NOVA SCOTIA

Health and Wellness

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

Patient Safety Act

Revised December 2015

Background

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 Health System Quality branch 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.

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

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 the Nova Scotia Health Authority (NSHA) and IWK Health Centre report publicly the healthcare-associated *Clostridium difficile* infection (CDI) rates for their health authority. NSHA/IWK will post on their websites, on a quarterly basis, the incidence rates for healthcare-associated CDI. In addition, the NSHA/IWK will complete a reporting form (Appendix A) with CDI rates. This form will be e-mailed to the Department of Health and Wellness (DHW) each quarter. The DHW will also report 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) Surveillance Case Definition for primary episodes of CDI

Healthcare-associated CDI rates will be collected using a standard case definition (CNISP, 2015).

A "primary" episode of CDI is defined as either the first episode of CDI ever experienced by the patient or a new episode of CDI which occurs greater than eight (8) weeks after the previous confirmed case of CDI in the same patient (i.e. after the first *C. difficile* toxin-positive assay or PCR test).

A patient is identified as a case if:

- ☐ they have diarrhea* or fever, abdominal pain and/or ileus, AND a laboratory confirmation of a positive toxin assay or positive PCR for *C .difficile* (without reasonable evidence of another cause of diarrhea)
  OR

☐ they have a diagnosis of pseudomembranes on sigmoidoscopy or colonscopy (or after colectomy) or histological/pathological diagnosis of CDI

OR

☐ the patient is diagnosed with a toxic megacolon (in 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 and this is new or unusual for the patient (in adult patients only)

Note: *If 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

Once the patient has been identified with CDI, they will be classified as *healthcare-associated* based on the following criteria and the best clinical judgment of the healthcare and/or infection prevention and control practitioner. CDI is considered healthcare-associated from your facility if it meets the following criteria:

☐ the patient's CDI symptoms occur in your healthcare facility 3 or more days after admission, with day of admission being day 1.

OR

☐ the patient's CDI symptoms occur less than three (3) days after admission and are seen in a patient who had been hospitalized at your healthcare facility and discharged within the previous 4 weeks.

NOTE: Only patients with healthcare-associated CDI, from your facility are included in this surveillance. Do not include patients who are admitted to your facility but who acquired while in another acute-care or long-term facility.

B) Population under Surveillance (Numerator)

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 your hospital but who remain in the Emergency Department (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
Emergency, mental health units, psychiatric or withdrawal management units and ambulatory clinic or other outpatient cases.
Patients who were discharged in the previous 4 weeks and return to the ED or outpatient clinic with a new onset of CDI, but are not readmitted, are NOT included.

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, 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.

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 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 CDI rate is calculated as follows:

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

Process for Public Reporting

Reporting process 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 level using the data collection tool *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. NSHA/IWK will post their CDI rates on their public websites. The NSHA/IWK may choose their own methods to display CDI rates (e.g. charts, graphs) or they may provide a link to the DHW webpage containing their publicly reported patient safety indicators.
5. 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.

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:
Canadian Nosocomial Infection Surveillance Program (CNISP) (2015) 2015-2017 Surveillance for *Clostridium difficile* infection (CDI). Public Health Agency of Canada.

Appendix A:

NOVA SCOTIA
Health and Wellness

Healthcare-Associated *Clostridium difficile* Infection Surveillance Reporting Form

Reporting Authority and/or Zone

Fiscal Year

Reporting Period
Select one only

☐ Quarter 1 (Apr 1-Jun 30)
☐ Quarter 2 (Jul 1-Sep 30)
☐ Quarter 3 (Oct 1-Dec 31)
☐ Quarter 4 (Jan 1-Mar 31)

Facility Name	# of new CDI cases	# of patient days	CDI rate (p/10000 days)
Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.	Click here to enter text.
Totals	**Click here to enter text.**	**Click here to enter text.**	**Click here to enter text.**

Person Completing Form Click here to enter text.

Position Click here to enter text.

Date Click here to enter a date.

Forward completed forms by email to PSI@gov.ns.ca

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