

Clostridium difficile (klo-STRID-ee-um dif-uh-SEEL)

What is *Clostridium difficile* (*C. difficile*)?

Clostridium difficile (*C. difficile*) are spore-forming bacteria that normally live in the intestinal tract of humans. *C. difficile* produces two exotoxins: toxin A and toxin B. *C. difficile* is a common cause of antibiotic-associated diarrhea (AAD) and accounts for 15-25% of all episodes of AAD.

How is *C. difficile* spread?

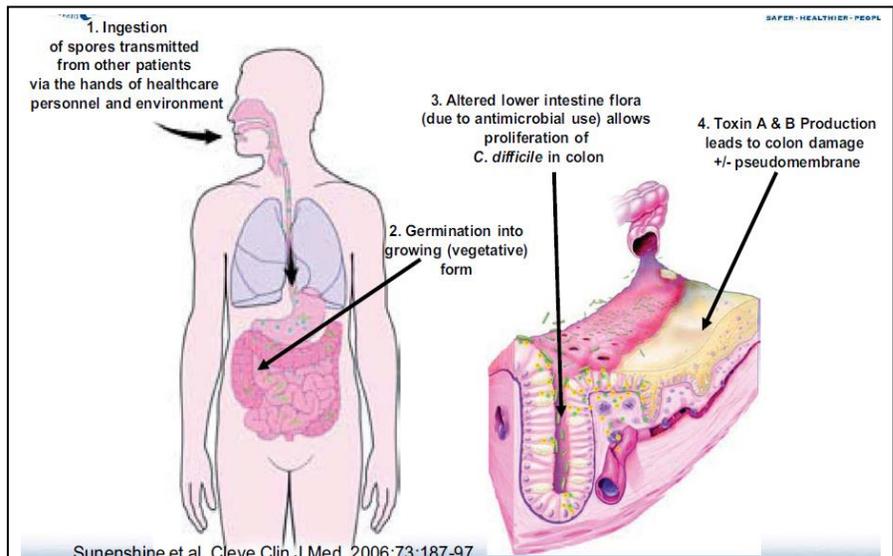
C. difficile is shed in feces. Any surface, device, or material (e.g., commodes, bathing tubs, and electronic rectal thermometers) that becomes contaminated with feces may serve as a reservoir for the *C. difficile* spores. *C. difficile* spores are transferred to patients mainly via the hands of healthcare personnel who have touched feces, a contaminated surface or item.

What are the symptoms of *C. difficile*?

Symptoms of infection are usually watery diarrhea and abdominal cramps, but serious complications can result that require hospitalization and on rare occasions cause death. Some people carry the bacteria without having symptoms.

Clinical symptoms include:

- watery diarrhea (at least three bowel movements per day for two or more days)
- fever
- loss of appetite
- nausea
- abdominal pain/tenderness



Are certain people at risk of getting *C. difficile*?

C. difficile is the most frequent cause of healthcare-associated diarrhea. The risk for disease increases in patients with:

- antibiotic exposure
- gastrointestinal surgery/manipulation
- long length of stay in healthcare settings
- a serious underlying illness
- immunocompromising conditions such as cancer
- advanced age

What is the treatment for *C. difficile*?

C. difficile is generally treated for 10 days with antibiotics prescribed by a healthcare provider. The drugs are effective and appear to have few side-effects.

How can *C. difficile* infection be prevented in the healthcare setting?

- Use antibiotics judiciously.
- Use Contact Precautions for patients with known or suspected *C. difficile*-associated disease:
 - Place patients in private rooms. If private rooms are not available, these patients can be placed in rooms (cohorted) with other patients diagnosed with *C. difficile*-associated disease.
 - Perform Hand Hygiene using soap and water.
 - If your institution experiences an outbreak, consider using only soap and water for hand hygiene when caring for patients with *C. difficile*-associated disease; alcohol-based hand rubs may not be as effective against spore-forming bacteria.
 - Use gloves when entering patients' rooms and during patient care.
 - Use gowns if soiling of clothes is likely.
 - Dedicate equipment whenever possible.
 - Continue these precautions until diarrhea ceases.
- Implement an environmental cleaning and disinfection strategy:
 - Ensure adequate cleaning and disinfection of environmental surfaces and reusable devices, especially items likely to be contaminated with feces and surfaces that are touched frequently.
 - Use an Environmental Protection Agency (EPA)-registered hypochlorite-based disinfectant for environmental surface disinfection after cleaning in accordance with label instructions; generic sources of hypochlorite (e.g., household chlorine bleach) also may be appropriately diluted and used. (Note: alcohol-based disinfectants are not effective against *C. difficile* and should not be used to disinfect environmental surfaces.)
 - Follow the manufacturer's instructions for disinfection of endoscopes and other devices.
 - Infection control practices in long-term care and home health settings are similar to those practices taken in traditional healthcare settings.
 - Follow CDC's "Guidelines for Environmental Infection Control in Healthcare Facilities" (http://www.cdc.gov/hicpac/pdf/guidelines/eic_in_hcf_03.pdf).

For more information regarding *C. difficile*, visit the following resources:

- http://www.cdc.gov/HAI/organisms/cdiff/Cdiff_infect.html
- http://www.cdc.gov/hai/organisms/cdiff/Cdiff_settings.html
- <http://www.cdc.gov/HAI/toolkits/Environmental-Cleaning-Checklist-10-6-2010.pdf>
- Educational materials available at:
http://www.cdc.gov/hai/pdfs/toolkits/CDItoolkitwhite_clearance_edits.pdf