Why is there an increased focus on Clostridium difficile infection (CDI)?

Clostridium difficile is the most commonly recognised cause of infectious diarrhoea in hospitalised patients. In the United States, Clostridium difficile now rivals methicillin-resistant Staphylococcus aureus (MRSA) as the most common healthcare-associated infection (HAI), accounting for $3.2 billion in excess costs annually.\(^1\)

Since 2000, there has been an increase in the rates of Clostridium difficile infection (CDI) in many healthcare facilities in the United States, Canada and Europe that has been associated with an epidemic strain of Clostridium difficile. This strain (PCR ribotype 027) has recently been identified in Australia\(^1\).

Between 2010 (when the first local transmission of an epidemic strain of Clostridium difficile was confirmed in Victoria) and late 2011, surveillance indicated that CDI in Queensland remained at a stable, low rate. However since October 2011 an increase in CDI in Queensland Health facilities has been detected through surveillance using pathology results. This increase has also been observed in other jurisdictions in Australia.

A renewed focus on CDI at a jurisdictional and local level will ensure Queensland is well placed to monitor and prevent further increases in CDI. CHRISP is also working with other jurisdictions and the Australian Commission on Safety and Quality in Healthcare to strengthen national surveillance and prevention efforts.

Surveillance

CDI is an important healthcare associated infection. Given its significance, healthcare facilities should have in place reliable surveillance programs to detect patients with CDI, identify outbreaks, monitor trends and evaluate interventions aimed at reducing incidence.

Facilities should monitor and categorise all CDI cases as per the Australian Commission on Safety and Quality in Healthcare: Implementation Guide for Surveillance of Clostridium difficile Infection as per the following categories:

- Health Care Associated - Health care facility onset
- Health Care Associated, community onset
- Community Associated.

Antimicrobial Stewardship

Clostridium difficile infection and colonisation is almost always associated with and triggered by the use of antibiotics, especially if inappropriate, excessive or prolonged. However, cases have been associated even with the appropriate use of a single perioperative antibiotic dose for surgical wound prophylaxis. Local antimicrobial stewardship guidelines for prudent antibiotic prescribing to ensure appropriate use of antibiotics should be adhered to. In general, beta-lactams (for example, cephalosporins or amoxicillin), lincosamides (clindamycin or lincomycin) and fluoroquinolones are regarded as antibiotics which provide highest risk for CDI. However, all antibiotic types have been implicated.
Mild-moderate cases of CDI are treated with orally administered metronidazole while severe cases are treated with orally administered vancomycin and intravenous metronidazole. Colectomy is sometimes required for toxic megacolon. There is no established benefit of intravenous immunoglobulin for CDI and its use is not recommended.

**Key Management Strategies**

**Diagnosis:** Clinicians shall suspect and test for CDI in all hospitalised patients with diarrhoea, and in all patients who present with diarrhoea after antibiotic therapy.7

The following measures should facilitate early diagnosis:

- Stool specimens shall be obtained from patients in or admitted to healthcare settings as soon as possible after the onset of diarrhoea (routine testing of asymptomatic patients is not recommended)

- Laboratory testing for *Clostridium difficile* toxins should only be performed on diarrhoeal stool specimens (defined as a faecal specimen that conforms to the shape of its container1)

- All specimens must either be sent immediately to the laboratory or kept refrigerated until processed. Children under 2 years of age are commonly asymptomatic carriers of *Clostridium difficile* therefore generally it is not advisable to test for CDI unless clinically indicated2,6

- The following may also be used to diagnose *Clostridium difficile*:
  - Pseudomembranous colitis seen during endoscopic examination or surgery
  - Pseudomembranous colitis seen during histopathological examination.1,5

- It is advisable that a faecal specimen is sent for CDI testing if pseudomembranous colitis is seen during sigmoidoscopy, colonoscopy, surgery or colonic histopathology.5

**Isolation:** Patients shall be placed in a single room with an ensuite or cohorted with other CDI patients whilst awaiting microbiologic confirmation.6 These precautions can be stopped when the patient ceases to have diarrhoea for at least 48hrs and is passing formed stools.2,6 Where possible, patients shall have dedicated toileting facilities (private bathroom or individual commode chair)1,6.

**Hand Hygiene:** Hand hygiene should be performed with liquid soap and water after having contact with the patient or the environment1,2,4.

**Personal Protective Equipment:** Staff should use aprons when performing a procedure or episode of care. Long sleeve gowns should be worn when performing patient care activities involving extensive patient contact. Gloves are to be worn at all times.

**Cleaning:** The process for cleaning equipment and the environmental shall be a one-step process using a combined detergent and disinfectant containing 1000 parts per million (ppm) available chlorine2,3 when diluted as per the manufacturer’s recommendations.

**Managing increases in CDI and possible transmission**

All hospitals should review surveillance data on a monthly basis to see if there has been an increase in cases; or any transmission between cases. Smaller facilities that do not normally get any cases of CDI, should consider one case significant.

A clinical response plan should be developed to review and identify deteriorations in systems causing an increase in cases, and implement appropriate interventions to ensure patient safety. An assessment of the risk should be performed using the Risk Analysis Matrix (refer to the Queensland Health Implementation Standard for Use of the Risk Analysis Matrix).
References:


