Clostridioides difficile Management in the Community Guidance

September 2021

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VERSION CONTROL				
Version	**Date**	**Author**	**Status**	**Comment**
1	**February 2008**	**Infection Control Team**	**Superseded by review policy**	
2-4	**February 2012, March 2013 & March 2014**	**Nikki Littlewood**	**Superseded by review policy**	March 2013 reviewed for transition to CCG
5	**February 2015**	**Nikki Littlewood**	**Superseded by review guidance**	The amendment of national target information that was based on annual targets (soon out dated) to more generic information. The addition of Co-amoxiclav as a high risk antibiotic for C. difficile acquisition
6	**February 2017**	**Nikki Littlewood**	**Superseded by review guidance**	Recurrence rate information updated Antibiotic and Proton Pump Inhibitor Review section updated to align with STH treatment algorithms. RCA data collection form (appendix 4) has been updated
7	**November 2018**	**Nikki Littlewood**	**Superseded by review guidance**	PPI information for review or stopping has been strengthened by inclusion of PHE Guidelines. C. difficile Recurrence An alert will be developed and placed in the patients' records to enable a pop-up reminder to appear if a clinician prescribes broad spectrum antibiotics for patients who have had a diagnosis of C. difficile within the past 12 months.
8	**September 2021**	**Nikki Littlewood**	**Current reviewed guidance**	This review merges 2 documents the main CCG Guidance and GP Practice summary Guidance. Clostridium changed to Clostridioides to reflect national

				terminology change Updated lab testing information (section 7) to align with STH changes Antibiotic treatment regimens have been changed in light of recent NICE Guidance (2021) Deleted all the appendices as no longer required (and re incorporated into the text where relevant).

Contents

1.0 Background

1.1 Clostridioides difficile (C. difficile) is an anaerobic, spore forming, gram-positive bacterium that is found in the large intestine of up to 3% of healthy adults & 66% of babies (Gov.uk 2014). The official name of this organism has been changed from 'Clostridium' to 'Clostridioides' in 2019. Clinically and infection prevention and control wise this change is irrelevant, and the terms are interchangeable.

1.2 It is a common cause of antibiotic associated diarrhoea, causing illness when the balance of the normal gut flora is disturbed by the use of certain antibiotics, e.g. cephalosporins and quinolones. Over 80% of cases are reported in the over 65's (HPA 2009).

1.3 *C.* difficile infection can be debilitating, prolonging hospital stays and complications of the infection can be fatal. *C.* difficile has the potential to cause large outbreaks in healthcare settings if not managed appropriately, i.e. via standard precautions and isolation.

1.4 The main route of acquisition of *C.* difficile by the faecal-oral route, i.e. *C. difficile* spores are ingested. Heavy environmental/equipment contamination with spores from colonised or infected patients are recognised as significant cross infection risk factors. It is extremely contagious and is spread very easily. *C. difficile* can however be prevented by good hygiene practices in healthcare environments.

2.0 National Context and NHS Sheffield CCG responsibilities

2.1 National Context – the DH in 2008 set a target to reduce *C. difficile* infections nationally by 30% by 2011, which was achieved early in June 2009. Since then, more challenging annual targets have been identified. To achieve these reduction targets and reduce *C.* difficile numbers as far as possible NHS Sheffield CCG has for the past few years had a C. *difficile* Action Plan, which is regularly reviewed.

3.0 Clinical Features of C. difficile

- Toxins produced by C*.* difficile can damage the large bowel causing watery, explosive, foul smelling diarrhoea. However, there is a range of symptoms from asymptomatic, a mild disturbance, to very severe illness and in some patients' subsequent development of pseudo membranous colitis (PMC) with ulceration and bleeding from the colon, toxic megacolon, and, at worst, perforation of the intestine leading to peritonitis, which can be fatal.
- Diarrhoeal stools are typically defined as those that take the shape of the containers or type 5-7 on the Bristol Stool Chart (Department of Health 2008), as per link below https://www.bladderandbowel.org/wp-content/uploads/2017/05/BBC002_Bristol-Stool-Chart-Jan-2016.pdf

    - Fever, loss of appetite, nausea and abdominal pain/tenderness may be present.
    - It has a recurrence rate of between 10-20% after first episode and 40 to 60% for 2nd/3rd episodes

4.0 Further episode (relapse or recurrence) of C. difficile infection

A further episode of C. difficile infection could either be a relapse, which is more likely to be with the same C. difficile strain, or a recurrence, which is more likely to be with a different C. difficile strain. There is no agreement on the precise definition of relapse and recurrence, and it is difficult to distinguish between them in clinical practice. In this guideline, it was agreed that a relapse occurs within 12 weeks of previous symptom resolution and recurrence occurs more than 12 weeks after previous symptom resolution. https://www.nice.org.uk/guidance/ng199/chapter/Recommendations#preventing-c-difficile-infection

5.0 Risk Factors

- Elderly 65 or over
- Long length of stay in healthcare settings - it has been estimated that up to 7% of adults have asymptomatic colonisation in these settings
- Recent antibiotic exposure especially broad-spectrum agents (e.g. Cephalosporin's, Quinolones and Co-Amoxiclav) which are harmful to normal gut flora.
- As well as choice of antibiotic being an important factor so is duration, excessive antibiotic exposure of even "safe" antibiotics is a risk factor for development of C. difficile.
- Please refer to chapter 5 "Infections" of the Sheffield Formulary for advice in relation to antibiotic prescribing practice

- Recent surgery, especially gastro-intestinal surgery
- Serious underlying disease/illness
- Immuno-compromising conditions
- Patient having chemotherapy
- Prolonged use of proton pump inhibitors i.e., Omeprazole, Lansoprazole have also been associated with C. difficile diarrhoea.
- Multiple co-morbidities

6.0 Transmission

- Transmission is via spores that survive in faecal matter ingested by the faecal-oral route. These spores are resistant to heat, alcohol (e.g. alcohol hand rub) and some disinfectants.
- C. difficile is easily spread from patient to patient, on the hands of healthcare staff or from the environment, especially if high standards of environmental cleanliness are not maintained.
- Contamination of patient equipment such as commodes, cot sides, chairs and bathroom facilities will increase the risk of an infection being spread around.

7.0 Procedure and Treatment

- Send stool specimen to confirm diagnosis
- **Stool samples should only be sent if the patient has Bristol Stool chart scores of 5- 7; has an altered bowel habit for them and has not recently received enemas, suppositories or laxatives.**
- Where there is a suspicion of C. difficile infection, ICE or the specimen request form should have the appropriate information. Request specifically for Clostridioides difficile Toxin (CDT) and add any other relevant current/recent medical information e.g. antibiotic history.
- **Once CDT confirmed, do not retest if patients are still symptomatic within a 28 day period unless symptoms resolve and then re-occur and there is a need to confirm recurrent C. difficile infection (DH 2008). Or unless the stool sample is required to test for other enteric micro-organisms.**
- Where there is a suspicion of C. difficile infection a review of current antibiotic treatment should be made. Ideally discontinue non-*C. difficile* antibiotics to allow normal intestinal flora to be re-established
- For relapse/recurrent cases of *C*. difficile a review of all drugs with gastrointestinal activity or side effects should be undertaken and PPIs stopped unless required acutely
- Antibiotics should be used to treat the infection when the diarrhoea (type 5-7 stool) does not cease after 48 hours or is moderate to severe in nature.
- NICE has published new treatment guidance in July 2021 https://www.nice.org.uk/guidance/ng199

The following is in line NICE guidance:

- In the community, consider seeking prompt specialist advice from a microbiologist or infectious diseases specialist before starting treatment.
- The first line antibiotic for the **first episode** of mild, moderate or severe disease is Vancomycin 125mgs orally four times a day for 10 days.
- The second line antibiotic for a **first episode** of mild, moderate or severe disease if Vancomycin is ineffective is Fidaxomicin 200mg orally twice a day for 10 days. However please phone or E-consult Microbiology **first** for further advice.
- For relapse or recurrence (see section 4 for definitions), please phone or E-consult with microbiology for further advice.
- Once the C. difficile infection has been successfully treated and the patients' diarrhoea has ceased for at least 48 hours, **there is no need to send a stool sample for clearance as C. difficile can remain in the gut for weeks after the initial infection.**
- New prescribing of opioids e.g. Codeine Phosphate, Dihydrocodeine etc. during this episode should be avoided as they may prolong or worsen symptoms. Patients already on opioids should not have their prescription automatically stopped however a prescription review should be carried out.
- Encourage the patient to maintain a good oral intake, observing for signs of dehydration, and encourage the use of rehydration solutions where appropriate, and monitor consistency of the faeces.

- Anti-motility drugs for example Loperamide should be avoided as this makes it difficult for toxins to be dispelled.

8.0 C. difficile stool sampling testing undertaken at Sheffield Teaching Hospitals

8.1 Results and interpretation

All samples will be tested for C. difficile using either antigen or PCR tests as per the laboratory protocols. Those that are positive will be tested for C. difficile toxin. Where C. difficile toxin is detected, in most cases, patients will have signs and symptoms of CDI and therefore require treatment. Occasionally, despite toxin positivity, the patient's clinical symptoms do not fit with CDI and such patients may be carriers only.

Such results will be phoned out on the same day where possible and sample authorised out (on ICE) the same day or day after it results positive and reported as:

C. difficile PCR:
Potentially toxigenic C. difficile DETECTED
C. difficile toxin:
C. difficile TOXIN DETECTED

This result indicates that we have detected the C. difficile organism in the sample and also toxin. The patient's current symptoms are likely to be due to this organism.

If possible, stop antibiotics that may worsen CDI. Treat according to CCG Guidance/Sheffield Formulary if CDI suspected. Please discuss any current antibiotic/future antibiotic therapy with medical microbiology. Infection control precautions may be required.

• Patients with ongoing symptoms and negative results consider discussing with a gastroenterologist.

8.2 In a minority of patients, diarrhoea is short lived or absent before fulminant disease occurs thereby obscuring the diagnosis.

8.3 Where C. difficile PCR is positive, but C. difficile toxin is negative this may represent either:

1) C. difficile carriage/colonisation (potentially toxigenic strain but not toxin produced) or:
2) C. difficile disease: failure of detection of toxigenic strain due to false negative toxin test result (the best toxin test is only ~85% sensitive).

In both cases the report will state: these results will be released on ICE as soon as they are complete

C. difficile PCR:
Potentially toxigenic C. difficile DETECTED
C. difficile toxin:
C. difficile TOXIN NOT DETECTED

This result indicates that we have detected a toxigenic strain of C. difficile organism in the sample but no toxin. The patient is therefore a carrier of C. difficile, and their current symptoms may or may not be due to this organism. A clinical assessment is therefore required to determine whether, this is a false negative toxin result (this may occur in up to 15% of cases) and the patient does indeed have C. difficile disease or whether it is an incidental finding, and their diarrhoea is caused by something else. Such patients are at risk of developing disease if their bowel flora is disturbed by antibiotics and they may contaminate the environment, especially if they have diarrhoea for any reason. Appropriate infection control procedures should therefore be taken, and caution used when prescribing antibiotics for the patient in the days, weeks, and months to come.

If possible, stop antibiotics that may worsen or increase likelihood of CDI. Any patient with such a result (PCR positive, toxin-negative) should be treated if the diarrhoea is otherwise unexplained and persists. Treat according to CCG Guidance/Sheffield Formulary if CDI suspected. Please discuss any current antibiotic/future antibiotic therapy with medical microbiology. Infection control precautions may be required.

9.0 PPI usage and C. difficile infection.

Please see the Sheffield Area Prescribing Group Prescribing guideline For Managing Proton Pump Inhibitors Balance of risks and benefits

https://www.intranet.sheffieldccg.nhs.uk/Downloads/Medicines%20Management/prescribing%20guidelines/PPIs_risks_vs_benefits.pdf

Page 3 states:

"That although not proven there is observational evidence to link PPI usage and C. difficile infection. Studies show that concurrent use of PPI with treatment for CDI was associated with a 42% increased relative risk of recurrent infection 15 to 90 days afterwards. Risks were highest among those older than 80 years and those receiving antibiotics not targeted to CDI.
Public Health England guidelines for managing and treating CDI recommend that consideration be given to stopping or reviewing the need for PPIs in patients with or at high risk of CDI".

10.0 C. difficile Recurrence

To try to reduce the incidence of relapse/recurrence the following actions will be put in place as soon as possible:

- Standardisation of read coding for C. difficile Toxin and PCR carriage on SystmOne & Emis to be developed and used for new patients with C. difficile.
- Following this a pop-up reminder will be enabled to appear if a clinician prescribes broad spectrum antibiotics for patients who have a diagnosis of C. difficile within the past 12 months.
- PPIs should be reviewed or stopped as per PPI section 9 above.
- For recurrent cases of C. difficile a review of all drugs with gastrointestinal activity or side effects should be undertaken

11.0 Infection Prevention and Control Precautions

11.1 Hand Hygiene

- Hand hygiene as always remains of the utmost importance in preventing outbreaks and transmission between patients.
- Use soap and water for effective hand hygiene. Ensuring hands are dried thoroughly with paper towels.
- Alcohol hand rub is less effective when eradicating bacterial spores.
- Carers and relatives etc. should be encouraged to regularly carry out hand hygiene.

11.2 Personal Protective Equipment

- Gloves and aprons should be worn if contact with diarrhoea/faeces is anticipated.

11.3 Environmental Cleanliness

- Ensuring that the environment is kept clean is one of the most important methods of ensuring that C. difficile is reduced.
- In the unlikely event of a patient having diarrhoea in the healthcare setting, i.e. GP Practice. The area should be cleaned with detergent followed by a chlorine releasing product at 1000 parts per million. It is preferable to use a 2 in 1 cleaning and chloring releasing product.
- A separate colour coded mop, bucket and cleaning equipment should be used.

11.4 Staff Exclusion Due to C. difficile Diarrhoea

- Staff with diarrhoea should attend their GP for assessment and stool sample.
- Staff with diarrhoea, thought to be infective, should be excluded from work until they have had a normal bowel habit for 48 hours.

11.5 Screening Requirements

- Screening patient and staff for asymptomatic carriage is not recommended**.**

12.0 Admission to Hospital or other healthcare facility

All previous current or suspected C. difficile patients require this information to be included on the admission/transfer letter. It should include the most recent C. difficile result and the patients' current status and if asymptomatic, the time elapsed since last symptoms.

13.0 Root Cause Analysis (RCA)

RCA is undertaken by the IPC Team and STHFT Consultant Microbiologist. It is undertaken to try to establish how the patient has acquired C. difficile and any lessons that can be learned and used to reduce cases in the future. The process has been reviewed to focus on areas where the risk of onward transmission is highest, or relapses/recurrences are occurring. Therefore, only community cases occurring in care homes, relapses/recurrent episodes, or cases where there has been a death within 30 days of diagnosis are subject to an RCA.

13.1 A targeted RCA, which requires an MDT meeting, will be undertaken in the event of an outbreak (2 or more associated 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) or a fatality (usually 1a main cause of death) within 30 days of diagnosis.

13.2 A targeted RCA will be facilitated by the IPCT and usually requires a team approach from a range of professions and may involve individuals not directly involved in the incident.

14.0 Information for patients with C. difficile

Please refer patients to the NHS Choices website:

https://www.nhs.uk/conditions/c-difficile/

The last section "how to stop C. difficile spreading"; is particularly useful environmental hygiene advice to try and prevent recurrence from the patient's environment.

15.0 Sheffield Formulary

Please refer to Section 5 Infections of the Sheffield formulary for Antibiotic Stewardship and the linked guidance "Good practice points for the prevention and detection of *C. difficile*" for further information. http://www.intranet.sheffieldccg.nhs.uk/medicines-prescribing/sheffield-formulary.htm

16.0 Dissemination of this guidance

This guidance will be circulated and implemented using established processes within NHS Sheffield CCG. It is available via the intranet.

17.0 Bibliography

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