

Clostridium difficile
Metric ID 5031: 12 week rolling total (banded metric)

This indicator shows the total number of cases of *Clostridium difficile*, known as *C. diff* or *C. difficile*, reported by each organisation as a 12-week rolling total. Organisations are then banded into three categories: 'worse than average for a hospital of this size', 'better than average for a hospital of this size' and 'typical for a hospital of this size'.

Why this fact is important

Clostridium difficile is the major cause of antibiotic-associated diarrhoea and colitis, a healthcare-associated intestinal infection that mostly affects elderly patients with other underlying diseases. Generally, it only causes diarrhoea when the normal healthy intestinal bacteria have been killed off by antibiotics and it is able to multiply in the intestine. Although some people can be healthy carriers of *C. difficile*, in most cases the disease develops after cross infection from another patient, either through direct patient-to-patient contact, via healthcare staff, or via a contaminated environment.

Things to note

The data are published as part of a series of weekly reports on meticillin-resistant *Staphylococcus aureus* (MRSA) bacteraemia and *Clostridium difficile* infections (CDI) and shows counts of cases by hospital, as opposed to acute trust and PCT-level reporting. The data covers a rolling 12-week period, reflecting data up to and including the preceding week.

The number of available beds for each organisation is sourced from Estates Returns Information Collection (ERIC) data. The number of beds available at each organisation is taken from the Hospital Estates and Facilities Statistics for 2008/09.

Technical definition

Expected and Observed cases

The total number of cases reported over the preceding 12 weeks is calculated from the HPA data. This is the number of 'observed' cases of *C. diff*.

The number of cases that each organisation would be 'expected' to have is calculated using the number of available beds in each organisation and the national rate of cases per bed.

The national rate of cases per bed over the previous 12 weeks is calculated by:

$$\text{National rate} = \frac{\text{total number of reported cases over 12 weeks}}{\text{Total number of available beds}}$$

The number of expected cases for each organisation is calculated by:

$$\text{Expected cases} = \text{national rate} \times \text{number of available beds}$$

Organisations are banded into three categories defined by the number of standard deviations their expected number of cases is from their observed number of cases. This is calculated by:

$$\text{Number of standard deviations between the observed and expected cases} = \frac{\text{Observed cases} - \text{Expected cases}}{\text{square root(Expected cases)}}$$

Banding

Organisations whose observed number of cases is more than 1.64 standard deviations from their expected number of cases are banded as '**worse than average for a hospital of this size**'.

Organisations whose observed number of cases is within 1.64 standard deviations of the expected number are banded as '**typical for a hospital of this size**'.

Organisations whose observed number of cases is less than 1.64 standard deviations from their expected number of cases are banded as '**better than average for a hospital of this size**'.

Data source

The Health Protection Agency and ERIC.

Time period

Most recent 12 weeks

Further information

For more information on the HPA surveillance data see the [HPA website](#).