



Clostridioides difficile Associated Disease (CDAD)

CHAPTER CONTENT

1. [Case Definition](#)
2. [Diagnosis](#)
3. [Reporting](#)
4. [Overview](#)
5. [Public Health Measures](#)
6. [Education](#)
7. [Epidemiology](#)
8. [References](#)

1. CASE DEFINITION

Confirmed Case

- Clinical illness* and laboratory confirmation of infection:
 - Positive toxin assay for *C. difficile* **OR**
 - Diagnosis of pseudomembranes on sigmoidoscopy or colonoscopy, **OR**
 - Histological/pathological diagnosis of *C. difficile* infection

*Clinical illness consists of diarrhea or fever, abdominal pain and/or ileus.

Diarrhea is defined as one of the following:

- 6 watery stools in past 36 hours
- 3 unformed stools in 24 hours for at least 1 day
- 8 unformed stools over 48 hours

NOTE: Once a case is confirmed, it can be classified according to when, where, and how it was acquired. Information surrounding CDAD classification can be found at [Infection Prevention and Control Canada CNISP Surveillance Protocols- *Clostridium difficile* \(CDI\) protocol](#).

2. DIAGNOSIS

- Positive toxin reports
- Positive *C. difficile* enzyme immunoassay for toxin A or toxin B
- Molecular testing (NAAT) for *C. difficile* toxin genes (A or B)
- An increased risk of acquiring *C. difficile* associated diarrhea (CDAD) is associated with:
 - A history of antibiotic usage



- Use of proton pump inhibitors
- Bowel surgery
- Chemotherapy
- Prolonged hospitalization
- The elderly
- Underlying illnesses and debilitation

3. REPORTING

Health Care Professionals

- Notify the Office of the Chief Public Health Officer (OCPHO) by telephone (867) 920-8646, fax (867) 873- 0442, or email, within **24 hours** after diagnosis is made or the opinion is formed **AND**
- Complete and fax the [NWT Communicable Disease Report Form](#) to the OCPHO within **24 hours** after diagnosis is made or the opinion is formed

Laboratories

- Notify the OCPHO of the test result by fax within **24 hours**,

4. OVERVIEW

Causative Agent

- *C. difficile* are gram-positive, spore-forming bacteria that are part of the normal intestinal flora.
- Some strains also produce toxins (toxin A and toxin B) which are responsible for diarrhea.

Clinical Presentation and Major Complications

- *C. difficile* can proliferate and cause severe intestinal disease in those treated with broad spectrum antibiotics that decrease the normal bacterial flora in the gut and interfere with bacterial competition that maintains their balance.
- Symptoms include watery diarrhea, fever, loss of appetite, nausea, and abdominal pain/tenderness.
- More serious manifestations include, life-threatening pseudomembranous colitis, bowel perforation, sepsis, and death.

Transmission

- Fecal-oral transmission
- Direct or indirect contact transmission via hands or items contaminated with stool from symptomatic and/or asymptomatic (colonized) patients.



- Period of communicability varies
- Spores can survive in the environment for up to 70 days.
- *C. difficile* is the most common nosocomial cause of infectious diarrhea in hospitalized patients and long-term care facilities in the industrialized world.
- Since 2000, there has been an increase in the rates of *C. difficile* in health care settings.

Incubation Period

- Unknown but believed to be between 2 days and 3 months after exposure.

Clinical Guidance

- For patient specific clinical management consult your local healthcare professional, paediatrician, or infectious disease specialist or consult the [NWT Clinical Practice Guidelines](#).

5. PUBLIC HEALTH MEASURES

Management of Cases

- There are no public health steps for individual cases of *C. difficile* associated disease.
- Consult Infection Prevention and Control for appropriate case management.
- In the case of a facility outbreak, the following public health actions should be considered,
- Support the outbreak facility by helping to identify the sources of illness and manage the outbreak as per infectious diseases and reporting and management protocol.
- Additional steps to manage outbreaks include
 - Placing all patients with acute diarrhea on contact precautions
 - Decontaminating and cleaning rooms, cubicles or designated bedspaces of patients suspected or confirmed to have *C. difficile* infection with a chlorine-containing cleaning agent (at least 1,000 parts per million [ppm]) or other sporicidal agent
 - Increasing the frequency of cleaning, including bathing and toileting facilities, recreational equipment, all horizontal surfaces in the patient's room and, in particular, areas/items that are frequently touched (hand and bedrails, light cords, light switches, door handles, furniture, etc.), common areas, nursing stations, staff washrooms, etc., on the affected unit(s);
 - Cohorting of staff to patients (i.e., assigning staff to work exclusively with *C. difficile* infection-positive patients);
 - With associated high burden of illness, particularly with higher than expected attributable mortality, there may be a role, in consultation with a microbiologist and public health, to characterize the strain type and clonality of *C. difficile* isolates;
 - Closing affected unit(s) to admissions if initial control measures are ineffective in controlling the spread of *C. difficile*;
 - Consulting provincial/territorial and/or national public health expertise in outbreak management for ongoing outbreak situations.
- An outbreak should be declared over when there is no further transmission and there has been a return to the organization's baseline *C. difficile* infection rate



- Facility outbreaks must be reported to the OCPHO

Management of Contacts

- There are no required management steps for contacts of *C. difficile*.

Prevention

- Public education in personal hygiene, especially the role of hand hygiene in eliminate *C. difficile* spores.
- Promotion of responsible antimicrobial stewardship.
- Adherence to appropriate Infection Prevention and Control requirements in facilities to prevent exposure.

6. PUBLIC & HEALTH CARE WORKER EDUCATION

- Government of Canada website for [C.difficile](#)
- Government of Canada: [Factsheet - C. difficile](#)
- Centers for Disease Control and Prevention: [C. diff \(Clostridioides difficile\)](#)
- World Health Organization: [Clostridium difficile](#)

7. EPIDEMIOLOGY

- For more information on the epidemiology of *C. difficile* in the NWT see: [Epidemiological Summary of Communicable Diseases HSS Professionals](#)

8. REFERENCES

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<http://www.provlab.ab.ca/guide-to-services.pdf>
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https://www.cdc.gov/HAI/organisms/cdiff/Cdiff_infect.html
6. Government of Canada Clostridium Difficile Infection: Infection Prevention and Control Guidance for Management in Acute Care Settings:
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 8. Government of Canada website - C-difficile:
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 9. Infectious Disease Protocol Appendix A: Disease-Specific Chapters:
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 10. NWT Infection Prevention and Control Manual:
<http://www.professionals.hss.gov.nt.ca/sites/default/files/infection-control-manual.pdf>
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