



California Department of Public Health

Clostridium difficile Infection in Healthcare Facilities

Quicksheet



A coordinated approach among healthcare facilities and public health is recommended to address *Clostridium difficile* infections (CDI) in California. Local health departments (LHD) are encouraged to be aware of CDI incidence in healthcare facilities and communities in their regions; understand effective, evidence-based prevention measures; and provide guidance to healthcare facilities when responding to CDI-related inquiries or events.

Clostridium difficile

- *C. difficile* is a spore-forming, toxin-producing bacteria transmitted among humans via the fecal-oral route.
- CDI ranges in severity from mild diarrhea to severe intestinal infection; death occurs in up to 9% of cases.
- Approximately 65% of cases are healthcare facility-associated.
- For *C. difficile* to proliferate and cause CDI, the normal flora of the colon must be disrupted (as with antimicrobials) and *C. difficile* must be ingested. These events may occur in any order.
- Other risk factors for CDI include advanced age and exposure to healthcare settings.

CDI Epidemiology in California Healthcare Facilities

- *C. difficile* is the most commonly reported healthcare-associated infection in hospitals. Increases in CDI reported by California hospitals have been observed during recent years.
- All California acute care hospitals are required to report healthcare facility-onset CDI to California Department of Public Health (CDPH) via the National Healthcare Safety Network. These [data are reported annually and sorted by county](http://www.cdph.ca.gov/programs/hai/Pages/CDI-Report.aspx) (<http://www.cdph.ca.gov/programs/hai/Pages/CDI-Report.aspx>). Raw data are available via the

[open data portal](https://chhs.data.ca.gov/cdph)

(<https://chhs.data.ca.gov/cdph>).

- California has no CDI reporting mandate for long-term care facilities (LTCF) or other settings; however, tracking *C. difficile* in these settings is highly encouraged.

CDI Case Definition

A positive laboratory test result for *C. difficile* toxin A and/or B (e.g. molecular assays and/or toxin assays), or a toxin-producing *C. difficile* organism detected by culture or other laboratory tests performed on an unformed stool specimen

CDI Testing Considerations

- Ensure only patients with clinically significant diarrhea are tested for CDI.
- Ensure specimens are collected and transported promptly to the laboratory.
- Repeat testing (i.e. as a test of cure) is not recommended. Bacterium and spores can shed into the environment both during and *after* CDI therapy. Routine screening of asymptomatic carriers is not recommended.

CDI Prevention & Control in Healthcare Facilities

Implement core prevention strategies at all times. Consider supplemental prevention strategies in addition to core prevention strategies when rates are high.

Core Prevention Strategies

- Contact precautions for duration of diarrhea
- Hand hygiene before, during, and after patient care
- Cleaning and disinfection of equipment and environment
- Laboratory-based alert system for immediate notification of positive test results
- Education for healthcare workers, housekeeping, administration, patients, families
- Antimicrobial stewardship
- CDI surveillance, reporting, data analysis, and feedback

Supplemental Prevention Strategies

- Extension of contact precautions beyond duration of symptoms (e.g. 48 hours)
- Presumptive isolation for patient with diarrhea pending confirmation of CDI
- Hand washing (soap and water) before exiting room of patient with CDI
- Universal glove use on units with high CDI rates (e.g. outbreak or endemic settings)
- Environmental Protection Agency (EPA) sporicidal agents for environmental cleaning*
- Tracking antibiotics associated with CDI in the facility
- Evaluation and optimization of testing for CDI

* [EPA approved antimicrobial products effective against *C.difficile* spores](https://www.epa.gov/sites/production/files/2016-06/documents/list_k_clostridium.pdf)

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Contact Precautions

Contact precautions are a core CDI prevention strategy, and consist of gowns and gloves for all contact with patients and environmental surfaces in the patient room and use of disposable or dedicated patient care equipment.

- Contact precautions should be clearly communicated (e.g. with signs) at room entrance, at handoff, and during transfers.
- Place patients with CDI in a single occupancy room. If unavailable, cohort with other CDI patients.

Three Key Components of a CDI Prevention Plan

The following are evidence-based approaches to CDI prevention.

Adherence Monitoring

- Measuring adherence and providing feedback are critical to a successful infection prevention program.
- [Adherence monitoring tools for hand hygiene, contact precautions, and environmental cleaning](http://www.cdph.ca.gov/programs/hai/Pages/AdherenceMonitoringTools.aspx)
(<http://www.cdph.ca.gov/programs/hai/Pages/AdherenceMonitoringTools.aspx>)

Environmental Cleaning

- Evaluating and enhancing environmental cleaning and disinfection processes reduce potential for transmission of harmful organisms including *C.difficile*.
- See [Environmental Cleaning and Disinfection FAQ](https://www.cdph.ca.gov/programs/hai/Pages/EnvironmentalCleaning2016.aspx)
(<https://www.cdph.ca.gov/programs/hai/Pages/EnvironmentalCleaning2016.aspx>)

Antimicrobial Stewardship

- Antibiotic stewardship interventions may be specifically designed to reduce the use of antibiotics associated with high risk of CDI.
- See [California Antimicrobial Stewardship Program Initiative](http://www.cdph.ca.gov/programs/hai/pages/AntimicrobialStewardshipProgramInitiative.aspx)
(<http://www.cdph.ca.gov/programs/hai/pages/AntimicrobialStewardshipProgramInitiative.aspx>)

Interfacility Communication

Interfacility transfer of patients with CDI occurs frequently in California and represents a

potential route for *C. difficile* transmission across healthcare facilities with a shared patient population.

- When transferring a CDI patient to another healthcare facility, CDI status must be communicated to the receiving facility ahead of time to ensure appropriate care is maintained after transfer.
- See [Infection Control Transfer Form](https://www.cdph.ca.gov/programs/hai/Documents/InterfacilityTransferForm_fillable060816.pdf) (https://www.cdph.ca.gov/programs/hai/Documents/InterfacilityTransferForm_fillable060816.pdf)
- Patients should not be denied admission into a healthcare facility based on CDI status. See [AFL 11-27](https://www.cdph.ca.gov/certlic/facilities/Documents/LNC-AFL-11-27.pdf) (<https://www.cdph.ca.gov/certlic/facilities/Documents/LNC-AFL-11-27.pdf>)

Outbreak and Cluster Response

An increase in CDI incidence may be an outbreak and warrants public health investigation. A CDI outbreak can be facility wide, unit specific, or occurring within the community. When responding to reports of suspected CDI outbreaks in healthcare facilities, LHD should:

- Develop and summarize patient information in a line list format. Collect relevant patient information including:
 - o date(s) of admission
 - o locations (e.g., wards, units, wings)
 - o symptoms (diarrhea, vomiting, nausea, abdominal pain/cramping, fever)
 - o symptom onset date
 - o antibiotic use within the past 90 days
 - o stool collection date
 - o lab test type(s) and results
- **Assess clinical features to determine whether symptoms are consistent with CDI, and consider other etiologies of gastrointestinal illness.** Colonization with *C. difficile* can be common in LTCFs (up to 30%) and positive *C. difficile* toxin tests collected in the setting of a GI outbreak might reflect colonization rather than infection. It might be

difficult to distinguish an outbreak of norovirus or other viral gastroenteritis pathogen from CDI. Viral testing can be arranged at the CDPH Viral and Rickettsial Diseases Laboratory if not available at the local public health laboratory.

All outbreaks must be reported to the local health department. Outbreaks in licensed healthcare facilities must also be reported to the local [CDPH Licensing and Certification District Office](http://www.cdph.ca.gov/certlic/facilities/Pages/LCDistrictOffices.aspx) (<http://www.cdph.ca.gov/certlic/facilities/Pages/LCDistrictOffices.aspx>)