POLICY & PROCEDURE NUMBER: 4.25
DEPARTMENT: **Infection Control** **SUBJECT: *Clostridium Difficile***

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Policy:
Elgin County Homes are committed to taking the necessary precautions to protect residents and staff from Clostridium Difficile infection.

BACKGROUND

Clostridium difficile (C. difficile) is a spore-forming, anaerobic bacillus that causes infectious diarrhea by producing two toxins – toxin A (an enterotoxin) and toxin B (a cytotoxin). It is recognized as the most common cause of acute infectious diarrheal illness in long-term care homes. Residents in long-term care homes are at greater risk because of advanced age, the frequent need for hospitalization, the presence of underlying and immunosuppressive agents. Incident rates of C. difficile infection for those aged 65 and older may be 10 times higher than in younger adults.

The reservoir for this organism is both humans and the environment. It has been estimated that as many as 2-15% of persons in the community may carry *C. difficile* as part of their normal gastrointestinal flora (asymptomatic carriers). Published reports indicate that the prevalence of asymptomatic carriers in hospitalized residents may be much higher depending on the rate of *C. difficile* in that facility (Gerding, et al).

The use of antibiotics increases the chances of developing *C. difficile* diarrhea because antibiotics alter the normal levels of good bacteria found in the intestines and colon. When there are fewer good bacteria, *C. difficile* can thrive and produce toxins that can cause an infection. In long-term care settings, the combination of a number of people receiving antibiotics and the presence of *C. difficile* can lead to frequent outbreaks. Infection control professionals should advocate for both effective infection prevention and control and antimicrobial stewardship programs as important strategies to prevent C. difficile infection within their organizations.

TRANSMISSION

Transmission of *C. difficile* is thought to be through contact with the contaminated items in the resident's environment and the hands of health care personnel.
The environment may become contaminated and this may be picked up by the health care personnel and transmitted to the resident when handwashing activity is not carried out.
The spores produced by this organism are very resistant and may remain in the environment after cleaning if the agent being used is not sporicidal.

For this reason, equipment that is shared between residents (e.g. lifts, scales, blood glucose meters, blood pressure cuffs, thermometers, stethoscopes) may be implicated in nosocomial transmission of the organism. Dedicated equipment must be provided for each suspected or confirmed C. difficile resident.

The likelihood of environmental contamination increases when the resident is symptomatic. Those individuals at greatest risk of contaminating their environment have symptomatic illness (diarrhea) and are incontinent. Asymptomatic carriers are less likely to contaminate their environment and for this reason no additional precautions or treatment are recommended.

Management of residents with CDAD should be based on the symptoms and geared to preventing the spread to other residents.

ASSESSMENT

Symptoms of *C. difficile* include:

- loose/watery bowel movements in a 24 hour period (bowel movements are unusual or different for the resident)
- fever
- loss of appetite, nausea
- abdominal pain or tenderness.

Residents experiencing diarrhea or other symptoms noted above should be assessed in a timely manner. Staff must immediately notify the Manager of Resident Care or delegate. A stool specimen should be taken for laboratory testing for C. difficile and the resident placed on contact precautions immediately until directed by MRC and/or until diarrhea resolves or until its cause is determined not to be infectious.
N.B. Only diarrheal stool specimens are tested. Formed stool will not be tested. Please refer to Resident Stool Chart

PRECAUTIONS

The following practices must be observed:

- contact precautions should be implemented at the onset of diarrhea for residents with acute diarrheal illness, suspected or confirmed to be C. difficile infection, and not otherwise explained
- contact precautions will be in place until the diarrhea is resolved or its cause is determined not to be infectious
- signage should be placed at the entrance to the room indicating the contact precautionary measures required upon entry.

- Handwashing before and after contact with the resident and his/her environment. Hands must also be washed when gown and gloves are removed. Soap and water in preference to alcohol based hand rub should be performed at the point-of-care and at a designated staff hand washing sink. If a designated hand sink is not available at the point-of-care, alcohol based hand rub should be used and hand hygiene with soap and water should be performed as soon as a staff hand washing sink is available.
- A private room is recommended for resident with c. difficile infection
- 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.
- In a shared room, privacy curtains should be drawn between beds at all times, if feasible. The room door may remain open.
- 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.
- Resident to remain in their own wheelchair for meals – i.e. do not transfer into dining room chair.
- Instructions/assistance with hand hygiene should be provided to residents after using the toilet facilities and prior to leaving their room
- If diarrhea cannot be contained and/or if hand hygiene compliance is inadequate, resident suspected or confirmed to have C. difficile infection should be restricted to their room until: diarrhea has resolved; or diarrhea can be contained; or hand hygiene compliance is adequate.
- Participation in group activities should be restricted when diarrhea cannot be contained and adherence to hand hygiene is not possible
- Transfer of residents suspected or confirmed to have C. difficile infections within and between facilities should be avoided unless medically indicated. If medically indicated and transfer is necessary: the transferring service/receiving unit or facility should be advised of the necessary precautions for the resident being transported; a request to have the resident promptly seen to minimize time in waiting areas should be considered; 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; the transport personnel should remove and dispose of their personal protective equipment and perform hand hygiene prior to transporting residents; and the transport personnel should put on clean PPE to handle the resident during transport and the transport destination.

- 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.
- Gowns 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.
- Masks and Eye Protection: These are usually not required, unless resident care activities are likely to generate splashes/sprays of resident excretions. Then they must be used to protect the mucous membranes of the eyes, nose and mouth.
- Bedpans and commodes should be handled in such a way as to avoid contamination of the environment with C. difficile spores. Spray wands for cleaning bedpans and commode pans/buckets should not be used.
- Toilet bowl brushes should be dedicated to one specific toilet and not be reused. Disposable toilet bowl brushes should be considered.
- Equipment must be dedicated for the symptomatic resident (e.g. commode chair, BP cuff, stethoscope, and thermometer) whenever possible and should be cleaned and disinfected with chlorine-containing agent or other sporicidal agent before reuse with another resident.
- Do not overstock supplies in the resident's room. Any supplies that cannot be surface wiped need to be discarded at the time of discharge. Any non-intact packages must be discarded.
- Encourage residents who have diarrhea to stay in their room. If the "diarrhea" is contained and the resident's hands are washed and clean clothes put on, instruct the resident that he may walk in the hallways but to avoid direct contact with the other residents. He must be instructed to only use the toilet in his room or the commode dedicated to his use.
- Inform other departments that resident is on Contact Precautions. Document this on the appropriate requisition or departmental communication board/book.
- It is not necessary to glove and gown for "portering" the resident unless direct contact with the resident is necessary.

- No special precautions are required for linen; routine practices are sufficient and include: placing soiled linen in a no touch receptacle at the point of use; handled with a minimum of agitation; 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.
- No special precautions are required for dishes, cutlery; routine practices are sufficient.

- Temperature must not be taken rectally.
- All horizontal and frequently touched surfaces in the room or designated bed space 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, toilet/commode/bedpan, light switches, light cords, bed/hand rails, bedside tables and other furniture, wheelchair, walker, etc.). **The product used to clean must be able to achieve a minimum of low level disinfection**. Strict attention must be paid to the manufacturer's use instructions to ensure that environmental contamination is minimized. Please refer to Housekeeping and Laundry Policy 7.9 Clostridium Difficile.
- Terminal cleaning: Follow protocol as per established procedure and as above but change the privacy curtains. See Housekeeping Policy 7.9 Clostridium Difficile

- Additional cleaning measures or frequency may be warranted in outbreak situations or when there is continued transmission of C. difficile infection.
- Contact precautions should be maintained until terminal cleaning of the room or designated bed space is completed.
- Visitors should be instructed to speak with nursing staff before entering the room or designated bed space 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. The number of visitors for residents on contact precautions should be minimized to essential visitors only. Visitors should be restricted to visiting only one resident who is on contact precautions.

Discontinuation of Precautions

1. Contact precautions may be discontinued when C. difficile infection is ruled out, and/or diarrhea is determined as not infectious; or if C. difficile is confirmed, diarrhea is resolved (the resident has had at least 48 hours without symptoms of diarrhea) under direction of MRC/delegate in consultation with public health.
2. Retesting for C. difficile is not necessary to determine the end of isolation and should not be done. Cytotoxin may persist in stool for weeks and therefore is not helpful in determining duration of treatment or the discontinuation of infection control precautions.

Treatment

- Treatment should be initiated based on the resident's risk factors and symptoms.
- The treatment regimen for C. difficile is at the direction/order of the physician and may include:
    - Cessation of antibiotic therapy if possible.
    - Rehydration of the resident.
    - Avoidance of antimotility medications such as loperamide.
    - Recommended 1st line of therapy is: metronidazole (flagyl) as ordered by physician
    - Avoid use of vancomycin unless:
        - Metronidazole is ineffective.
        - Resident is allergic to metronidazole.
        - True resistance to metronidazole is shown.
    - Residents with recurrent C. Difficile may be retreated with the same agent used to treat the initial episode of C. Difficile.
    - Monitor residents throughout the course of treatment for signs and symptoms of complications such as peritonitis, dehydration and electrolyte abnormalities.
- Reoccurrence of C. difficile is common and occurs in about 30% of cases. If diarrhea reoccurs, the resident should immediately be placed on contact precautions, re-tested for C. difficile cytotoxin and re-initiation of therapy considered as outlined above.

Staff Education

- All health care 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
- 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.

Residents, Families, Visitor Education

- 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
- Families and visitors who are participating in direct resident care should be instructed about the indicators for and appropriate use of personal protective equipment
- Families and visitors who assist with resident care should use the same personal protective equipment as health care workers.

Outbreak Management

1. 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:
    1. Placing signage at entrances to the affected unit(s) to direct families and visitors;
    2. Placing all residents with acute diarrhea illness on contact precautions;
    3. Reporting the outbreak to local public health officials as per regional, provincial/territorial reporting requirements;
    4. Decontaminating and cleaning rooms or designated bed space 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;
    5. Increasing the frequency of cleaning, including bathing and toileting facilities, recreational equipment, all horizontal surfaces in the resident's room or designated bed space 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);
    6. Cohorting of staff to residents (i.e., assigning staff to work exclusively with *C. difficile* infection-positive residents);
    7. 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;
    8. Auditing adherence to hand hygiene practices personal protective equipment use by staff), cleaning/disinfecting shared non-critical equipment, and environmental cleaning. Educate staff on the mode of transmission and precautions to be used. Reviewing the process for disposal of fecal matter
    9. Closing affected unit(s) to admissions if initial control measures are ineffective in controlling the spread of *C. difficile;*
    10. 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
    11. Consulting provincial/territorial and/or national public health expertise in outbreak management for ongoing outbreak situations.

2. 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. After the outbreak a debriefing session should be conducted to discuss how the outbreak was handled, what can be learned from the outbreak and how future outbreaks can be prevented.

Glossary of Terms

Additional Precautions – precautions carried out in additional to routine practices when infections caused by organisms transmitted by these routes are suspected or diagnosed. They include physical separation of infected or colonized residents from other residents and the use of barriers (gowns, masks, gloves) to prevent or limit the spread of the infectious agent.

Contact Precautions – Placement of resident in a single room, the use of hand hygiene, PPE, dedication and the cleaning of equipment.

Cohorting- The sharing of a room or unit by two or more residents who are either colonized or infected with the same organism.

Cohorting of Staff- Assigning specified staff to care only for residents known to be colonized or infected with the same micro organisms. These personnel would not participate in the care of residents who are not colonized or infected with that micro organism.

Colonization- The presence of growth of a microorganism in or on a body with growth and multiplication but without tissue invasion or cellular injury. The resident will be asymptomatic (show no symptoms).

Decolonization- the use of antimicrobials to eradicate colonization of resistant bacteria.

Direct Care – providing hands-on care such as bathing, washing, turning or changing wet incontinence products, care of open wounds or toileting. Feeding and pushing a wheelchair are not classified as direct care.

Hand hygiene- process of removing visible sole and removing or killing germs from the hands. Hand hygiene may be accomplished using soap and running water (for visibly soiled hands) or the use or an alcohol-based hand rub (when hands are not visibly soiled).

Outbreak – An increase in the number of cases above the number normally occurring in the home over a defined period of time.

Personal Protective Equipment (PPE) - Clothing worn for protection against hazards.

Prevalence Screen- screening all residents in a defined area (i.e., unit) at a specific time to determine how many are colonized with a specific microorganism.

Resident- Any person receiving health care within a health care setting.

Routine Practices- The system of infection prevention and control practices recommended by the Public Health Agency of Canada to be used with all residents during all care to prevent and control transmission of microorganisms.

Screening- A process of identifying residents at risk.

Staff- anyone conducting activities within the home that will bring him/her into contact with residents. This includes all health care providers (nurses, Doctors, allied health professionals and students).

Surveillance – The systemic ongoing collection, collation and analysis of data with timely dissemination of information to those who require it in order to take action.

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