CH 05

Infection. Prevention. Control.
You're in safe hands

Cumbria County Council

CLOSTRIDIOIDES DIFFICILE

Community Infection Prevention and Control Policy for Care Home settings

Clostridioides difficile

Version 3.00
August 2020

CH 05

CLOSTRIDIOIDES DIFFICILE

This guidance document has been adopted as a policy document by:

Organisation:	Cumbria County Council
Signed:	
Name:	Pam Duke
Job Title:	Assistant Director Provider Services
Directorate:	People
Date Adopted:	11 August 2020
Review Date:	10 August 2022

For further information and advice regarding infection prevention and control please contact:

Fiona McCredie
Head of Health Protection
Public Health
People Directorate
Cumbria County Council
Penrith Community Fire Station
Carleton Avenue
Penrith
Cumbria CA10 2FA

Tel: 01768 812539
Mob: 07900 668648
Email:
Fiona.McCredie@cumbria.gov.uk

Debbie McKenna
Health Protection Specialist
Public Health
People Directorate
Cumbria County Council
Cumbria House
107-117 Botchergate
Carlisle
Cumbria CA1 1RZ

Mob: 07769 301904
Email:
Deborah.McKenna@cumbria.gov.uk

Your local Public Health England Team:

Public Health England North West	Tel: 0344 225 0562 Option 2

Community Infection Prevention and Control
Harrogate and District NHS Foundation Trust
Gibraltar House, Thurston Road
Northallerton, North Yorkshire. DL6 2NA
Tel: 01423 557340
email: infectionprevention.control@nhs.net
www.infectionpreventioncontrol.co.uk

CLOSTRIDIOIDES DIFFICILE

Contents Page

CLOSTRIDIOIDES DIFFICILE

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% of healthy adults 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 –** this 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’.

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

- ***C. difficile* infection (CDI) –** this 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 almost always 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 residents
- **Antibiotic therapy** – those 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 –** those who are frequently in hospital or who have had a lengthy stay in hospital
- **Other medication –** those 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 –** those undergoing treatments requiring nasogastric tubes
- **Colonisation with *C. difficile* –** they are at greater risk of developing *C. difficile* infection (CDI)

4. Signs and symptoms

If a resident 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, laxatives, 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 residents, the illness is mild and a full recovery is usual. Older residents often with underlying illnesses and CDI may, however, become seriously ill. Occasionally, residents with CDI may develop a severe form of the infection called pseudomembranous colitis which can cause

significant damage to the large bowel resulting in perforation, peritonitis and death.

5. 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.*

6. Routes of transmission

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

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

7. 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
- Prompt isolation of residents with suspected or confirmed *C. difficile* colonisation or infection
- Promptly sending a stool sample for *C. difficile* testing
- Good hand hygiene practice – refer to ‘Hand hygiene’ on page 9
- Use of appropriate personal protective equipment, e.g. disposable apron and gloves
- 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	**Isolate the resident in their own room**
G	**Gloves and aprons must be worn for all contact with the resident and their environment**
H	**Hand washing with liquid soap and warm running water before and after each contact with the resident and their environment**
T	**Test the stool for toxin by sending a specimen immediately**

8. Management and treatment

- The resident should be reviewed by their GP promptly:
  - Antibiotics causing diarrhoea 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 residents with or at high risk of *C. difficile* infection (CDI)
  - 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
  - Supportive care should be given to CDI cases, including attention to hydration, electrolyte balance and nutrition
  - The course of treatment can be repeated if symptoms persist
- A Care Pathway for residents with *C. difficile* should be commenced. A 'Care Pathway for service users with *Clostridioides difficile'* is available to download at www.infectionpreventioncontrol.co.uk.
- The resident's bowel movements should be recorded on a 'Stool chart record' which is available to download at www.infectionpreventioncontrol.co.uk.

- The severity of illness should be assessed using the following table and documented daily in the resident's records.

Table 2: Severity of *C. difficile* infection

Severity of *C. difficile* 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^{o}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 re-infections (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 re-infection due to the person re-infecting themselves from spores in their environment, hence the need for thorough cleaning and disinfection of the environment, see Section 9. If a resident relapses, a second course of treatment is usually indicated. The resident's GP should be notified of any relapse.

9. Infection prevention and control measures

Isolation

- Early isolation in a care home helps to both control outbreaks and reduce endemic levels of *C. difficile*. An isolation need risk assessment must take place and be documented in the resident's notes.
- Any resident with confirmed or suspected *C. difficile* colonisation or infection sharing a bedroom must be transferred to a single room, ideally with an en-suite facility, as soon as possible after diagnosis or onset of symptoms and no later than the end of the day of diagnosis/symptoms. The room they have moved from must be cleaned and disinfected thoroughly.
- If the room does not have its own toilet, then a designated commode must be provided and not be used for any other resident. A disposable cover or

reusable lid should be used when transporting the pan for emptying/cleaning in the sluice room.

- The procedure for isolation should be clearly explained to residents and visitors.
- A notice should be placed on the door with advice to see the person in charge before entering. (This may be omitted if it can be assured that all relatives/visitors are made aware of the actions they need to take whilst visiting the resident and when leaving the room.)
- The door should be kept closed where possible at all times, except for entry and exit.
- Fans must not be used as they can recirculate the spores in the environment.
- When a resident has been diarrhoea free for 48 hours and has passed a formed stool (type 1-4 on the Bristol Stool Form Scale - see Appendix 1), or their bowel habit has returned to their normal type, they are no longer infectious and isolation precautions are no longer required and their room should be cleaned and disinfected. A negative stool sample is not required.
- Residents who develop diarrhoea following a period of being symptom free, may have been re-infected or relapsed. These residents must be isolated immediately and a stool sample sent for *C. difficile* testing if more than 28 days since the previous toxin positive result. If it is within 28 days, a repeat test is not required, but the resident must still be isolated and reviewed by the GP.

Refer to the 'Isolation Policy for Care Home settings' for further information**.**

Hand hygiene

- Staff should be 'Bare Below the Elbows' whilst on duty.
- Ensure residents nails are short and clean.
- Alcohol handrubs do not kill spores, therefore, should **not** be used.
- Hands should be washed with liquid soap and warm running water after contact with each resident/resident's environment, including immediately prior to leaving and again after exiting the isolation room.
- Residents and their visitors should be supplied with information on hand hygiene. A 'Hand hygiene: Information leaflet for community service users and relatives' is available to download at www.infectionpreventioncontrol.co.uk.
- Residents should be encouraged to wash their hands with liquid soap and warm running water, particularly after using the toilet/commode and before eating/drinking. Bar soap should not be used as it can harbour *C. difficile* spores.
- Residents unable to access hand washing facilities should be provided with non-alcohol skin wipes to clean their hands. Assistance should be

given to those residents unable to perform hand hygiene themselves; staff should ensure all surfaces of the resident's hands are wiped sufficiently.

- Visitors should wash hands on entering, before leaving the isolation room and before leaving the establishment.

Refer to the 'Hand hygiene Policy for Care Home settings'.

Personal protective equipment

- All staff (including housekeeping) should wear disposable apron and gloves for all contact with the isolated resident and their immediate environment.
- All visitors (including family and friends) should wear personal protective equipment (PPE) when providing personal care or advised by care home staff. In some circumstances, e.g. end of life, it may be appropriate to allow some relaxation on the wearing of PPE for visitors, but strict hand washing must still be performed.
- Gloves and apron should be changed between tasks, removed in the room, disposed of as infectious waste and hands cleaned or washed with liquid soap and warm running water after removing each item of PPE, e.g. pair of gloves, apron.

Refer to the 'Personal protective equipment Policy for Care Home settings',

Cleaning and disinfection

C. difficile spores can survive in the environment for months or possibly years if not adequately cleaned. Therefore, an enhanced cleaning schedule should be undertaken when a resident is suspected or confirmed to have *C. difficile*.

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 container 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

Any equipment required for resident management/care, should ideally be disposable or must be dedicated for that resident only. Reusable equipment

must be cleaned and disinfected using a sporicidal product between use on the resident and again when the infectious period is over.

- The isolated resident's en-suite toilet/commode should be cleaned then disinfected after each use using a sporicidal product, e.g. 1,000 ppm chlorine-based disinfectant solution, such as a Milton dilution of 50 ml in 1 litre of cold water. Staff must ensure that **all** commode or toilet surfaces (including underneath and frame) are cleaned thoroughly.
- Used commode pans should be washed in a washer disinfector. If a washer/disinfector is not available, pans should be emptied in a slop hopper/toilet and washed in a designated sink or a bowl labelled for the cleaning of commode pans. After use, the sink/bowl should be filled with pH neutral detergent and warm water and the pan immersed, washed and dried with paper towels. It should then be wiped with a sporicidal disinfectant solution, and allowed to dry.
- The room where the resident is isolated must be cleaned and disinfected at least twice daily basis.
- To facilitate cleaning during the isolation period, the resident's personal items should be kept to a minimum. All unnecessary items as well as unwrapped food and sweets should be removed from the isolation room.
- When the resident no longer requires isolation, the room should undergo a **deep clean** with pH neutral detergent, e.g. Hospec, then a sporicidal disinfectant. Soft furnishings, e.g. curtains, should be changed and curtain tracks disinfected. Where possible, surfaces and equipment should be steam cleaned. Refer to the 'Isolation Policy for Care Home settings' for more detailed information.
- As per the 'National colour coding scheme for cleaning materials and equipment in care homes', yellow colour coded cleaning equipment should be allocated for use only in the isolation room and should be removed from the room after each period of cleaning.
- Mops heads should preferably be disposable. Reusable mop heads should be laundered on a hot wash after each use.
- Buckets should be washed after each use, then wiped with a sporicidal disinfectant, dried with paper towels and stored inverted 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 Policy for Care Home settings' and the 'Safe management of the care environment Policy for Care Home settings'.

10. Laundry

Kylie (reusable) incontinence pads should not be used, disposable incontinence pads/sheets should be used.

- All staff should wear disposable apron and gloves for all contact with used laundry.
- All faecally contaminated linen and clothing should be handled with care, using minimum handling in order to avoid dispersal of spores.
- At no time should contaminated linen be placed on the floor/surface or handled close to the body.
- All used laundry should be placed in a water soluble alginate bag.
- The alginate bag should then be taken outside the room and immediately placed in a designated infected laundry bag prior to transportation to the laundry and laundered as soon as possible.
- Contaminated linen should not be allowed to accumulate.
- At no time should contaminated personal clothing be washed/sluiced by hand.
- It is important to observe adequate thermal disinfection (65^{o}C or above) wash temperatures for used items. Fabrics that will not withstand such high temperature should be washed at the highest temperature recommended by the items manufacturer.
- Staff wearing their own clothes for work should make sure that clothing is clean and washed at highest temperature recommended by the manufacturer.

Refer to the 'Safe management of linen Policy for Care Home settings'.

11. Enhanced resident monitoring

In the event of a resident being suspected or confirmed with *C. difficile* colonisation or infection, the following measures should also be implemented:

- Instigation of enhanced monitoring of other residents for symptoms of *C. difficile* with close observation of all residents receiving antibiotic treatment
- Other residents who develop diarrhoeal stools (type 5-7 Bristol Form Scale - see Appendix 1) should be isolated immediately and have a stool sample sent for *C. difficile* testing. A fluid balance and stool chart should be commenced

12. Referral or transfer to another health and social care provider

- Symptomatic residents should not be transferred within or to another health and/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.
- Prior to a resident's transfer to and/or from another health and social care facility, an assessment for infection risk must be undertaken. This ensures appropriate placement of the resident.
- Transfer documentation, e.g. an Inter-Health and Social Care Infection Control (IHSCIC) Transfer Form (see Appendix 2) or patient passport, must be completed for all transfers, internal or external and whether the resident presents an infection risk or not.
- The ambulance/transport service and receiving area must be notified of the resident's infectious status in advance.

Refer to the 'Patient placement and assessment for infection risk Policy for Care Home settings'.

13. Death of a resident with *C. difficile* infection

No special precautions other than those for a living resident are required for a deceased resident.

Refer to the 'Care of the deceased Policy for Care Home settings'.

14. C. difficile card

Some areas now issue residents who are confirmed CDI or *C. difficile* colonised with a '*C. difficile* card'. The card is provided so the resident can present it at any consultation with a healthcare professional or admission to hospital. This will alert the healthcare worker/admitting unit to the residents' diagnosis of *C. difficile* and help to ensure, if antibiotics are needed, that only appropriate ones are prescribed.

15. Investigation of *C. difficile* infection cases

A root cause analysis (RCA) should be conducted by your local Community Infection Prevention and Control or Public Health England Team for each CDI case to identify any lapses in care. The home may be requested to supply relevant information for the RCA investigation. By implementing the lessons learned from the RCA, resident safety can be continuously improved.

16. 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 Care Home 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:

- 29 IPC Policy documents for Care Home settings
- 'Preventing Infection Workbook: Guidance for Care Homes'
- 'IPC CQC Inspection Preparation Pack for Care Homes'
- IPC audit tools, posters, leaflets and factsheets
- 'IPC Bulletin for Care Homes'

In addition, we hold educational study events in North Yorkshire 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.

17. 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 and Health Protection Agency (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*

Department of Health (2007) *Saving Lives: Reducing infection, delivering clean and safe care - High Impact Intervention No. 7: Care bundle to reduce the risk from Clostridium difficile* www.clean-safe-care.nhs.uk

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*

National Patient Safety Agency (2010) *The national specifications for cleanliness: Guidance on setting and measuring performance outcomes in care homes*

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

Public Health England (May 2013) *Updated guidance on the management and treatment of Clostridium difficile infection*

18. Appendices

Appendix 1: The Bristol Stool Form Scale

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

Infection. Prevention. Control.
You're in safe hands

NHS

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

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, hands must be washed with liquid soap and warm water when caring for patients/clients with diarrhoea.

NB: Hands must be decontaminated after glove use.

Reproduced by kind permission of Dr KW Heaton, Reader in Medicine at the University of Bristol.

Infection. Prevention. Control.
You're in safe hands

NHS

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:	GP Name and contact details:
Address:	
NHS number:	
Date of birth:	
Patient's current location:	

Receiving facility, e.g., hospital ward, hospice: .....

If transferred by ambulance, the service has been notified: Yes ☐ N/A ☐

Is the patient an infection risk:
Please tick most appropriate box and give details of the confirmed or suspected organism

☐ Confirmed risk Organisms: .....
☐ Suspected risk Organisms: .....
☐ No known risk

Patient exposed to others with infection, e.g., D&V, Influenza: Yes ☐ No ☐ Unaware ☐

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 ☐ No ☐ Unknown ☐

Relevant specimen results if available

Specimen:				
Date:				
Result:				

Treatment information:

Is the patient aware of their diagnosis/risk of infection? Yes ☐ No ☐

Does the patient require isolation? Yes ☐ No ☐

If the patient requires isolation, phone the receiving facility in advance: Actioned ☐ N/A ☐

Additional information:

Name of staff member completing form: .....

Print name: .....

Contact No: ..... Date .....

Community Infection Prevention and Control, Harrogate and District NHS Foundation Trust April 2017
www.infectionpreventioncontrol.co.uk