

CLOSTRIDIUM DIFFICILE INFECTION (CDI)
Infection Prevention and Control Policy No 8

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EXECUTIVE SUMMARY

This policy describes the measures required by clinical teams when a patient has suspected or confirmed.

Clostridium difficile infection (CDI) is episodes of diarrhoea that occur at the same time as a positive assay that are not attributable to any other cause including medicines.

Purpose

To prevent and control the spread of communicable infections within LTHT
Ensure a safe environment for all patients within LTHT

Aim:

To ensure that patients with suspected or confirmed CDI are cared for appropriately in order to prevent and control the spread of the infection.

Objectives:

To reduce the risk of transmission of CDI to non-colonised or infected patients.

To ensure that patients with CDI are appropriately managed.

This policy applies to

All patients at LTHT.

All staff employed at LTHT who have direct patient contact.

All students who have direct patient contact.

Key Points

CDI causes serious illness and is easily transmittable amongst hospital in-patients. It normally affects the elderly, the debilitated and patients who have had antibiotic treatment.

When patients present with diarrhoea, the possibility that it may have an infectious cause should be considered. Patients with suspected potentially infectious diarrhoea should be isolated (DoH, 2009).

(See [Source Isolation policy](#))

Apply the **SIGHT** protocol when managing suspected potentially infectious diarrhoea:

S	Suspect that a case may be infective when there is no clear alternative cause for diarrhoea
I	Isolate the patient within 2 hours
G	Gloves and aprons must be used for all contacts with the patient and their environment
H	Hand washing with soap and water should be carried out before and after each contact with the patient and the patient's environment
T	Test the stool for <i>Clostridium difficile</i> by sending a specimen immediately

See flowchart in Appendix C

- Strict and thorough hand washing with soap and water after every contact with the patient/ patients environment.
NB – alcohol hand rub/gel has minimal effects on *Clostridium difficile* spores. Alcohol hand rub/gel cannot be relied upon for effective hand decontamination if *Clostridium difficile* spores are present.
- Follow the Isolation Cleaning Guidelines using a cleaning agent which contains a detergent and chlorine based product, and disinfect the patient care equipment and environment daily.
- The bed space vacated by the infected patient on the ward must be cleaned thoroughly following the source isolation cleaning guidelines.
- Encourage good patient hand and toilet hygiene.
- The patient must be nursed in a single room with a wash basin and preferably an en-suite toilet. If an en-suite toilet is not available, a commode for sole use of the isolated patient should be kept in the isolation room for the duration of the patient's stay. If isolation facilities are not available, discussion should take place with the Infection Prevention and Control Team about cohorting affected patients.
- Keep an accurate record of the patient's bowel movement using the Bristol Stool Chart. If the patient has been symptom free (i.e. not had any diarrhoea of type 5-7 on the Bristol Stool Chart) for the previous 48 hrs isolation restrictions can be lifted. A clearance specimen to check for *Clostridium difficile* toxin is **not required**.

1 INTRODUCTION

Clostridium difficile is now a major healthcare associated infection (HCAI) related antibiotic use and environmental contamination: it affects mainly the over 65s.

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 was estimated in 1996 to be in excess of £4000 per case (Wilcox et al. 1996).

2 PURPOSE

The purpose of this policy is to outline the prevention and control measures that need to be in place when a patient within LTHT has suspected or confirmed CDI. It also serves to ensure that patients with *CDI* are appropriately managed.

Failure to follow this policy could result in the instigation of disciplinary procedures.

3 DEFINITIONS

Clostridium difficile is a Gram-positive bacterium; it is anaerobic – which means it lives in oxygen free conditions.

Diarrhoea is defined as stool loose enough to take the shape of the container used to sample it or as types 5-7 on the Bristol Stool Chart.

Clostridium difficile infection (CDI) is episodes of diarrhoea that occur at the same time as a positive assay that are not attributable to any other cause including medicines.

Isolation is the physical separation of a patient with an identified or suspected transmissible infection (alert organism/condition) into a single side room.

4 DUTIES

4.1 Duties within the organization

As a healthcare establishment, LTHT has a duty of care that is covered by the Health and Safety Act (1974) (HSE 2003), COSHH (HSE 2005) and the Health Act (DH 2006). The case of patients with suspected or confirmed *CDI* is covered in core duties 1,2f, 3, 4a, 4d, 5, 6, 8, 9, and 11.

4.2 Consultation and communication with stakeholders

The Infection Prevention and Control Committee and the Infection Prevention and Control Team have commented on and contributed to this policy. The policy will be approved by the Infection Prevention and Control Committee and the Senior Management Team.

5 **CLOSTRIDIUM DIFFICILE**

- *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.

6 **MANAGEMENT AND TREATMENT OF CDI**

- Apply the **SIGHT** protocol when managing suspected potentially infectious Patients should be monitored daily for frequency and severity of diarrhoea using the Bristol Stool Chart (stool type 5-7).

S	Suspect that a case may be infective when there is no clear alternative cause for diarrhoea
I	Isolate the patient within 2 hours
G	Gloves and aprons must be used for all contacts with the patient and their environment
H	Hand washing with soap and water should be carried out before and after each contact with the patient and the patient's environment
T	Test the stool for <i>Clostridium difficile</i> by sending a specimen immediately

- All antibiotics that are clearly not required should be stopped, as should other drugs that might cause diarrhoea. It is unclear whether proton pump inhibitors are a risk factor for CDI; their use should be reviewed, especially in a patient who experiences recurrent CDI.
- CDI is normally treated with oral metronidazole or vancomycin, as described in the Leeds Health Pathways ["*Clostridium difficile* antimicrobial guideline"](#).

7 TESTING CRITERIA FOR *CLOSTRIDIUM DIFFICILE* INFECTION (CDI) AT LTHT

- A stool sample should be sent for *Clostridium difficile* testing whenever a patient has diarrhoea (Bristol stool chart 5-7 faeces) that is not attributable to a cause other than CDI (e.g. laxative administration, overflow, medications). The patient should be placed in Source Isolation whilst awaiting the result.
- If diarrhoea is worsening in a patient in whom it was previously attributed to a cause other than CDI, CDI should be suspected. A stool sample should be tested for *C. difficile* toxin (CDT) and the patient should be placed in Source Isolation whilst awaiting the result.
- If diarrhoea is persistent (e.g. lasting for > 48 hrs) in a patient in whom it was previously attributed to a cause other than CDI a decision as to whether to test for CDT should be made following discussion between experienced members of the medical and nursing staff. If a sample is tested the patient should be placed in Source Isolation whilst awaiting the result.
- Stool samples should not be sent for CDT testing in patients who do not have diarrhoea or in patients whose diarrhoea immediately follows administration of a laxative/enema.
- If in doubt about the need to test, please seek advice from a senior colleague, microbiologist or member of the IPC Team.

8 PREVENTION OF SPREAD THROUGH ISOLATION

- Patients with suspected potentially infectious diarrhoea should be isolated within two hours of onset of symptoms, in accordance with the source isolation policy. This should be in a room with en-suite toilet facilities and a hand wash basin. If en-suite facilities are not available the patient should have their own designated commode which should be kept in the room.
- Once CDI has been confirmed, 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 order no. WRU 1004).
- Once CDI has been confirmed the patient should be commenced on the appropriate Infection prevention and control care plan. (Print Unit Order Number WUN 958)
- In areas where a dedicated CDI Isolation ward exists, patients with confirmed CDI should be transferred to this facility.

- Staff should monitor and record the patient's bowel movement using the Bristol Stool Chart.
- Hand hygiene using soap and water should be performed before entry and on leaving the patient's environment.
- All staff entering the isolation room should use disposable gloves and aprons for all contact with the patient or their environment, and wash their hands with soap and water before and after each patient contact and between each patient care activity.
- If the patient has been symptom free (i.e. not had any diarrhoea of type 5-7 on the Bristol Stool Chart) for the last 48 hours isolation restrictions can be lifted. A clearance specimen to check for *Clostridium difficile* toxin is **not required**.
- The movement and transfer of infected patients should be kept to a minimum, where possible. If patients need to attend other departments for essential investigations they should be placed last on the list and the receiving department must be informed of the patient's infectious status. An Infection Control Transfer Form (appendix B of the Patient Transfer of Patients Policy) should be completed for each patient transfer (see [Transfer of Patients Policy](#)).
- All clinical waste and linen from patients with CDI should be treated as infected and managed in accordance with the [Source Isolation Policy](#).
- Curtains will need to be changed and laundered (or replaced if disposable paper curtains are used) as soon as any patient has been moved from a bay into to source isolation.

9 HAND HYGIENE

- All healthcare workers should wash their hands with soap and water before and after contact with patients with suspected or confirmed CDI or any other infective diarrhoea. (see [Hand Hygiene Policy](#)).
- Visitors should also be encouraged to wash their hands before entering or leaving the isolation room/ area.
- Alcohol hand rub/gel is less effective on *Clostridium difficile* spores. When caring for a patient with CDI, alcohol products should **not** be used as a substitute for hand washing with soap and water. Soap and water physically remove 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 NHS Logistics).

10 PREVENTION THROUGH ENVIRONMENTAL CLEANING AND DISINFECTION

- Environmental cleaning of isolation rooms of patients with suspected or confirmed CDI should occur at least daily using a detergent and chlorine releasing agent to a concentration of at least 1000ppm.
- The identified toilet/commode must be cleaned thoroughly with a detergent and chlorine releasing agent after each use and disinfected using a detergent and chlorine based agent daily and when visibly soiled.
- Bed frames, commodes and other frequently touched items are often contaminated. All patient care equipment needs to be decontaminated using a detergent and chlorine releasing product daily and in between patients (see **LTHT Decontamination of Hospital Equipment Policy**).

Single-use items should be used where appropriate.

- Terminal cleaning of the room should be undertaken once the patient has been discharged in accordance with the Source Isolation Cleaning Guidelines. Curtains will need to be changed and laundered (or replaced if disposable paper curtains are used) as a component of the terminal cleaning process.
- Isolation rooms should be kept free from clutter to enable thorough cleaning to take place.

11 ANTIBIOTIC PRESCRIBING

- All antibiotics, but especially broad spectrum agents, may cause CDI.
- Refer to the Leeds Health Pathways Antimicrobial Guideline for guidance on antibiotic prescribing and usage.

<http://nww.lhp.leedsth.nhs.uk/antimicrobials/index.aspx>

12 TREATMENT OF CDI

CDI should be managed as a diagnosis in its own right, with each patient reviewed daily regarding fluid resuscitation, electrolyte replacement and nutrition review. Monitor for signs of increasing severity of disease. See

Leeds Health Pathways [Guideline for the diagnosis and treatment of *Clostridium difficile* infection.](#)

and *Clostridium difficile* infection: How to deal with the problem - DH 2009)

13 RECURRENCE OF CLOSTRIDIUM DIFFICILE

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

- If the patient is still symptomatic after treatment is complete, continue to take precautions and liaise with IPCT, who will advise as to whether a repeat specimen is required and on the management of the patient.
- Reinstate appropriate source isolation precautions at any time should the patient become symptomatic.
- If the patient has had a positive *Clostridium difficile* result ensure they have had a full 10 days of appropriate antibiotics before sending a repeat sample.
- If the patient is *Clostridium difficile* negative wait 7 days before sending a repeat sample, unless symptoms are worsened or are severe.
- If clinically concerned about the patient please discuss with the Consultant Microbiologist.

14 TRAINING IN CDI MANAGEMENT

Provision of training

Training in the management and treatment of patients with suspected or confirmed CDI infection is mandatory on a yearly basis for all staff working in clinical areas within LTHT.

This training is available via an e learning package which can be accessed via the Trust intranet or remotely from outside the Trust.

However the training is accessed, staff are personally responsible for providing evidence to their line manager of having received that training.

Line managers are responsible for monitoring completion by staff of training. Staff are given protected time to attend a classroom taught session or to complete on line teaching material.

15 RESPONSIBILITY FOR DOCUMENT DEVELOPMENT

Lead Director: Ruth Holt

Membership of the Steering Group:

Juliette Cosgrove

Gillian Hodgson
Richard Hobson
Michael Horsley

16 EQUALITY IMPACT ASSESSMENT

The Policy has been assessed for its impact upon equality, Appendix A. The Leeds Teaching Hospitals Trust is committed to ensuring that the way that we provide services and the way we recruit and treat staff reflect individual needs, promote equality and does not discriminate unfairly against any particular individual or group.

17 IDENTIFICATION OF STAKEHOLDERS

The key stakeholders in this policy are staff involved in caring for patients with known or suspected infections and managers responsible for the provision of facilities for this patient group.

18 CONSULTATION PROCESS

This policy will be consulted on by the Infection Prevention and Control Committee and its sub groups and the Chief Nurse Team.

19 APPROVAL AND RATIFICATION

This policy will be approved by the Senior Management Team.

20 PROCESS FOR REVIEW/REVISION OF THIS POLICY

This policy will be reviewed in two years from date of approval.

21 COMMUNICATION/DISSEMINATION

IPT to circulate electronically to the following managers:
Divisional General Managers (DGMs) Divisional Medical Managers (DMMs),
Divisional Nurses (DNs)

The above managers then to disseminate as below:

DNs to ensure matrons receive the policy and communicate this to ward managers, who are responsible for cascading to junior medical staff.

DMMs to ensure Clinical Directors receive the policy and that this is communicated to consultants, who are responsible for cascading to junior medical staff.

DGMs - to ensure the policy is communicated to directorate managers

All staff - to be included as part of the new team brief

22 IMPLEMENTATION

This policy will be implemented immediately following dissemination. DGMs, DMMs, DNs will ensure that robust processes are in place for all appropriate staff groups to ensure this policy is implemented.

23 MONITORING COMPLIANCE/EFFECTIVENESS

If a staff member fails to comply with the policy a file note will be given to the staff member. Once this has been received and if the staff member still fails to comply, then investigation down the disciplinary route will be instigated.

24 REFERENCES AND FURTHER READING

Wilcox, M.H., Cunniffe, J.G., Trundle, C. & Redpath, C. (1996). Financial burden of hospital-acquired *CDI*. *Journal of Hospital Infection* **34**, 23-30.

Casewell, M & Philips, I. (1977). Hands as a route of transmission for *Klebsiella* species. *British Medical Journal* *ii*, 1315-7.

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Verity, P., Wilcox, M.H., Fawley, W. & Parnell, P. (2001). Prospective evaluation of environmental contamination by *Clostridium difficile* in isolation side rooms. *Journal of Hospital Infection* **49**: 204-209.

Wilcox MH, Fawley WN. Hospital disinfectants and spore formation by *Clostridium difficile* *Lancet* 2000;356:1324

Hall J, Horsley M (2007) Diagnosis and management of patients with *clostridium difficile*-associated diarrhoea. *Nursing Standard* 21 46 49-56

Department of Health & Public Health Laboratory Service Joint Working Party. (1994). *Clostridium difficile* Infection. Prevention and Management. DOH, London.

National *Clostridium difficile* Standards Group (Feb 2003) Report to the Department of Health

CMO and CNO – DOH (Dec 2005) Infection Caused by *Clostridium difficile* – Letter to NHS Trust Chief Executives

Health Protection Agency (Dec 2005) Management, prevention and surveillance of *Clostridium difficile* –Interim findings from a national survey of NHS acute trusts in England.

Saving lives: reducing infection, delivering clean and safe care (Oct 2007)

Clostridium difficile infection

Department of Health

Department of Health (2009) *Clostridium difficile* infection: How to deal with the problem

Appendix A - EQUALITIES IMPACT ASSESSMENT

Section 1 Screening				
Does this policy or procedure impact on staff patients or public? S = Staff PA = Patients PU = Public (enter below)	How relevant is the policy to achieving the duties under race legislation? 0 = none 1 = a little 2 = some 3 = very (enter below)	How relevant is the policy to achieving the duties under disability legislation? 0 = none 1 = a little 2 = some 3 = very (enter below)	How relevant is the policy to achieving the duties under gender legislation? 0 = none 1 = a little 2 = some 3 = very (enter below)	Could this policy disadvantage any group due to Race, Disability or Gender? R = Race D = Disability G = Gender N = None (enter below)
S, PA, PU	0	0	0	N
Section 2 Assessing impact				
Please specify in the relevant box any thing that you have included in the policy which helps to meet the Race Disability or Gender Equality Duties* Please put NA if this is not applicable	Race	Disability	Gender	
	The policy is inclusive and applies to all patients	The policy is inclusive and applies to all patients	The policy is inclusive and applies to all patients	

* The equality duty is to eliminate unlawful discrimination and promote equality of opportunity and good relations between different groups.

Appendix B - Checklist for the Review and Approval of Policy

To be completed and attached to the policy when submitted to the appropriate committee for consideration and approval.

	Title of document being reviewed:	Yes/No/Unsure	Comments
1.	Title		
	Is the title clear and unambiguous? Is it positively named in respect of the behaviour, actions, established position it seeks to achieve?	Y	
	Is it clear whether the document is a policy, guideline, protocol or standard?	Y	
2.	Rationale		
	Are reasons for development of the document stated?	Y	
3.	Development Process		
	Is the method described in brief?	N	
	Are people involved in the development identified?	Y	
	Do you feel a reasonable attempt has been made to ensure relevant expertise has been used?	Y	
	Is there evidence of consultation with stakeholders and users?	Y	
4.	Content		
	Is the objective of the document clear?	Y	
	Is the target population clear and unambiguous?	Y	
	Are the intended outcomes described?	Y	
	Are the statements clear and unambiguous?	Y	
5.	Evidence Base		
	Is the type of evidence to support the document identified explicitly?	Y	
	Are key references cited?	Y	

	Title of document being reviewed:	Yes/No/Unsure	Comments
	Are the references cited in full?	Y	
	Are supporting documents referenced?	Y	
6.	Approval		
	Does the document identify which committee/group will approve it?	Y	
	If appropriate have the joint Human Resources/staff side committee (or equivalent) approved the document?	N/A	
7.	Dissemination and Implementation		
	Is there a communications plan to identify how this will be done?	N	
	Does the implementation plan include the necessary training/support to ensure compliance?	N	
8.	Document Control		
	Does the document identify where it will be held?	Y	
	Have archiving arrangements for superseded documents been addressed?	N/A	
9.	Process to Monitor Compliance and Effectiveness		
	Are there measurable standards or KPIs to support the monitoring of compliance with and effectiveness of the document?	Y	
	Is there a plan to review or audit compliance with the document?	Y	
10 .	Review Date		
	Is the review date identified?	Y	
	Is the frequency of review identified? If so is it acceptable?	Y	
11 .	Overall Responsibility for the Document		

	Title of document being reviewed:	Yes/No/Unsure	Comments
	Is it clear who will be responsible for co-ordinating the dissemination, implementation and review of the document?	Y	

Individual Approval			
If you are happy to approve this document, please sign and date it and forward to the chair of the committee/group where it will receive final approval.			
Name		Date	
Signature			
Committee Approval			
If the committee is happy to approve this document, please sign and date it and forward copies to the person with responsibility for disseminating and implementing the document and the person who is responsible for maintaining the organisation's database of approved documents.			
Name		Date	
Signature			

APPENDIX C
Management of a Patient with explained Diarrhoea or suspected *Clostridium difficile* infection (CDI)

If a patient has diarrhoea (Bristol Stool Chart types 5-7) that is not clearly attributable to an underlying condition (e.g. colitis, overflow) or therapy (e.g. laxatives, enteral feeding) then it is necessary to determine if this is due to CDI.

Isolate patient in a single room - if unable to do this within 2 hours escalate problem to Matron.

Collect stool specimen & send to Microbiology
 In order for the specimen to be processed for *C. diff* the sample must take on the shape of the container and be at least ¼ filled (to indicate the patient has diarrhoea).

If symptomatic CDI i.e. they have diarrhoea isolate immediately (if not already) – in single room with en-suite or own commode. Consider admission criteria for Ward 42 LGI or Ward 16 SJUH.

If asymptomatic commence on ***C. diff* Care Plan**
 The IPT will give medical/nursing advice.

If *C.diff* toxin negative
 consider other causes of diarrhoea - if not infective may consider ending single room isolation.
 If diarrhoea worsens suspect CDI and send repeat specimen.
 If symptoms remain the same but persist for <48 hours the decision about re-testing should be made in consultation with senior medical and nursing staff.

- Implement the following measures**
- Remember the **SIGHT** list (see bottom of page)
 - *Clostridium difficile* Policy
 - *Clostridium difficile* treatment guideline
 - Source Isolation Policy
 - Source Isolation Cleaning Policy

End of symptoms
 Once the patient has had no diarrhoea for 48 hours he/she can be brought out of isolation and Standard Precautions maintained.
 Do **NOT** send a test of cure specimen.

Terminal Cleaning of isolation room (or bed space) must be carried out using Chlor-clean.

S	Suspect that a case may be infective when there is no clear alternative cause for diarrhoea
I	Isolate the patient within 2 hours
G	Gloves and aprons must be used for all contacts with the patient and their environment
H	Hand washing with soap and water should be carried out before and after each contact with the patient and the patient's environment
T	Test the stool for <i>C. difficile</i> by sending a specimen immediately

