



LOS ANGELES COUNTY DEPARTMENT OF PUBLIC HEALTH ACUTE COMMUNICABLE DISEASE CONTROL PROGRAM

Frequently Asked Questions about *Clostridium difficile*

What is *Clostridium difficile*?

Clostridium difficile is a gram-positive, spore-forming bacillus that is commonly found in the environment. It is a common cause of antibiotic-associated diarrhea. *C. difficile* infections have been increasing in incidence and severity over the past several years. Some of this may be due to the recent emergence of a new strain of *C. difficile* called the North American pulsed-field gel electrophoresis type1 (NAP1).

What is the NAP1 strain of *C. difficile*?

NAP1 has recently caused several outbreaks of *C. difficile* in the United States, Canada, and Europe. NAP1 produces higher levels of toxin than other strains of *C. difficile* and is resistant to fluoroquinolones. This strain is more virulent than other strains of *C. difficile*, possibly because of the additional toxin.

What is the difference between *C. difficile* colonization and infection?

People can be colonized or infected with *C. difficile*. People who are colonized with *C. difficile* will have the organism present in their intestines, but will not have symptoms. People who are infected with *C. difficile* have the organism present, and they also have clinical symptoms.

As many as 25% of hospitalized patients and 20% of long-term care residents are colonized with *C. difficile*, while only 2–3% of healthy adults are colonized.

Who is at risk of getting *C. difficile*?

In order to cause infection, *C. difficile* must be ingested and there must be disruption of the normal colonic flora (e.g., due to antibiotics). People with the following risk factors are at increased risk of *C. difficile* infection:

- Recent antibiotic use (especially clindamycin, penicillins, cephalosporins)
- Older age
- Compromised immune system
- Serious underlying illness
- Longer hospital stay
- Gastrointestinal surgery

What are the symptoms of *C. difficile*?

C. difficile infections can cause a range of disease. Infection is most commonly mild and characterized by watery, nonbloody diarrhea, and lower abdominal pain. Some patients will have more severe illness, including pseudomembranous colitis, and may require surgery. Rarely, infection may result in death.

How is *C. difficile* diagnosed?

Stool samples can be tested for the presence of toxins produced by the organism. Selected laboratories can isolate *C. difficile* by culture. NAP1 strain is identified by culture and genetic typing (fingerprinting).

How is *C. difficile* treated?

Mild *C. difficile* infections are usually treated with 10–14 days of either metronidazole or vancomycin. If possible, healthcare providers should stop the antibiotics that the patient was previously exposed to.

Patients who are colonized with *C. difficile* are asymptomatic and should not be treated.

Will *C. difficile* infection recur after treatment?

Approximately 20% of patients will have recurrence within 1–2 months of the original infection.

How is *C. difficile* spread?

C. difficile is present in stool and can be spread from person to person or via a contaminated environment. The spores can survive on surfaces for several months. In healthcare settings, such as hospitals and long-term care facilities, *C. difficile* can be spread on the hands of healthcare providers.

How can the spread of *C. difficile* be prevented?

There are several ways to prevent and control *C. difficile* infections.

- Antibiotics should be used when necessary and appropriate. Antibiotics should be given that target a suspected or confirmed pathogen. Narrow-spectrum antibiotics should be used whenever possible.
- Healthcare providers, patients, and visitors should wash hands with soap and water after an encounter with every patient, especially if the patient has *C. difficile*. Alcohol-based hand gel may not be as effective against *C. difficile* spores, so soap and water are preferred.
- Contact precautions should be used for patients in healthcare settings with *C. difficile* infections. These patients should be placed in private rooms, if possible. Patients can be grouped with other patients with *C. difficile* infections, if private rooms are not available. Contact precautions should be continued until diarrhea resolves. When the diarrhea has resolved, it is not necessary to perform an additional stool test for *C. difficile*, as the patient may remain colonized.
- Use an EPA-registered hypochlorite-based (bleach) disinfectant for disinfection of environmental surfaces in the rooms and bathrooms of patients infected with *C. difficile*.

Is *C. difficile* a reportable disease?

Individual cases of *C. difficile* infection are not reportable. Outbreaks of *C. difficile* are reportable to the Los Angeles County Department of Public Health Morbidity Unit at 1-888-397-3993 and to the facility's licensing agency. For additional questions about *C. difficile*, please contact the Acute Communicable Disease Control Program at (213) 240-7941.

Resources

Centers for Disease Control and Prevention: Overview of *C. difficile* Infections
http://www.cdc.gov/ncidod/dhgp/id_Cdiff.html