



Protocol for Healthcare-associated *Clostridioides difficile* Infection Surveillance for Acute Care Hospitals in Nova Scotia

Patient Safety Act

Revised July 2026

The following protocol is an appendix to the Patient Safety Reporting Regulations for the *Patient Safety Act* and pertains to reporting of healthcare-associated *Clostridioides difficile* infection surveillance in acute care hospitals in Nova Scotia. This protocol will provide a standardized process for the collection of rates of healthcare-associated *Clostridioides difficile* infection and subsequent process for reporting to the public and to the Department of Health & Wellness.

DISCLAIMER: Changes may occur to this protocol over time. Users must refer to the online version of this document located on the DHW website ([Public Reporting on Patient Safety - Government of Nova Scotia, Canada](#)) to ensure version accuracy.

Background

As of 2004, all cases of *Clostridioides difficile* have been reported to Public Health as per Reporting of Notifiable Diseases and Conditions Regulations under the *Health Protection Act*. The *Act to Improve Patient Safety and Health Systems Accountability (Patient Safety Act)* requires that the Nova Scotia Health Authority (NSHA) and IWK Health Centre publicly report patient safety indicators in accordance with protocols established by the regulations.

What is *Clostridioides difficile*?

Clostridioides difficile (*C. difficile*) is a Gram positive, spore-forming, anaerobic bacillus that causes infectious diarrhea by producing two toxins – toxin A (an enterotoxin) and toxin B (a cytotoxin). *C. difficile* is the most frequent cause of healthcare-associated infectious diarrhea in adults in Canada and other developed countries. The effects of CDI are usually mild but sometimes can be severe. Symptoms range from mild diarrhea to high fever, abdominal cramping, abdominal pain, and dehydration. In severe cases, surgery may be needed, and in extreme cases, CDI may cause death.

Why are incidence rates being publicly reported?

Public reporting using standardized definitions and methods ensures that all hospitals track, count, and report infections consistently. The purpose of publicly reporting healthcare-associated CDI is to reinforce system-wide accountability and transparency while supporting efforts to reduce infection rates.

This surveillance protocol helps determine the rate of healthcare-associated CDI in acute care facilities. By measuring, monitoring, and reporting these infections, hospitals can strengthen existing infection prevention and control measures while continuing to improve patient safety. Additionally, hospitals with similar demographics and challenges can share prevention strategies, fostering collaboration and continuous improvement.

Data Collection Methodology

The data collection methodology for this protocol is based on the Canadian Nosocomial Infection Surveillance Program (CNISP) Surveillance Protocol for *Clostridioides difficile* infection (CDI).

A) Case Definition

1. Primary CDI case definition

A “primary” episode of CDI is defined as either the first episode of CDI identified at a given hospital or a new episode of CDI which occurs greater than eight (8) weeks after the diagnosis of a previous episode in the same patient.

A patient is identified as having CDI if the patient meets one of the following criteria:

Criterion 1:

They have diarrhea¹ or fever, abdominal pain and/or ileus, AND a laboratory confirmation of a positive toxin assay or positive polymerase chain reaction (PCR) for *C. difficile* toxin gene(s) (without reasonable evidence of another cause² of diarrhea – see Note 1)

OR

Criterion 2:

They have a diagnosis of pseudomembranes on sigmoidoscopy or colonoscopy (or after colectomy) or histological/pathological diagnosis of CDI.

OR

Criterion 3:

They are diagnosed with a toxic megacolon (in adult patients only)

Exclusions:

- Any patients under 1 year of age
- Any pediatric patients (aged 1 year to less than 18 years) with alternate cause of diarrhea¹ found (i.e., rotavirus, norovirus, enema, or medication, etc.) are excluded even if *C. difficile* diagnostic test result is positive.

Notes:

¹ Diarrhea is defined as one of the following:

- 6 or more watery stool in a 36-hour period
- 3 or more unformed stools in a 24-hour period and this is new or unusual for the patient (in adult patients only)

² Consideration for other etiologies/contributors to loose stools, such as use of laxative, new medications with GI side effects, or other chronic gastrointestinal causes of diarrhea, should be included in determining if the patient meets the clinical case definition.

Asymptomatic cases identified only by laboratory confirmation of a positive toxin assay or PCR for *C. difficile* are not included for the purpose of publicly reporting healthcare-associated CDI (i.e., a patient must have diarrhea or fever, abdominal pain and/or ileus AND a laboratory confirmation of a positive toxin assay or PCR for *C. difficile* to be identified as having CDI).

2. New & Recurrent CDI case definition:

A **new** episode of CDI that occurs after eight (8) weeks following the diagnostic test date of the primary episode of CDI is considered a new infection.

A **recurrent** case of CDI is defined as an episode of CDI that occurs in a patient less than or equal to eight (8) weeks following the diagnostic test date of the primary episode of CDI, providing the patient was treated successfully for the primary episode and symptoms of CDI resolved completely. Recurrent episodes of CDI are not included for the purpose of publicly reporting healthcare-associated CDI.

3. Healthcare-associated acquired in your acute care facility

	Day of Admission			
Calendar Day	1	2	3	4
Time (hours)	0-23	24-47	48-71	72-95

Related to the current hospitalization:

The patient's CDI symptoms occur in your healthcare facility 72 or more hours (or more than 3 days) after admission.

Related to a previous hospitalization:

- **Inpatient:**

The patient's CDI symptoms occur less than 72 hours after the current admission (or 3 or fewer days)

AND

The patient had been previously hospitalized at your healthcare facility and discharged within the previous 4 weeks.

- **Outpatient:**

The patient presents with CDI symptoms at your emergency department (ED) or select high-risk outpatient location³

AND

The patient had been previously hospitalized at your healthcare facility and discharged within the previous 4 weeks.

Related to a previous healthcare exposure⁴ at your facility:

- **Inpatient:**

The patient's CDI symptoms occur less than 72 hours after the current admission (or 3 or fewer days)

AND

The patient had a previous healthcare exposure⁴ at your healthcare facility within the previous 4 weeks.

- **Outpatient:**

The patient presents with CDI symptoms at your ED or select high-risk outpatient location³

AND

The patient had a previous healthcare exposure⁴ at your healthcare facility within the previous 4 weeks.

Notes:

Only patients with healthcare-associated CDI, from NSHA/IWK acute care facilities are included in this surveillance. Do not include patients who are admitted to NSHA/IWK acute care facilities but who acquired CDI while in a long-term care facility or a non-acute care setting (e.g., mental health units, psychiatric or withdrawal management units, and ambulatory clinic or other outpatient cases that are not deemed high-risk).

³ **High-risk outpatient clinics:** General Medical or subspecialty clinic, General Surgical or subspecialty clinic, Hematology/Oncology, Gastrointestinal, Transplant, and Hemodialysis

⁴ **Healthcare exposure:** The patient had 2 or more interventions at any of the following locations: chemotherapy, radiation, dialysis, day surgery, day hospital, transfusion clinic, interventional radiology or emergency department OR had a single visit to the emergency department for more than or equal to 24 hours

B) Population under Surveillance

Inclusion criteria

To be included in the surveillance, a patient with healthcare-associated CDI must be:

- a) ONE year of age and older
- b) Admitted to the acute care hospital.

Long-term care and awaiting-placement patients on acute care wards are to be included. Patients admitted to a NSHA/IWK facility but who remain in the ED once admitted are included. Patients who are discharged after the date of the positive culture but before the results are available are included.

Exclusion criteria:

- a) Any patients under 1 year of age
- b) Any pediatric patients (aged 1 year to less than 18 years) with alternate cause of diarrhea found (i.e., rotavirus, norovirus, enema, or medication, etc.) are excluded even if *C. difficile* diagnostic test result is positive.
- c) ED visit under 24 hours, mental health units, psychiatric or withdrawal management units and low-risk outpatient clinics.

C) Numerator

The number of healthcare-associated CDIs, as defined in this protocol, that occur at a given facility within the reporting period.

D) Denominator

Denominator is defined as the total number of days that patients are in hospital (i.e., patient days) on the units on which surveillance for CDI is conducted and is reported on a quarterly basis. Excluded from patient days are those pertaining to dedicated long-term care units/facilities, mental health/psychiatric or withdrawal management units, and patients less than 1 year of age. Denominator data should be collected using the health information systems of the respective Authority.

E) Calculating the CDI Rate

The CDI rate is calculated by dividing the number of new cases observed in the hospital by the number of patient days per quarterly reporting period for the facility multiplied by 10,000. This rate calculation allows the level of hospital activity to be taken into account because this will fluctuate over time and is different across hospitals. Rates are expressed as cases per 10,000 patient days.

The healthcare-associated CDI rate per 10,000 patient days is calculated as follows:

$$\text{CDI rate} = \frac{\text{Number of new CDIs at a given facility during the reporting period}}{\text{Number of patient days at a given facility during the reporting period}} \times 10,000$$

Process for Public Reporting

Reporting process to the DHW

1. The number of healthcare-associated CDI cases, patient days and CDI rates will be calculated as described through this protocol.
2. The number of healthcare-associated CDI cases, patient days and CDI rates will be sent to DHW on a facility level using the data collection tool *Healthcare-Associated Clostridioides difficile Infection Surveillance Reporting Form*.
3. Healthcare-associated CDI rates will be reported on a quarterly basis. The data will be securely transferred to DHW on or before the last business day prior to the quarterly deadlines below:
 - Quarter 1 (April 1-June 30): August 15
 - Quarter 2 (July 1-September 30): November 15
 - Quarter 3 (October 1-December 31): February 15
 - Quarter 4 (January 1-March 31): May 15
4. NSHA/IWK facilities will post their CDI rates on their public websites either independently or by providing a link to the DHW webpage displaying publicly reported indicators as required by the *Patient Safety Act*. http://novascotia.ca/dhw/qps/public_reporting.asp.
5. The NSHA/IWK may choose their own methods to display CDI rates (e.g., charts, graphs).
6. Healthcare-associated CDI rates will be accompanied by a standard narrative that will allow the public to interpret the rates. This narrative will be developed and revised in collaboration between health authorities and the DHW to ensure consistent messaging.

How will DHW present the data?

The DHW will present zone-level healthcare-associated CDI rates for all reporting acute care hospitals in the NSHA and a rate for the IWK Health Centre on the DHW website on a quarterly basis. In addition, DHW will determine a provincial rate for healthcare-associated CDI by aggregating the data for all reporting facilities in Nova Scotia.

The most recent national rate published by the Canadian Nosocomial Infection Surveillance Program serves as a benchmark against which NSH rates can be compared. The 2023 rate for healthcare-associated CDI is 3.6 per 10,000 patient days.

How should the data be interpreted?

Rates of healthcare-associated CDI can be used as a tool for hospitals to monitor their overall efforts to prevent healthcare-associated infection. Because of a variation in the acuity of illness between facilities and other risk factors, the public reporting of CDI rates is not intended to serve as a measure for hospitals to compare themselves against other organizations or for the public to use as a measure of where to seek care or the quality of care at different hospitals. Rates can vary from hospital to hospital and from month to month. Some hospitals may experience higher rates of *CDIs* due to the type of hospital, the care they provide, and/or the risk profile of the patients they serve. Also, in a smaller facility, one additional case or one fewer can cause the rate to go up or down considerably.

Public reporting of healthcare-associated CDI, and other measures of health care quality over time, are important tools to ensure transparency and accountability to Nova Scotians.

References:

Public Health Agency of Canada. Canadian Nosocomial Infection Surveillance Program (CNISP) Surveillance Protocol for *Clostridioides difficile* infection (CDI) 2026. Revised October 2025.

Canadian Nosocomial Infection Surveillance Program. Healthcare-associated infections and antimicrobial resistance in Canadian acute care hospitals, 2019–2023. *Canada Communicable Disease Report*. 2025;51(6/7):249–69.
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