

Appendix B: Provincial Case Definitions for Reportable Diseases

Disease: *Clostridium difficile* Infection (CDI) outbreaks in public hospitals

[Known as *Clostridium difficile* associated disease (CDAD) in the regulations under the HPPA]

Revised January, 2012

***Clostridium difficile* Infection (CDI) outbreaks in public hospitals**

1.0 Provincial Reporting

Confirmed outbreaks and outbreak-associated cases occurring in hospitals under the Public Hospitals Act

2.0 Type of Surveillance

Outbreak and case level data

3.0 Outbreak Classification

CDI outbreak definitions have been revised to incorporate the concept of notification thresholds, which are more sensitive than outbreak definitions.

3.1 Notification Thresholds Definition

- For wards/units with ≥ 20 beds, 3 cases of nosocomial CDI identified on one ward/unit within a seven day period or 5 cases within a 4 week period;
OR
- For wards/units with < 20 beds, 2 cases of nosocomial CDI identified on one ward/unit within a seven day period or 4 cases within a 4 week period;
OR
- Hospitals that have a baseline CDI rate for two months that is at or above the 80th percentile for comparator hospitals;
OR
- Hospitals that have a facility rate that is greater than or equal to 2 standard deviations above their baseline.

Note: This does not apply to small hospitals with a single case of nosocomial CDI which artificially elevates the facility rate

Following consultation between the institution and the Medical Officer of Health (MOH), decisions on the declaration of an outbreak will be made based on the following two criteria:

- Significant* (as determined by the facility and health unit) increase in CDI numbers or rate compared to own baseline and/or that of comparator institutions
- Epidemiologic evidence of ongoing nosocomial transmission within the ward/unit or facility

*Significance may be determined by reviewing:

- Number of new nosocomial cases associated with the reporting ward/unit or facility;
- Historic level of CDI activity of the ward/unit or facility;
- Current trend in ward/unit CDI activity or facility rate;
- Location of current cases and possible epidemiologic links between cases;

3.2 Confirmed Case Definition

- Diarrhea* with laboratory confirmation of toxin A or B for *C. difficile* (e.g. Enzyme immunoassay for toxin A or B , PCR for *C. difficile* toxin genes A or B, or *C. difficile* cytotoxicity assay);
OR
- Visualization of pseudomembranes on sigmoidoscopy or colonoscopy;
OR
- Histological/pathological diagnosis of pseudomembranous colitis;
OR
- Diagnosis of toxic megacolon.

*Diarrhea is defined as:

- loose/watery bowel movements (conform to the shape of the container), and
- the bowel movements are unusual or different for the patient, and
- there is no other recognized etiology for the diarrhea (for example, laxative use)

The following definitions should be used to determine whether the case is nosocomial:

3.2.1 New nosocomial case of CDI associated with reporting facility

- A case that meets the case definition for CDI;
AND
- CDI was not present on admission (i.e., onset of symptoms >72 hours after admission);

OR

- The infection was present at time of admission but was related to a previous admission to the same facility within the last 4 weeks.
AND
- The case has not had CDI in the past 8 weeks.

3.2.2 New nosocomial case of CDI associated with other health care facilities

- A case that meets the case definition for CDI;
AND
- CDI was present on admission;

OR

- The case had symptom onset <72 hours after admission;
AND
- The case was exposed to any other health care facility (including LTC) other than the reporting facility within the last 4 weeks;
AND
- The case has not had CDI in the past 8 weeks.

3.2.3 New case of CDI associated with source other than a health care facility or indeterminate source

- A case that meets the case definition for CDI;
AND
- CDI was present on admission;

OR

- The case had symptom onset <72 hours after admission;
AND
 - There was no exposure to any health care facility within the last 4 weeks
- OR**
- The source of infection cannot be determined;
AND
 - The case has not had CDI in the past 8 weeks.

4.0 Laboratory Evidence

4.1 Laboratory Confirmation

Any of the following will constitute a confirmed case of CDI:

- Laboratory confirmation by validated methods
- Visualization of pseudomembranes on sigmoidoscopy or colonoscopy
- Histological/pathological diagnosis of pseudomembranous colitis
- Diagnosis of toxic megacolon

4.2 Approved/Validated Tests

- *Clostridium difficile* (*C. difficile*) enzyme immunoassay (EIA) for toxin (A/B)
- Molecular testing (PCR) for *C. difficile* toxin genes (A/B)
- *C. difficile* cytotoxicity assay

4.3 Indications and Limitations

- Laboratory testing for CDI requires the identification of toxin A or B, or the genes related to cytotoxin production. Cultures for *C. difficile* are not routinely performed, and require confirmation of toxin A/B of the related genes.
- Stool specimen collection should occur as soon as possible after the onset of symptoms.
- Specimens are not recommended from patients who are less than 12 months old.
- Quick turnaround time for *C. difficile* cytotoxin and PCR testing is essential and should be pre-arranged with the microbiology laboratory serving the facility.
- A single negative EIA should not be relied on to rule out *C. difficile*. If a single EIA is negative, a second specimen should be sent. The role of repeating a PCR test is not known, and is not routinely recommended.
- *C. difficile* toxin testing and PCR are not recommended as a test of cure. Toxin may be detected long after clinical symptoms have resolved.
- Formed stool specimens will be rejected. If CDI is still suspected, contact the testing laboratory to arrange testing.

5.0 Clinical Evidence

Clinically compatible signs and symptoms are characterized by the following:

- Diarrhea (as defined above)
- Fever
- Loss of appetite
- Nausea and
- Abdominal pain or tenderness

C. difficile infection can lead to diseases ranging from mild diarrhea to toxic megacolon and death.

6.0 ICD Code(s)

ICD 10 Code J22a

7.0 Comments

- It should be noted that exceeding a threshold does not necessarily imply that an outbreak will be declared. Declaration of an outbreak can be made by either the institution or the MOH.
- In the event of a disagreement between the institution and the MOH, the MOH has the authority to determine if an outbreak of a communicable disease exists, for purposes of exercising statutory powers under the HPPA. Once an outbreak is declared it is reported to the Ministry of Health and Long Term Care through integrated Public Health Information System (iPHIS).
- The hospital may declare an outbreak over and shall consult with the MOH in doing so. Rationale for declaring or not declaring an outbreak, and declaring an outbreak over should be documented.

8.0 References

- Control of *Clostridium difficile* Infection (CDI) Outbreaks in Hospitals, A Guide for Hospital and Health Unit Staff, December 2009.
- Ontario Ministry of Health and Long Term Care, Provincial Infectious Diseases Advisory Committee (PIDAC). Testing, Surveillance and Management of *Clostridium difficile* In All Health Care Settings. 2010. Available from http://www.health.gov.on.ca/english/providers/program/infectious/diseases/best_prac/bp_cdifff.pdf.
- Ontario Agency for Health Protection and Promotion. Lababstract. *Clostridium difficile* toxin testing: specimen acceptance criteria. 2008. Available from <http://www.oahpp.ca/resources/documents/lababstracts/LAB-SD-002%20-%20002%20C%20Diff.pdf>.
- Ontario Agency for Health Protection and Promotion. Lababstract. *Clostridium difficile*: specimen acceptance and testing during outbreaks. 2008. Available from http://www.oahpp.ca/resources/documents/lababstracts/LAB-SD-045-000_C_diff_outbreaks_with_revisions_drp2.pdf.
- Public Health Agency of Canada, *Clostridium difficile* It's your health; 2006 <http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/diseases-maladies/cdifficile-eng.php>
- Ramsey, MD et al. Fulminant *Clostridium difficile*: An Underappreciated and increasing cause of death and complications. *Annals of Surgery*. 2002;235(3):363-372
- Ministry of Health and Long-Term Care. Control of *Clostridium difficile* Infection (CDI) Outbreaks in Hospitals, A Guide for Hospital and Health Unit Staff. 2009. Available from http://www.health.gov.on.ca/patient_safety/pro/cdad/pro_resource/guide_cdi_infect_control.pdf.

