

Clostridium difficile, England, Wales, and Northern Ireland: 2000 to 2002

Key points:

- The number of reports of *Clostridium difficile* infections diagnosed from faecal specimens increased from 20,556 reports in 2000 to 28,819 in 2002, although it is not clear what proportion could be due to improved reporting.
- Both Wales and Northern Ireland had rates above the English average; within England, rates of *C. difficile* varied widely among the regions.
- Few antibiotic susceptibility results were reported; all reports where this information was included were sensitive to metronidazole and vancomycin.
- Eighty-two per cent of reports concerned patients aged 65 years or over.

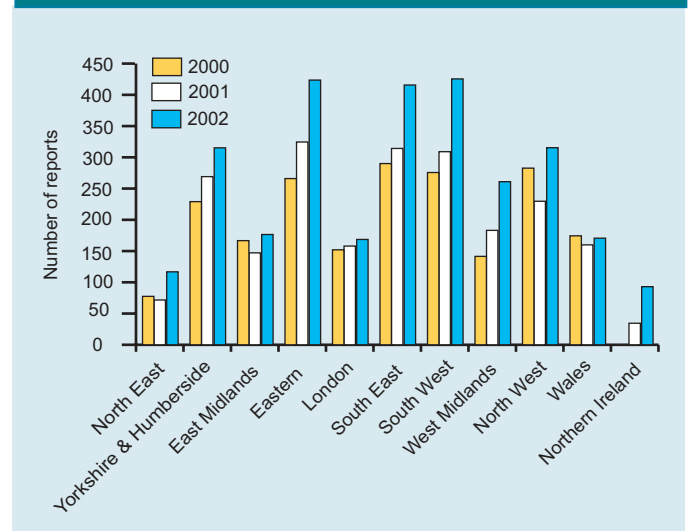
This review covers reports of *Clostridium difficile* made to CDSC in 2000, 2001, and 2002 from laboratories in England, Wales, and reports made in 2001 and 2002 from Northern Ireland. Only reports concerning faecal or lower gastro-intestinal tract specimens were included. Where rates were calculated according to age or geographical area, 2001 mid-year resident population estimates were used. Data were analysed and displayed according to current regional boundaries.

In 2000, 20,556 reports of *C. difficile* diagnosed from stool specimens from England and Wales (table 1) were received at CDSC. In 2001, this increased to 22,008 reports, including 345 reports from Northern Ireland. In 2002, a further increase of 31% was seen compared to the previous year, to 28,819 reports.

In six of the nine English regions (Yorkshire and Humberside, Eastern, London, South East, South West, and West Midlands), year-on-year increases in the number of reports were seen (figure 1). In Wales, the

number of reports fluctuated between 2000 and 2002, but decreased overall (1744 reports in 2000 to 1706 in 2002). The number of reports from Northern Ireland more than doubled between 2001 and 2002, from 345 to 930 reports. Data from Northern Ireland have been incorporated into this dataset from 2001.

Figure 1 Laboratory reports of *Clostridium difficile*, England, Wales, and Northern Ireland: 2000 to 2002



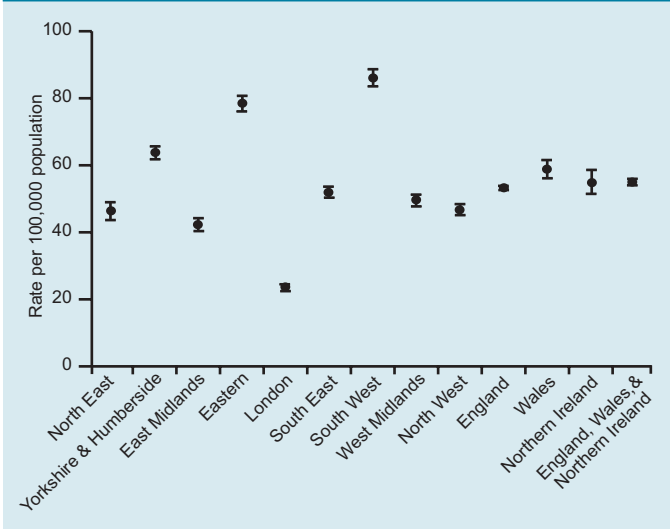
	2000	2001	2002
North East	775	717	1168
Yorkshire & Humberside	2291	2691	3152
East Midlands	1667	1471	1765
Eastern	2660	3245	4236
London	1520	1580	1686
South East	2900	3142	4157
South West	2757	3090	4255
West Midlands	1415	1831	2610
North West	2827	2297	3154
England	18,812	20,064	26,183
Wales	1744	1599	1706
Northern Ireland	NA*	345	930
England, Wales and Northern Ireland	20,556	22,008	28,819

In 2002, the overall rate of *C. difficile* reports for England, Wales, and Northern Ireland was 53.59 per 100,000 population (figure 2). The rates in Wales and Northern Ireland (58.76/100,000 and 55.05/100,000 respectively) were higher than in England (53.24/100,000). The English region with the highest rate was the South West with 86.24/100,000 population, over three times the lowest rate (23.46/100,000), which was in London.

Reports of *C. difficile* can include information on the method(s) used to identify this bacterium, including whether *C. difficile* toxin was detected. In 2000, 76% (15,530/20,556 reports) of reports indicated that toxin

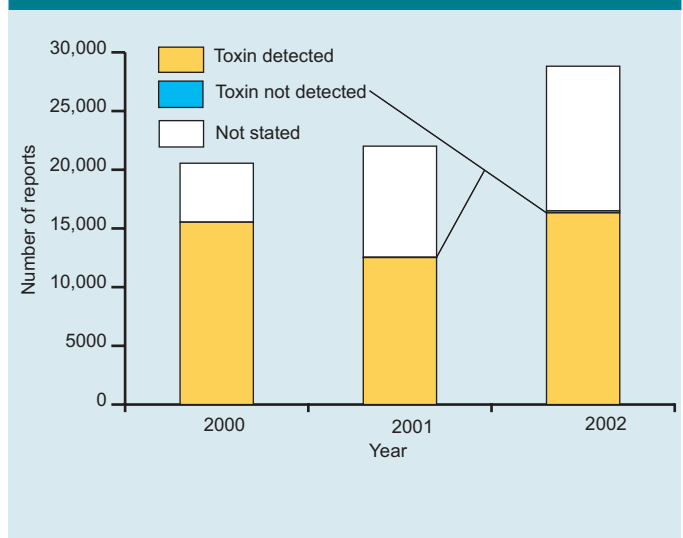
*Not available, data imported at national level from 2001.

Figure 2 Region-specific rates* of *Clostridium difficile*, England, Wales and Northern Ireland: 2002



* rates calculated using 2001 mid-year resident population estimates

Figure 3 *Clostridium difficile* reports and toxin detection, England, Wales, and Northern Ireland: 2000 to 2002



had been detected, and the remainder did not contain this information (figure 3). In 2001, fewer reports (12,521 reports, 57%) indicated that toxin had been detected. Twenty reports (0.1%) indicated that toxin had not been detected and in the remainder it was not stated.

In 2002, the proportion of reports that indicated that toxin was detected remained unchanged from 2001 (57%, 16,326 reports) although the number of reports that indicated that toxin had not been detected increased slightly (to 0.6% of the total, 182 reports). Of the reports that indicated toxin had not been detected, 71 (39%) indicated that *C. difficile* had been diagnosed by isolation; for the remainder (111; 61%) it was not clear on what the basis the diagnosis was made. Forty-three per cent of reports from 2002 did not contain information on whether toxin had been detected. Of these, 19% (2311 reports) indicated that culture was used to identify *C. difficile*. This does not necessarily mean that toxin detection did not take place; of the 16,326 reports from 2002 that indicated that toxin had been detected, 14% (2322 reports) indicated that *C. difficile* had also been cultured. Between 2000 and 2002 a decreasing proportion of reports indicated that *C. difficile* had been diagnosed by isolation, from 33% of reports (6746 reports) in 2000 to 16% (4674 reports) in 2002.

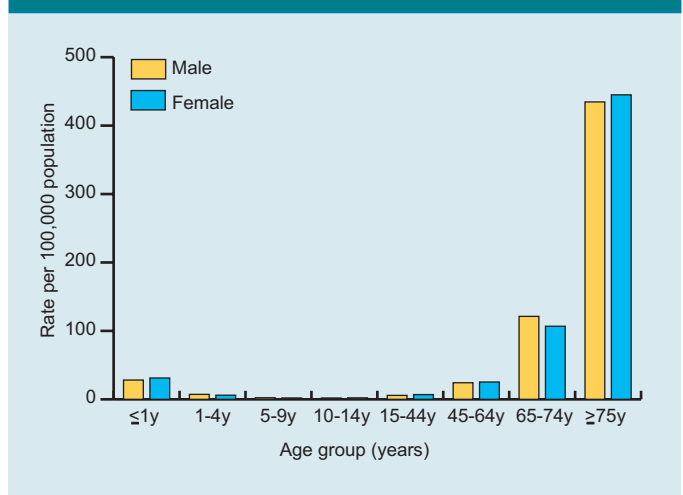
Antimicrobial resistance

In 2000 and 2001 very few reports contained information on antimicrobial susceptibility (seven and four reports respectively). In 2002, 115 reports included antimicrobial susceptibility information, although the majority (71 reports) came from a single laboratory in the East Midlands over a six-month period. Of the remaining 44 reports, 39 came from the North West region. Of the 115 reports, 20 isolates were reported as having been tested for susceptibility to vancomycin, all of which were sensitive, and four isolates were tested for susceptibility to metronidazole. Again all were sensitive. Susceptibility to a wide range of other antibiotics was also reported.

Age distribution

In 2002, 607 reports (2% of the total) did not contain information on the age of the patient. The highest age-specific rate of *C. difficile* was in those aged 75 years and over, and the rate for females was slightly higher than that for males in this age group (figure 4). The second highest rate was in the 65 to 74 age group, although this time the rate was slightly higher among males than in females. Overall, 82% of *C. difficile* reports

Figure 4 Age-specific rates* of *Clostridium difficile* reports, England, Wales, and Northern Ireland: 2002



* rates calculated using 2001 mid-year resident population estimates

concerned patients aged 65 years or over.

Discussion

The data presented in this report show that the number of reports of *C. difficile* has increased between 2000 and 2002. The 20,556 reports from England and Wales in 2000 were an increase compared to 1999, for which 18,354 reports were received(1). This increase, however,

has not been reported evenly across the country; certain regions (North East, Eastern, South West, and West Midlands) reported increases of over 50% in the number of reports received over the three years reported here, whereas other regions reported smaller increases. This geographic variation was also reflected in the region-specific rates of *C. difficile*. It is not clear how much of this increase is related to improved reporting of cases.

Although only 57% of reports in 2002 indicated that toxin had been detected, virtually all laboratories that perform *C. difficile* testing (that responded to the national survey of current practice carried out on behalf of the National *Clostridium difficile* Standards Group(2)) indicated that they used toxin testing to diagnose *C. difficile* disease. It is, therefore, likely that *C. difficile* was diagnosed by toxin testing in most of the cases where the report did not have this information.

As the majority of cases of *C. difficile* are diagnosed using toxin testing, little culture is undertaken (16% of reports in 2002 indicated culture as the method of identification) removing the opportunity for antibiotic susceptibility testing to be carried out; less than 1% of reports from 2002 included information on antimicrobial susceptibility. The susceptibility testing results available indicate the need for more representative sampling across the regions. No metronidazole or vancomycin resistance was reported in any of the years examined here, although an isolate with reduced susceptibility to metronidazole was identified by the Anaerobe Reference Unit and reported in 2001(3).

The increase in laboratory reports of *C. difficile* indicates the need for increased vigilance in the surveillance of this pathogen. The figures used for this report are based on voluntary laboratory reporting, but following the recent announcement of the Chief Medical Officer(4), surveillance of *C. difficile* will become mandatory from January 2004. Details of this and the report of the National *Clostridium difficile* Standards Group (which recommends standard methods to

ensure a consistent approach) are given in Volume 13 Number 40 of *CDR Weekly* (5).

Acknowledgements

These reports would not be possible without the enduring weekly contributions from microbiology colleagues in laboratories across England, Wales, and Northern Ireland, without which there would be no surveillance data. Laboratory reporting is the bedrock of national surveillance. This is your data, so please tell us what you would like done with it. We are always pleased to hear your views. Please send your comments/feedback to <georgia.duckworth@hpa.org.uk>. In addition, the support from colleagues within the Health Protection Agency, the Anaerobe Reference Unit in particular, is valued in the preparation of the reports. These contributions are greatly appreciated.

References

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