

	POLICIES & PROCEDURES Number: 40-30 Title: <i>Clostridium difficile</i>
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Introduction

Clostridium difficile (*C. difficile*), is a gram positive, spore-forming anaerobic bacillus that may be present as part of the normal intestinal flora or acquired through contact with healthcare facilities. Antibiotics disrupt the normal flora which may allow for the microorganism overgrowth and the production of toxins by *C. difficile*. In response to the toxins, an inflammatory condition occurs called pseudomembranous colitis resulting in diarrhea. *C. difficile* should be suspected if a client has received antibiotics within the past 3 months. *C. difficile* diarrhea has a distinct "horse barn odor" and is often associated with fever, leukocytosis, and abdominal pain. Illness may progress to toxic megacolon, sepsis and death. There is a 1.5 % mortality rate attributable to *C. difficile* associated disease (CDAD). A reoccurrence rate of 15-35% can occur following a successful course of treatment due to reinfection or regrowth of persistent spores.

Asymptomatic *C. difficile* clients represent a less important source of transmission than symptomatic clients. *C. difficile* is transmitted via the oral-fecal route. Ingestion of spores is the most common mode of transmission and contaminated hands are the main vector. Transmission of the organism can occur after contact with the client or the contaminated environment on the hands and gloves of healthcare workers. The environment can be an important indirect source of transmission given the spores persist in the environment for months and are highly resistant to cleaning and disinfection methods.

Policy

1. In addition to Routine Precautions, use Contact Precautions for clients who have diarrhea known or suspected to be infected with *C. difficile*.

Purpose

To prevent or minimize the transmission of *C. difficile* with appropriate management of all *C. difficile* clients.

Procedure

1. Identification of *C. difficile* status in clients.

- When *C. difficile* is suspected as a cause of diarrhea, send stool specimen immediately (e.g., loose/watery unformed stool that conforms to the shape of a specimen collection container).
Diarrhea is defined as:
 - 6 watery stools in past 36 hours
 - 3 unformed stools in 24 hours for 2 days
 - 8 unformed stools over 48 hours
 - bowel movements are unusual or different for the client
 - there is no other recognized etiology for the diarrhea (laxatives, IBD).
- Testing of infants under one year of age should not be done as they are not susceptible to *C. difficile* infection (CDI).
- The laboratory will notify the unit positive *C. difficile* report as an urgent value for timely management.
- Repeat testing during the same episode of diarrhea or follow-up “test of cure” should not be done.
- See Appendix A for Medical Management of *C. difficile* Infection.
- See Appendix B for *C. difficile* Infection Control Measures.

2. Client placement

- Client with diarrhea is to be placed on contact precautions in a single room with private bathroom.
- If a single room is not available, spatially isolate the client with other clients with the same organism (also referred to as cohorting), each with their own bathroom facilities (e.g., bathroom dedicated for one client, individual commodes identified for roommates).
- If there are no other known clients with the same organism, spatially isolate the client with a non-infected client who is not at high risk for acquisition for CDI (e.g., high risk includes a client on broad-spectrum antibiotics such as cephalosporins, clindamycin, and fluoroquinolones, on proton pump inhibitors, bowel disease, chemotherapy, GI surgery, or enteral feed).
- Notify the site ICP when you spatially isolate a client with diarrhea.
- Bed screens should be drawn to promote separation.
- As soon as a private room is available, move the client with diarrhea to the private room.
- Client is to remain in their room while symptomatic with CDI and for 48 hours after symptoms have stopped.
- Avoid room transfers unless medically necessary.
- A client who is spatially isolated for CDI may be moved to a clean room once diarrhea resolves for 48 hours to prevent reinfection.
- Post Contact Precautions sign (SHR Printing Services #102106) and “**Reminder - Wash your Hands**” (SHR Printing Services #102144).
- Provide the Contact Precautions - Client Instructions handout to the client (SHR Printing Services #102931).
- Refer to [30-10 Contact Precautions](#) policy in the IPC Manual.

3. Gloves and Hand Cleansing

- The physical action of washing and rinsing hands removes the spores. The antiseptic agents used in hand rubs or soaps are not sporicidal.
- Alcohol-based hand rub is not recommended in care of clients with *C. difficile*. If a non-client sink is not readily available use the alcohol-based hand rub and then wash hands in the nearest staff hand washing sink.
- Glove for all direct contact with the client or the environmental surfaces in the room, including the client sink, which is potentially contaminated.

- Remove gloves and wash hands before leaving the room. Avoid contact with the environment surfaces when leaving the room.
- Assist the client to perform hand washing with soap and water after toileting, before meals, and upon mobilization outside of the room.

4. Gown

- Gown for all direct contact with the client or the environmental surfaces in the room.
- Gowns are for single use only. Remove immediately if wet.
- Remove the gown after gloves are removed by untying at the back, then pull forward and turn inside on itself, roll up and discard in the laundry hamper in the room. Avoid contact with the environment surfaces when leaving the room.

5. Client Flow

- Client transportation to other departments is limited to essential internal tests and treatments only.
- Inform the receiving department that Contact Precautions are required.
- Have client wash hands with soap and water prior to leaving room.
- Client should wear clean hospital attire when outside of the room.

6. Client Care Equipment

- Dedicate noncritical client-care equipment to a single client (e.g., stethoscope, blood pressure cuff, tourniquet, vacutainer, laundry hamper stand and commode).
- If sharing of equipment is unavoidable, clean and disinfect between client use) refer to section 7, "Housekeeping"). Equipment that cannot be disinfected must be discarded rather than being used for another client.
- Limit the supplies taken into the room to avoid unnecessary waste at client discharge. Do not store any supplies in the bathroom.
- Gloves should be worn for food tray pick-up and removed after tray is placed on cart. Perform HH before picking up the next food tray.
- Clean and disinfect dedicated equipment in client room upon discharge or when precautions are discontinued.
- The hazardous practice of using open flushing sinks (e.g., hoppers) or toilets for the emptying of human waste is a high risk procedure. Staff hands, uniforms and the environment are contaminated by splashes, splatters and direct contact with contaminated body fluids. The risk of exposure may cause staff to become infected unless they are diligent about using PPE and multi-step processes necessary. Even when staff complete the process in a manner that protects themselves, rinsing human waster containers (e.g., use of a spray wand or dedicated non-client or non-staff sink faucet) is a source of contamination through splatter and aerosolization which leads to organisms being transmitted to clients, other staff and visitors.
- Bedpan management requires disposing of feces without contaminating the healthcare worker or the environment. This may include covering the bedpan during transportation to the point of disposal. A washer disinfectant is the recommended method of cleaning and disinfecting the bedpan. If a washer disinfectant is not available, another safe option is the use of the hygienic cover for bedpans and commodes (SKU# 212908). If these options are not available, ensure the method and processes are done in a way to ensure the lowest risk for contamination of staff and the environment.

7. Housekeeping

- It is the manual effort of scrubbing that is most effective at spore removal. After cleaning with facility's usual detergent solution, disinfect all surfaces using a hospital

grade sporicide (e.g., accelerated hydrogen peroxide (AHP), sodium hypochlorite 5.25% diluted 1:9 with tap water). Some sporicide products have detergent properties and can be used as a one step cleaner and disinfectant. Always follow the manufacturer's direction for use to ensure proper preparation, application and sufficient contact time on items and surfaces.

- All horizontal surfaces and items within client reach should be cleaned and disinfected twice daily (e.g., bed rails, telephone, call bell, light switches, door handles, sink taps, bedside tables). All cleaning and disinfectant solutions are to be applied directly to the cloth. Do not use spray bottles to apply disinfectants.
- Cloths and mop heads must not be double dipped and must be changed after use in the room (e.g., single client use).
- At terminal clean and/or discharge, all curtains (e.g., shower, bed screens) are to be taken down and sent for laundering. Discard disposable paper products, toilet brush and other items that cannot be wiped down.
- If Contact Precautions are discontinued before discharge, move client to clean room and do terminal cleaning. The client should be bathed and dressed in clean clothes before re-admission to the room. If unable to move client, terminal clean the room, equipment and supplies, including change of bed screens.
- During a CDI outbreak, environmental cleaning and disinfection with a hospital grade sporicide is recommended.

8. Visitors

- Instruct visitors regarding hand washing with soap and water before and after client contact.
- Gowns and gloves are not required unless the visitor provides direct care.
- Must not use client bathroom and not sit on the client bed.
- Should not visit other clients.
- Provide [Clostridium difficile Fact Sheet](#) found in the Infection Prevention and Control Manual.
- Provide the Contact Precautions – Client, Family and Visitor Information handout (SHR Printing Services # 102926).

9. Client and family teaching

- Clients should understand the nature of their infectious process and the correct precautions being used, as well as the prevention of transmission to other clients. Good hand washing with soap and water should be emphasized at all times, including prior to eating, using the bathroom and upon leaving the room.
- Provide *Clostridium difficile* Fact Sheet found in the Infection Prevention and Control Manual.
- The Infection Prevention and Control Professional may be called to assist with education on *C. difficile*.

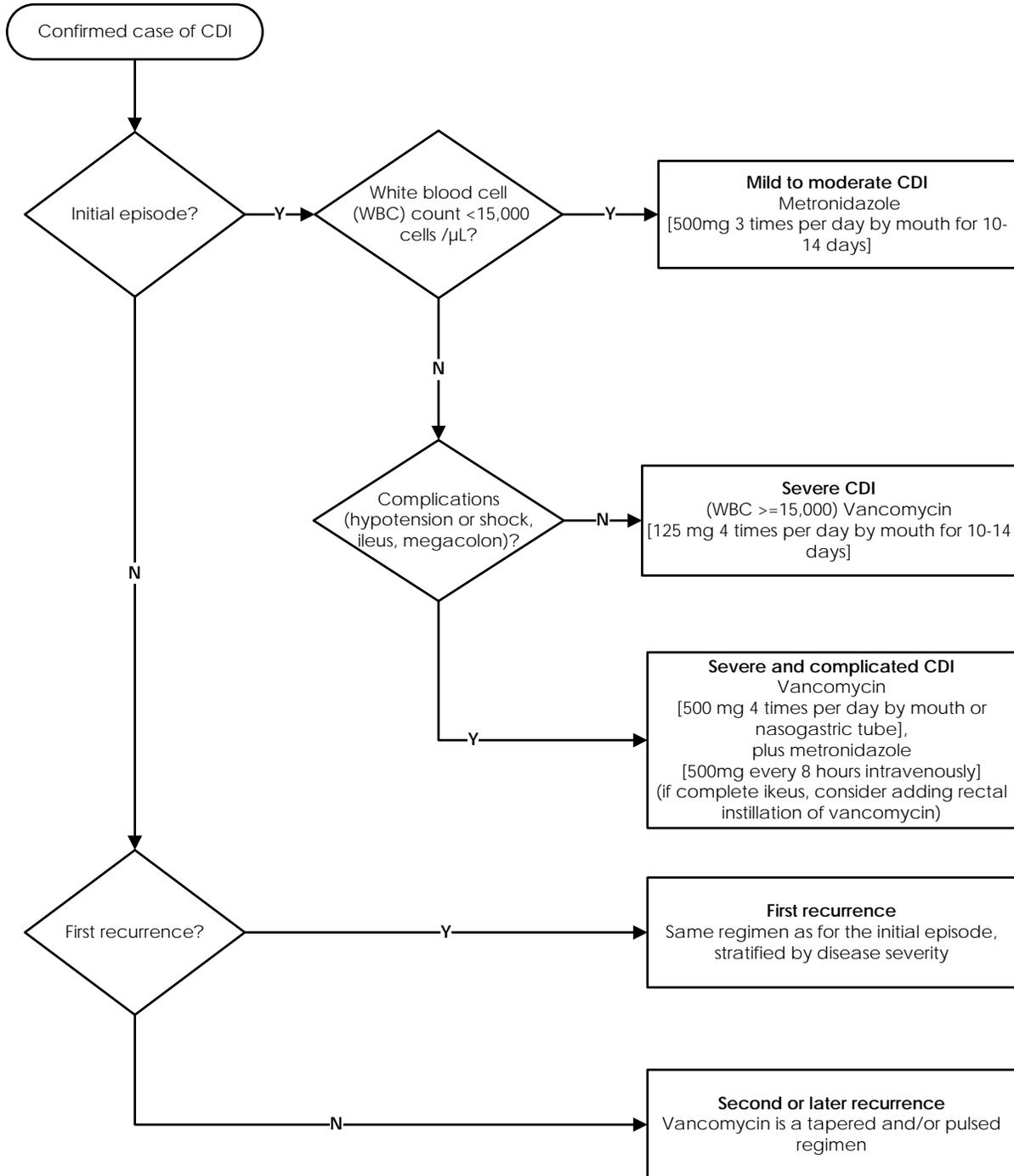
10. Laboratory Testing

- Results are reported as critical results to ensure timely management of CDI.
- Contact Precautions may be stopped without further testing when the appearance and frequency of stools is normal for at least 48 hours.
- If symptoms return following a period of absence, retesting may be indicated to determine if a relapse has occurred.

References:

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4. Center for Disease Control and Prevention. (2007). Recommendations for Surveillance of *Clostridium difficile* - Associated Disease, *Infection Control and Hospital Epidemiology*, 28(4), 140-145.
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6. International Infection Control Council. (2007). International Infection Control Council Global Consensus Conference Infection Prevention and Control Practice: Clostridium difficile Associated Diarrhea. Toronto, Canada
7. Ministry of Health and Long Term Care. (2007). Best Practices Document for the Management of *Clostridium difficile* in all health care settings. Provincial Infectious Diseases Advisory Committee, Ontario.
8. Public Health Agency of Canada. (2012) *Clostridium difficile* Infection: Infection Prevention and Control Guidance for Management in Acute Care Settings.
9. Saskatchewan Ministry of Health. (2011). Guideline for the Management of *Clostridium difficile* Infection in all Healthcare Settings.

Appendix A - Medical Management of CDI³³



Note: This is provided for general information only. The physician will determine the course of treatment based on her/his clinical judgment and the patient's condition.

Adapted from Guidelines for the Management of *Clostridium difficile* Infection (CDI) in all Healthcare settings

³³ Cohen, Gerding, Johnson et al., 437 (Table 3).

Appendix B – CDI Infection Control Measures



Clostridium difficile Infection Control Measures

Facility/Unit _____ Date _____

Note: With the identification of a single individual with undiagnosed acute diarrheal illness that could be infectious, it is imperative that contact precautions be instituted *immediately* without waiting for lab information or for additional cases to occur.

		Yes	No	Comments
1.	Notification/Communication at Entrance of Room			
1.1	Notify Unit Clinical Coordinator, Unit Manager, Unit staff and Infection Prevention and Control.			
1.2	Post Contact Precaution sign at on door or bed screen.			
1.3	Post “Reminder – Wash your Hands” – use of only liquid soap and water for hand hygiene.			
		Yes	No	Comments
2.	Placement of Client			
2.1	Unit staff to chart symptoms such watery diarrhea, frequency of diarrhea, fever, abdominal pain and distinctive ‘horse-barn’ odour.			
2.2	Isolate in single room with dedicated bathroom and if possible away from vulnerable clients with bowel disease, GI surgery, on chemotherapy, on enteral feeds, on broad-spectrum antibiotics or on proton-pump inhibitors.			
2.3	Send stool specimen with completed requisition to the Lab.			
2.4	Dedicate equipment for client.			
2.5	Restrict client to single room until absence of diarrhea for 48 hours.			
2.6	Client should be started on appropriate antibiotic (e.g., Metronidazole or oral Vancomycin).			
2.7	If client had multiple room transfers while having diarrhea, these rooms require terminal cleaning with a sporicidal disinfectant.			
2.8	Diligent hand washing with use of liquid soap and water, especially before meals and after using washroom. Staff to assist client if needed.			
2.9	Personal protective equipment readily available outside client room and used appropriately (contact precautions).			

Appendix B – CDI Infection Control Measures

		Yes	No	Comments
3.	Staff			
3.1	Contact precautions (gloves and long sleeved cloth gowns) if contact with the client or client environment.			
3.2	Wear gloves when handling tube feeding systems.			
3.3	Diligent hand washing with the use of liquid soap and water.			
3.4	Sink, liquid soap, and paper towels available for hand hygiene. Dedicate a sink if necessary.			
3.5	Food services staff not to be in direct contact with symptomatic clients.			
3.6	Staff to disinfect common use items with sporicidal disinfectant before re-use (e.g., stethoscopes, glucose meter, infusion pump, feeding pump). Dedicate equipment for symptomatic clients (e.g., commode/bedpan, blood pressure cuff, tourniquet, laundry hamper stand). Discard any equipment or items that can not be cleaned and disinfected.			
		Yes	No	Comments (DATE)
4.	Enhanced Cleaning (*at least 2 times per day to allow for contact time)			
4.1	Clean and disinfect rooms with <i>C. difficile</i> clients last (e.g., clean to dirty).			
4.2	Remove all unnecessary supplies and furniture to facilitate cleaning and disinfection. Clean and disinfect these items before removal. Discard all items that can not be cleaned and disinfected.			
4.3	If client has been moved throughout the facility, where able, trace rooms to terminal cleaning with sporicidal disinfectant.			
4.4	*Bathroom (sink, taps, and toilet).			
4.5	*Commode/booster/bedpan. Cover when transporting and clean in utility room. Use a washer disinfector if available.			
4.6	*Call lights/bed rails, bed tables, IV poles/pumps.			
4.7	*Light switches/door handles.			
4.8	*Wheel chairs/walkers.			
4.9	*Telephone and TV remote.			
4.10	*Garbage container inside and out.			
4.11	<p>Sporicidal disinfectants:</p> <ul style="list-style-type: none"> • Accelerated hydrogen peroxide (4.5% or greater) 1:16 (e.g., Rescue) • Hydrogen peroxide with peroxyacetic acid (e.g., Virasept) • Hypochlorite 1:50 (1000 ppm) and Sodium hypochlorite 1:10 (5000 ppm) <ul style="list-style-type: none"> ○ Ensure proper PPE is worn. 			

Appendix B – CDI Infection Control Measures

4.12	Discard toilet brush and other supplies that can not be wiped down once symptoms are resolved, at time of terminal cleaning when precautions are discontinued, and when client is discharged.			
4.13	Change bed screens when client is discharged.			
4.14	After discharge terminal clean, remove additional precaution sign, stop sign, and hand hygiene signs.			
		Yes	No	Comments
5.	Laundry			
5.1	Soiled linen and clothes handled minimally – no rinsing and place into leak proof laundry bag. Carefully close laundry bag.			
5.2	Staff to use gloves and long sleeved gown to handle soiled linen. Launder in hot water, commercial bleach, on the longest cycle and machine dry.			