

CLOSTRIDIUM DIFFICILE INFECTION

INFECTION PREVENTION AND CONTROL GUIDANCE FOR MANAGEMENT IN LONG-TERM CARE FACILITIES

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CLOSTRIDIUM DIFFICILE INFECTION:

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FOREWORD

CLOSTRIDIUM DIFFICILE INFECTION

INFECTION PREVENTION AND CONTROL GUIDANCE FOR MANAGEMENT IN LONG-TERM CARE FACILITIES

The Public Health Agency of Canada has developed this document to provide infection prevention and control guidance to long-term care^a facilities and healthcare workers^b for the management of residents with *Clostridium difficile* infection. The content of this guidance document has been informed by technical advice provided by members of the Public Health Agency of Canada's Steering Committee on Infection Prevention and Control Guidelines.

This guidance is meant to be used in conjunction with relevant provincial/territorial and local legislation, regulations, and organizational policies. The recommendations are based on current, scientific evidence and best practices, and are subject to review and change as new information becomes available.

^a Long-term care facility - A facility or unit that includes a variety of activities, types and levels of skilled nursing care for individuals requiring 24-hour surveillance, assistance, rehabilitation, restorative and/or medical care in a group setting that does not fall under the definition of acute care. These facilities/units are called by a variety of names including chronic, continuing, complex, residential, rehabilitation, or convalescence care and nursing homes.²⁰

^b Healthcare workers – Individuals who provide health care or support services, such as nurses, physicians, dentists, nurse practitioners, paramedics and sometimes emergency first responders, allied health professionals, unregulated healthcare providers, clinical instructors and students, volunteers and housekeeping staff. Healthcare workers have varying degrees of responsibility related to the health care they provide, depending on their level of education and their specific job/responsibilities.²⁰

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DESCRIPTION

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).¹ *C. difficile* is the most frequent cause of healthcare-associated infectious diarrhea in Canadian hospitals^{2,3} and is the most common cause of acute infectious diarrheal illness in long-term care facilities.^{4,5}

The reported incidence of healthcare-associated *C. difficile* infection in Canada has risen over the last decade and is associated with increased morbidity and mortality.⁶ *C. difficile* infection can have a variety of manifestations from uncomplicated diarrhea to life-threatening pseudomembranous colitis,³ bowel perforation and sepsis.⁷ Residents in long-term care facilities are at greater risk because of advanced age, the frequent need for hospitalization,^{8,9} the presence of underlying diseases/comorbidities, recurrent exposures to antimicrobial agents,⁸ and receipt of chemotherapy and immunosuppressive agents.³ Incident rates of *C. difficile* infection for those aged 65 and older may be 10 times higher than in younger adults.⁸

C. difficile is easily transmitted within healthcare settings, commonly causing outbreaks in hospitals¹⁰ and long-term care facilities,¹¹ and is associated with an increase in *C. difficile* infection-related morbidity and mortality in Canada.¹² There has been an almost four-fold increase in the *C. difficile* infection attributable mortality rate in Canadian hospitals from 1997 to 2005 (1.5% of cases to 5.7%, respectively, $p < .001$).¹² There are multiple reasons behind the increase in *C. difficile* infection and *C. difficile* infection-related mortality rates in Canada but an important contributor has been the spread of a more virulent strain, often referred to as North American pulsed field (NAP) type 1.¹³

The primary mode of transmission for *C. difficile* within healthcare settings, including long-term care facilities, is by person-to-person spread through the fecal-oral route.⁹ The hands of healthcare workers, transiently contaminated with *C. difficile* spores, along with environmental contamination play an important role in the transmission of *C. difficile* in healthcare settings.¹⁴⁻¹⁶ Compared to other healthcare-associated bacterial pathogens, environmental contamination around a *C. difficile* infection resident is thought to be a relatively more significant factor in cross-transmission to others. This is because *C. difficile*, being a spore-forming microorganism, persists in the environment longer and resists routine disinfection processes more than non-spore forming bacteria.

The incidence of *C. difficile* infection within a LTCF is variable. Those responsible for infection prevention and control within a facility should be aware of *C. difficile* infection epidemiology within their organization and gauge their response accordingly.¹⁷ Consistent and correct application of infection prevention and control measures has proven effective in reducing the incidence of healthcare-associated *C. difficile* infection.^{10,18}

As *C. difficile* infection is strongly associated with previous antibiotic use, antimicrobial stewardship is believed to have a role in preventing and terminating *C. difficile* infection outbreaks.^{12,19} While this guidance document is focused on infection prevention and control measures to prevent *C. difficile* infection in long-term care facilities, it should be acknowledged that the prevention of *C. difficile* infection also requires appropriate use of antimicrobial therapy (i.e., antimicrobial stewardship). Infection control professionals or delegates should advocate for both effective infection prevention and control and antimicrobial stewardship programs as important strategies to prevent *C. difficile* infection within their organizations.

RECOMMENDED INFECTION PREVENTION AND CONTROL MEASURES

The following guidance is based primarily on recommendations in the Public Health Agency of Canada's *Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Healthcare Settings* guideline,²⁰ except where indicated.

In addition to routine practices, residents suspected or confirmed to have *C. difficile* infection in long-term care facilities should be placed on **Contact Precautions**. A point-of-care risk assessment approach (Appendix A) should be used to guide decisions regarding when to apply contact precautions.

The following topics are addressed in more detail below:

1. Organizational Controls
 - a) Engineering Measures
 - b) Administrative Measures
2. Assessment
3. Surveillance
4. Laboratory Testing/Reporting
5. Contact Precautions
6. Personnel Restrictions
7. Hand Hygiene
8. Resident Placement and Accommodation
9. Resident Flow/Activities
10. Personal Protective Equipment
11. Management of Fecal Matter
12. Cleaning and Disinfection of Non-critical Resident Care Equipment
13. Environmental Cleaning
14. Handling Linen, Dishes, Cutlery
15. Duration of Precautions
16. Handling Deceased Bodies
17. Education of Healthcare Workers, Residents, Families, Visitors
18. Visitor Management
19. Outbreak Management

1. ORGANIZATIONAL CONTROLS

A major role of all healthcare organizations, including long-term care facilities, is to minimize the risk of exposure to and transmission of infections within healthcare settings. This can be achieved by having policies, procedures and programs specifically for the prevention of *C. difficile* infection based on the following engineering and administrative measures.

a) Engineering Measures

- i. Facility design should include single rooms for the routine care of residents (with in-room private toilets, designated resident sinks, appropriately placed alcohol-based hand rub dispensers and designated staff hand washing sinks).
- ii. Facility design should include surfaces that are constructed of materials that can be easily and effectively cleaned at the point of use.
- iii. Appropriate number of bedpans and commodes should be available.
- iv. To avoid contamination of the environment with *C. difficile* spores, systems should be in place to manage the disposal of fecal matter when bedpans or commodes are required. Some options for consideration are:
 - Installation of bedpan washers/disinfector systems^c on resident units;
 - Utilization of disposable bedpans for residents with acute diarrhea and the installation of macerator systems for the disposable bedpans.
- v. Appropriate supply of and accessibility to personal protective equipment should be available.
- vi. Appropriate number of accessible no-touch waste receptacles for disposal of paper towels, tissues, gloves, etc. should be available.
- vii. Appropriately functioning, accessible dispensers for hand hygiene products (soap, lotion, paper towels and alcohol-based hand rubs) should be available.
- viii. Appropriate number of designated staff hand washing sinks should be available.
- ix. Appropriate number of point-of-care alcohol-based hand rub dispensers should be installed.
- x. If laundry chutes are used, they should be properly designed, maintained and used in a manner to minimize dispersion of aerosols from contaminated laundry.

b) Administrative Measures

- i. Policies and procedures should be developed and implemented for the prevention and control of *C. difficile* infection, including the application of routine practices, contact precautions, and outbreak recognition, reporting and management.
- ii. Sufficient expert human capital (e.g., infection control professionals) and financial allocation to ensure an effective infection prevention and control program appropriate to the organization's mandate should be provided.

^c A thorough evaluation on the efficacy of bedpan disinfectant systems for use on patient units should be done prior to procurement with a continuous quality improvement process in place for monitoring and evaluating performance.^{27,28}

- iii. Infection control professionals or delegates should be actively involved in the selection of new resident care equipment and devices that require cleaning, disinfection and/or sterilization.
- iv. Policies and procedures should be developed and implemented for environmental cleaning to ensure sufficient staffing, routine scheduled environmental cleaning, procedures for assigning responsibility and accountability for cleaning as indicated by the level of resident contact and degree of soiling, and to include event-related cleaning of environmental surfaces and increased cleaning, as per additional precautions.
- v. Education and training programs should be developed and implemented for those responsible for environmental cleaning. Evaluation of policies, procedures and practices, including audits, should be performed to determine effectiveness of environmental cleaning and cleaning practices.
- vi. Policies and procedures, including assigning responsibility, should be developed and implemented for cleaning and disinfecting all non-critical resident care items (e.g., mobile devices, multi-use electronics and electronic games, etc.) that are and are not moved in and out of resident areas.
- vii. A facility-wide, adequately resourced antimicrobial stewardship program should be established.
- viii. Monitoring, auditing and reporting of hand hygiene compliance and environmental cleaning procedures should be established.
- ix. A surveillance system should be established that includes systematic collection, analysis, interpretation and dissemination of *C. difficile* infection rates by unit in the facility (refer to item 3, Surveillance).

2. ASSESSMENT

- a) Residents with diarrhea or other symptoms (e.g., nausea \pm vomiting, fever, abdominal pain/tenderness) that may be due to *C. difficile* infection should be assessed in a timely manner. A stool specimen should be taken for laboratory testing for *C. difficile*, (Refer to item 4, Laboratory Testing/Reporting), and the resident placed on contact precautions (refer to item 5, Contact Precautions).
- b) Clinical assessment of symptomatic residents and where necessary, initiation of antimicrobial therapy according to clinical practice guidelines, should occur promptly.
- c) Asymptomatic residents should not be tested for *C. difficile*.
- d) Routine environmental testing for *C. difficile* is not useful and should not be done.
- e) Testing of asymptomatic staff is not advisable. Symptomatic staff should be referred to the organization's occupational health and safety personnel, or their personal physician for evaluation.

3. SURVEILLANCE

- a) A system should be established for the early reporting of symptomatic residents to the organization's infection control professional or delegate.
- b) A system should be established for early notification of residents testing positive for *C. difficile* to the infection control professional or delegate.
- c) Prospective surveillance using accepted *C. difficile* infection case definitions and denominators²¹ should be established to determine the organization's baseline rate and to monitor changes in the *C. difficile* infection rate. By adopting a recognized national case definition (i.e., the Canadian Nosocomial Infection Surveillance Program,⁶ Case Definitions for Communicable Diseases under National Surveillance,²² Case Definition and Minimum Data Set for the Surveillance of *Clostridium difficile* Infection in Acute Care Hospitals across Canada²³) organizations will be able to benchmark their *C. difficile* infection and *C. difficile* infection -related mortality rate against other Canadian facilities.

4. LABORATORY TESTING/REPORTING

- a) Long-term care facilities should have accessible laboratory support to facilitate prompt identification of *C. difficile* infection.
- b) A variety of tests are available to identify *C. difficile* or its toxins in the stools of residents with diarrhea. These tests vary significantly in sensitivity. Infection control professionals or delegates should review local testing methods and algorithms with laboratory personnel. If increases in *C. difficile* infection rates are observed, it is important to ensure that they are not an artifact of increased case detection resulting from adoption of new test methods or algorithms.
- c) A protocol and provisions for testing for *C. difficile* infection should be established.
- d) Stool specimen collection for testing for *C. difficile* or its toxins should be done as soon as possible after onset of acute diarrhea.³
- e) A process should be established for prompt notification of all positive tests to the resident's physician and the infection control professional or delegate, as well as regional, provincial/territorial public health authorities as required.
- f) When test methods of lower sensitivity are performed (e.g., enzyme-linked immunoassays) a single negative test for residents with acute diarrhea should not be relied on to rule out *C. difficile*.²⁴ If the first test is negative, a second test may be indicated.
- g) Testing for *C. difficile* or its toxins should only be performed on unformed, diarrheal stool (i.e., loose, watery stool).³
- h) Repeat testing during the same episode of diarrhea or follow-up for "test of cure" should not be done.³

5. CONTACT PRECAUTIONS

- a) Contact precautions should be implemented empirically, at the onset of diarrhea, for residents with acute diarrheal illness, suspected or confirmed to be *C. difficile* infection, and not otherwise explained.
- b) Residents suspected or confirmed to have *C. difficile* infection should be placed on contact precautions, until the diarrhea is resolved or its cause is determined not to be infectious. (refer to item 8, Resident Placement and Accommodation).
- c) Signage should be placed at the entrance to the room or designated bedspace or other visible location of the resident suspected or confirmed to have *C. difficile* infection to identify contact precautions.
- d) Refer to items below for further details relating to contact precautions.

6. PERSONNEL RESTRICTIONS

- a) Healthcare workers should stay away from work when infectious with a communicable disease, including, but not limited to, gastroenteritis with vomiting and/or diarrhea.
- b) The immediate supervisor/occupational health personnel should be informed if the healthcare worker worked when symptomatic/infectious.

7. HAND HYGIENE

- a) Hand hygiene should be performed frequently using effective techniques (as recommended in Public Health Agency of Canada's *Hand Hygiene Practices in Healthcare Settings* guideline²⁵) and include:
 - i. After resident care;
 - ii. After contact with the resident's environment;
 - iii. After removing gloves at point-of-care and just prior to leaving the resident's room or designated bedspace;
 - iv. After handling fecal matter; and
 - v. After handling bedpans and commodes.
- b) Soap and water in preference to alcohol-based hand rub should be used in settings with *C. difficile* infection transmission and during *C. difficile* infection outbreaks, for the physical and mechanical removal of spores. (Refer to item 19, Outbreak Management).
- c) Hand washing with soap and water should be performed at the point-of-care and at a designated staff hand washing sink. If a designated staff hand washing sink is not available at the point-of-care, alcohol-based hand rub (with an alcohol concentration between 60% and 90%) should be used and hand hygiene with soap and water should be performed as soon as a staff hand washing sink is available.
- d) Hand wipes (impregnated with antimicrobials, plain soap or alcohol) may be used as an alternative to soap and water when a hand washing sink is not immediately available or when the hand washing sink is unsuitable (e.g., contaminated sink, no running water, no soap) for the following conditions.

- i. When hands are not visibly soiled; and
- ii. When hands are visibly soiled, alcohol-based hand rub should be used after the use of hand wipes, and hands should be washed with soap and water once a suitable staff hand washing sink is available.

8. RESIDENT PLACEMENT AND ACCOMMODATION

- a) A point-of-care risk assessment (Appendix A) should be done to determine resident placement and removal from a shared room, the potential of infection risks to other residents in the room, the presence of risk factors that increase the likelihood of transmission and the potential psychological impact on the symptomatic resident. The infection control professional or delegate should be consulted.
- b) In a shared room, a resident suspected or confirmed to have *C. difficile* infection should not share a toilet or commode with another resident. A dedicated toilet or commode should be assigned to each individual resident with diarrhea.
- c) In a shared room, privacy curtains should be drawn between beds at all times, if feasible.
- d) The room door may remain open.
- e) Infection control signage should be placed at the entrance to the resident's room or designated bedspace indicating contact precautions are required upon entry.
- f) The chart/record of the resident suspected or confirmed to have *C. difficile* infection should not be taken into the resident's room or designated bedspace.

9. RESIDENT FLOW/ACTIVITIES

- a) The symptomatic resident suspected or confirmed to have *C. difficile* infection should be allowed out of the room as indicated in the care plan, providing diarrhea can be contained and hand hygiene compliance with soap and water is adequate.
- b) The resident suspected or confirmed to have *C. difficile* infection should be provided with clean clothes and should perform hand hygiene with soap and water, with supervision/assistance as necessary, before leaving the room.
- c) Instructions/assistance with hand hygiene should be provided to residents suspected or confirmed to have *C. difficile* infection after using the toilet facilities and prior to leaving their room.
- d) If diarrhea cannot be contained and/or if hand hygiene compliance is inadequate, residents suspected or confirmed to have *C. difficile* infection should be restricted to their room until:
 - i. Diarrhea has resolved; or
 - ii. Diarrhea can be contained; and
 - iii. Hand hygiene compliance is adequate.
- e) Participation in group activities should be restricted when diarrhea cannot be contained and adherence to hand hygiene is not possible.

- f) Transfer of residents suspected or confirmed to have *C. difficile* infection within and between facilities should be avoided unless medically indicated (e.g., for essential diagnostic and therapeutic tests/treatment). If a medically indicated transfer is necessary:
- i. The transferring service, receiving unit, or facility should be advised of the necessary precautions for the resident being transported;
 - ii. A request to have the resident promptly seen to minimize time in waiting areas should be considered;
 - iii. The resident should be provided with clean clothes and bedding as necessary; diarrhea should be contained (i.e., with incontinent products) as necessary, and instruction/assistance with performing hand hygiene should be provided;
 - iv. The transport personnel should remove and dispose of their personal protective equipment (refer to item 10, Personal Protective Equipment) and perform hand hygiene prior to transporting residents; and
 - v. The transport personnel should put on clean personal protective equipment, if necessary (refer to item 10, Personal Protective Equipment), to handle the resident during transport and at the transport destination.

10. PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment for contact precautions should be provided outside the room or designated bedspace of the resident suspected or confirmed to have *C. difficile* infection.

Healthcare workers, families and visitors should use the following personal protective equipment for residents suspected or confirmed to have *C. difficile* infection and include the following:

- a) Gloves
 - i. Gloves should be worn if direct personal care contact with the resident is necessary, if direct contact with frequently touched environmental surfaces is anticipated, if handling contaminated objects/equipment, or if handling soiled linen;
 - ii. Gloves should be removed and discarded into a no-touch waste receptacle and hand hygiene (refer to item 7, Hand Hygiene) should be performed upon exiting the resident's room or designated bedspace.
- b) Gowns
 - i. A long-sleeved gown should be worn if it is anticipated that clothing or forearms will be in direct contact with the resident or with environmental surfaces or objects in the resident's environment;
 - ii. If a gown is to be worn it should be put on before entering the room or designated bedspace. The gown should be removed and discarded into a no-touch receptacle immediately after the indication for use and hand hygiene should be performed before leaving the resident's environment.

The same personal protective equipment should not be worn for more than one resident. If caring for more than one resident in a shared room, personal protective equipment should be changed and hand hygiene performed between contacts with each resident in the same room.

11. MANAGEMENT OF FECAL MATTER

- a) When bedpans and commodes are required:
 - i. Bedpans and commodes should be handled in such a way as to avoid contamination of the environment with *C. difficile* spores;
 - ii. Disposable bedpans should be considered; and
 - iii. Spray wands for cleaning bedpans and commode pans/buckets should not be used.
- b) Toilet bowl brushes should be dedicated to one specific toilet and not be reused. Disposable toilet bowl brushes should be considered.

12. CLEANING AND DISINFECTION OF NON-CRITICAL RESIDENT EQUIPMENT

- a) All equipment/supplies should be identified and stored in a manner that prevents use by or for other residents.
- b) Reusable non-critical resident-care equipment (e.g., blood pressure cuff, stethoscope, commode chair, walker, wheelchair, recreational equipment, etc.) should be dedicated to the use of the resident suspected or confirmed to have *C. difficile* infection, and should be cleaned and disinfected with chlorine-containing cleaning agent (at least 1,000 parts per million [ppm] or other sporicidal agent before reuse with another resident.²⁶
- c) Electronic rectal thermometers should not be used.
- d) Single-use devices should be discarded in a no-touch waste receptacle after use.
- e) Electronic games, personal effects, etc., should be dedicated to the use of the resident suspected or confirmed to have *C. difficile* infection and not be shared between residents, and should be cleaned and disinfected before reuse by another resident.

13. ENVIRONMENTAL CLEANING

- a) All horizontal and frequently touched surfaces in the room or designated bedspace of the resident suspected or confirmed to have *C. difficile* infection should be cleaned at least twice daily and when soiled, paying particular attention to “high touch” areas/items (e.g., resident’s bathroom, bathing facilities, toilet/commode/bedpan, light switches, light cords, bed/hand rails, bedside tables and other furniture, wheelchair, walker, etc.).
- b) Measures should be taken to limit contamination of cleaning and disinfecting solutions by changing cleaning cloths and mop heads frequently.²⁶
- c) During continued transmission of *C. difficile* infection, the rooms or bedspace of residents suspected or confirmed to have *C. difficile* infection should be decontaminated and cleaned with a chlorine-containing cleaning agent (at least 1,000 ppm) or other sporicidal agent.
- d) Additional cleaning measures or frequency may be warranted in outbreak situations (refer to item 19, Outbreak Management), or when there is continued transmission of *C. difficile* infection.

- e) When the resident suspected or confirmed to have *C. difficile* infection is moved to a single room at the onset of acute diarrhea, or transferred out of the room for other reasons, or when contact precautions are discontinued, terminal cleaning of the room or designated bedspace and bathroom, changing the privacy curtains, discarding the toilet bowl brush, and cleaning and disinfecting or changing the string/cloth call bells or light cords should be done (refer to Routine Practices and Additional Precautions for Preventing the Transmission of Infection for Healthcare Settings guideline, Appendix VII,²⁰ for details on terminal cleaning).
- f) Contact precautions should be maintained until terminal cleaning of the room or designated bedspace is completed.

14. HANDLING LINEN, DISHES, CUTLERY

- a) No special precautions are required for linen; routine practices are sufficient and include the following:
 - i. Soiled linen should be handled in the same way for all residents without regard to their infection status;
 - ii. Soiled linen should be placed in a no-touch receptacle at the point of use;
 - iii. Soiled linen should be handled with a minimum of agitation to avoid contamination of air, surfaces and persons;
 - iv. Soiled linen should be sorted and rinsed outside of the resident's care area; and
 - v. Heavily soiled linen should be rolled or folded to contain the heaviest soil in the centre of the bundle. Solid fecal matter that can be removed using a gloved hand and toilet tissue should be placed into a bedpan or toilet for flushing.
- b) No special precautions are required for dishes, cutlery; routine practices are sufficient.

15. DURATION OF PRECAUTIONS

- a) Maintain contact precautions until:
 - i. *C. difficile* infection is ruled out, and/or diarrhea is determined as not infectious; or
 - ii. If *C. difficile* infection is confirmed, until diarrhea has resolved^d; or
 - iii. According to provincial/territorial guidelines or organization's policy.
- b) Discontinuation of contact precautions should be made in conjunction with the infection control professional or delegate.

^d An operational definition is suggested by some experts to continue contact precautions for at least 48 hours after diarrhea has resolved as relapse of diarrhea is common. However, there is currently no data to support isolation of asymptomatic patients.²⁶

16. HANDLING DECEASED BODIES

- a) Routine practices, properly and consistently applied, should be used in addition to contact precautions, for handling deceased bodies, preparing them for autopsy, or transferring them to mortuary services.
- b) Provincial/territorial specified communicable disease regulations should be followed.

17. EDUCATION OF HEALTHCARE WORKERS, RESIDENTS, FAMILIES AND VISITORS

- a) Healthcare Workers
 - i. All healthcare workers should receive education on *C. difficile*, including measures to control its spread and on their role in identifying and acting on new onset diarrhea;
 - ii. Education should reinforce that routine practices, contact precautions, and safe work practices, (e.g., no eating or drinking in resident care areas) protect healthcare workers from acquiring *C. difficile* infection.
- b) Residents, Families, Visitors
 - i. Residents, families and visitors should be educated about the precautions being used; the duration of precautions, as well as the prevention of transmission of infection to others, with a particular focus on hand hygiene;
 - ii. Families and visitors who are participating in direct resident care should be instructed about the indications for and appropriate use of personal protective equipment;
 - iii. Families and visitors who assist with resident care should use the same personal protective equipment as healthcare workers.

18. VISITOR MANAGEMENT

- a) Visitors should be instructed to speak with nursing staff before entering the room or designated bedspace of a resident on contact precautions to evaluate the risk to the health of the visitor and the ability of the visitor to comply with precautions.
- b) The number of visitors for residents on contact precautions should be minimized to essential visitors (e.g., immediate family member/parent, guardian or primary caretaker) only.
- c) Visitors should be restricted to visiting only one resident who is on contact precautions. If the visitor must visit more than one resident, the visitor should be instructed to use personal protective equipment as healthcare workers and perform hand hygiene before going to the next resident's room or bedspace.

19. OUTBREAK MANAGEMENT

- a) When there is evidence of continued transmission of *C. difficile* within a facility or when the incidence rate for *C. difficile* is higher than the facility's baseline rate, the following heightened measures should be considered:
- i. Placing signage at entrances to the affected unit(s) to direct families and visitors;
 - ii. Placing all residents with acute diarrhea illness on contact precautions;
 - iii. Reporting the outbreak to local public health officials as per regional, provincial/territorial reporting requirements;
 - iv. Decontaminating and cleaning rooms or designated bedspace of residents suspected or confirmed to have *C. difficile* infection with a chlorine-containing cleaning agent (at least 1,000 parts per million [ppm] or other sporicidal agent;
 - v. Increasing the frequency of cleaning, including bathing and toileting facilities, recreational equipment, all horizontal surfaces in the resident's room or designated bedspace and, in particular, areas/items that are frequently touched (e.g., hand and bedrails, light cords, light switches, door handles, furniture, etc.), common areas, nursing stations, staff washrooms, etc., on the affected unit(s);
 - vi. Cohorting of staff to residents (i.e., assigning staff to work exclusively with *C. difficile* infection-positive residents);
 - vii. With associated high burden of illness, particularly with higher than expected attributable mortality, there may be a role, in consultation with a microbiologist and public health, to characterize the strain type and clonality of *C. difficile* isolates;
 - viii. Auditing adherence to hand hygiene practices (refer to item 7, Hand Hygiene), personal protective equipment use by staff (refer to item 10, Personal Protective Equipment), cleaning/disinfecting shared non-critical equipment (refer to item 12, Cleaning and Disinfection of Non-critical Resident Equipment), and environmental cleaning (refer to item 13, Environmental Cleaning);
 - ix. Reviewing the process for disposal of fecal matter (refer to item 11, Management of Fecal Matter);
 - x. Closing affected unit(s) to admissions if initial control measures are ineffective in controlling the spread of *C. difficile*;
 - xi. Reviewing antimicrobial prescribing practices including indications for prescribing and specific agents used. In some settings, it may be helpful to restrict the use of specific antimicrobial agents; and
 - xii. Consulting provincial/territorial and/or national public health expertise in outbreak management for ongoing outbreak situations.
- b) An outbreak should be declared over when there is no further transmission and there has been a return to the facility's baseline *C. difficile* infection rate.

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APPENDIX A

POINT-OF-CARE RISK ASSESSMENT¹

Prior to any patient/resident/client interaction, all healthcare workers have a responsibility to always assess the infectious risk posed to themselves and to other patients/residents/clients, families, visitors, and healthcare workers. This risk assessment is based on professional judgment about the clinical situation and up-to-date information on how the specific healthcare organization has designed and implemented engineering and administrative controls, along with the availability and use of personal protective equipment.

The point-of-care risk assessment is an activity performed by the healthcare worker **before every patient/resident/client interaction**, to:

1. Evaluate the likelihood of exposure to the infectious agent,
 - **from a specific interaction** (e.g., performing/assisting with aerosol-generating medical procedures, other clinical procedures/interaction, non-clinical interaction [i.e., admitting, teaching patients/residents/clients and families], transporting patients/residents/clients, direct face-to-face interaction with patients/residents/clients, etc.);
 - **with a specific patient/resident/client** (e.g., infants/young children, patients/residents/clients not capable of self-care/hand hygiene, have poor compliance with respiratory hygiene, copious respiratory secretions, frequent coughing/sneezing, diarrhea, etc.);
 - **in a specific environment** (e.g., single rooms, shared rooms/washrooms, hallway, assessment areas, emergency departments, public areas, therapeutic departments, diagnostic imaging departments, housekeeping, etc.);
 - **under available conditions** (e.g., air exchanges in a large waiting area or in an airborne infection isolation room, patient/resident/client waiting areas, etc.);

AND

2. Choose **the appropriate actions/ personal protective equipment** needed to minimize the risk of the patient/resident/client, healthcare worker, other staff, family, visitor, contractor, etc. of exposure to the infectious agent.

The PCRA is not a new concept, but one that is already performed regularly by healthcare workers many times a day for their safety and the safety of patients/residents/clients and others in the healthcare environment. For example, when a healthcare worker assesses a patient/resident/client and the situation to determine the possibility of blood or body fluid exposure or chooses appropriate personal protective equipment to care for a patient/resident/client with an infectious disease, these actions are both activities of a point-of-care risk assessment.

¹ Public Health Agency of Canada. Prevention and Control of Influenza during a Pandemic for All Healthcare Settings. Annex F of The Canadian Pandemic Influenza Plan for the Health Sector. Available at: www.phac-aspc.gc.ca/cpip-pclcpi/index-eng.php.