counts and rates of all reported cases from 233 to 165, and 1.6 to 1.2 cases per 100,000 population, respectively. Community-onset MRSA bacteraemia cases and rates decreased 38.9% from 162 to 99 and from 1.1 to 0.7 cases per 100,000 population (Table 4a). The count of hospital-onset MRSA bacteraemia cases decreased 7.0% from 71 to 66 with a corresponding increase in the incidence rate of 8.8% from 0.8 to 0.9 per 100,000 bed-days.

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

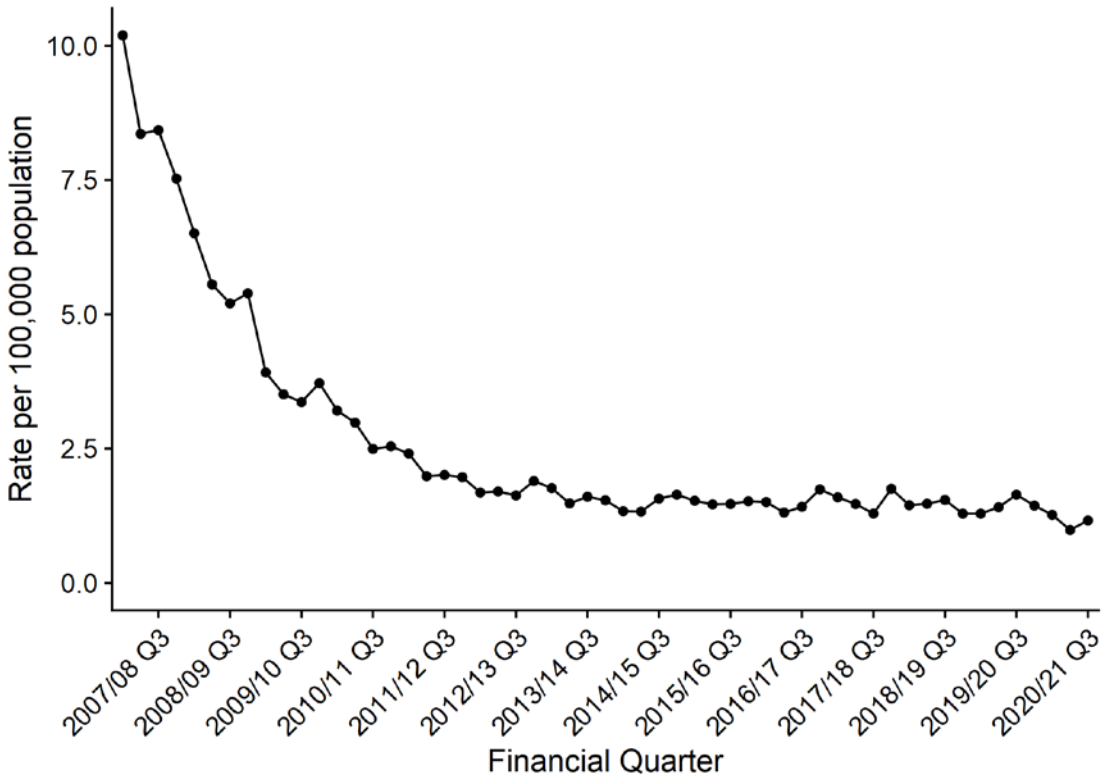
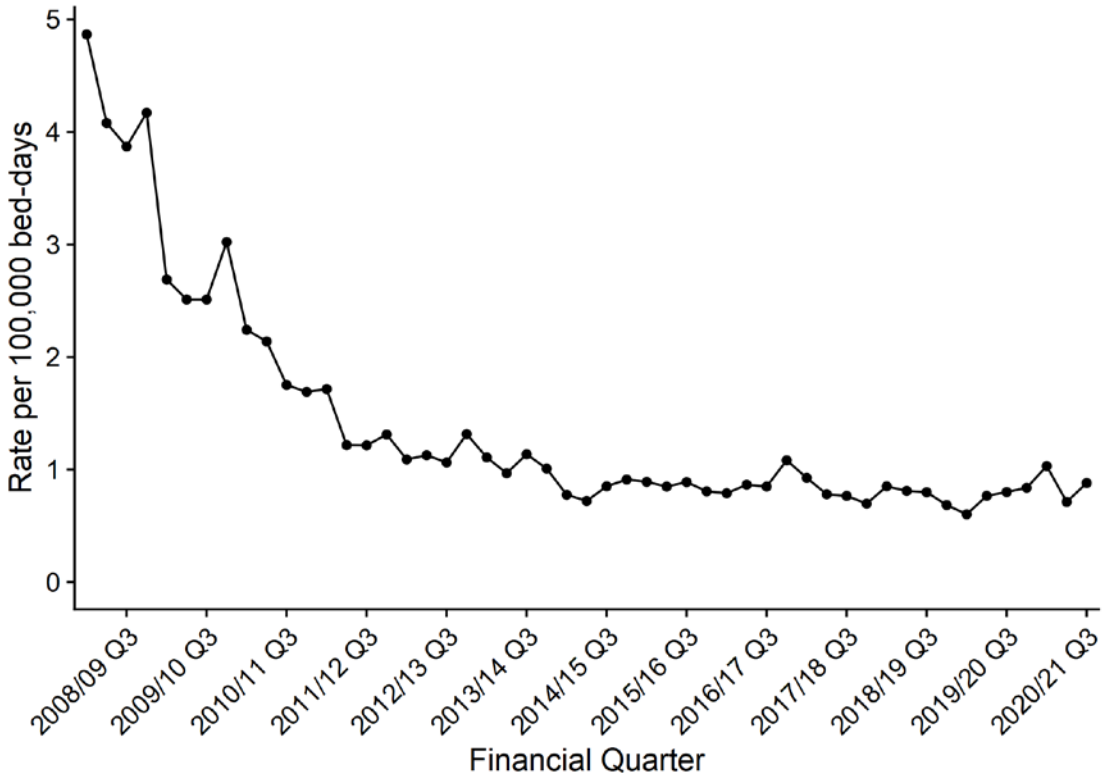


Figure 4b: Quarterly rates of hospital-onset MRSA bacteraemia: April to June 2008 to October to December 2020



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 of cases. The count of all reported cases of MSSA bacteraemia increased by 34.0% from 2,199 to 2,947 between January to March 2011 and October to December 2020. This was accompanied by a 23.7% increase in incidence rate from 16.8 to 20.8 per 100,000 population (Figure 5a, Table S5).

These increases are primarily driven by the increase in community-onset cases. Between January 2011 and October to December 2020, the count and the incidence rate of community-onset cases increased by 40.4% and 29.6% respectively from 1,464 to 2,055 cases and from 11.2 to 14.5 cases per 100,000 population. Over the same period, the count of hospital-onset cases increased by 21.4% from 735 to 892 cases, while the incidence rate increased 41.1% from 8.4 to 11.8 cases per 100,000 bed-days (Figure 5a and 5b, Table S5a). Since the beginning of the COVID-19 pandemic there has been a decrease in all reported cases and a contrasting increase in hospital-onset cases. The overall reduction is, in part a result of reduced hospital activity, although the increase in hospital-onset cases is still under investigation.

Comparing the most recent quarter (October to December 2020) to the same period in the previous year (October to December 2019) shows this disparity between the total counts and rates of MSSA and hospital-onset counts and rates of MSSA. There was a 5.9% decrease in the counts and rates of all reported cases from 3,132 to 2,947 cases and from 22.1 to 20.8 cases per 100,000 population. Hospital-onset MSSA bacteraemia cases however, increased 5.4% from 846 to 892 which corresponds to a sharp incidence rate increase of 23.5% from 9.5 to 11.8 per 100,000 bed-days. Community-onset MSSA bacteraemia cases decreased 10.1% from 2,286 to 2,055, while the community-onset incidence rate decreased 10.1% from 16.1 to 14.5 per 100,000 population. This large rate increase in hospital-onset has been present since April to June 2021 and can broadly be explained due to similar counts of cases combined with the reduction of hospital activity as a result of COVID-19 pandemic.

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

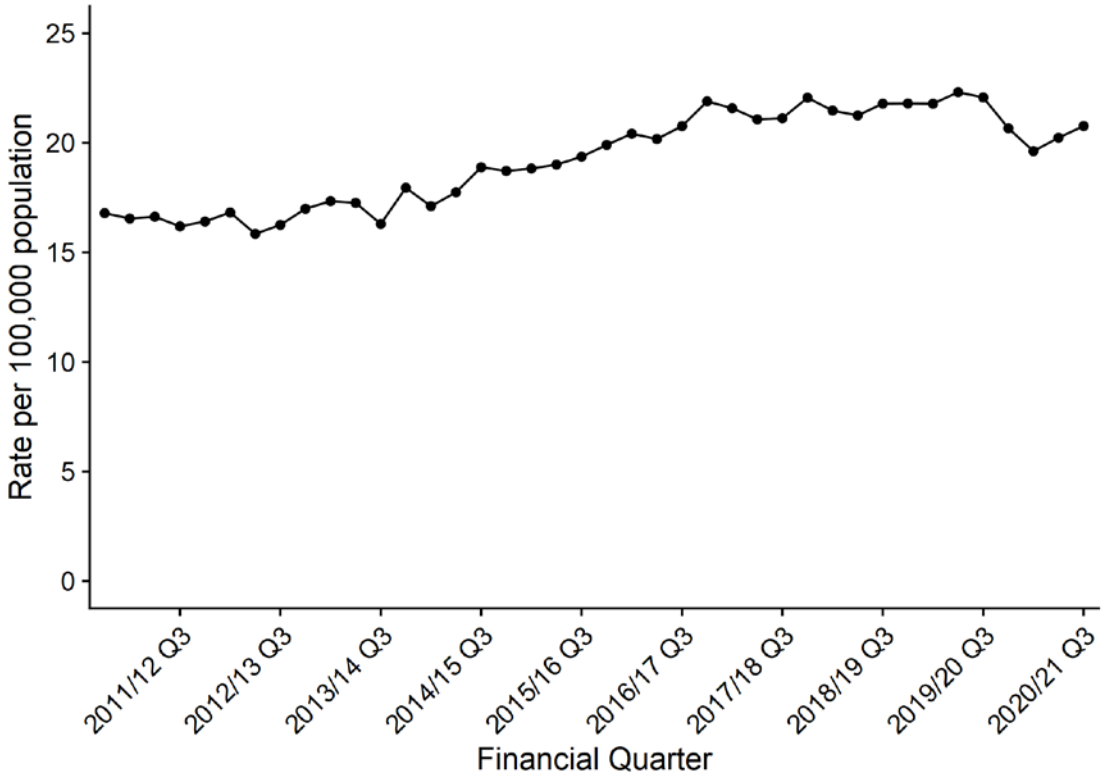
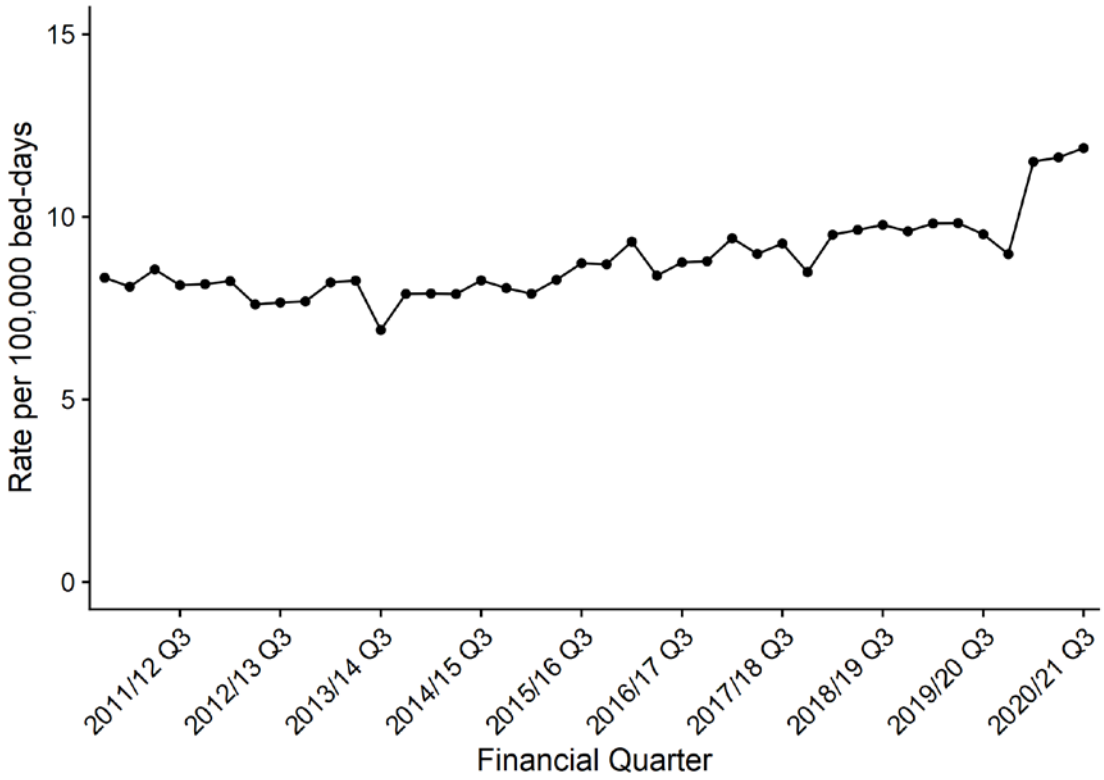


Figure 5b: Quarterly rates of hospital-onset MSSA bacteraemia: January to April 2011 to October to December 2020



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 S6).

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 October to December 2020, the count of all-reported cases decreased 13.0% from 3,711 to 3,227 cases and the incidence rate reduced by 18.5% from 27.9 to 22.7 cases per 100,000 population.

There were similar, but greater, reductions among hospital-onset CDI cases with an 85.0% reduction in count of cases between April to June 2007 and January to March 2012 from 10,436 to 1,613 cases and 84.0% reduction in the incidence rate from 112.5 to 18.2 per 100,000 bed-days. This was followed by a further 27.7% decrease in the count of cases from 1,613 to 1,167 cases and a decrease of 14.9% in the incidence rate from 18.1 cases per 100,000 bed-days to 15.4 between January to March 2012 and October to December 2020.

Comparing the most recent quarter (October to December 2020) to the same period in the previous year (October to December 2019) shows a 5.3% decrease in the count of all reported cases from 3,407 to 3,227, while the incidence rate decreased 5.3% from 24.0 cases per 100,000 population to 22.7. Hospital-onset CDI cases decreased 8.8% from 1,279 to 1,167 which corresponds to an incidence rate increase of 6.8% from 14.4 cases per 100,000 bed-days to 15.4. Community-onset CDI cases decreased 3.2% from 2,128 to 2,060, while the community-onset incidence rate decreased 3.2% from 15.0 to 14.5 per 100,000 population.

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

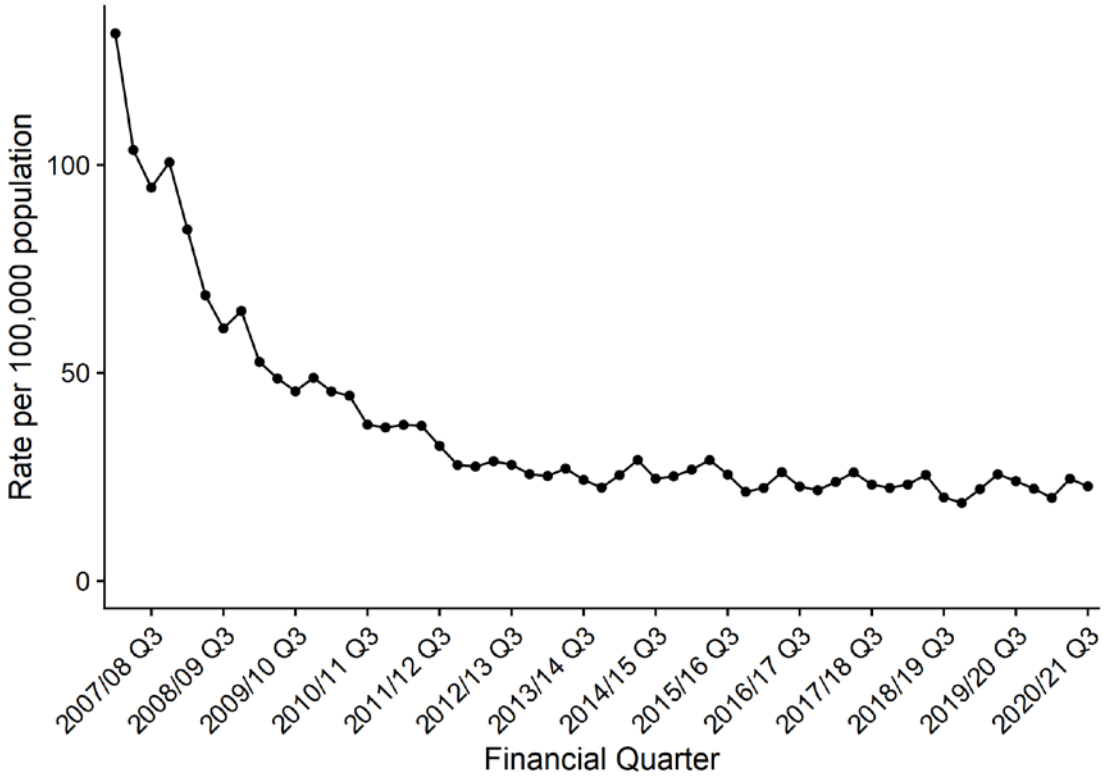
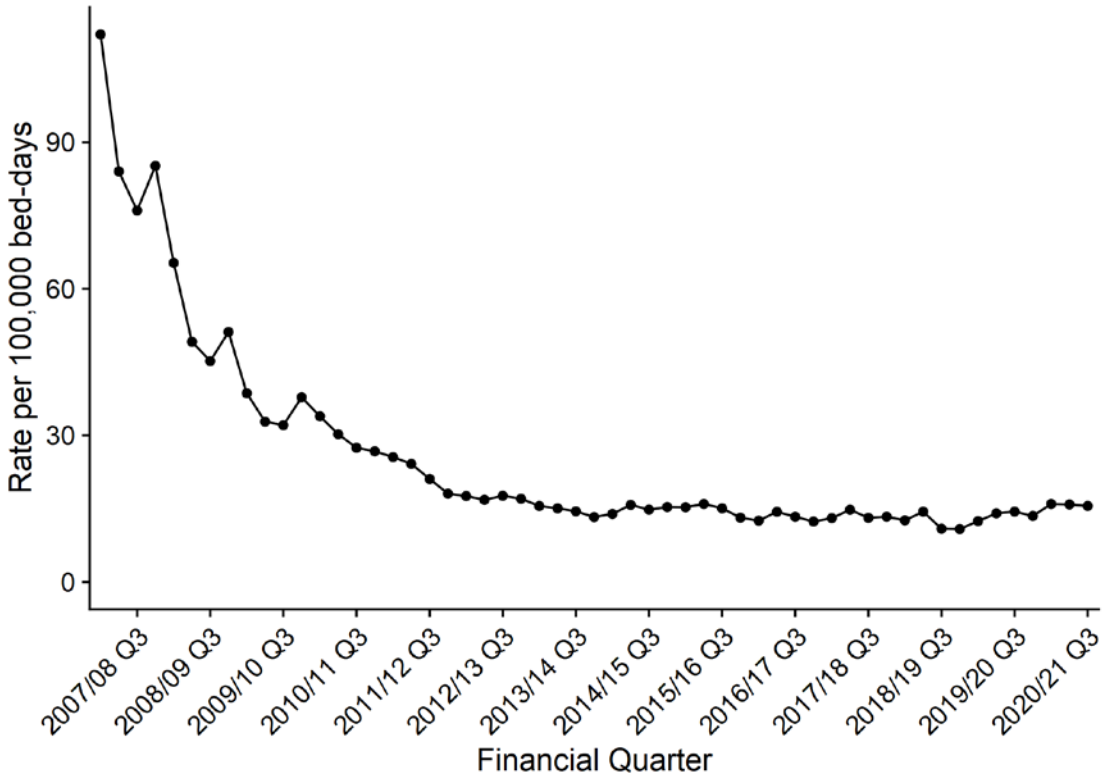


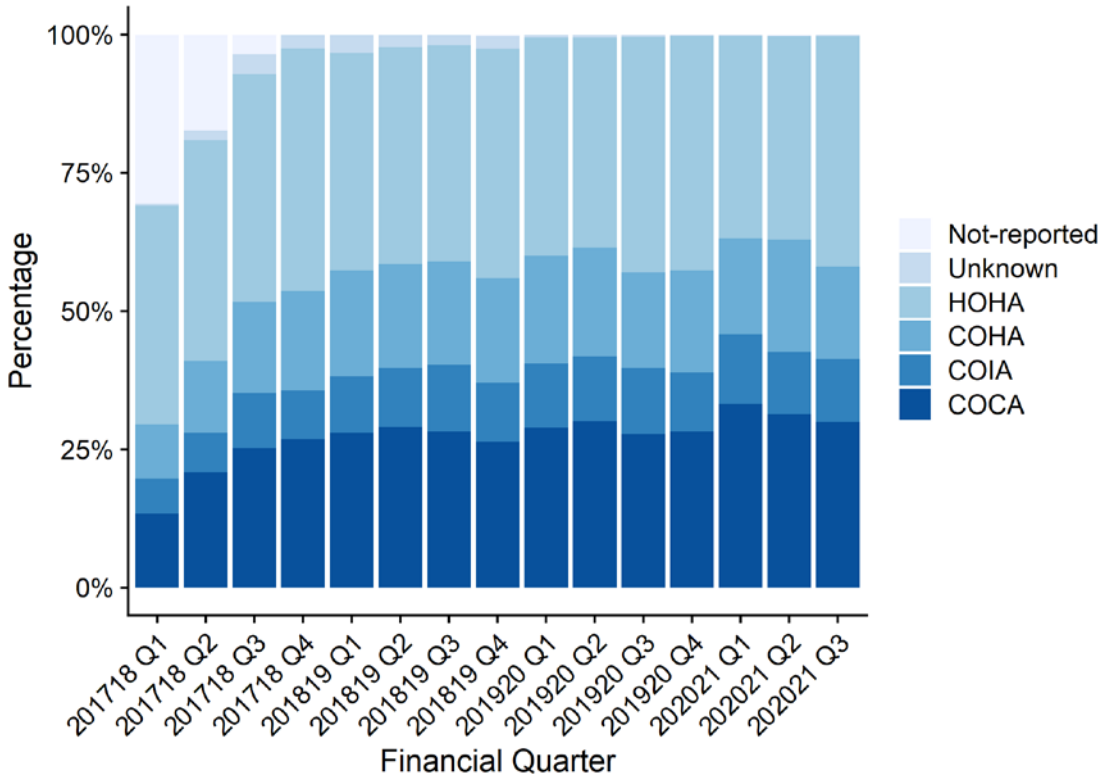
Figure 6b: Quarterly rates of hospital-onset *C. difficile*: April to June 2007 to October to December 2020



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 Centres 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 ''Not-reported'.

Between April to June 2017 and October to December 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 30.0% of all CDI, although most of this increase was observed during 2017 to 2018. COHA cases have increased from 9.7% to 16.7% of all CDI, with most of the increase being observed during 2017 to 2018. COIA cases have increased from 6.3% to 11.4% of all CDI. Much of the increase observed is likely due to improved data quality as shown by the sharp decline of cases with missing data (Figure 7 Table S7).

Figure 7: CDI rates by prior trust exposure April 2017 to October to December 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 to 2012, bed-day data has been available on a quarterly basis and has been used as such for Q2 2011/2012 to Q3 2020/2021. 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.

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 to 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) 2007/2008 and 2008/2009 KH03 figures: replaced with 2006/2007 KH03 figure
- Rotherham NHS Foundation Trust (RFR): 2009/2010 and April to June 2010 to April to June 2011 KH03 figures: replaced with 2008/2009 KH03 figure
- Sheffield Teaching Hospitals NHS Foundation Trust (RHQ) April to June 2010 to April to June 2011 KH03 figures: replaced with 2009/2010 KH03 data
- The Princess Alexandra Hospital NHS Trust (RQW) April to June 2014 and October to December 2014 KH03 figures: replaced with April to June 2013 to October to December 2013 KH03 figures, respectively
- Ipswich Hospital NHS Trust (RGQ) January to March 2016 KH03 figure: replaced with January to March 2015 figures

- West Suffolk NHS Foundation Trust (RGR) April to June 2016 to October to December 2016 and April to June 2017 KH03 figures: replaced with April to June 2015 to October to December 2015 KH03 figures
- Gloucestershire Hospitals NHS Foundation Trust (RTE) October to December 2016 to January to March 2017 KH03 figures: replaced with October to December 2015 to January to March 2016 KH03 figures

The KH03 data used for this report was published on 20th August 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 2019 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, report 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 3 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 6 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

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

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:

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

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

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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Published March 2021
PHE gateway number: GOV-7869

PHE supports the UN Sustainable Development Goals