

Nursing Home Quality Care Collaborative
Learning Series

Clostridium Difficile (CDI, *C. difficile*, *C. diff*)

Clinical Overview

With use and overprescribing of antibiotics, there are certain bacterial infections that increase, including *C. difficile*. The information reviews the etiology, transmission, risk, signs, symptoms, and treatment of *C. difficile* Infection; implementation of principles and practices of antibiotic stewardship; and prevention and management of *C. difficile* infections.



What is CDI?

CDI is a bacterium that is found in the intestines.

How does CDI cause disease?

- CDI bacteria can be found in the intestines of healthy people.
- Antibiotics can cause a decrease in normal (healthy) bacteria and an increase in CDI bacteria.
- When CDI bacteria multiply, some can produce toxins that cause diarrhea or inflammation of the colon.



What are the symptoms of CDI?

The most common symptoms of CDI include:

- Watery diarrhea, consisting of three or more bowel movements per day for two or more days
- Fever
- Loss of appetite
- Nausea
- Abdominal cramping or tenderness.



What are risk factors for developing CDI?

- Antibiotic use (a significant casual event for developing CDI)
- Hospitalization
- A stay in an acute or long-term healthcare facility
- Advanced age
- A serious underlying illness
- A weakened immune system
- Gastrointestinal surgery



How is CDI spread?

- CDI can be spread among residents on the hands of healthcare workers.
- CDI bacteria produce spores that can live on surfaces for months.
- In the healthcare setting spores can be transferred to anyone who comes into contact with contaminated items in the environment (e.g., bed rails, bed linens, bathroom fixtures, commodes, medical devices and equipment). If the spores are ingested, CDI disease may occur.



How is CDI disease treated?

- If CDI is a result of antibiotic use, the doctor may consider discontinuation of the drug.
- Additional medications specific to CDI disease are available.



What are your rates of *C. difficile* in your building? How do you know?

One resource to document and track rates of *C. difficile* is through the CDC's National Healthcare Safety Network (NHSN), which provides long-term care facilities with a customized system to track infections in a streamlined and systematic way. When facilities track infections, they can identify problems and track progress toward stopping infections. On the national level, data entered into NHSN will gauge progress toward national healthcare-associated infection goals. NHSN's long-term care component is for use by nursing homes, skilled nursing facilities, chronic care facilities, and assisted living and residential care facilities.



Calculating CDI Infections

- Numerator: The total number of CDI cases identified during the surveillance month for a location.
- Denominator: The total number of resident days and admissions during the surveillance month for a location.



Data Analysis

Data are stratified by time (e.g., month, quarter, etc.) and by resident care location.

CDI Incidence Rate = Number of CDI cases / Number of resident days x 10,000

(Source: CDC.gov)



CDI Quality Management and Prevention Practices

To prevent CDI, healthcare providers should follow CDC infection prevention guidelines that include recommendations to

- Use antibiotics cautiously
- Implement contact precautions for residents with known or suspected CDI
- Implement an environmental cleaning and disinfection strategy.



Take Home Messages

- *C. difficile* spores are shed in feces. Any surface that becomes contaminated with feces may serve as a reservoir for the *C. difficile* spores.
- *C. difficile* spores are transferred to residents/patients mainly via the hands of healthcare personnel who have touched a contaminated surface or item.
- *C. difficile* infections can be prevented by using infection control recommendations and more careful antibiotic use.
- Everyone in the nursing home plays a role in preventing *C. difficile* infection.
- When facilities track infections, they can identify problems and track progress toward stopping infections.