



Community Infection Prevention and Control Policy for General Practice

(also suitable for adoption by other healthcare providers, e.g. Dental Practice, Podiatry)

C. difficile (*Clostridioides difficile*)

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1. Introduction

Clostridioides difficile (formerly known as *Clostridium difficile*) is a bacterium which produces spores that are resistant to air, drying and heat. The spores survive in the environment and are the main route of transmission of the bacterium.

Clostridioides difficile (*C. difficile*) is present harmlessly in the gut (bowel) of up to 3-5% of healthy people and 66% of babies as part of their normal gut flora. However, when antibiotics disturb the balance of bacteria in the gut, *C. difficile* can multiply rapidly producing toxins causing diarrhoea or colitis.

C. difficile produces two major toxins (A and B) that are linked to its pathogenicity (ability to cause disease). The presence or absence of these toxins is detected in the Laboratory as part of the *C. difficile* testing process.

The 027 strain of this organism is particularly virulent (hypertoxigenic) causing severe morbidity and mortality.

C. difficile has been associated with outbreaks in health and social care settings. It is, therefore, imperative that good infection prevention and control measures are instigated so that transmission does not occur in any health or social care setting.

2. *C. difficile* conditions

There are two types of *C. difficile* conditions:

- ***C. difficile* colonisation** means that the bacteria are present in the bowel, but not producing toxins. Symptoms, if present, are usually very mild and antibiotic treatment is not usually required. People who are colonised are often known as 'carriers'

Patients who are colonised are at high risk of progressing to infection

- ***C. difficile* infection (CDI)** means that the bacteria are present and producing toxins, causing symptoms which can be mild to severe, including life-threatening pseudomembranous colitis, toxic megacolon and even perforation of the bowel (see 'Severity of *C. difficile* infection' table on page 8)

C. difficile is usually associated with, and triggered by, the prior use of antibiotics prescribed as treatment for, or to prevent infection (prophylaxis).

3. Risk factors for *C. difficile*

The risk factors associated with acquiring *C. difficile* are:

- **Age** - incidence is much higher in those aged over 65 years
- **Underlying disease** - those with chronic renal disease, underlying gastrointestinal conditions and oncology patients
- **Antibiotic therapy** - patients who are receiving or who have recently received antibiotic treatment (within 3 months), especially broad-spectrum antibiotics such as cephalosporins, e.g. cefuroxime, quinolones, such as, ciprofloxacin, co-amoxiclav or clindamycin. *C. difficile* has been associated with oral, intramuscular and intravenous routes of administration of antibiotics
- **Recent hospital stay** - patients who are frequently in hospital or who have had a lengthy stay in hospital
- **Bowel surgery** - those who have had bowel surgery
- **Other medication** - patients receiving anti-ulcer medications, including antacids and proton pump inhibitors (PPIs), e.g. omeprazole, which are used for treating reflux (heartburn and indigestion)
- **Nasogastric tubes** - patients undergoing treatments requiring nasogastric tubes
- **Previous history of colonisation or infection with *C. difficile*** - patients are at greater risk of developing *C. difficile* infection (CDI)

4. Signs and symptoms

If a patient has diarrhoea (types 5-7 on the Bristol Stool Form Scale, see Appendix 1), that is not attributable to underlying causes, e.g. inflammatory colitis, overflow, or therapy, such as, aperients, enteral feeding, then it is necessary to determine if this is due to *C. difficile* infection.

Symptoms include:

- Explosive, foul-smelling watery diarrhoea, which may contain blood and or mucus
- Abdominal pain and fever due to the toxins causing fluid loss from the gut and cell damage
- Dehydration which can be severe due to fluid loss

In the majority of patients, the illness is mild and a full recovery is usual. Older patients often with underlying illnesses and CDI may, however, become seriously ill. Occasionally, patients with CDI may develop a severe form of the

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infection called pseudomembranous colitis which can cause significant damage to the large bowel resulting in perforation, peritonitis and death.

5. Hydration

Fluid loss due to diarrhoea can lead to dehydration. Patients with *C. difficile* should be encouraged to drink plenty of fluids.

6. Diagnosis

It is difficult to diagnose *C. difficile* just by symptoms alone. Therefore, a diarrhoea sample should be sent to the microbiology laboratory and tested for the presence of *C. difficile*.

7. Routes of transmission

C. difficile produces invisible to the naked eye, hard to kill, microscopic spores, which are passed in the diarrhoea. The spores are resistant to air, drying and heat, and can survive in the environment for months and even years.

The main routes of transmission of *C. difficile* spores are:

- Contaminated hands of staff and patients
- Contact with contaminated surfaces or equipment, e.g. toilet flush handles, toilet assistance rails

8. Prevention of *C. difficile*

The main methods of preventing and reducing transmission of *C. difficile* are:

- Prudent antibiotic prescribing:
 - Antibiotics should not be prescribed unless necessary
 - Where possible, broad spectrum agents should be substituted by those with a narrower spectrum of activity
- Courses of antibiotics should be as short as the clinical condition allows
- Use of antibiotics associated with CDI should be avoided where possible
- Your local 'Antibiotic Prescribing Policy' should be followed
- Good hand hygiene with liquid soap, warm running water and dried with paper towels. Alcohol handrub should not be used as it is **not** effective at killing *C. difficile* spores

- Use of appropriate personal protective equipment, e.g. disposable gloves and apron
- Reducing the number of spores in the environment by thorough cleaning and then disinfecting with a sporicidal product

The following mnemonic protocol (SIGHT) should be applied when managing suspected potentially infectious diarrhoea.

Table 1: SIGHT mnemonic (adapted from *Clostridium difficile* infection: How to deal with the problem)

| | |
|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S | Suspect that a case may be infective where there is no clear alternative cause for diarrhoea |
| I | Isolation. Advise isolating the patient if they are a resident in a care home |
| G | Gloves and aprons must be worn for all contact with the patient and their environment |
| H | Hand washing with liquid soap and warm running water before and after each contact with the patient (and their environment if a home visit is undertaken) |
| T | Test the stool for toxin by sending a specimen immediately |

9. Management and treatment

- Current antibiotics should be stopped, if possible, as should other drugs that might cause diarrhoea. If it is not appropriate to discontinue antibiotics, it may be possible to substitute agent(s) with a narrower spectrum.
- Anti-motility agents, e.g. Imodium, Lomotil, which are given to stop diarrhoea, should not be prescribed in acute infection.
- Consideration should be given to stopping/reviewing the need for PPIs in patients with or at high risk of *C. difficile* infection (CDI).
- Antibiotic treatment for patients who are symptomatic with CDI should be prescribed in line with your local 'Antibiotic Prescribing Policy'. Advice can be sought from your local Consultant Microbiologist.
- In mild cases of CDI, and those where the diarrhoea is settling, antibiotic treatment may not be indicated.
- In cases of *C. difficile* colonisation, antibiotic treatment is not usually indicated.
- Advice on treatment can be sought from your local Consultant Microbiologist.

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- If diarrhoea persists after 20 days treatment, but the patient is stable, the number of type 5-7 stools (see Appendix 1) has decreased, the WCC is normal and there is no abdominal pain or distension - in such cases, the patient may be treated with an anti-motility agent, such as loperamide (instead of antibiotic treatment). The patient should be closely monitored for evidence of a therapeutic response and to ensure there is no evidence of colonic dilation.
- The severity of illness should be assessed using the following table.

Table 2: Severity of *C. difficile* infection

| Severity of <i>C. difficile</i> infection | |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Mild disease: typically <3 stools per day type 5-7 (on Bristol Stool Form Scale) and a normal white cell count (WCC) |
| 2 | Moderate disease: typically 3-5 stools per day type 5-7 and raised WCC (but <15x10 ⁹ /L) |
| 3 | Severe disease: WCC >15x10 ⁹ /L, or a temperature of >38.5°C or acutely rising serum creatinine (e.g. >50% increase above baseline) or evidence of severe colitis (abdominal symptoms or radiological signs). The number of stools may be less reliable as an indicator of severity |
| 4 | Life threatening disease: includes hypotension, partial or complete ileus or toxic megacolon |

Recurrence of diarrhoea following treatment

Recurrence of CDI occurs in up to 20% of cases after the first episode. A proportion of recurrences are reinfections (20-50%) as opposed to relapses due to the same strain. Relapses tend to occur in the 2 weeks after treatment stops. This increases to 50-60% after a second episode.

Studies have suggested that some of these relapses are in fact reinfection due to the person reinfesting themselves from spores in their environment, hence the need for thorough cleaning and disinfection of the environment, see Section 10. If a patient relapses, a second course of treatment is usually indicated. See your local 'Antibiotic Prescribing Policy' for further advice or consult with your local Consultant Microbiologist.

10. Infection prevention and control measures

Always use standard infection control precautions and, where required, transmission based precautions (SICPs and TBPs), refer to the 'SICPs and TBPs Policy for General Practice'.

Hand hygiene

- Staff should be 'Bare Below the Elbows' whilst on duty.
- Alcohol handrubs do not kill spores, therefore, should **not** be used.
- Hands should be washed with liquid soap and warm running water and dried with paper towels after contact with each patient (and their environment if a home visit is undertaken, including immediately prior to leaving).

Refer to the 'Hand hygiene Policy for General Practice'.

Personal protective equipment

- All staff should wear disposable gloves and aprons for all contact with the patient.
- Gloves and apron should be changed between tasks, removed in the room, disposed of as infectious waste and hands washed with liquid soap and warm running water after removing PPE.
- Gloves and apron should be worn if a home visit is undertaken to a symptomatic patient. Gloves should be removed first, then remove apron, dispose of in the patient's household waste and wash hands thoroughly.

Refer to the 'Personal protective equipment Policy for General Practice'.

Cleaning and disinfection

C. difficile spores can survive in the environment for months or possibly years if not adequately cleaned. If a patient who is confirmed to have *C. difficile* and has either had diarrhoea in the last 48 hours, or whilst in the Practice, the immediate environment, e.g. couch, work surfaces, toilet, should be decontaminated.

Cleaning with detergent wipes or pH neutral detergent, e.g. Hospec, and warm water alone is **insufficient** to destroy *C. difficile* spores. Following cleaning, surfaces must be disinfected with a sporicidal product, e.g. 1,000 parts per million (ppm) chlorine-based disinfectant solution, such as Milton at a dilution of 50 ml in 1 litre of cold water. A fresh solution must be made up to the correct concentration every 24 hours and the solution bottle must be labelled with the date and time of mixing.

Note:

- Chlorine-based disinfectant solutions may damage soft furnishings, carpets and some equipment. A risk assessment of using such solutions on surfaces should be made and where deemed unsuitable to use, pH neutral detergent and warm water, steam cleaner or carpet cleaning machine, should be used
- Antibacterial surface sprays, including Milton and Flash with bleach, are **not** effective against *C. difficile* spores

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Any care equipment required for patient management/care must be cleaned and disinfected using a sporicidal product after use on the patient.

- Cleaning care equipment should be undertaken as per the 'National colour coding scheme for cleaning materials and equipment in General Practice'.
- Mop heads should preferably be disposable. Reusable mop heads should be laundered on a hot wash after each use. Alternatively, wash then soak the mop head in the sporicidal disinfectant for the manufacturer's recommended time period, before storing the mop head upside down, to air dry in the housekeeping/cleaners equipment store room.
- Mop buckets should be washed after each use with detergent and warm and dried with paper towels, then wiped with a sporicidal disinfectant, and stored upside down to air dry in the housekeeping/cleaners equipment store room.
- Any concerns regarding the standard of environmental cleanliness must be reported to the person in charge immediately.

Refer to the 'Safe management of care equipment for General Practice' and the 'Safe management of the care environment for General Practice'.

Advice for symptomatic patients in their own home

- Keep finger nails short and clean.
- Wash your hands thoroughly with liquid soap and warm running water, especially after going to the toilet and before preparing or eating food.
- Use a separate towel to dry your hands, this should be washed daily. Make sure this is not used by other members of the household or visitors.
- After you have had an episode of diarrhoea, close the toilet seat lid before flushing, this will reduce spread onto surrounding surfaces.
- Clean hard surfaces in toilets/bathrooms, e.g. taps, toilet flush, door handles, soap dispenser, at least daily using household bleach following the directions on the label (generally 1 part bleach to 10 parts cold water).
- To prevent contamination of hands, the sink and surrounding environment, do not rinse soiled linen and clothing by hand.
- Soiled clothing or linen should be washed as soon as possible, separately from other items, on a pre-wash cycle in the washing machine, followed by a wash cycle on the highest temperature advised on the label.
- If possible, have a shower or bath every day as *C. difficile* can be present on other areas of your body.
- Where possible, stay at home until you have been free from diarrhoea for 48 hours and passed a formed stool, or your bowel habit has returned to normal, to prevent spreading it to other people.
- Do not take medicines to stop your diarrhoea as this will stop *C. difficile* being cleared from your body, unless prescribed by your doctor.

- Drink plenty of fluids to prevent dehydration.
- Visitors, including pregnant women and children, are not at risk if they are healthy.
- Once recovered, there is no risk to other people.
- If you have been given a *C. difficile* card, please show it to healthcare professionals. The card lets healthcare professionals know that you have had *C. difficile* and if you need any treatment with antibiotics in the next 12 months, they will choose a type of antibiotic to help prevent your symptoms of diarrhoea returning.

11. Referral or transfer to another health or social care provider

- Symptomatic patients should not be transferred within or to another health or social care environment until they have had no diarrhoea for 48 hours and passed a formed stool (Bristol Form Scale type 1-4, see Appendix 1) or their bowel habit has returned to their normal type, unless **essential** investigations or treatment is required.
- If it is necessary to refer or transfer a patient to another health or social care provider, e.g. ambulance service, hospital, they should be informed of the patient's *C. difficile* status prior to the transfer. This will enable a risk assessment to be undertaken to determine the appropriate infection prevention and control (IPC) measures to be taken, e.g. transported without other patients, isolated on admission.
- Staff preparing to transfer a patient to another health and social care provider should complete the Inter-Health and Social Care Infection Control Transfer Form (see Appendix 2) or patient passport. This should accompany patient. Refer to the 'Patient placement and assessment for infection risk Policy for General Practice'.
- SICPs and TBPs should be followed whenever transferring a patient, whether they have a confirmed infection or not.
- The completed transfer documentation should be supplied to the receiving health or social care provider and a copy filed in the patient's notes.
- Ensure that care equipment used to transfer the patient, e.g. wheelchair, is decontaminated in accordance with the 'Safe management of care equipment Policy for General Practice'.

12. *C. difficile* card

Some areas now issue patients who are confirmed CDI or *C. difficile* colonised with a '*C. difficile* card'. The card is provided so the patient can present it at any consultation with a healthcare professional or admission to hospital. This

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will alert the healthcare worker/admitting unit to the patients' diagnosis of *C. difficile* and help to ensure, if antibiotics are needed, that only appropriate ones are prescribed.

13. Investigation of *C. difficile* infection cases

A root cause analysis (RCA) for each CDI case should be conducted by your local Community Infection Prevention and Control or Health Protection Team and reviewed in conjunction with your local statutory NHS body, e.g. Integrated Care System (ICS), to identify any lapses in care. The General Practice may be requested to supply relevant information for the RCA investigation. By implementing the lessons learnt from the RCA, patient safety can be continuously improved.

14. Infection Prevention and Control resources, education and training

The Community Infection Prevention and Control (IPC) Team have produced a wide range of innovative educational and IPC resources designed to assist your General Practice in achieving compliance with *The Health and Social Care Act 2008: Code of Practice on the prevention and control of infections and related guidance* and CQC registration requirements.

These resources are either free to download from the website or available at a minimal cost covering administration and printing:

- 25 IPC Policy documents for General Practice
- 'Preventing Infection Workbook: Guidance for General Practice'
- 'IPC CQC inspection preparation Pack for General Practice'
- IPC audit tools, posters, leaflets and factsheets
- 'IPC Bulletin for General Practice Staff'

In addition, we hold educational study events in North Yorkshire and York and can arrange bespoke training packages and 'Mock IPC CQC Inspections'. Prices vary depending on your requirements and location.

Further information on these high quality evidence-based resources is available at www.infectionpreventioncontrol.co.uk.

15. References

Department of Health (2015) *The Health and Social Care Act 2008: Code of Practice on the prevention and control of infections and related guidance*

Department of Health (2013) *Prevention and control of infection in care homes – an information resource*

Department of Health (2012) *Updated Guidance on the Diagnosis and reporting of Clostridium Difficile*

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

Health and Social Care Commission (October 2007) *Investigation into outbreaks of Clostridium difficile at Maidstone and Tunbridge Wells NHS*

National Institute for Health and Care Excellence (2012, updated February 2017) *Healthcare-associated infections: prevention and control in primary and community care Clinical Guideline 139*

NHS England and NHS Improvement (March 2019) *Standard infection control precautions: national hand hygiene and personal protective equipment policy*

Public Health England (July 2014, updated September 2019) *Clostridioides difficile: guidance, stat and analysis* www.gov.uk

Public Health England (May 2013) *Updated guidance on the management and treatment of Clostridium difficile infection*
www.gov.uk/government/publications/clostridium-difficile-infection-guidance-on-management-and-treatment#history

16. Appendices

Appendix 1: The Bristol Stool Form Scale

Appendix 2: Inter-Health and Social Care Infection Control Transfer Form

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The Bristol Stool Form Scale

Please refer to this chart when completing a bowel history on the 'Inter-Health and Social Care Infection Control Transfer Form' or when documenting a service user's 'Stool chart record'.

Definition of diarrhoea: an increased number (two or more) of watery or liquefied stools, i.e. types 5, 6 and 7 only, within a duration of 24 hours. Please remember, after removing gloves, hands must be washed with liquid soap and warm running water when caring for service users with diarrhoea.

THE BRISTOL STOOL FORM SCALE

| | | |
|--------|--|---------------------------------------------------|
| Type 1 | | Separate hard lumps, like nuts (hard to pass) |
| Type 2 | | Sausage-shaped but lumpy |
| Type 3 | | Like a sausage but with cracks on its surface |
| Type 4 | | Like a sausage or snake, smooth and soft |
| Type 5 | | Soft blobs with clear-cut edges (passed easily) |
| Type 6 | | Fluffy pieces with ragged edges, a mushy stool |
| Type 7 | | Watery, no solid pieces ENTIRELY LIQUID |

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Inter-Health and Social Care Infection Control Transfer Form

The Health and Social Care Act 2008: Code of Practice on the prevention and control of Infection and related guidance (Department of Health 2015), states that "suitable accurate information on infections be provided to any person concerned with providing further support or nursing/medical care in a timely fashion". This form has been developed to help you share information with other health and social care providers. The form should accompany the patient and, where possible, a copy filed in the patient's notes.

| | | | | | | | | | | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----------|--|--|--|-------|--|--|--|---------|--|--|--|
| Patient Name: Address: NHS number: Date of birth: Patient's current location: | GP Name and contact details: | | | | | | | | | | | | |
| Receiving facility, e.g., hospital ward, hospice: If transferred by ambulance, the service has been notified: Yes <input type="checkbox"/> N/A <input type="checkbox"/> | | | | | | | | | | | | | |
| Is the patient an infection risk: Please tick most appropriate box and give details of the confirmed or suspected organism <input type="checkbox"/> Confirmed risk Organisms: <input type="checkbox"/> Suspected risk Organisms: <input type="checkbox"/> No known risk | | | | | | | | | | | | | |
| Patient exposed to others with infection, e.g., D&V, Influenza: Yes <input type="checkbox"/> No <input type="checkbox"/> Unaware <input type="checkbox"/> If yes, please state: | | | | | | | | | | | | | |
| If the patient has a diarrhoeal illness, please indicate bowel history for last week, if known, (based on Bristol Stool Form Scale): Is diarrhoea thought to be of an infectious nature? Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> | | | | | | | | | | | | | |
| Relevant specimen results if available <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 25%;">Specimen:</td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> <tr> <td>Date:</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Result:</td> <td></td> <td></td> <td></td> </tr> </table> | | Specimen: | | | | Date: | | | | Result: | | | |
| Specimen: | | | | | | | | | | | | | |
| Date: | | | | | | | | | | | | | |
| Result: | | | | | | | | | | | | | |
| Treatment information: | | | | | | | | | | | | | |
| Is the patient aware of their diagnosis/risk of infection? Yes <input type="checkbox"/> No <input type="checkbox"/> | | | | | | | | | | | | | |
| Does the patient require isolation? Yes <input type="checkbox"/> No <input type="checkbox"/> | | | | | | | | | | | | | |
| If the patient requires isolation, phone the receiving facility in advance: Actioned <input type="checkbox"/> N/A <input type="checkbox"/> | | | | | | | | | | | | | |
| Additional information: | | | | | | | | | | | | | |
| Name of staff member completing form: Print name: Contact No: Date: | | | | | | | | | | | | | |