



Summary points on April to June 2009 quarterly data and financial year (2008/09) for acute Trust apportioned *Clostridium difficile* mandatory surveillance data

Key points: analyses of quarterly mandatory *Clostridium difficile* surveillance data

- Decreases in *C. difficile* infection numbers have been seen in the current quarter (April to June 2009) when compared to the previous quarter (18% decrease overall in patients aged 2 years and over). This is a similar decrease to that seen at this time last year (decrease of 16% between January to March 2008 and April to June 2008). This is a reduction of 37% when compared to the same quarter last year (April to June 2008).
- For patients aged 65 years and over there was a 19% reduction in the number of infections reported in April to June 2009 compared to the previous quarter. This is a 37% reduction on the number of reports received in April to June 2008.
- For patients aged between 2 and 64 years of age there was a reduction of 13% in the number of infections reported in April to June 2009 compared to the previous quarter and is a 37% reduction on the same quarter in 2008.

Key points: interpreting the data

- Data are reported for 167 NHS acute Trusts.
- There are four English NHS acute Trusts which specialise in children's services; these four Trusts did not submit data to the *C. difficile* mandatory surveillance scheme until April 2007 as, prior to this, data were only collected for patients aged 65 years and over. Data for these Trusts thus only feature in the tables/analyses relating to patients aged between 2 and 64 years of age and patients aged 2 years and over.
- The annual data are presented by financial year. Historically analyses have been by calendar year as the mandatory surveillance of *C. difficile* infection started in January 2004. However, the new Public Service Agreement on reducing *C. difficile* infection is based on financial year from 2007/8.
- Archived calendar year counts/rates from January 2004 to December 2007 can be found separately in [Archive Calendar Year Table](#).

- The denominator used for this publication is based upon bed days calculated using Hospital Episode Statistics (HES) data for the relevant period and age group. This is used to calculate Trust specific rates per 1,000 bed days. Rates are only calculated for financial year annual data.
- This publication includes bed day rates for 'Trust apportioned' cases only (NHS admitted specimens taken 3 or more days following admission). This information is included in the financial year data tables.

Key points: developments in presentation of data

- Previous versions of the tables distinguished between specimens taken in an acute Trust and those taken in other settings. This was seen as the first step towards the separation of acute cases and community onset *C. difficile* infection. The tables now attempt to further address acute/community allocation through the attribution of cases based upon timing of detection.

All reported cases are now allocated to one of two categories (defined as follows):

- 'Trust apportioned' - any NHS patient specimens taken on the third day of admission onwards (e.g. day 3 when day 0 equals day of admission) at an acute Trust (including cases with unspecified specimen location) for In-patients, Day-patients, Emergency Assessment, or unspecified patient category.
Records with a missing admission date (where the specimen location is acute trust or missing and the patient category is In-patients, Day-patients, Emergency Assessment, or unspecified) are also included.
Acute Trust rates are calculated based upon this category.
- 'All other reports' - any NHS patient specimens not apportioned to the above. This will typically include the following groups:
 - Any acute Trust specimens taken on either the day of admission or the two subsequent days (e.g. days 0, 1, 2 where day 0 equals day of admission).
 - Any specimens from patients attending an acute Trust who are not In-patients, Day-patients or under Emergency Assessment (e.g. non admitted patients).
 - Any specimens from patients attending an identifiable healthcare location **except** an acute Trust. This will typically include GP, nursing home, PCT hospital and private patients.

Quarterly reports of *C. difficile* by age/Trust (April to June 2009)

- *C. difficile* quarterly reports are listed by Trust and divided into three age categories. Data for the three age categories are reported in separate tables:
 - Patients aged 65 years and over (tables 3a/3b).
 - Patients aged between 2 and 64 years (tables 3c/3d).
 - Patients aged 2 years and over (tables 3e/3f).

- **Tables 3a/3b**. Quarterly reports (case episodes) of *C. difficile* April 2007 – June 2009 for patients aged 65 years and over: 5,484 cases of *C. difficile* were reported from 163 Trusts in the second quarter of 2009 (April to June). This represents a 19% reduction on the count for the previous quarter (January to March 2009), when 6,776 reports were received and a reduction of 3,207 cases (37%) from the same period (April to June) in 2008.

Of the 5,484 cases reported between April and June 2009 2,909 (53%) had specimens taken three or more days following admission to an acute Trust and are thus 'Trust apportioned' cases. This is slightly lower than last quarter (January to March 2009) when 58.8% of cases were 'Trust apportioned' (3,983 out of 6,776 cases).

- **Tables 3c/3d**. Quarterly reports (case episodes) of *C. difficile* April 2007 – June 2009 for patients aged between 2 and 64 years of age: 1,371 cases of *C. difficile* were reported from 167 Trusts in the second quarter of 2009 (April to June). This represents a 13% decrease on the count for the previous quarter (January to March 2009), when 1,581 reports were received and a reduction of 821 cases (37%) from the same period (April to June) in 2008.

Of the 1,371 cases reported between April and June 2009 684 (49.9%) had specimens taken three or more days following admission to an acute Trust and are thus 'Trust apportioned' cases. This is approximately the same as last quarter (January to March 2009) when 49.7% of cases were Trust apportioned (786 out of 1,581 cases).

- **Tables 3e/3f**. Quarterly reports (case episodes) of *C. difficile* April 2007 – June 2009 for patients aged 2 years and over: 6,855 cases of *C. difficile* were reported from 167 Trusts in the second quarter of 2009 (April to June). This represents an 18% decrease on the count for the previous quarter (January to March 2009), when 8,357 reports were received and a reduction of 4,028 cases (37%) from the same period (April to June) in 2008.

Of the 6,855 cases reported between April and June 2009 3,593 (52.4%) had specimens taken three or more days following admission to an acute Trust and are thus 'Trust apportioned' cases. This is slightly lower than last quarter (January to March 2009) when 57.1% of cases were 'Trust apportioned' (4,769 out of 8,357 cases).

- Quarterly reports of *C. difficile* infections are summarised in the table below:

| Quarter | Number of <i>C. difficile</i> reports in patients aged 2-64 years | | Number of <i>C. difficile</i> reports in patients aged ≥65 years | | Number of <i>C. difficile</i> reports in patients aged ≥2 years | |
|-------------------------|---|---------------------|--|---------------------|---|---------------------|
| | Total cases | 'Trust apportioned' | Total cases | 'Trust apportioned' | Total cases | 'Trust apportioned' |
| April – June 2007 | 2,940 | 1,715 | 13,924 | 8,725 | 16,864 | 10,440 |
| July – September 2007 | 2,534 | 1,398 | 10,885 | 6,517 | 13,419 | 7,915 |
| October – December 2007 | 2,236 | 1,200 | 10,012 | 5,957 | 12,248 | 7,157 |
| January – March 2008 | 2,349 | 1,332 | 10,618 | 6,598 | 12,967 | 7,930 |
| April – June 2008 | 2,192 | 1,142 | 8,691 | 5,016 | 10,883 | 6,158 |
| July – September 2008 | 1,886 | 896 | 7,062 | 3,790 | 8,948 | 4,686 |
| October – December 2008 | 1,652 | 812 | 6,255 | 3,497 | 7,907 | 4,309 |
| January – March 2009 | 1,581 | 786 | 6,776 | 3,983 | 8,357 | 4,769 |
| April – June 2009 | 1,371 | 684 | 5,484 | 2,909 | 6,855 | 3,593 |

NB: data relating to pre April 2007 periods (patients aged 65 years and over) can be found in the relevant archive table.

Financial year reports/rates of *C. difficile* by age (FY 2008/09)

- *C. difficile* financial year reports/rates are listed by Trust and are also divided into three age categories. Data for the three age categories are reported in separate tables:
 - Patients aged 65 years and over (table 4a).
 - Patients aged between 2 and 64 years (table 4b).
 - Patients aged 2 years and over (table 4c).
- **Table 4a. Financial year annual reports (case episodes) and rates of *C. difficile* for patients aged 65 years and over:** 28,784 cases of *C. difficile* were reported from 163 Trusts between April 2008 and March 2009. Of these 28,784 cases 16,286 (56.6%) had specimens taken three or more days following admission to an acute trust and are thus 'Trust apportioned'. This is markedly lower than in FY 2007/08 when 61.2% of cases were 'Trust apportioned' (27,797 out of 45,439 cases).
- The *C. difficile* rate for 'Trust apportioned' cases (patients aged 65 years and over) was 0.74 cases per 1,000 bed-days for the period April 2008 to March 2009. This is markedly lower than the rate of 1.26 cases per 1,000 bed-days seen in FY 2007/08.
- **Table 4b. Financial year annual reports (case episodes) and rates of *C. difficile* for patients aged between 2 and 64 years:** 7,311 cases of *C. difficile* were reported from 167 Trusts between April 2008 and March 2009. Of these 7,311 cases 3,636 (49.7%) had specimens taken three or more days following admission to an acute Trust and are thus 'Trust apportioned'. This is

markedly lower than in FY 2007/08 when 56.1% of cases were 'Trust apportioned' (5,645 out of 10,059 cases).

- The *C. difficile* rate for 'Trust apportioned' cases (patients aged between 2 and 64 years of age) was 0.26 cases per 1,000 bed-days for the period April 2008 to March 2009. This is markedly less than the rate of 0.41 cases per 1,000 bed-days seen in FY 2007/08.
- **Table 4c. Financial year annual reports (case episodes) and rates of *C. difficile* for patients aged 2 years and over:** 36,095 cases of *C. difficile* were reported from 167 Trusts between April 2008 and March 2009. Of these 36,095 cases 19,922 (55.2%) had specimens taken three or more days following admission to an acute Trust and are thus 'Trust apportioned'. This is markedly lower than in FY 2007/08 when 60.3% of cases were 'Trust apportioned' (33,442 out of 55,498 cases).
- The *C. difficile* rate for 'Trust apportioned' cases (patients aged 2 years and over) was 0.56 cases per 1,000 bed-days for the period April 2008 to March 2009. This is markedly less than the rate of 0.93 cases per 1,000 bed-days seen in FY 2007/08.
- Financial year reports and rates (per 1,000 bed-days) for 'Trust apportioned' cases of *C. difficile* infections are summarised in the table below:

| Financial year | Patients aged 2-64 years | | | Patients aged ≥65 years | | | Patients aged ≥2 years | | |
|--------------------------|--------------------------|---------------------|------|-------------------------|---------------------|------|------------------------|---------------------|------|
| | Total cases | 'Trust apportioned' | Rate | Total cases | 'Trust apportioned' | Rate | Total cases | 'Trust apportioned' | Rate |
| April 2007 to March 2008 | 10,059 | 5,645 | 0.41 | 45,439 | 27,797 | 1.26 | 55,498 | 33,422 | 0.93 |
| April 2008 to March 2009 | 7,311 | 3,636 | 0.26 | 28,784 | 16,286 | 0.74 | 36,095 | 19,922 | 0.56 |

Appendix 1 – Method for calculating financial year data table rates

- Rates are calculated for ‘Trust apportioned’ specimens only.
- For each particular time period and age group (patients aged x) the *C. difficile* infection rate per 1,000 bed days for each Trust was calculated as follows:

$$\text{Trust Rate} = \left[\frac{\text{Number of Trust apportioned } C. \textit{difficile} \text{ reports for patients aged } x \text{ from that Trust for the time period}}{\text{Sum of durations of episodes finishing in the time period, for patients aged } x \text{ years at the start of the episode}} \right] \times 1,000$$

- The denominator used is based upon bed days calculated using Hospital Episode Statistics (HES) data for the relevant period. This exercise was undertaken in conjunction with the Department of Health.
- For each finished episode within a Trust where the patient’s age at the start of the episode was within the specified age range, the episode start date was subtracted from the episode end date to produce an episode length in days. These were then totalled over the Trust.

Appendix 2 – Data source

- The quarterly data tables are based on reports of *C. difficile* infection. Data are reported to the HPA via a web enabled mandatory surveillance system. This surveillance is operated by the HPA on behalf of the Department of Health.
- Data were extracted from the HPA’s data capture system on 16th July 2009. Changes and updates to the data will be reflected in the next publication.