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Guideline Objective

This guideline aims to ensure that systems are in place to prevent and control infection and communicable disease by underpinning national polices. It outlines the criteria, responsibilities and systems required to manage specific conditions/ infections. The goal of this guideline is to protect patients, staff and the public by effective prevention and control of infection and communicable disease.


Compliance with this guideline is best practice. If you have any concerns please discuss with your line manager who will consult the local Infection Control/Health Protection Team for advice

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SECTION E 2

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1 BACKGROUND

Clostridium difficile, a toxin-producing, anaerobic spore-bearing bacillus, is a normal inhabitant of the infant gut flora, but apparently rare thereafter. *C. difficile* is carried in the gut of 3% of healthy adults and 20% of hospital patients. In a significant proportion of elderly or hospitalised patients who have recently received antibiotics, it can be readily isolated from the faeces. *C. difficile* may also colonise susceptible patients by direct contact with infected cases or contaminated environment through the presence of spores. Some patients with the organism are asymptomatic or nearly so, some have mild diarrhoea, while a few may develop a serious illness e.g. pseudomembranous colitis. The spore-bearing nature of the organism means that patients with diarrhoea are likely to cause heavy environmental contamination and are a potential source of cross-infection.


2 MAJOR RISK FACTORS FOR CDI

Certain patients are at increased risk of acquiring CDI. The possibility of CDI should be considered when patients with diarrhoea also have:

- History of use or current use of antimicrobial drugs
- Prolonged hospital stay
- Increased age (>65 yrs.)
- Serious underlying diseases
- Surgical procedures (in particular bowel procedures)
- Immunocompromising conditions
- Use of proton pump inhibitors

3 MARKERS FOR SEVERITY OF INFECTION

- Temperature > 38.5°C
- Patient has major risk factors i.e. immunosuppressed or are in intensive care
- Suspicion of PMC, toxic megacolon, ileus
- Colonic dilatation >6 cm
- Increase white blood cell count >15x10⁹
- Creatinine > 1.5 x baseline

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4 TESTING FOR C. DIFFICILE

Patients with *C.difficile* toxin A and/or B demonstrable in their faeces and gastrointestinal symptoms consistent with *C.difficile* infection should be regarded as definite cases. Symptoms vary and assessment of the clinical picture is central to determining the course of action e.g. toxin may still be present in proven cases where symptoms have recently resolved, whether spontaneously or by specific treatment. The Microbiology Laboratory will examine faecal specimens for *C.difficile* toxin only when the sample is liquid or semi-formed, (or if specifically requested). Culture for *C. difficile* is usually now performed only when an outbreak has developed or if patients have multiple recurrences or severe disease.

5 MANAGEMENT AND TREATMENT OF FIRST AND SECOND EPISODES OF CDI FIRST EPISODE

- The white blood cell count (WBC), temperature, findings of abdominal examination, bowel movements and overall clinical status of patients with CDI should be evaluated and recorded daily
- Management guidelines for in-patients with loose stools/diarrhoea should be followed (**Section E 1**).
- Issue patients and visitors with information leaflet on *Clostridium difficile*.
- Implement CDI care Plan
- Mild cases may be treated merely by stopping the offending antibiotic and re-hydrating the patient with oral fluids. When this does not work, and providing there are no severity markers noted, prescribe course of oral Metronidazole 400 mg 8 hourly for 10 - 14 days. Where patients have difficulty in swallowing or are unable to take medication orally, it can be administered in oral suspension, intravenously (if possible) or via suppositories
- For patients whose clinical condition worsens (at any time) or those who fail to improve after five days of Metronidazole, treatment should be switched to oral Vancomycin, 125 mg 6 hourly for 10 – 14 days. If ileus is detected, add 500 mg Metronidazole i.v. 8 hourly. until ileus is resolved
- Anti-diarrhoeal medications are contraindicated and should not be prescribed
- If possible stop the use of proton pump inhibitors

The usual duration of therapy is ten days, but this can be extended to fourteen days. However it is recommended to stop the treatment as soon as possible to allow the reconstitution of the microflora of the gut.

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Continued worsening of symptoms, especially increase in WBC and hypotension is an indication for surgery, gastroenterology and microbiology consultations.

In patients whose gastrointestinal tract function is compromised, delivery of orally administered drugs to the colon is not reliable. In the presence of ileus consensus opinion is that 500 mg i.v. 8 hourly Metronidazole should be added to the oral Vancomycin treatment until ileus is resolved.

SECOND EPISODE

- If a patient develops a second episode after successful treatment (i.e. patient has had symptom free days), antimicrobial treatment should be based on severity markers. A stool sample should be obtained 48 hrs after treatment with antimicrobials has stopped
- Often treatment with the same drug used to treat the first episode is effective in treating the second episode

6 TREATMENT OF RECURRENT DISEASE

25 - 30% of patients given either Vancomycin or Metronidazole may go on to develop recurrent disease. Health Protection Scotland (HPS) defines recurrent disease as having three or more episodes.


TREATMENT FOR RECURRENT DISEASE IS:

- Oral Vancomycin 125mg 6 hourly for 10 – 14 days then
- Oral Vancomycin 125mg 12 hourly for 7days then
- Oral Vancomycin 125mg once daily for 7days then
- Oral vancomycin125 mg daily every 3 days for 28 days
- Continually rehydrate patient

At all times staff should consult the patient's physician, and if necessary liaise with the Consultant Microbiologist in relation to prescription of drug regimens when treating patients with CDI

7 FURTHER SPECIMENS

Patients who respond to treatment **need not** have follow-up specimens sent to the laboratory, since once their stool is formed; they present a negligible cross-infection risk provided good hand hygiene is maintained. Persistence of the organism or its toxin in the stool does not

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necessarily predict relapse, and conversely absence of the organism or its toxin from the stool does not guarantee non-recurrence.

8 DISCHARGE/TRANSFER

There is no need to demonstrate clearance of the organism from stool when symptoms have resolved. Prior to discharge or transfer of patients with a history of *C. difficile*, the general practitioner and staff of continuing care establishments must be informed in advance, and warned of the possibility of relapse.

9 ENDEMICITY

Clostridium difficile can be endemic in long-stay units and units with a high proportion of elderly patients. Because of the ease with which environmental contamination can occur, and the consequent risk of cross-infection, the need for high standards of hygiene when working in such units is emphasised. Hand-washing between patient contacts should be mandatory. Hand washing by patients themselves is just as important, particularly before meals


Note: Alcohol gels are known to have little activity against the spores of *C. difficile*. Hand washing with soap and water (Section H CIM) is essential and more effective.

10 SUSPECTED OUTBREAK

Spread from a single case to affect vulnerable patients in the same area is not uncommon. Staff members are, however, rarely affected. Control measures are as indicated in Section E1. It is recommended that, in proven outbreaks, laboratory culture for *C. difficile* should be performed. Isolates should be sent for epidemiological investigation.


11 CLEANING

The area where the patient is being cared for should be cleaned each day by both the domestic and nursing staff using a solution of Actichlor Plus 1,000 ppm. The domestics should replace their normal cleaning solutions with the Actichlor Plus and clean their designated areas, and nursing staff should clean all items of patient care equipment. The rooms with CDI patients in them should have a designated mop and bucket. The mop and bucket should not be used to clean other CDI patient's rooms, or other source isolation rooms

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12 CASES IN COMMUNITY

Within the home setting a patient diagnosed with *C. difficile* infection will receive (if required) the same antibiotic treatment. They should be advised as to the importance of good hand washing and environmental cleanliness. Where continent garments are used, patients should be advised to dispose of them in the usual manner.

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