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

Patient Safety Act

March 2013

The following protocol is an appendix to the Patient Safety Reporting Regulations for the Patient Safety Act pertaining to public and departmental reporting of healthcare-associated Clostridium difficile infection rates. This protocol will provide a standardized process for the collection of rates of healthcare-associated Clostridium difficile infection and subsequent process for reporting to the public and to the Healthcare Quality and Patient Safety division at 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 IPCNS website (http://ipc.gov.ns.ca/) to ensure version accuracy.
Background

As of April 2012, all cases of *Clostridium difficile* were reportable to Public Health as per *It’s the Law: Reporting Notifiable Diseases and Conditions*. The Act to Improve Patient Safety and Health Systems Accountability (*Patient Safety Act*) requires that district acute care facilities/IWK Health Centre report publicly the healthcare-associated *Clostridium difficile* infection (CDI) rates for their district health authority (DHA). DHAs/IWK will post on their websites, on a quarterly basis, the incidence rates for healthcare-associated CDI. In addition, DHAs/IWK will complete a reporting form (Appendix A) with CDI rates. This form will be faxed or e-mailed to the Department of Health and Wellness (DHW) each quarter. The DHW will also report district level healthcare-associated CDI rates publicly.

What is *Clostridium difficile*?

*Clostridium 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. CDI can damage the bowel and cause diarrhea. 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 common definitions and methods ensures that all hospitals are tracking and counting infections in the same way. The purpose of reporting healthcare-associated CDI on publicly available websites is to ensure and confirm a system-wide commitment to public accountability and transparency. A further benefit is that hospitals with similar demographics and challenges may more easily learn from one another and can share CDI prevention tips and strategies.

Data Collection Methodology

A) Case Definition

Healthcare-associated CDI rates will be collected using a standard case definition (CNISP, 2012). A patient is identified as a case if:

- ☐ s/he has diarrhea* or fever, abdominal pain and/or ileus, AND a laboratory confirmation of a positive toxin assay or positive PCR for *C. difficile*
  
  OR
  
- ☐ s/he has a diagnosis of pseudomembranes on sigmoidoscopy or colonoscopy or histological/pathological diagnosis of CDI
  
  OR
  
- ☐ s/he is diagnosed with a toxic megacolon (ADULT PATIENTS ONLY)

*Diarrhea is defined as at least one of the following:

- 6 or more watery stool in a 36 hour period
- 3 or more unformed stools in a 24 hour period for at least 1 day and new or unusual for the patient (ADULT PATIENTS ONLY)
Note: If the information about the frequency and consistency of diarrhea is not available, a toxin-positive stool or positive PCR may be considered as a case. All attempts to ensure the laboratory result of *C. difficile* meets the case definition should occur.

**Healthcare-associated CDI:** CDI is considered healthcare-associated from your facility if it meets the following criteria:

- Patients CDI symptoms occur in a hospital ≥ 72 hours after admission
- OR
- CDI is seen in a patient who had been hospitalized at your hospital and discharged within the previous 4 weeks.

Only “primary” episodes are included in the surveillance. These are defined as either 1) the first episode of CDI experienced for the patient OR 2) a new episode of CDI that occurs > 8 weeks after the first laboratory-confirmation of *C. difficile*.

The healthcare-associated CDI is considered from your facility if the admission associated with the patient’s CDI was your facility. Otherwise it is considered from another facility.

**B) Population under Surveillance (Numerator)**

The population under surveillance consists of inpatients admitted to Nova Scotia acute care facilities. This also includes patients admitted to the emergency department awaiting placement (e.g. patients admitted to a service who are waiting for a bed), patients in restorative care units, patients who are considered alternate level of care and placed on an acute care ward, and patients in labour and delivery.

Excluded from surveillance are outpatient visits to acute care facilities, patients in transitional care units, alternate level of care or dedicated long term care units housed in acute care facilities, patients in psychiatric or withdrawal management (detox) units and short term emergency room visits (without admission to a service and awaiting a bed). Infants under one year of age are also excluded from this surveillance.

**C) Denominator Data**

Denominator = the total number of days that patients are in hospital (“patient days”) on the units on which surveillance for CDI is conducted. This is collected on a quarterly basis.

Excluded from “patient days” are dedicated long-term care, alternate level of care, psychiatric or withdrawal management units, transitional care units and patients less than 1 year of age. Denominator data should be collected using the health information systems of the respective DHA/IWK.

**D) 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. 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 CDI rate is calculated as follows:

\[
\text{# of new cases of CDI associated with the reporting facility} \times 10,000 = \text{Rate per 10,000 patient days}
\]

\[
\text{# of patient days}
\]

**Process for Public Reporting**

**Reporting process for DHAs/IWK to the DHW**

1. CDI cases, patient days and CDI rates will be calculated as described through this protocol.
2. CDI cases, patient days and CDI rates will be sent to DHW on a facility and district level using the data collection tool *District Healthcare-Associated Clostridium difficile Infection Surveillance Reporting Form* located in Appendix A.
3. CDI surveillance will be reported on a quarterly basis. The data will be sent to DHW prior to the quarterly data entry deadline, as follows:
   - 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. DHAs/IWK will post their CDI rates on their public websites. DHAs/IWK may choose their own methods to display CDI rates (e.g. charts, graphs).
5. CDI rates will be accompanied by a standard narrative that will allow the public to interpret the rates. This narrative will be developed in collaboration between DHAs/IWK and the DHW to ensure consistent messaging.

**How will DHW present the data?**

The DHW will present district level healthcare-associated CDI rates for all DHAs/IWK in Nova Scotia on the DHW website on a quarterly basis beginning in May 2013. In addition, DHW will determine a provincial rate for healthcare-associated CDI by aggregating the data for all DHAs/IWK in Nova Scotia.

**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. 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, month to month. In a smaller facility, there is a greater chance that variation in a hospital’s *C. difficile* count will affect the hospital’s rate, because a change in even one case in a small facility will cause the rate to go up or down considerably. Some hospitals may experience higher rates of *C. difficile* due to the nature of the type of hospital, the care they provide, and the high risk patients they serve.

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.

**Reference:**
Appendix A:

**District Healthcare-Associated *Clostridium difficile* Infection Surveillance Reporting Form**

<table>
<thead>
<tr>
<th>Facility Name</th>
<th># of new CDI cases</th>
<th># of patient days</th>
<th>CDI rate</th>
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**District Totals**

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<tr>
<th>Facility Name</th>
<th># of new CDI cases</th>
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<th>CDI rate</th>
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**Person Completing Form**

- Position
- Date

Forward completed forms by fax: (902)-428-2449 or by email Terrilyn.Hayward@gov.ns.ca

Information collected for this form shall be done in accordance with the *Protocol for Healthcare-Associated Clostridium difficile Infection Surveillance for Acute Care Hospitals in Nova Scotia.*