

Clostridium difficile – Information for healthcare professionals

Key Points

- Restrict use of certain antibiotics
- Perform hand hygiene with alcohol based hand rubs or soap and running water before patient contact (Moments 1 and 2)
- Perform hand hygiene with soap and running water after patient/ environment contact (Moments 3, 4 and 5)
- Enhanced environmental hygiene

Why is *C. difficile* important?

Virulent (aggressive) strains of *C. difficile* have emerged worldwide and have caused extensive outbreaks in hospitals and the community with significant mortality, especially in the elderly

An awful tragedy occurred at Stoke Mandeville in 2004 and 2005. Over 30 people died as a consequence of two outbreaks of infection caused by the bacterium Clostridium difficile (Professor Sir Ian Kennedy)

Commission for Healthcare Audit and Inspection. Investigation into outbreaks of *Clostridium difficile* at Stoke Mandeville Hospital, Buckinghamshire Hospitals NHS Trust. July 2006

<http://www.buckinghamshirehospitals.nhs.uk/healthcarecommission/HCC-Investigation-into-the-Outbreak-of-Clostridium-Difficile.pdf>

What is *Clostridium difficile* (*C. difficile*)?

C. difficile is a spore forming bacterium that can be found in stool specimens of many healthy children under the age of one year and some adults.¹

Following antimicrobial treatment toxin-producing strains of *C. difficile* multiply and cause illness. *C. difficile* is a common cause of antibiotic-associated diarrhoea.

Risk factors for *C. difficile*

- Older patients (> 60 years)
- Significant underlying disease
- Non-surgical gastrointestinal procedures
- Presence of nasogastric tube
- Stomach acid reduction medications
- Prolonged hospital stay, intensive care stay
- Prolonged antibiotic course; administration of multiple antibiotics or course

Specimens and diagnosis

- Collect stool samples from symptomatic patients for *C. difficile* testing as soon as practicable
- Ensure all hospitalised patients who develop diarrhoea are tested for *C. difficile*
- Do NOT test patients without diarrhoea or who have had a previous positive test within the previous 8 weeks
- Ensure that patients with severe disease are cultured for *C. difficile*. Refer isolates for typing as soon as practicable
- Colonic appearances (pseudomembranous colitis) or biopsy findings at endoscopy and/or radiological appearances may be diagnostic

Patient—symptoms, complications and treatment

Clinical Symptoms	Complications	Monitoring and treatment
<ul style="list-style-type: none"> • Watery diarrhoea/green appearance • Fever • Loss of appetite • Nausea • Abdominal pain/tenderness 	<ul style="list-style-type: none"> • Relapse of diarrhoea • Pseudomembranous colitis • Toxic megacolon • Perforations of the colon • Sepsis • Death 	<ul style="list-style-type: none"> • Ask if this could be <i>C. difficile</i> diarrhoea • Quickly identify patient deterioration • Stop all unnecessary antibiotics • If diagnosed, treat with metronidazole (oral or IV) or vancomycin (oral only) • Monitor fluid balance: correct dehydration • Monitor diarrhoea: stool chart • Monitor signs of escalating infection: rising CRP, renal failure, falling albumin, rising WBC, fever

No single measure is sufficient to prevent an outbreak. All measures should be followed consistently.²

1. Restrict use of certain antibiotics
2. Contact Precautions⁴
3. Hand hygiene
4. Enhanced environmental hygiene

Refer to

NSW Health

Infection Control Policy

(PD2007_036) at

<http://www.health.nsw.gov.au/policies/pd/2007/>

[PD2007_036.html](http://www.health.nsw.gov.au/policies/pd/2007/PD2007_036.html)

References

1. Cohen SH, Gerding DN, Johnson S et al. Clinical Practice Guidelines for *Clostridium difficile* Infection in Adults: 2010 Update by the Society for Healthcare Epidemiology of America (SHEA) and the Infectious Diseases Society of America (IDSA). Infection Control and Hospital Epidemiology 2010;31(5):431-455.
2. Health Protection Agency Good Practice Guide to control *Clostridium difficile*, January 2007
3. National Therapeutic Guidelines : Antibiotics (CIAP at <http://proxy9.use.hcn.com.au/>)
- 4 NSW Health Infection Control Policy (PD2007_036)
5. NSW Health Notification of Infectious Diseases under the Public Health Act 1991 (PD2006-014)

Antibiotic prescribing

- Comply with Therapeutic Guidelines: Antibiotic consistent with antimicrobial susceptibility results³
- Use minimum durations of treatment and use the minimum number of agents required
- Avoid use of broad spectrum betalactam agents (including ceftriaxone, cefotaxime, cefepime, ceftazidime, ticarcillin/clavulanate, piperacillin/tazobactam and meropenem), fluoroquinolones (including norfloxacin, ciprofloxacin and moxifloxacin) and lincosamides (including clindamycin and lincomycin)
- Restrict prescription of IV antibiotics to indications specified in the Therapeutic Guidelines: Antibiotic³
- Always specify a stop or review date for every antibiotic course
- Use single dose surgical prophylaxis wherever possible as per Therapeutic Guidelines³

Infection prevention and control

Contact Precautions⁴

C. difficile is spread in faeces, which can cause widespread environmental contamination. A patient with diarrhoea, their equipment (eg. commodes, rectal thermometer) and near environment are contaminated with *C. difficile* bacteria and spores. These can then be transferred to other patients mainly via the equipment; or hands or clothing of healthcare staff who have touched the patient or a contaminated surface.¹

- Isolate patients in a single room with ensuite or dedicated commode/bed pan
- Maintain Contact Precautions for patient care until > 48 hours after last diarrhoeal stool
- Gloves—put on gloves and other personal protective equipment prior to room entry. When removing gloves, take care not to contaminate hands (refer to Hand Hygiene)
- Use gown or apron made of impervious material. The choice will depend on the extent of contamination anticipated
- If wearing an apron, ensure that arms below the elbow are bare of wrist watch, rings or clothing

Hand Hygiene

- As in NSW Health policy, perform hand hygiene in accordance with the 5 Moments of Hand Hygiene
- Use alcohol based hand rub or soap and running water for Moments 1 and 2 (before patient contact) prior to putting on personal protective equipment
- **Use soap and running water for Moments 3, 4 and 5 (after patient/environment contact) after removal of personal protective equipment. Alcohol based hand rub cannot kill bacterial spores**
- Patients and visitors require education about correct hand hygiene practice, particularly performing hand hygiene with soap and water after toileting

Environmental Hygiene

- **Follow specific advice from your Infection Control Professional**
- Disinfect surfaces, including commodes and toilets with a chlorine-based disinfectant (1 in 1000 hypochlorite solution in cold water)
- Clean and disinfect reusable equipment before the next patient. Where possible dedicate such equipment for each patient. Disinfect or discard at patient transfer or when Contact Precautions cease (refer to Contact Precautions)
- Maintain enhanced levels of environmental hygiene within the endoscopy service and comply with requirements for reprocessing of endoscopes

Notifiable disease⁵

Gastroenteritis among people of any age, in an institution (eg. among persons in healthcare, educational or residential facilities) is a notifiable disease under the Public Health Act 1991