

## ***CLOSTRIDIUM DIFFICILE INFECTION POLICY***

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This document replaces:	<b><i>Clostridium difficile</i> Infection Policy – November 2009</b>

Please *specify* standard/criterion numbers and tick ✓ other boxes as appropriate

*The Strategic Directions 2007-2012 were agreed by the Board of Directors in October 2007 to support the Trust's vision "Respond, Deliver, Enable". The Key Milestones below will ensure there is a shared understanding about what needs to be delivered.*

<b>Monitoring Information</b>		<b>Strategic Directions – Key Milestones</b>	
Patient Experience		Waiting	
Assurance Framework		Privacy and Dignity	
Monitor/Finance/Performance		Efficiency and Effectiveness	
Care Quality Commission Outcomes:	8	Delivery of Care Closer to Home	
		Infection Control	✓
NHSLA Risk Management Standards for Acute Trusts			
NHSLA CNST Maternity Clinical Risk Management Standards:			
Other ( <i>please specify</i> ):			
<b>Note:</b> This policy has been assessed for any equality, diversity or human rights implications			

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## 1. INTRODUCTION

- 1.1 The aim of this policy is to reduce transmission of *Clostridium difficile* within healthcare settings. Previous guidance has been updated to take into consideration the prevalence of *C.difficile* infection both locally and nationally and takes into account national guidance (DH, 2008)
- 1.2 The *Clostridium difficile* bacterium produces two potent toxins that cause mucosal damage and inflammation of the large colon. It causes a diarrhoeal illness which can vary from mild to severe, and occasionally, particularly elderly patients may develop a severe life threatening form of the disease called 'pseudomembranous colitis'. This condition is characterised by significant damage to the large bowel, and may lead to gross dilation with possible rupture or perforation of the bowel. *C. difficile* infection (CDI) is extremely unpleasant for the patient and has significant morbidity and both direct and indirect mortality, especially in elderly patients with multiple comorbidities.
- 1.3 *C.difficile* infection is often acquired in hospital, and almost all patients who develop *C.difficile* diarrhoea are taking, or have recently been given antibiotic therapy. Nearly all antibiotics have been causally associated with *C.difficile* however, some such as cephalosporins (particularly oral cephalosporins), quinolones, clindamycin and antibiotic combinations such as cefuroxime and clarithromycin are more strongly associated whereas gentamicin, vancomycin, tetracyclines and trimethoprim are much less often associated.
- 1.4 The sensible use of antibiotics is the key to the prevention of *C.difficile* infection. Unnecessary use of antibiotics must be avoided. Where possible, short courses of narrow-spectrum antibiotics, of only three to five days, are preferred to longer courses. All antibiotic prescriptions should be kept under review and follow Trust guidelines.
- 1.5 It has been firmly established that person to person transmission can occur in the hospital setting and indeed major outbreaks have resulted. Staff hands are the most important mode of transmission, but studies have also demonstrated that *C.difficile*, as a spore forming organism, can survive for long periods of time in the environment and on contaminated equipment.

## 2. SCOPE OF POLICY

This policy will apply to

- all Trust staff, including bank staff, wherever they are working
- visiting clinical staff and employees of other organisations working on Trust premises
- patients of the Trust and visitors on Trust premises
- all clinical agency /locum staff
- volunteers

## 3. DUTIES

### 3.1 Corporate responsibility

The Trust has a responsibility to promote a high level of compliance with best practice. The Trust will support and encourage compliance by:

- Regarding lapses in compliance this policy with as a serious issue.
- Supporting mandatory education at induction for all staff and appropriate updates for staff involved in direct patient contact.
- Ensuring all necessary facilities are provided for the isolation of patients with suspected or confirmed CDI, e.g. suitable isolation facilities, hand wash basins.
- Involving the Infection Control Team in the planning process for new construction and refurbishment work so that advice can be given on appropriate isolation facilities as emphasised by “Infection Control in the Built Environment” ( NHS Estates, 2002) and the Health and Social Care Act 2008 - Code of Practice for the NHS on the prevention and control of healthcare associated infection ( DH 2009).

### 3.2 Directorate Manager, Clinical Director and Lead Nurse responsibilities

Each directorate management team has a responsibility to actively encourage compliance with the Policy by all staff groups.

- Ensure that all staff including junior medical staff undertake and complete infection control training and annual updates.
- Provide facilities and equipment for isolation of patient with suspected or confirmed CDI.
- Ensure the provision of infection control training and the release of staff to undertake training.
- Ensure that CDI surveillance and any root cause analysis action plans are discussed at Directorate Governance Group meetings as part of the infection control standing agenda item

### 3.3 Infection Prevention and Control Team (IPCT) responsibilities

The IPCT will:

- Ensure that CDI results are communicated to the clinical staff promptly
- Provide advice on appropriate placement of patients with suspected or confirmed CDI
- Update patient infection control alerts appropriately for PAS and Whiteboard
- Produce timely feedback on surveillance of CDI for wards/units, directorates and Trust
- Produce reports to the Governance Committee and for the Trust Board on CDI
- Ensure that all patients over the age of two with *C. difficile* toxin positive stools are reported on the HPA mandatory enhanced surveillance system( MESS)
- Monitor the use of antimicrobial agents within the Trust and feedback on areas for improvement

### 3.4 Microbiology staff responsibilities

- Ensure that testing for CDI is available 7 days per week
- Ensure that *C.difficile* laboratory results are communicated promptly to clinical teams
- Provide timely advice to clinicians regarding appropriate treatment

### 3.5 Matron and other nursing staff responsibilities

- Ensure that patients with suspected infective diarrhoea are identified promptly, reported to the infection control team and isolated in single room accommodation.

- Obtain faecal sample for *C.difficile* testing promptly and send to microbiology laboratory.
- Record bowel movements using the Bristol Stool Chart
- Ensure that visitors are advised of any necessary infection control precautions required of them when visiting a patient with suspected or confirmed CDI
- On laboratory confirmation of CDI arrange for transfer of the patient to *C.difficile* isolation ward, if appropriate.
- Administer prescribed treatment for CDI.
- Ensure that bed spaces/rooms vacated and associated equipment used by patients with suspected or confirmed CDI are terminally cleaned and disinfected prior to new admission

### 3.6 **Consultant and other medical staff responsibilities**

- Use antimicrobial agents prudently
- When antimicrobial use is necessary comply with Trust antimicrobial prescribing policy and guidelines
- Ensure that a plan is in place to ensure that patients with CDI, who are transferred to the isolation ward, receive the appropriate clinical care.
- Advise the Infection Control Team if transfer of the patient to the isolation ward will compromise a patient's clinical care
- Commence treatment of patients with confirmed CDI in accordance with this policy or Microbiology advice.
- Ensure that all patients with CDI are kept under review by Microbiology and other specialists with an interest in *C. difficile*, especially if not managed on the isolation ward

### 3.7 **Site Management Team responsibilities**

- Assist ward staff to identify single room accommodation for patients with suspected CDI
- Facilitate the prompt transfer of patients with confirmed CDI into the isolation ward, and transfer out on recovery, on the advice of the IPCT.

### 3.8 **Housekeeping responsibility**

- Routinely maintain a clean environment to reduce level of environmental contamination with *C.difficile* spores
- Provide terminal cleaning of vacated bed spaces/isolation rooms on discharge/transfer of patients with suspected or confirmed CDI using products advised by the Infection Control Team

### 3.9 **Individual responsibility**

All staff have a personal and corporate obligation to comply with best practice in the prevention of infection and comply with this and all other infection control related policies.

## 4. **TRAINING**

- 4.1 All staff working within the Trust must receive infection control training. Provision and monitoring of training delivery is outlined in the Infection Control Policy. Where relevant this training will include information on CDI.

## 5. DIAGNOSIS

- 5.1 **C. difficile infection** is defined as one episode of diarrhoea, defined either as stool loose enough to take the shape of a specimen container or as Bristol Stool Chart types 5–7, that is not attributable to any other cause, including medicines and that occurs at the same time as a positive test for the presence of toxigenic *C. difficile* and/or endoscopic evidence of pseudomembranous colitis (PMC).
- 5.2 Stool samples, loose enough to take the shape of the container, submitted from **all hospital in-patients** (excluding neonates and children under 2 years) will be tested routinely for the presence of toxigenic *C. difficile*.
- 5.3 In general practice, only diarrhoeal stool samples from patients over 65 years of age will be tested routinely for toxigenic *C. difficile*. If a GP requires a *C. difficile* test on a younger patient this must be specifically requested.
- 5.4 Samples of faeces taken within 7 days of a negative stool test for toxigenic *C. difficile* will not normally be tested for *C. difficile* unless agreed with a Consultant Microbiologist. Also it is not normally necessary to retest for toxigenic *C. difficile* in patients presenting with typical features of relapsing CDI, although such patients may be tested for other pathogens (e.g. norovirus) in some circumstances.
- 5.5 Sudden increases in the number and/or severity of cases detected in a ward or across several units within a hospital are legitimate reasons for typing *C. difficile* in order to detect outbreaks or appearance of virulent strains. Typing is undertaken by the *Clostridium difficile* Ribotyping Network for England and can only be requested with the agreement of the HPA Regional Microbiologist. To facilitate investigations a sample from all stools positive for toxigenic *C. difficile* is stored for a minimum of 2 years.

## 6. MANAGEMENT OF A PATIENT WITH SUSPECTED C. DIFFICILE INFECTION

- 6.1 Obtain and send a faecal sample for toxigenic *C. difficile* testing. Ensure that microbiology request form is completed appropriately and that specimen container is closed securely to avoid leakage.
- 6.2 Inform the Infection Prevention and Control Team
- 6.3 Move patient into a single room, with *ensuite* facilities where possible. Where *en suite* facilities are unavailable, a dedicated commode should be allocated. Source isolation procedures as per the Source Isolation Policy should be followed.
- 6.4 Ensure vacated bed space is terminally cleaned prior to admitting the next patient as per instructions for terminal cleaning in Source Isolation Policy.
- 6.5 Ensure that the following precautions are in place:
- 6.5.1 **Hand Hygiene:** Staff hands are the most important mode of transmission of microbes from patient to patient. Soap and water must be used for hand hygiene after contact with a patient who has CDI as this is the most effective method for removal of spores. However, alcohol hand rub must be available for hand hygiene *before* contact with the patient and between tasks on the same patient.

Patients must also be encouraged to wash their hands. If the patient is bed bound, wet patient wipes can be offered for hand hygiene as an alternative to soap and water

6.5.2 **Protective Clothing:** Gloves and aprons must be worn for direct patient contact with the symptomatic patient or when cleaning the isolation room/bay. Hands must be washed with soap and water following removal of protective clothing.

6.5.3 **Staff exclusion**

Staff very rarely suffer from symptoms related to *C.difficile*. However, should staff be receiving antibiotics then they may be at some risk of infection, and therefore should avoid contact with known cases of *C.difficile* infection

6.5.4 **Family, visitors and social contact:** - Protective clothing is unnecessary unless involved in personal care. Advise visitors to wash their hands immediately prior to leaving the isolation room. Advise visitors not to eat or drink within the room. If visitors disclose the fact that they are taking antibiotics, they should be advised of the increased risk of infection.

6.6 Do NOT give anti-motility agents such as Loperamide (risk of toxic megacolon).

6.7 Objective assessment of the patient's bowel movements must be undertaken every time the patient opens their bowels and recorded on a stool chart. The use of the Bristol Stool Scale is required for this purpose.

## 7. ACTION TO TAKE ONCE *CLOSTRIDIUM DIFFICILE* INFECTION IS CONFIRMED

7.1 If patient is on the RD&E (Wonford) site, arrange transfer to designated *C.difficile* isolation facilities via the infection control team (also refer Torridge Ward Operational and Infection Control Policy). Precautions as described in Section 6.5 will continue.

7.1.1 The benefits of transfer to the designated ward include:

- Reduces risk to other patients in original ward
- Specialist medical management of CDI
- Daily multidisciplinary review of patients

7.2 If the clinical condition of the patient suggests that the patient should remain in a specialist area, rather than being transferred to the designated isolation facilities, a member of the Infection Control Team will discuss and confirm appropriate placement with the relevant Consultant. Precautions as described in Section 6.5 will continue.

7.3 If the patient is not on the RD&E (Wonford) site, the patient will be isolated in a single room with precautions as described in Section 6.5.

7.4 Ensure patient is provided with an explanation of *C. difficile* infection and an information leaflet.

## 8. TREATMENT

8.1. Treatment will depend on the severity of the CDI. **DO NOT** give anti-motility agents such as Loperamide (risk of toxic megacolon). All patients must be assessed by a senior member of medical staff advice should be sought from the duty Medical Microbiologist or specialist team based on Torridge ward.

- 8.2. Stop any antibiotics that may have precipitated the acquisition of CDI, if possible. This may suffice to prevent diarrhoea developing further.
- 8.3. Assess the severity of CDI each day. Assessment should include clinical examination and monitoring of severity of diarrhea. Laboratory markers should include full blood count, renal function and C reactive protein. Blood lactate may be helpful in severe disease. Abdominal x-ray or CT assessment may also be indicated especially in assessment of severe disease. Categorisation of severity is as follows as follows:

- **Mild CDI** is not associated with a raised WCC; it is typically associated with <3 stools of types 5–7 on the Bristol Stool Chart per day.
- **Moderate CDI** is associated with a raised WCC that is  $<15 \times 10^9/L$ ; it is typically associated with 3–5 stools per day.
- **Severe CDI** is associated with a WCC  $>15 \times 10^9/L$ , or an acute rising serum creatinine (i.e.  $>50\%$  increase above baseline), or a temperature of  $>38.5^\circ C$ , or evidence of severe colitis (abdominal or radiological signs). The number of stools may be a less reliable indicator of severity.
- **Life-threatening CDI** includes hypotension, partial or complete ileus or toxic megacolon, or CT evidence of severe disease.

#### 8.4 Treatment for mild to moderate CDI

1<sup>st</sup> line: Oral metronidazole 400mg 8 hourly for 10 days.

Second line: Oral vancomycin if metronidazole intolerant/allergic reaction or alcoholic, or after discussion with a Medical Microbiologist or specialist.

**After 5 days** treatment with metronidazole or vancomycin, if the patient still has diarrhoea review diagnosis.

If severity increases while on treatment obtain urgent review from Microbiology or specialist based on Torridge ward

#### 8.5 Treatment for severe CDI

Oral vancomycin 125 mg qds for 10–14 days.

In severe CDI cases not responding to oral vancomycin 125 mg qds, additional measures including the addition of intravenous (iv) metronidazole 500 mg tds, and rectal vancomycin should be considered. .

The addition of oral rifampicin (300 mg bd) or iv immunoglobulin (400 mg/kg) may also be considered.

#### 8.6 Treatment for Life-threatening CDI

It is essential that all patients are managed by a multidisciplinary team including a physician with experience in management in *C. difficile* disease, a Medical Microbiologist and a colonic surgeon.

In addition to medical measures colectomy should be considered.

## 8.7 Persistent Diarrhoea

If diarrhoea persists despite 20 days' treatment but the patient is stable and the daily number of type 5–7 motions has decreased, the WCC is normal, and there is no abdominal pain or distension, the persistent diarrhoea may be due to post-infective irritable bowel syndrome.

At this stage, the patient may be treated with an anti-motility agent such as loperamide 2 mg prn (instead of metronidazole or vancomycin). The patient should be closely observed for evidence of a therapeutic response and to ensure there is no evidence of colonic dilatation.

## 8.8 Treatment for Recurrent CDI

8.8.1 Recurrence or relapse following an episode of CDI is common and may be due to an infection with the same strain, or a different strain of *C. difficile*. A proportion of patients may have multiple recurrences. Recurrence does not occur because of resistance to metronidazole / vancomycin, but because of the disturbance of normal gut flora in *C. difficile* patients.

8.8.2 For first recurrence, repeat the same antibiotic used to treat the initial episode in the first instance, or manage as appropriate to the severity of infection.

8.8.3 For subsequent recurrences, a tapering course of vancomycin may be used. Occasionally iv immunoglobulin is used for multiple recurrences. Specialist advice should always be obtained.

8.8.4 In selected patients with recurrent *C. difficile* faecal donation treatment will be considered.

## 9. CLEARANCE

9.1 DO NOT send specimens to confirm a patient is negative for *C. difficile* toxin unless asked to by a member of the infection prevention and control team.

**Follow up stool samples are of no value since they often remain positive even in patients who have recovered symptomatically.**

9.2 Once a patient has had 48 hours without diarrhoea **and** a return to normal bowel habits they can be considered non-infectious. Source isolation precautions can then be stopped with the agreement of the Infection Prevention and Control Team.

## 10. TERMINAL CLEANING

Once the patient is considered non infectious the housekeeping/domestic supervisor should be notified, and given early warning if possible, so that the room, and associated equipment, can be decontaminated, preferably using hydrogen peroxide vapour.

## 11. RELAPSE

If further diarrhoea occurs after recovery, suspect a relapse, isolate the patient. Repeat testing for *C. difficile* is not always necessary if symptoms are typical, and can be misleading as patients can remain toxin positive for some time after clinical infection. Testing for other pathogens to exclude alternative infection may be required.

Investigation and management of relapses should be discussed with the clinical team on Torridge Ward or Medical Microbiologist.

## **12. TRANSFER**

- 12.1 If transfer of a patient with CDI is confirmed or suspected, the receiving area must be informed prior to transfer.
- 12.2 The Infection Prevention and Control Team should be informed of the transfer as soon as possible.
- 12.3 When a patient has been positive but symptoms have resolved, the receiving area should be informed. This will ensure that the diagnosis of *C.difficile* is considered if the patient has any further diarrhoea.

## **13. DISCHARGE**

- 13.1 Staff must ensure that the diagnosis of *CDI* is noted on the information sent to the patient's General Practitioner, and the patient should be advised to report to their GP if they experience further diarrhoea.
- 13.2 If a patient still has symptoms on discharge, agencies that will provide care for the patient must be informed.

## **14. DEATH CERTIFICATION**

- 14.1 If a patient with CDI dies, the death certificate should state whether CDI was part of the sequence of events leading directly to death or whether it was the underlying cause of death. If either case applies CDI should be mentioned in Part 1 of the certificate.
- 14.2 If CDI was not part of the sequence of events leading directly to death but contributed in some way to it, this should be mentioned in Part 2.
- 14.3 If a doctor is in doubt about the circumstances of death when writing the certificate, they should consult with the trust's multidisciplinary clinical review team for CDI.
- 14.4 A root cause analysis will be undertaken whenever CDI is recorded on Part 1 of the death certificate.

## **15. SURVEILLANCE**

- 15.1 The Infection Prevention and Control team (IPCT) will undertake continuous surveillance of CDI.
- 15.2 Daily reports will be made to the Executive Team identifying cases identified.
- 15.3 The IPCT will provide wards with charts showing new cases of CDI on a monthly basis via the Ward to Board report.
- 15.4 Outbreaks and period of increased incidence will be discussed at Directorate Governance Group meetings

15.5 Trust wide surveillance data will be reported to the Infection Control Committee, Trust Governance Committee and Trust Board.

## **16. MANAGEMENT OF INCREASED INCIDENCE AND OUTBREAKS OF CDI**

16.1 A period of increased incidence (PII) of CDI is defined as two or more new ward acquired cases in a 28-day period on a ward/unit.

16.2 The IPCT will inform the Clinical Director, Lead Nurse, Senior Matron/Matron and Directorate manager urgently when increased incidence is identified in a particular ward area and advise on action required.

16.3 Depending on the size and rate of growth of the PII action required may include:

- Holding an incident meeting
- Partial closure of a bay to new admissions
- Closure of a ward to new admissions
- Deep cleaning of an area or entire ward using a chlorine –containing agent or hydrogen peroxide vapour
- Review of antimicrobial prescribing
- Review of patient equipment cleaning
- PCR Ribotyping

16.4 Ribotyping may confirm that a PII represents an outbreak of CDI. • An outbreak of *CDI* is defined as two or more cases caused by the same strain related in time and place over a defined period that is based on the date of onset of the first case.

## **17. MONITORING THE EFFECTIVENESS OF THE POLICY**

17.1 Compliance with this policy will be audited as follows:

- Antimicrobial prescribing will be audited in accordance with the Antimicrobial Policy
- A multidisciplinary review of all patients admitted to the designated *C.difficile* isolation ward will be undertaken at weekly *C. difficile* rounds. Feedback is to source wards and consultants.
- Patients with CDI will be reviewed daily by the IPCT to review isolation precautions and monitoring of symptoms
- A Trustwide annual audit of patient placement, isolation facilities and infection risk assessment will include patients with CDI infection
- Hand hygiene will be audited in accordance with the Hand hygiene Policy
- Environmental and patient equipment cleaning will be audited as part of the routine Cleanliness Standards audits.

## **References**

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