Clostridioides difficile infection (C.Diff)

LCC IPC Guidance

Review October 2023

infectionprevention@lancashire.gov.uk

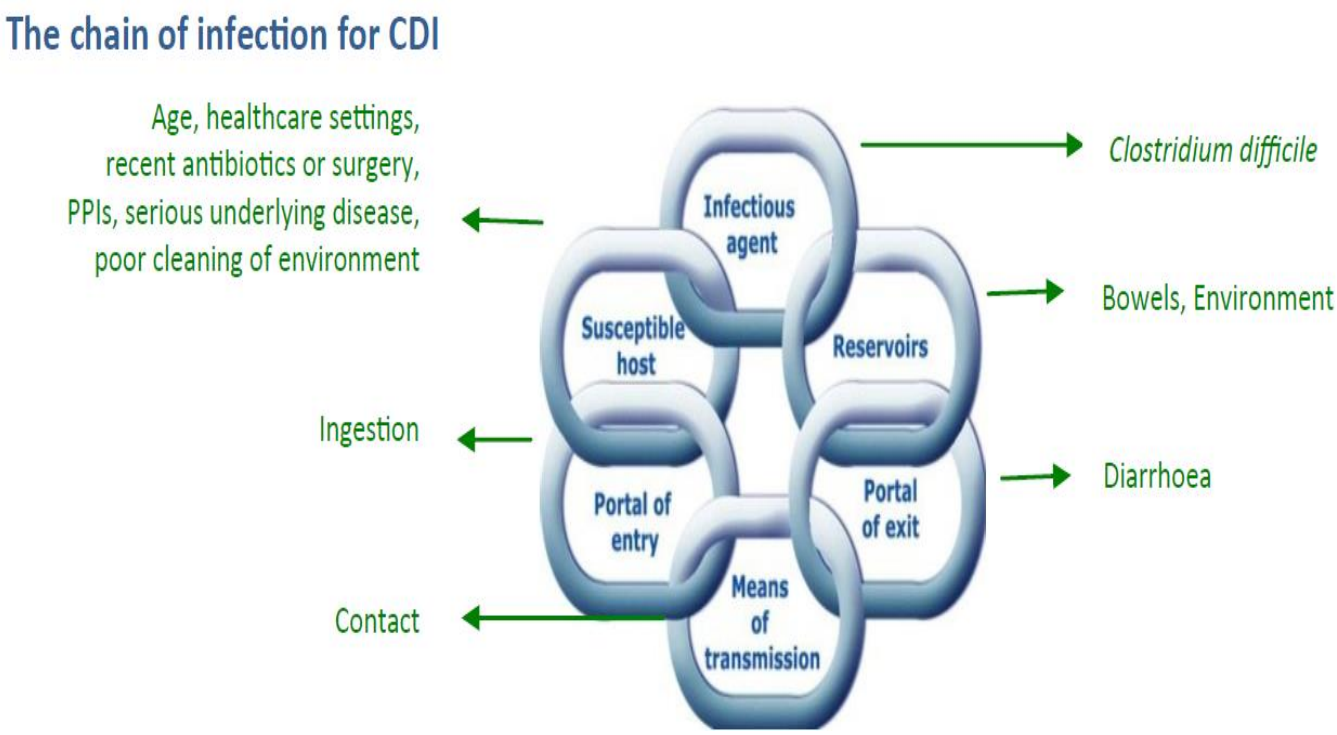
Clostridioides difficile infection (CDI)

Clostridioides difficile, also known as *C. difficile* or *C. diff*, is a bacterium that can infect the bowel and cause diarrhoea.

The infection most commonly affects people who have recently been treated with antibiotics. In some cases, the diarrhoea can be serious and hospitalisation maybe required for treatment.

Once out of the body, the bacteria turn into resistant cells called spores. These can survive for long periods on hands, surfaces (such as toilets), objects and clothing unless they are thoroughly cleaned.

Someone with CDI is generally considered to be infectious until at least 48 hours after their symptoms have cleared up. CDI is highly infectious and can be spread to other people via the faecal oral route. Good environmental and personal hygiene can help prevent this happening.



Control of CDI - the SIGHT protocol

Suspect CDI when no clear alternative cause for diarrhoea

Isolate

- Always discuss with Infection Prevention and Control Nurses.
- If the resident is a care home resident isolate in a single room (following risk assessment) whilst having diarrhoea.
- Encourage the resident to express anxieties regarding isolation.
- The room should be self-contained with en suite or dedicated commode and washbasin.
- Keep the environment free from clutter, whilst providing sufficient sensory stimulation e.g. TV, radio, reading materials.
- Use single resident use equipment when possible.
- Treat incontinence pads, clinical waste and linen as contaminated. Dispose of all waste into a clinical waste bag inside the room. When waste bag is ¾ full fasten securely, label and replace.

Gloves and aprons must be worn for all contacts with the resident, equipment, bodily fluids, and the environment within residential care facilities.

- After use remove and throw away as clinical waste.
- Hands must be washed after removal of gloves and aprons.

Hand washing using liquid soap from wall mounted dispenser and drying with paper towels before and after each contact with the resident and their environment.

- Sufficient supplies should be available for staff and visitors.
- **Don't forget resident's hand washing**. All residents should be helped to wash their hands after using the toilet and before meals.
- **Alcohol hand gel is not effective against CDI**.

Test stool.

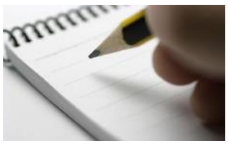
- Document on Bristol stool chart (see pg. 3).
- If type 5-7 discuss sampling with GP.
- Complete the request form correctly stating all antibiotics prescribed in previous 4 weeks, if previous CDI and severity of infection.
- **Clearance specimens are not required.** There is a risk of relapse with 20-30% of cases.

Treatment

Discuss with GP.
Review all medications - antibiotics, anti-motility agents (i.e. loperamide), laxatives and proton pump inhibitors (i.e. omeprazole) should be stopped if appropriate.
If the resident is suffering from diarrhoea antibiotics is often prescribed. Continue treatment for 10-14 days, even if feeling better.
Some cases settle before the result is known without the need for antibiotic treatment.
After treatment monitor for signs of constipation and report to GP if abdominal size increases
Monitor and ensure good fluid and electrolyte replacement.
After using the toilet ensure skin is clean and dry.
Ensure hands are washed thoroughly with soap and warm water.

Documentation

Explain to resident that they may have an infection.
Provide an information leaflet to resident and family.
Record colour frequency and consistency of stool using the Bristol Stool chart.
Ensure care pathway is followed and all actions are documented.



Visitor restrictions

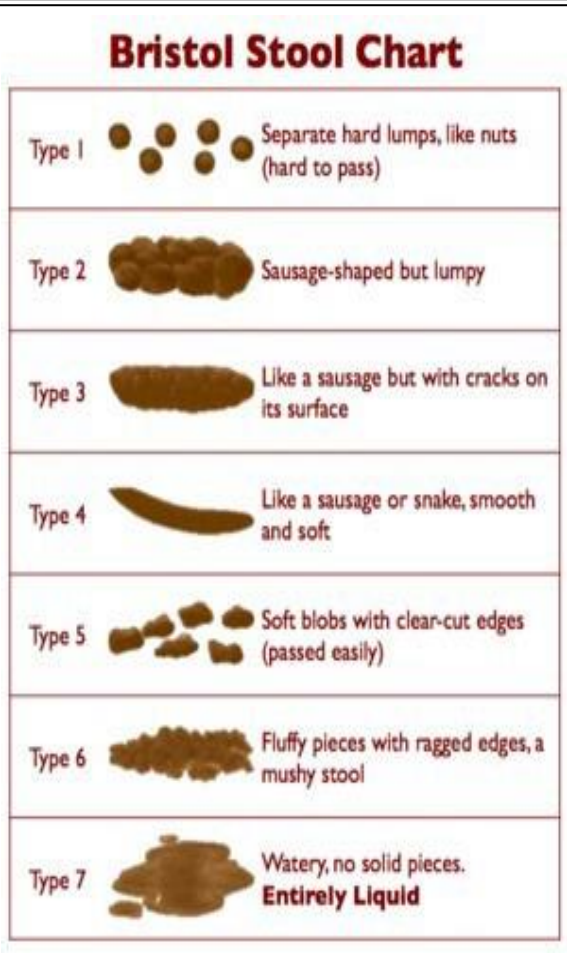
All visitors must report to the nurse in charge before entering the room
Gloves and aprons are not required for visitors but they must wash and dry their hands before leaving the room.

Transfer to hospital

Inform the ambulance and hospital staff of CDI if transfer is needed.

Environmental cleaning

Advise domestics/housekeeper that the resident is isolated.
All areas should be cleaned at least daily.
Domestic staff should wear a disposable apron and gloves.
Pay particular attention to toilet including the flush handles, commodes (check underneath) and hand wash sinks/taps.
Use disposable cloths and a dedicated mop and bucket.
The bucket must be washed out after use and then stored inverted.
Mop heads should be disposable or washed after each use.
Clean with hot soapy water followed by chlorine containing solution (bleach – 1000ppm available chlorine).
Care staff are responsible for cleaning resident related equipment.
A full clean to be carried out when resident is symptom free.



Infection Prevention & Control Care Plan for a Resident with *Clostridioides difficile*

Resident's Name:	**DOB:**

Aim: This care plan is designed for residents who are suspected of or are known to have *Clostridium difficile.* This care plan should be followed to reduce the risk of transmitting *Clostridium difficile* to other residents, staff, carers and visitors. If it is not possible to follow this care plan, please notify a member of the Infection Control Team who will support you on how best to care for this resident.

Date	No	Issue/Problem	Action to be taken	On-going Assessment/ Review Date	Signature	Comment
	1	**Accommodation**	• A risk assessment should be carried out by the Care Manager/IPC care champion to determine the suitability of the resident for isolation. • Isolate in a single room with en suite or dedicated commode and equipment. • Implement Infection Prevention & Control measures and Personal Protective Equipment (PPE). • Explain to the resident that they (possibly) have an infection which is causing the diarrhoea, and to prevent the infection spreading to other residents, the team would like to nurse the resident in a 'single room' (provide a leaflet where possible to the resident and their relatives. • Ensure the resident has sufficient sensory stimulation e.g. reading material, TV, Radio. • Encourage the resident to express fears/anxieties regarding isolation. Seek to resolve them.	Isolation precautions may be discontinued once the resident has been asymptomatic for 48 hours and has passed a normal stool (refer to Bristol Stool chart for guidance)		

	2	**Hand Hygiene**	**<u>Alcohol gel does not kill *Clostridioides difficile*</u>** • Hands must be washed with soap and water before and after contact with the resident, their environment or equipment and on leaving the isolation room (refer to '5 Moments' for Hand Hygiene) • The resident should be instructed and helped to wash hands with soap and water after using the toilet and before and after eating. • Liquid soap and paper towels must be made available for staff, residents and visitors.			
	3	**Specimen**	• The resident is managed according to their symptoms (please refer to 'SIGHT' attached to Care Plan and your Infection Prevention and Control policy on the 'Management of *Clostridioides difficile'*). • Record colour, frequency and consistency of stool using the 'Bristol Stool' chart. • Discuss symptoms with residents GP. • Collect stool sample for culture and sensitivity and Clostridium toxins if stools are type 5 or 7 (refer to Bristol Stool chart). • Clearance samples are not required for *Clostridioides difficile.*			

	4	**Clinical Monitoring of Resident**	• Monitor fluid input and output, observing for signs of dehydration. • Risk assess areas of the skin for signs of pressure ulcers and ensure skin is clean and dry. • Treatment with antibiotics will depend on whether it is mild, moderate or severe disease (see *Clostridium difficile* infection: how to deal with the problem NICE guidelines July 2021. Clostridioides difficile infection: antimicrobial prescribing. • Symptoms may reduce after commencement of antibiotic treatment. However, monitor for signs of constipation post CDI and if the abdominal size increases report to GP as a matter of urgency. • If the resident has settled on their own accord before the results have been confirmed discuss symptoms with GP before commencing treatment. Some mild cases of CDI will settle without the need for antibiotic treatment and only require monitoring for relapse. • There is a risk of relapse with 20 – 30 % of cases. **Therefore do not repeat stool sample within 28 days of first sample – discuss with GP**			
	5	**Medications**	• Check/assess recent prescriptions of antibiotic/proton pump inhibitors (i.e. omeprazole)/analgesia (i.e. pain killers) /laxative therapy which may have increased risk of *Clostridioides difficile.* • Anti-peristaltic (antimotility) agents eg. Loperamide (Imodium), should be avoided in acute infection because of the theoretical risk of causing toxic mega colon by slowing the clearance of the *Clostridioides difficile* toxin.			

	6	**Personal Protective Equipment**	• Aprons and gloves to be worn by all staff having contact with the resident, equipment or bodily fluids which must be removed and thrown away in the room. • Hands must be washed with liquid soap and water and dried with disposable paper towels before leaving the room.			
	7	**Waste**	• Dispose of all waste into a clinical waste bag inside the room. When waste is ¾ full, fasten securely, label and replace. • Clinical waste bags should be placed in a foot operated bin and ensure bin and lid is on a cleaning schedule.			
	8	**Environmental Cleaning**	• Advise domestics/housekeepers that the resident is isolated. • Increase cleaning measures to once a day. • Domestic staff should wear a disposable apron and gloves and use a dedicated mop and bucket. The bucket should be washed after use and stored inverted. Mop heads should be disposable, if not laundered after each use. Use disposable cleaning cloths if possible. • Nursing/care staff are responsible for the cleaning of resident related equipment. • All commodes, toilets and bathroom areas of CDI residents should be cleaned after each use with a chlorine agent (1000ppm available chlorine). • When 48 hours clear of symptoms domestics to carry out a thorough 'Terminal Clean' of the room and en suite using general detergent followed by a chlorine based solution (refer to Infection Prevention Control policy on the 'Management of Clostridioides difficile infection)			

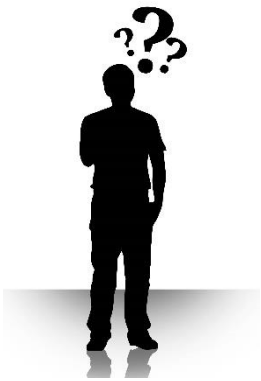
	9	**Visitor Restrictions**	• All visitors must report to the Care Manager/Nurse before entering room. • Aprons and gloves are NOT required to be worn by visitors, but they should wash their hands with soap and water on leaving the room.			
	10	**Transfer to Hospital**	• Please inform Ambulance and Hospital staff of *Clostridioides difficile* infection if residents need to be transferred to hospital for a clinical emergency.			

Clostridioides difficile Infection (CDI)

This leaflet aims to answer some of the most commonly asked questions about Clostridioides Difficile infection for patients who are diagnosed and treated in the community.

Lancashire County Council

Blackburn with Darwen Borough Council



Environment

The environment should be kept clean at all times as the spores can survive for a long time outside the body until they are removed or destroyed by thorough cleaning. They can also be spread through the air (during bed making, for example).

To reduce environmental contamination, clean all surfaces that may have come into contact with the bacteria or spores, such as toilets, the floor around toilets, bedpans and beds, thoroughly, using hot soapy water and disposable cloths, rinse and then clean surfaces using products containing chlorine (bleach).

Outlook

Most cases settle within 1–2 weeks however you may continue to carry the toxin in your faeces for a while. Once your symptoms have settled there is a small risk that you may have a repeat of them. If you have diarrhoea again you should consult your doctor immediately as other treatments may be required. Your doctor will review your medication and may alter any antibiotics.

A repeat specimen is usually not required.

Antibiotics

To prevent future episodes some antibiotics should be avoided as this may trigger a return of symptoms. Please tell any doctor, pharmacist, dentist or other health professional to consult with the local microbiologist prior to prescribing antibiotic therapy.

The Department of Health advises that doctors prescribe antibiotics cautiously to try to reduce the total amount being given to patients. This is to help cut down the number of people who are vulnerable to an infection. To keep cases of CDI down, healthcare workers are advised to avoid prescribing broad-spectrum antibiotics, as far as possible, so that patients' natural protection is not weakened.

Do people with CDI need special care at home?

Maintain a healthy diet if you are able to. Some patients enquire about the use of probiotics drinks: at present there is only a limited amount of research to confirm whether their use is of benefit or not.

What can we do to prevent infection?

It may not be possible to prevent the bacteria from spreading altogether. However, a number of precautions can be taken to reduce the risk of infection such as routine personal hygiene, laundering and maintaining a clean environment.

Whenever possible, people who have CDI should have their own room and toilet facilities to avoid passing the infection onto others.

If you are receiving support from health or social care workers then they should wear gloves and aprons, especially when they are assisting you to use the toilet.

Hand washing is of the utmost importance.

The spores or bacteria are spread by the hands of people who come into contact with infected patients or contaminated surfaces. To stop the spread of CDI it is important to wash your hands with soap and water after using the toilet or commode, and before eating.

Alcohol hand gel is not effective against *Clostridium difficile* spores, so the use of soap and water is essential.

Is it contagious?

It is unusual for *Clostridioides difficile* to affect your family or friends, but when you have diarrhoea, cross-infection, either through direct person to person contact, or via

restrictions. It is safe for you to have social contact with any adult or child. Visitors who are healthy are unlikely a contaminated environment can occur.

Sufferers of CDI shed large numbers of the spores in their diarrhoea. The spores contaminate the environment: especially bathroom surfaces, commodes or toilet areas, bedclothes, skin and clothing. They can survive for a long time and transfer on the hands from an infected to an uninfected person as a source of hand-to-mouth infection for others, especially if they have also been given antibiotics.

Socialising and advice for visitors

Individuals with no symptoms of diarrhoea present no risk to others and can continue with their normal lifestyle with no to become infected with *Clostridioides difficile* provided simple hygiene measures are observed.

Ask visitors to wash their hands with soap and water after helping you and before leaving your home. You should avoid visiting healthcare environments if you are feeling unwell or have recently had diarrhoea.

How is it treated?

You will only need treatment for a CDI if you have symptoms. No treatment is needed if the bacteria are living harmlessly in your gut. Symptoms may subside with no treatment other than stopping the antibiotics. Your doctor will review your medication and make any necessary changes. If symptoms are more severe, you may need to take medication to clear the infection. Your GP may start you on a course of antibiotics to treat the CDI. The symptoms should start to ease within 2-3 days, but it is important to complete the course, usually 10-14 days. Possible side effects of these antibiotics are stomach ache, nausea and vomiting.

What is *Clostridioides* difficile infection?

People taking antibiotics often develop diarrhoea. The major cause of this diarrhoea is an infection of the bowel caused by a bug called *Clostridioides difficile.*

The *Clostridium* family includes the bacteria that cause tetanus, botulism, and gas gangrene. Lab tests have identified over 100 different types of *Clostridioides difficile*. It is an anaerobic bacterium, which means it does not need oxygen and therefore can survive in the bowel. It also produces spores (a form of cell that is highly resistant to chemicals), that can survive for a long time in the environment.

Clostridioides difficile is common in the bowel of babies, infants and 5% of healthy adults. It is usually kept under control by the good bacteria that break down and digest food. Bacteria live in a state of balance, but some antibiotics kill the good bacteria disturbing the balance. This allows the *Clostridioides difficile* to grow and produce toxins (poisons) that damage the cell lining of the bowel resulting in diarrhoea. At this point, a person is said to be suffering with *Clostridioides difficile* infection (CDI).

Most people who get CDI have symptoms while they are taking antibiotics. However, symptoms can appear up to 10 weeks after finishing a course of antibiotics.

***Clostridioides difficile* – background and a short history**

Clostridioides difficile was first described in the 1930s, but it was not identified until the late 1970s as the cause of diarrhoea following antibiotic therapy. Even once this was recognised, laboratory diagnosis was difficult and the number of cases was not monitored. Since January 2004, *Clostridium difficile* has been part of the mandatory surveillance programme for healthcare associated infections.

Who is at risk of getting CDI?

Patients who are most at risk are:

-Those recently treated with antibiotics, especially antibiotics that affect a wide range of bacteria, including bowel bacteria;

-The elderly, particularly those over the age of 65 years;

-Those debilitated with a serious underlying illness or condition and a weakened immune system;

-Those with a long stay in a hospital or regular attenders to hospital; or

-Those having repeated enemas, bowel surgery or bowel disease.

Symptoms of CDI

The symptoms of CDI can include:

· Mild to severe diarrhoea which may be frequent, watery, offensive smelling with urgency;

· Bleeding from the colon and blood-stained stools;

· Loss of appetite and nausea;

· Abdominal pain and cramps; and Fever.

These symptoms are caused by swelling and irritation of the lining of the bowel. In rare cases, CDI can cause perforation of the bowel, peritonitis and blood poisoning.

How do I know I have got it?

A sample of diarrhoeal faeces has been sent to the laboratory and the toxin related to *Clostridioides difficile* has been found in the sample. This means that you have the infection.

In outbreaks, or for surveillance of the different strains circulating in the population, *Clostridium difficile* can be cultured from faeces and the isolates sent to a laboratory for typing and testing for susceptibility to antibiotics.