Annex C: Testing, Surveillance and Management of *Clostridium difficile* In All Health Care Settings

PIDAC

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This document is intended to provide best practices related to the testing, surveillance and management of *Clostridium difficile* and is current to January 2013
• Annex C is an extension to the PIDAC – Infection Prevention and Control *Routine Practices and Additional Precautions in All Health Care Settings*, November 2012

• Appropriate for but not limited to: acute care, long-term care, chronic care and home health care

• Replaces 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
Background: CDI Rates

- Mandatory public reporting of nosocomial CDI began in Ontario public hospitals in September 2008
- Between 2009 and 2011, rates of CDI increased 13% in Acute Teaching and Large Community Hospitals (from 0.30/1000 patient days in 2009 to 0.34/1000 patient days in 2011)
  - Current rate as of July 2013 is 0.29/1000 patient days
- In past three years there has been a 55% increase in the number of CDI cases in the non-health care or unknown source category
Appendix B: CDI Rates in Ontario 2009 to 2011

Rates of CDI associated with reporting facilities by hospital type
Ontario, 2009-2011

Source: Ministry of Health and Long-Term Care, Hospital self-reported data (Self Reporting Initiative), extracted [2012/07/12].
Background: Outbreak Strains

- Number of strains identified per outbreak ranged from 1 to 41, with a median of 3 distinct strains; multi-clonal outbreaks
- NAP1 Strain represented 60% of all *C. difficile* outbreak strains as tested by PHO laboratories.
- All isolates were susceptible to metronizadole and vancomycin (still preferred treatment options)
What’s changed in this Annex?

A number of updates including:

- IPAC measures
- Overall, stronger positions on patient accommodation, enhanced cleaning practices, baseline determination, surveillance and treatments
- CDI testing and surveillance: addition to the case definition and removal of 80th percentile as an outbreak threshold
- Management of CDI outbreaks: Control of *Clostridium difficile* Infection (CDI) Outbreaks in Hospitals 2009 MOHLTC guide has been incorporated into Annex C
- All revisions/additions are summarized (page iii) and highlighted in the text
There are two major components to successful control of CDI: effective IPAC measures and antimicrobial stewardship
IPAC Measures: the CDI “bundle”

Sustained control of CDI may be achieved with IPAC measures directed at interrupting the horizontal spread

• A system for identification and prompt isolation of suspected or known CDI cases
• Appropriate environmental services policies and procedures for rooms/bathrooms of CDI cases, including use of sporicides
• A hand hygiene program
• A system for disposal of human waste that prevents environmental contamination
• Access to appropriate and timely laboratory testing
Environmental Cleaning

• *C. difficile* is a spore-forming bacterium

• Thorough cleaning and disinfection of the patient/resident environment to remove and kill spores is essential to CDI control

• Clean and disinfect patient/resident room twice daily using hospital-grade disinfectant or a sporicide

• Clean and disinfect patient/resident bathroom twice daily using a sporicidal agent

• Discharge/transfer cleaning should be a double cleaning with use of a sporicide

• Appendix C: daily and discharge/transfer cleaning procedure
Environmental Cleaning: other considerations

- If there are multiple cases on a unit, regardless of source, consider using CDI protocol for all patient/resident discharge/transfer cleaning, regardless of patient/resident CDI status, to reduce bioburden.

- Consider use of a sporicidal agent as a routine disinfecting agent for bathrooms in ambulatory areas where patients with CDI are likely to be seen, e.g. emergency departments, chemotherapy clinics.
  - at a minimum, high-use bathrooms should be cleaned every 4 hours.
Treatment

- New antibiotic option: Fidaxomicin
  - Non-inferior to vancomycin for curing CDI; superior for reducing CDI recurrences
- New prevention and treatment modalities that are being explored include:
  - probiotics
  - faecal microbiota transplantation
An antimicrobial stewardship program (ASP) is an essential component of CDI prevention and control

Refer to:

• Annex A for more information on ASPs
• PHO website for information on developing an ASP
CDI Testing and Surveillance

- Ideally, laboratory testing turnaround time should be less than 24 hours; test should be available 7 days per week
- Molecular testing methods (i.e., PCR, other NAATs) are more sensitive and are now considered testing methods of choice
- If the first molecular test is negative there is no need for a second test
- Sensitive testing methods can detect both colonization and disease
  - Result must be correlated with case definition for CDI
Case Definition of CDI

- Laboratory confirmation of *C. difficile* together with diarrhea*
  
  or

- Visualization of pseudomembranes on sigmoidoscopy or colonoscopy
  
  or

- Histological/pathological diagnosis of pseudomembranous colitis
  
  or

- Diagnosis of toxic megacolon

*Definition of diarrhea: loose/watery stool; unusual/different for the patient; no other etiology, e.g., laxatives; 3 or more episodes within a 24 hour period

**N.B.** Initiate contact precautions **at onset** of diarrhea without waiting for 3 episodes or laboratory results
When is CDI attributable to your facility and when is it not?

- Annex C provides surveillance guidance for **internal** surveillance purposes:
  - CDI attributable to your facility
  - CDI not attributable to your facility

- This differs from public reporting requirements, which has 3 levels of attribution:
  - Attributable to your facility
  - Attributable to another facility
  - Other/unknown

- Note: 72 hour time frame associated with these definitions is useful for surveillance, but is arbitrary and may not reflect acquisition in the facility
CDI Outbreaks

• Cases of CDI occurring at a rate exceeding the normally expected baseline rate for the health care facility for 2 consecutive months should be investigated as a possible outbreak

• Clusters of cases attributable to one unit/ward/area of the facility should be investigated as a possible outbreak

• CDI outbreaks should be reported by long-term care homes as institutional outbreaks of gastroenteritis
CDI Outbreaks: MOHLTC notification thresholds

• wards/units with ≥20 beds: 3 new cases of nosocomial CDI identified on ward/unit within a 7-day period OR 5 new cases of nosocomial CDI within a 4-week period,

OR

• wards/units with <20 beds: 2 new cases of nosocomial CDI identified on ward/unit within a 7-day period OR 4 new cases of nosocomial CDI within a 4-week period,

OR

• Facilities that have a facility nosocomial CDI rate that exceeds their annual nosocomial baseline rate for a period of 2 consecutive months
Notes on notification thresholds:

• Exceeding a threshold does not necessarily imply that an outbreak will be declared

• Not valid for a small community hospital, where a single case of nosocomial CDI can artificially elevate the facility rate

• Consultation with local public health unit and/or with the local RICN is available for facilities with limited experience in managing CDI outbreaks

• PHO ICRT visit may be requested by the facility or the MOH for assistance with threshold investigation or outbreak management

• Removal of the 80th percentile from outbreak threshold definition
  • all Ontario hospitals should now have baseline data
Annex C’s Outbreak Management section also includes guidance on:

- Infection prevention and control measures
- Antimicrobial stewardship during an outbreak
- Criteria for declaring an outbreak over
- Sample outbreak line listing (Appendix E)
QUESTIONS?