

LTHT Infection Control Policies

Clostridium difficile Infection

***Clostridium difficile* is an important hospital acquired infection, and is recognised as a major cause of diarrhoea in hospital patients. This infection is associated with antibiotic use and environmental contamination: it affects mainly the over 65's.**

Key Points:

- If patients are *Clostridium difficile* toxin positive and are symptomatic i.e. they have diarrhoea, isolate if possible. If unable to isolate, nurse on the ward as if in isolation.
- Follow the Isolation Guidelines and make sure Universal Infection Control Precautions are being followed.
- Strict and thorough hand washing with soap and water after every contact with the patient/ patients environment. **NB** – alcohol hand rub/gel is less effective on *Clostridium difficile* spores.
- Follow the Isolation Cleaning Guidelines, increasing the cleaning to twice a day. Ensure thorough terminal cleaning of area after clearance.
- Wear single use gloves and apron for close patient/patient environment contact e.g. bedmaking, manual handling.
- Treat all linen as infected.
- Encourage good patient hand and toilet hygiene.
- Have separate commode/toilet, which must be cleaned thoroughly with detergent and water and disinfected using a chlorine based agent after each use.
- Keep accurate record of patient's bowel movement. If your patient has been symptom free (i.e. not had any diarrhoea) for the last 48 hrs isolation restrictions can be lifted. A clearance specimen is not required.

1. What's the problem?

- *Clostridium difficile* is now a major hospital acquired infection associated with antibiotic use and environmental contamination: it affects mainly the over 65's.
- This infection can be life threatening, especially if pseudomembranous colitis develops. The patient's dignity is often compromised, as they may be incontinent of foul smelling diarrhoea up to 30 times a day.
- *Clostridium difficile* can cause outbreaks in ward situations, and more recently in community care establishments.
- There is also a financial cost, which has been estimated to be in excess of £4000 per case (Wilcox et al. 1996).

2. What causes it?

- *Clostridium difficile* is a gram-positive bacterium; it is also anaerobic – which means it lives in oxygen free conditions.
- *Clostridium difficile* bacteria produce spores in adverse conditions i.e. when oxygen is present. The spores are resistant to many disinfectants and harsh environmental conditions where they can survive for many months.
- These bacteria may also produce toxins, which cause the symptoms of diarrhoea – which is why we test for the presence of toxins.
- Humans can be asymptomatic carriers of the organism; however, there is no evidence to suggest that such carriers are sources of cross-infection.

3. How does it affect the patients?

- The illness ranges from mild self-limiting diarrhoea to severe, potentially fatal pseudomembranous colitis.
- Patients may present with as many as 20-30 episodes of watery, green, foul smelling diarrhoea a day. The patients may also have fever, abdominal cramps, and blood and leucocytes in the stools. Because many patients are incontinent of diarrhoea at this stage, their dignity and privacy may be compromised.

- Complications associated with the infection include dehydration, electrolyte imbalance, colon perforation and toxic megacolon.

4. Who is vulnerable?

- *Clostridium difficile* affects especially the elderly – those over 65, the debilitated and the immunocompromised.
- The infection is particularly associated with the use of certain antibiotics, particularly the third generation cephalosporins and also if a cocktail of antibiotics is used. These alter the normal gut flora, therefore allowing *Clostridium difficile* to multiply and produce toxins in the absence of competition. The gut flora may also be altered by aperients, enemas, antacids and bowel surgery.

5. How is it spread?

- *Clostridium difficile* is spread by the faecal-oral route.
- Spores in the faeces can contaminate
 - patients' skin and hands
 - hands of health care workers
 - the environment

(see the flow chart “ The Cycle of *Clostridium difficile* Infection” Appendix A)

6. What to do if you suspect someone has *Clostridium difficile* infection.

- If patients present with unexplained diarrhoea ensure they have the appropriate investigations and if possible are isolated.
- If *Clostridium difficile* is suspected request *C. diff* as well as microscopy, culture and sensitivity (MC&S) on the same Microbiology form. You will need to fill the specimen pot ¼ full.

7. Who is classed as infected?

- The patient is symptomatic i.e. has diarrhoea and is *Clostridium difficile* toxin positive.
- The Infection Control Team receives all the *Clostridium difficile* toxin positive results from the laboratory. They will then inform the ward staff and ascertain whether the patient is symptomatic or not and also if and what antibiotic therapy they are on, and discuss appropriate infection control precautions.

8. What is the treatment?

- The Medical Microbiologists will advise on treatment.
- If possible, stop pre-existing antibiotic therapy and any other therapy, which may alter the gut flora.

The first line effective antibiotic in the treatment of *Clostridium difficile* infections within the Trust is:

Metronidazole 400mgs TDS for 7-10 days. This drug should be taken orally.

If this treatment is not successful please seek Microbiology advice.

9. How to stop it spreading

The Infection Control Team (ICT) will give relevant infection control advice on each patient.

(See the flow chart – “The Management of *Clostridium difficile* Infection “, Appendix B)

9.1 Isolation: - it is important to physically separate the symptomatic patient from other vulnerable patients, in order to prevent the spread of *Clostridium difficile*.

- If possible, isolate all symptomatic patients in single rooms. If unable to isolate, nurse as if in isolation i.e. imagine an invisible barrier around the bed area.
- If there is more than one patient on the ward, the ICT will assist the ward staff in arranging to cohort them.

- Ensure the patient has his or her own toilet/commode. This must be cleaned thoroughly with neutral detergent and water and disinfected using a chlorine based agent, or agent that contains both, after each use.
- Follow the Source Isolation policy

9.2 Hand Washing: - this is the most important procedure for preventing hospital acquired infection as hands have been shown to be an important route of infection.

***Clostridium difficile* spores have been found on the hands of LTH health care workers .**

- Strict and thorough hand washing with soap and water after every contact with the patient or their environment. (see Hand Hygiene Policy).
- Staff and visitors must always wash their hands on leaving the isolation room/ area.
- Alcohol hand rub/gel is less effective on *Clostridium difficile* spores. When caring for a patient with *Clostridium difficile* alcohol products should not be used as a substitute for hand washing with soap and water, this physically removes the spores.
- It is important to encourage **ALL** patients to wash their hands after using the toilet and before meals. If patients cannot access a hand wash basin then moist hand wipes may be offered (these can be obtained through the RSC).

9.3 Protective Clothing: - it is important to assess the possibility of contamination by *Clostridium difficile* bacteria and/or spores, then choose appropriate protective clothing before carrying out a procedure.

- Single use gloves and apron must be worn when dealing with all body fluids.
- Wear single use gloves and apron for close patient/patient environment contact
 - e.g. Moving and handling patient
 - Bedmaking
 - Cleaning room/area

NB Always wash hands after removing gloves

9.4 Cleaning:- *Clostridium difficile* spores may survive for many months and are often widely distributed in the ward setting; they are also resistant to many disinfectants. Patient care equipment can easily become contaminated with the organism.

- Inform the locality supervisor, requesting
 - to follow “isolation cleaning guidelines”
 - thorough cleaning of vacated bed space
 - meticulous cleaning of isolation room/bed area – taking special care with horizontal surfaces
 - the room/bed area to be cleaned twice daily
 - good care and storage of cleaning equipment
- Clean toilet/commode thoroughly after each use with neutral detergent and water and disinfect using a chlorine based agent (don't forget the arms, where often patients rest their hands).
- Allocate where possible specific equipment for the infected patient
 - e.g. moving and handling slings
 - wash bowl
- All patient care equipment needs to be decontaminated in between patients and on a regular basis (see Decontamination of Hospital Equipment).
- Single-use items should be used where appropriate.
- After clearance of the infection the room/bed area must be thoroughly cleaned, paying special attention to the bed frame and mattress, toilet/commode and frequent touching surfaces e.g. door handles.

9.5 Communication and documentation: - important in ensuring everyone is aware of the infection control precautions that need to be in place.

- Explanation to patient and relatives is essential. It is also important to maintain the patient's dignity and confidentiality at all times. (Patient information leaflets are available and can be ordered from the Print Unit).
- **ALL** staff, both regular and visiting should be made aware of the importance of taking the necessary infection control precautions.

- The ICNs will give ward staff “Infection Control Advice Sheets” specifically for *Clostridium difficile* infection. These can be incorporated into the patient’s care plans.
- It is important to keep an accurate record of the patient’s bowel movements in order that clearance of infection can be established as soon as possible.
- Symptomatic patients should not leave the ward unless unavoidable, If an investigation is necessary **ASK:** -
 - Can it be postponed until the patient is asymptomatic?
 - Can it be performed on the ward?

If unable to do either of these: -

- Liaise with the ICT
- Inform staff in the receiving department who will then take the relevant precautions
 - E.g. - putting patient last on list
 - time spent in the department is kept to a minimum
 - area/equipment is thoroughly cleaned after use

10. When is the patient clear of the infection?

- The patient can be brought out of isolation if he/she has been free of symptoms for **48hrs.**
- A clearance specimen is not required.
- If the patient is still symptomatic after treatment is complete, continue to take precautions and inform the ICT, who will advise as to whether a repeat specimen is required and on the management of the patient.
- Ensure a thorough terminal clean of the room area after clearance.

11. What happens if symptoms recur?

Recurrences of *Clostridium difficile* diarrhoea are common, occurring in at least 20% of cases.

- Regard the patient as infectious, inform the ICT
- Reinstate appropriate infection control precautions
- If the patient has had a positive *Clostridium difficile* result wait 14 days before you send a repeat sample.

- If the patient is *Clostridium difficile* negative wait 7 days before you send a repeat sample
- If clinically concerned about the patient please discuss with the Microbiologist.

12. How can *Clostridium difficile* infection be prevented?

- Limit the use of antimicrobial drugs.
- Wash hands between contact with all patients.
- Use relevant infection control precautions for all patients with diarrhoea.
- Clean the environment meticulously.

References and Further Reading

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