

# Investigating *Clostridioides difficile* Infections Across the U.S.

Emerging Infections Program - Healthcare-Associated Infections Community Interface Activity

## CDC: the Scientific Core of HAI Prevention

### HAI Tracking/ Reporting — NHSN

- National
- State and
- Facility levels

### Guidelines

- Foundation for clinical practice

### Outbreaks

- Stopping infections at point of care

### State Support

- Coordinating and funding state activity

### Research

- Identifying prevention strategies of tomorrow

### Technical Expertise that fuels Federal efforts

- CMS Conditions of Participation
- CMS Facility Inspections
- CMS Pay for Reporting/ Performance Standards
- HHS HAI Prevention Action Plan
- FDA Recalls
- AHRQ Prevention Projects (CUSP)

## *Clostridioides difficile* (*C. difficile*)

*Clostridioides difficile* is a bacterium that causes diarrhea and more serious intestinal conditions. The organism is estimated to have caused almost half a million infections in the United States in 2011, and 29,000 died within 30 days of the initial diagnosis. Between 2011 and 2017, the estimated CDI burden decreased by 24% after adjusting for the increased sensitivity of nucleic acid amplification tests. The decrease was driven primarily by a decline in healthcare-associated *C. difficile* infection, while the adjusted rates of community-associated *C. difficile* infection remained unchanged.

*C. difficile* infections are almost always linked to medical care; people who take antibiotics and also receive medical care are most at risk. Death rates due to *C. difficile* are highest in the elderly, however, almost half of infections occur in people younger than 65. Severe disease has been linked to ribotype 027, a stronger *C. difficile* strain. This strain spread widely after first being found in early 2000s; it appears more virulent and is more resistant to certain classes of antibiotics, such as fluoroquinolones, that are commonly used to treat other infections.

## Measuring the Scope of *C. difficile* Infection in the United States

*C. difficile* infections are a leading cause of patient harm in the U.S. medical system. Data from this project will help inform future policy and prevention strategies to reduce *C. difficile* disease.

Specifically, the EIP *C. difficile* surveillance project will:

- Determine the burden of *C. difficile* disease in the U.S.
- Identify proportion of infections associated with medical care
- Measure trends of disease over time
- Determine which strains of *C. difficile* are causing disease, and in what proportions

In addition, the project provides infrastructure for further research including studies to identify risk factors, to determine population targets for vaccines, and to monitor the efficacy of prevention strategies.

## Partners

This project is being completed through the Emerging Infections Program, a network of state health departments and academic medical centers dedicated to improving surveillance, prevention, and control of emerging infectious diseases. EIP participants in the *C. difficile* project include partners from California, Colorado, Connecticut, Georgia, Maryland, Minnesota, New Mexico, New York, Oregon, and Tennessee.

[Healthcare-associated Infections](https://www.cdc.gov/hai)

<https://www.cdc.gov/hai>

[Safe Healthcare Blog Posts](https://blogs.cdc.gov/safehealthcare/)

<https://blogs.cdc.gov/safehealthcare/>

[Clostridioides difficile Infection](https://www.cdc.gov/hai/organisms/cdiff/cdiff_infect.html)

[https://www.cdc.gov/hai/organisms/cdiff/cdiff\\_infect.html](https://www.cdc.gov/hai/organisms/cdiff/cdiff_infect.html)



National Center for Emerging and Zoonotic Infectious  
Division of Healthcare Quality Promotion