

<b>PROTOCOL</b>		
<b>FROM:</b>	Service of Infection Prevention & Control	<b>G-113-06-03</b>
<b>TO:</b>	The CBHSSJB medical & nursing staff	<b>DATE OF CREATION:</b> 2011-05-13
<b>OBJECT:</b>	Infections prevention & control measures for <i>Clostridium Difficile</i> associated diarrhea	<b>EFFECTIVE ON:</b>
<b>APPROVED BY:</b>	The Executive Committee of the Council of physicians, dentists and pharmacists	<b>REVIEW DATE:</b> 2011-05-18
<b>APPLIED BY:</b>	This protocol must be applied by all nurses and physicians working for the Cree Health Board.	
<b>CLIENTELE:</b>	All patients admitted to Chisasibi Hospital and any other appropriate patient receiving care from CBHSSJB.	

**GUIDELINES FOR THE PREVENTION & CONTROL OF THE *Clostridium Difficile*  
ASSOCIATED DIARRHEA**

Service of Infection Prevention & Control

Based on the document *Guidelines for the Control and Prevention of Clostridium Difficile* by the  
MUHC

## **1. INTRODUCTION**

*Clostridium difficile* is an anaerobic, gram-positive, spore-forming bacillus that may be present in asymptomatic carriers or may produce a range of disease from self-limiting diarrhea to colitis without pseudomembranes, pseudomembranous colitis or fulminant colitis with or without toxic megacolon. Changes in the normal bowel flora due most frequently to antibiotic use may produce acute diarrhea by overgrowth and toxin production by *Clostridium difficile*.

In 80% of *Clostridium difficile*-associated diarrhea (CDAD) cases, symptoms begin between 4 to 9 days after the initiation of antibiotic therapy. Symptoms may start after the cessation of therapy and as long as 10 weeks later. Symptoms include diarrhea that is watery, mucoid, green, foul smelling and sometimes bloody. In addition the patient may exhibit fever, leukocytosis and abdominal pain.

In the community, up to 2% of healthy adults are carriers of *C. difficile* while 30-50% of infants are asymptomatic carriers. Acquisition of *C. difficile* is via the fecal-oral route. It is spread within the hospital environment by hands of healthcare workers as well as via indirect transmission from patient care equipment or contaminated environments. Hospitalized patients may acquire *C. difficile* and remain asymptomatic until antibiotics are received. Alternatively, the hospitalized patient may receive antibiotics and then become colonized with *C. difficile*. Thirty (30%) percent of hospitalized patients may become colonized with *C. difficile* within 2 weeks of admission.

A two-pronged approach is required to prevent CDAD: 1) interrupt the transmission of *C. difficile* thereby preventing the patient from acquiring the organism and 2) reducing the individual's risk of developing disease. Prompt identification, treatment, and the institution of control measures are essential in preventing the ongoing transmission of *C. difficile*. Judicious use of antibiotics is required to reduce the patient's risk of acquiring CDAD.

## **2. PURPOSE**

To prevent transmission and facilitate the early identification and treatment of patients infected with *C. difficile*.

## **3. SCOPE**

The prevention and control of *C. difficile* for the purpose of reducing transmission among patients and employees within the Cree Health Board. This policy applies equally to all long-term care units and outpatient services at these sites.

**4. RESPONSIBILITY**

Nurses, physicians and other health care workers are collectively responsible for the prevention and control of *C. difficile*. Hand washing and appropriate use of contact precautions are the responsibility of every healthcare worker and member of the medical team. A physician or a nurse will initiate *C. difficile* testing and precautions according to guidelines. Nursing personnel will place appropriate signs on the door and patient chart and document the initiation of *C. difficile* precautions in the patient's chart.

**5. CONTROL MEASURES****5.1 Early detection of CDAD**

- Report to nurse-in-charge and physician all new cases of diarrhea.
- Promptly send a stool (liquid/loose) specimen for *C. difficile* toxin assay on all patients with acute onset diarrhea.
- Repeat if the result of the first test is negative and diarrhea continues.

**5.2 Patient placement**

- Single room, if possible, with dedicated toilet facilities or commode, otherwise:
- Cohort patients with diarrhea who are *C. difficile* positive. Use dedicated commodes.
- As last resort, leave patient in room with uninfected patients and do not allow sharing of the bathroom. Ensure that infected patient uses a dedicated commode.
- Restrict symptomatic patients to their room at all times except for medically necessary tests or treatment.

**5.3 Contact precautions**

5.3.1 Place all patients with diarrhea on contact precautions until CDAD is ruled out by 2 negative *C. difficile* toxin assays within 72 hours. If CDAD is ruled out, reassess need for contact precautions. Incontinent patients who cannot practice good hygiene should be kept in isolation.

5.3.2 Place a Contact Precautions sign on the doorframe where it will be visible.

5.3.3 Personal protective equipment:

6. Wear long-sleeved gown and gloves on entering the room
7. Remove gloves and gown before leaving the room. Place gown in dedicated linen hamper in patient's room. Do not reuse gowns.

8. When cohorting patients in a multi-bed room, change gloves and gown between each patient and wash hands.

## **5.4 Hand washing**

### Personnel

- When a patient is on Contact precautions for diarrhea, wash hands with antiseptic soap and water, rub hands vigorously for 10-15 seconds. Cover all surfaces of the hands, nails, and wrists. Rinse thoroughly.
- Handwashing with antiseptic soap and water achieves removal of spores by mechanical action. Chlorhexidine and alcohol does not kill *C. difficile* spores. In other instances when hands are not visibly dirty, alcohol hand rinse remains the most effective and efficient method of hand decontamination.

### Patients

- Instruct all patients about the need for hand hygiene, especially after use of the bathroom and before meals.
- Provide a premoistened hand wipe or a wet washcloth with soap for patients who are unable to wash hands at the sink after use of bathroom or commode and before meals.

## **5.5 Removing patient with CDAD from contact precautions**

- Contact precautions may be discontinued when the patient has had no diarrhea for 72 hours irrespective of whether or not the treatment has finished. Although there is reduced risk of contaminating the environment when the patient does not have diarrhea, continuing good hand hygiene by the patients and staff is important. Reinstitute precautions immediately if diarrhea recurs.
- It is not necessary to test stool for *C. difficile* toxin when diarrhea has ceased to determine whether contact precautions should be continued. The *C. difficile* toxin may be present in the bowel for months even though the patient no longer has active disease.

## **5.6 Materials and Equipment**

- Provide dedicated equipment (e.g. stethoscope, sphygmomanometer, thermometer, tourniquets, pens, glucometer, etc).
  - For non-dedicated equipment, decontaminate items before and after use with another patient (e.g. IV poles and wheelchairs).
1. Clean with hospital-approved disinfectant wipe and let dry. Unless otherwise specified,

the disinfectant wipe refers to wipes containing quaternary ammonium compound.

2. Clean a second time with bleach solution 500 ppm (or bleach wipe), if the item will tolerate bleach. Otherwise, clean a second time with the hospital-approved disinfectant wipe.
  - Use dedicated or single use thermometers for patients with diarrhea.
  - Limit the amount of supplies and linen taken into the patient's room. Use an isolation cart for supplies.
  - Keep the patient's chart outside the room.
  - Commode: used for patients with diarrhea
3. Provide a dedicated commode for each patient with diarrhea
4. Clean daily and at discharge using a two-step method
5. Clean by vigorously rubbing with hospital-approved disinfectant wipe and let dry, then disinfect with bleach wipe and let dry.
6. Clean the commode after use and daily with a bleach wipe.
7. Clean top of backrest, armrests, and then seat. Continue with under the seat, legs and wheels.
  - Commode: general preventive cleaning for all commodes on the unit
8. Clean and disinfect all commodes daily using the two-step method described above.
9. Clean commodes of patients on isolation precautions last.

### **5.7 Linen handling**

- Place dedicated hampers for dirty laundry inside the room.
- Place soiled linen directly in laundry bag, not on floor or chair. If linen is very wet such that leakage may occur, place wet linen in a plastic bag and place that bag in the cloth laundry bag.
- Disinfect hamper before removing from room.

### **5.8 Waste disposal**

No special requirements.

## 9. CLEANING

Regular and thorough environmental cleaning and disinfection is crucial for the control of *C. difficile*. The aim is primarily to eliminate, by mechanical action, spores and vegetative *C. difficile* bacteria from the environment. See Appendix IV for cleaning table.

- Assistant head nurses notifies housekeeping of *Clostridium difficile* rooms.
- As usual, clean isolation rooms last
- Apply additional precautions to enter room (gown, gloves, mask if needed)
- Respect product contact time
- Change gloves after each cleaning step
- Always begin with patient's surroundings and finish with bathroom
- Change rag between steps and between areas (high touch, low touch, bathroom, pt surroundings, ...)
- Dispose of disinfecting solution in the bathroom at the end of the work
- Send rags and mop head to the laundry
- Immediately clean visibly soiled areas
- Never put a rag back in the solution bucket to "rinse" or add product; change rag instead to avoid contamination of the solution

### .1 Daily cleaning of CDAD room

- Clean using the two step method: Clean all surfaces with quaternary ammonium compound, let dry then repeat cleaning with bleach solution of 0.05% (500 ppm) with a 15 minutes wait in between two steps.
- Change mop head, rags, and disinfectant solution between each step and between each room.
- Clean bathrooms of *C. difficile* rooms **twice a day** in the usual manner.

### 6.2 Terminal cleaning of CDAD rooms (departure or cessation of additional precautions)

- Discard supplies that cannot be disinfected and clean medical equipment that need to be reused.
- Remove bedside and window curtains and place in laundry bag.
- For the 3 steps of cleaning, use the same sequence (order) in cleaning.
- Clean all areas of the room **including the walls (at hand reach)** with usual detergent.
- Rinse with water

- Clean a second time with bleach solution 5000 ppm or lighter dilution with longer contact time if other patients in the bedroom or not well tolerated by workers.
- Install clean bedside and window curtains.
- Replace the call bell attachment with nylon washable string.
- Housekeeping supervisor inspects *C. difficile* rooms or cubicles that have undergone terminal cleaning before a new patient is admitted to the space.

### **6.3 Cleaning of the nursing units to prevent CDAD**

Clean nursing unit with quaternary ammonium compound one day and bleach solution alternate days (including weekends) as per Housekeeping routine schedule.

Cleaning of the nursing unit includes:

- Patient rooms including floor
- Every bathroom
- Floors of hallways
- Railings in hallways
- Solarium and common public areas
- Nursing station & conference rooms
- Utility rooms
- Activity and family rooms including chairs
- Kitchenette floor and remove garbage

### **6.4 Cleaning in clinical outpatient departments to prevent CDAD**

- Clean washrooms twice a day.
- Clean examination rooms
- Clean waiting rooms.

## **10. GENERAL ACTIVITIES**

Restrict patient to room, except for medically necessary tests or treatments, until diarrhea has ceased for 72 hours. In particular, patients must not go to public areas of the hospital.

## **11. PATIENT TRANSPORT**

### **8.1 Booking procedures**

- Limit patient transport to other departments as much as medically feasible.

- When possible, perform procedures at the end of the day.
- When possible, perform diagnostic procedures or therapies in the patient's room.

## **8.2 Notification**

The patient care unit, prior to transport, must inform the receiving department of the infection control measures to be taken. This is done to ensure that tests or procedures are carried out without delay and that the appropriate precautions are taken.

## **8.3 Procedures**

- Transport patients directly to and from the procedure area
- Instruct the patient to wash his/her hands or assist the patient with hand hygiene by using hand wipes. If necessary, provide diapers or other means to contain diarrhea during transport.

Transportation by wheelchair or stretcher

- Cover the wheelchair including the handlebars with a sheet before entering the room.
- When entering the room, the transport attendant and/or health care worker are to wear gown and gloves to help lift the patient.
- Cover the patient well with gloves, long-sleeved gown or sheets where appropriate.
- Upon leaving the patient's room, transport attendant and/or health care worker will remove protective wear and wash hands.
- Remove the sheet from the handlebars once the patient is seated in the wheelchair.
- After using the wheelchair or stretcher, decontaminate with the hospital-approved germicide.
- Decontaminate patient dedicated wheelchairs with the hospital-approved germicide before leaving the room.
- Patients are not to have contact with the chart during transport. Place chart under mattress or on clean cover.

## **12. DIETARY**

- Place patient on lactose free and low residue diet where appropriate.
- There are no special requirements for utensils, trays, etc. Disposable trays are not necessary.
- Distribute hand wipes with meal trays.
- Instruct or assist patient with hand hygiene.
- Use contact precautions:



- Tray delivery

**10.** Put on gown and gloves before entering the room. Place tray on table.

**11.** Before leaving the room, remove gloves and gown. Wash hands with antiseptic soap for 15 seconds. Rinse thoroughly. Turn off tap with a paper towel.

- Tray pick-up

**12.** Move tray carrier close to the entrance of the room and open doors.

**13.** Put on gloves and gown.

**14.** Pick up tray and place directly in the carrier.

**15.** Remove gloves and gown and wash hands.

### **13. VISITOR POLICY**

- Limit visitors to 2 at any one time.
- Consult with the nurse in charge before permitting children to visit.
- Nursing manager or delegate with the support of the treating physician is responsible to inform patients, family members and visitor of the policy.
- Security has the authority to escort visitors who do not respect this policy off the unit.

**14. PATIENT AND VISITOR EDUCATION**

- Provide patients and visitors with adequate information so that they can understand the need for, and importance of complying with infection control measures.
- Instruct patients and visitors about appropriate hand hygiene.
- Instruct patient about the importance of returning to the hospital if diarrhea or abdominal pain develops after discharge. Instruct patient to seek immediate medical attention from his/her own physician, CLSC or this hospital.

**15. TRANSFER / DISCHARGE OF PATIENT WITH CDAD (STILL ON CONTACT PRECAUTIONS)**

- Patients may be discharged / transferred as is medically necessary.
- Communicate the patient's CDAD status verbally as well as on the transfer note to the recipient institution.
- Include the patient's current CDAD status or history in the medical discharge summary.
- See Appendix III for reference letter

**16. PRECAUTIONS IN AMBULATORY CARE AREAS****13.1 Scheduling appointments**

- When possible, schedule patient as the last appointment of the clinic.
- When scheduling appointments for the patient in other ambulatory care areas, notify clerical staff of the patient's *C.difficile* status so that appropriate precautions can be taken.

**13.2 Waiting Area**

- When possible, place patient directly into an examination room.
- If possible, designate a washroom for *C.difficile* positive patients and ensure appropriate cleaning following use.

**13.3 Protective Apparel for the Health Care Worker Providing Direct Care**

- Wear gown and gloves when there is direct patient contact.
- Hand hygiene is essential after removal of gloves and gown and after each patient contact. If patient has diarrhea, wash hands thoroughly for **10-15 seconds** with the hospital approved antiseptic soap.

**13.4 Equipment and Environment**

- Prepare for the arrival of the patient by placing a supply of gowns and gloves outside the designated examination room.
- Place a laundry hamper inside the room (or near the door if there is inadequate space

in the room).

- Before the examination room is used for another patient, clean equipment and surfaces in direct contact with the *C.difficile* patient as well as surfaces frequently touched by the gloved hands of health care workers.

**16.** Clean with hospital-approved disinfectant wipe, then

**17.** If equipment will tolerate, clean a second time with the bleach solution.

**18.** Otherwise clean a second time the hospital-approved disinfectant wipe.

### **17. MANAGEMENT OF HEALTH CAREWORKERS WITH CDAD**

The decision for work restrictions and client assignment will be individualized in consultation with the Infection Control Service and OH&S.

## **18. REFERENCES**

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**APPENDIX I – CLEANING RECOMMENDED**

Sodium hypochlorite solution (Bleach) 5000 ppm - Dilution 1:10

10 minutes of contact time (takes 1-3 minutes to dry)

<b>Examples</b>	<b>Water</b>	<b>Concentrated hypochlorite solution Bleach 6%</b>
Hand bucket	2,5 litres	0,250 litres = 250 mL = 1 cup
Floor bucket	15 litres	1,5 litres = 5 cups

- A fresh solution of bleach must be prepared daily.
- Do not apply bleach with a spray bottle.
- Amounts for bleach are approximated to measurable quantities.

Other dilution possible

Sodium hypochlorite solution (Bleach) 500 ppm - Dilution 1:100

<b>Examples</b>	<b>Water</b>	<b>6% Bleach</b>
Hand bucket	2,5 litres	25 ml
Floor bucket	15 litres	130 ml

## APPENDIX II - DEFINITIONS

### CDAD

*Clostridium difficile*-associated diarrhea or *Clostridium difficile*-associated disease.

### Colonized

Stool positive for *C. difficile* toxins without clinical evidence of infection (no clinical symptoms).

### Infected (for the purpose of surveillance)

Diarrhea (more than 3 liquid stools in 24 hours) AND laboratory confirmation of positive toxin assay

### **OR**

Acute onset of diarrhea (more than 3 liquid stools in 24 hours) without alternate explanation

### **AND**

Diagnosis of pseudomembranes on sigmoidoscopy or colonoscopy

### **OR**

Histological/pathological diagnosis of CDAD with or without diarrhea.

Note: Patients with ileus will have an atypical presentation. Diarrhea may not be present.

### Primary infection (for the purpose of surveillance)

First time infected with *C. difficile* within the last 8 weeks regardless of location of acquisition.

### Recurrence of CDAD (for the purpose of surveillance)

Recurrence of symptoms 3 days or more after the end of the previous treatment.

### Reservoir

The source of the organism. Persons colonized or infected with *C. difficile* as well as contaminated environmental sources (e.g. toilet, taps, and frequently touched items). *C. difficile* spores can remain in the environment for months.

### Toxin assay

Identification of *C. difficile* toxin from stool specimen sent to Microbiology Laboratory to confirm diagnosis of CDAD.

## Control Measures

Preventive and containment practices recommended to reduce the fecal-oral transmission of *C. difficile* (e.g. use of a single room, gloves, hand washing, dedicated equipment and specific environmental cleaning).

**APPENDIX III – LETTER FOR PATIENT TRANSFER**

From « Prévention et contrôle de la diarrhée nosocomiale associée au *Clostridium Difficile* au Québec ». published by Institut national de santé publique du Québec.

Nom du patient : \_\_\_\_\_

Admis du (date) : \_\_\_\_\_ au : \_\_\_\_\_

Nom du centre hospitalier : \_\_\_\_\_

- L'information reçue lors de votre admission à notre centre ou lors de votre séjour nous indique que vous avez eu un test positif pour le *Clostridium difficile* le (date) : \_\_\_\_\_
- Diarrhée encore présente : OUI  NON
- Date de résolution de la diarrhée (date) : \_\_\_\_\_

Les centres hospitaliers doivent porter une attention spéciale à la prévention de la transmission de cette bactérie à d'autres patients. Il faut donc aviser tous vos médecins traitants et autres professionnels de la santé, afin que des précautions soient prises si vous présentez encore de la diarrhée.

Si vous êtes symptomatique de nouveau, il faut aviser votre médecin afin qu'une évaluation soit faite et qu'un traitement approprié vous soit prescrit.

Vous avez reçu le traitement suivant : (nom du médicament et dates du traitement)

\_\_\_\_\_  
\_\_\_\_\_

Patient Name: \_\_\_\_\_

Was admitted on (date): \_\_\_\_\_

Discharge from our facility on (date): \_\_\_\_\_

- Information from your medical record during your hospitalization revealed that you had *Clostridium difficile* diagnosed (date): \_\_\_\_\_
- Diarrhea still present: YES  NO
- Date diarrhea ended (date): \_\_\_\_\_

This germ is of special concern in medical facilities and you should advise any treating physician and other health care professionals. Hospitals must use necessary precautions to prevent spread among other patients.

**You must advise your physician of any reoccurrence of symptoms for evaluation and treatment.**

You were treated by: (name and dates of prescribed treatment) \_\_\_\_\_

\_\_\_\_\_



# CLOSTRIDIUM DIFFICILE PROTOCOL

Chisasibi Hospital

## APPENDIX IV – SUMMARY OF CLEANING PROCEDURES WITH *CLOSTRIDIUM DIFFICILE*

Intervention	Environment / situation	Surface / object	Procedure	Steps	Product
<b>Daily cleaning</b>	Private toilet, reserved to a single patient	High touch surfaces, floor	1 step Increase frequency if needed	Cleaning – Disinfection	Usual germicide detergent
	Shared toilet amongst CD + patients	High touch surfaces, floor	1 step Frequency: minimum 3 times a day	Cleaning – Disinfection	Usual germicide detergent
	Shared toilet amongst CD+ and asymptomatic patients (proscribed situation)	High touch surfaces	3 steps	Cleaning	Usual detergent
				Rinsing	Water
				Sporicide disinfection	5000 ppm bleach solution
	Walls	1 step	Cleaning – Disinfection	Usual germicide detergent	
	Private bedroom	High touch surfaces	1 step	Cleaning – Disinfection	Usual germicide detergent
Cohort shared bedroom	High touch surfaces	1 step Increase frequency if needed	Cleaning – Disinfection	Usual germicide detergent	
<b>Departure (or cessation of additional precautions)</b>	Private and shared bathroom	High touch surfaces, floors, walls	3 steps	Cleaning	Usual detergent
				Rinsing	Water
				Sporicide disinfection	5000 ppm bleach solution
	Private and shared room (without patients)	Curtains	Unhook and send to laundry		
		Furniture	Discard single use material or material that cannot be disinfected		
		Low and high touch surfaces, equipment, floors	3 steps	Cleaning	Usual detergent
				Rinsing	Water
				Sporicide disinfection	5000 ppm bleach solution
		Walls	1 step	Cleaning – Disinfection	Usual germicide detergent
	Shared room with patients	Curtains close to the patient	Unhook and send to laundry		
		Designated furniture of patient who left	Discard single use material or material that cannot be disinfected		
		Low and high touch surfaces, equipment, floors (liberated area)	3 steps	Cleaning	Usual detergent
				Rinsing	Water
Walls close to the patient		1 step	Cleaning – Disinfection	Usual germicide detergent	

If visibly soiled: remove and wipe as soon as possible and apply 3 steps procedure on the affected area.