



## Microorganism

- **Clostridioides difficile** (formerly *Clostridium difficile*), a Gram-positive, spore-forming bacillus.
- *C. difficile* is one of the leading causes of diarrhea in hospitalized or outpatient individuals who have received or recently received antibiotic therapy.
- **Only toxigenic strains that produce toxins A and B are pathogenic.**

## Infection or Asymptomatic Carriage?

Asymptomatic carriage is common	<i>C. difficile</i> testing should not be performed in
<ul style="list-style-type: none"> <li>• Less than 3% in the general population</li> <li>• Up to 30% in hospitalized patients</li> <li>• Up to 50% in children under 1 year of age</li> <li>• Up to 25% following a <i>C. difficile</i> infection</li> </ul>	<ul style="list-style-type: none"> <li>• Children under 3 years of age</li> <li>• Asymptomatic individuals</li> <li>• Patients who have clinically recovered from a <i>C. difficile</i> infection</li> </ul>

## Manifestations

Typical form	Severe form ( $\geq 1$ criteria)	Possible complications
<ul style="list-style-type: none"> <li>• Profuse, watery diarrhea</li> </ul>	<ul style="list-style-type: none"> <li>• Fever <math>&gt; 38,5^{\circ}\text{C}</math></li> <li>• Leukocytes <math>&gt; 15 \times 10^9/\text{L}</math></li> <li>• Créatinine <math>&gt; 50\%</math> above baseline</li> <li>• Imaging findings: colonic distension, colonic wall thickening, or pericolic fat stranding</li> </ul>	<ul style="list-style-type: none"> <li>• Toxic megacolon</li> <li>• Gastrointestinal perforation</li> <li>• Ileus</li> <li>• Septic shock</li> <li>• Arterial hypotension</li> </ul>

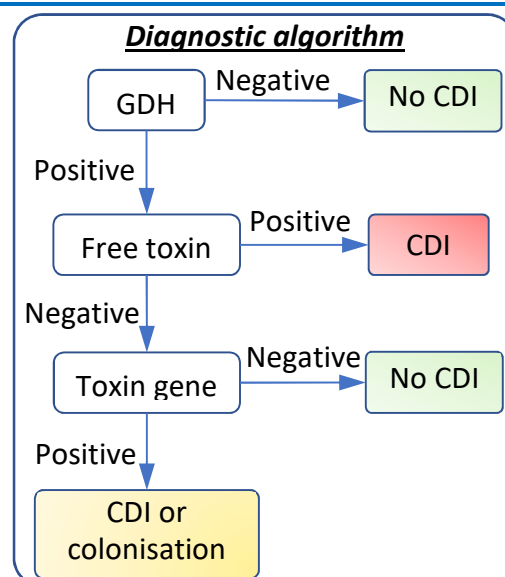
## Risk Factors for Clostridioides difficile Infection (CDI) and Recurrence

- Antibiotic use within the past 3 months or continuation of antibiotics following a CDI episode
- Age  $> 65$  years
- Recent hospitalization within the past 3 months or prolonged hospital stay
- History of *C. difficile* infection
- Use of proton pump inhibitors
- Comorbidities such as malignancy, immunosuppression, or renal failure

## Diagnostic

Diagnosis is based on microbiological testing

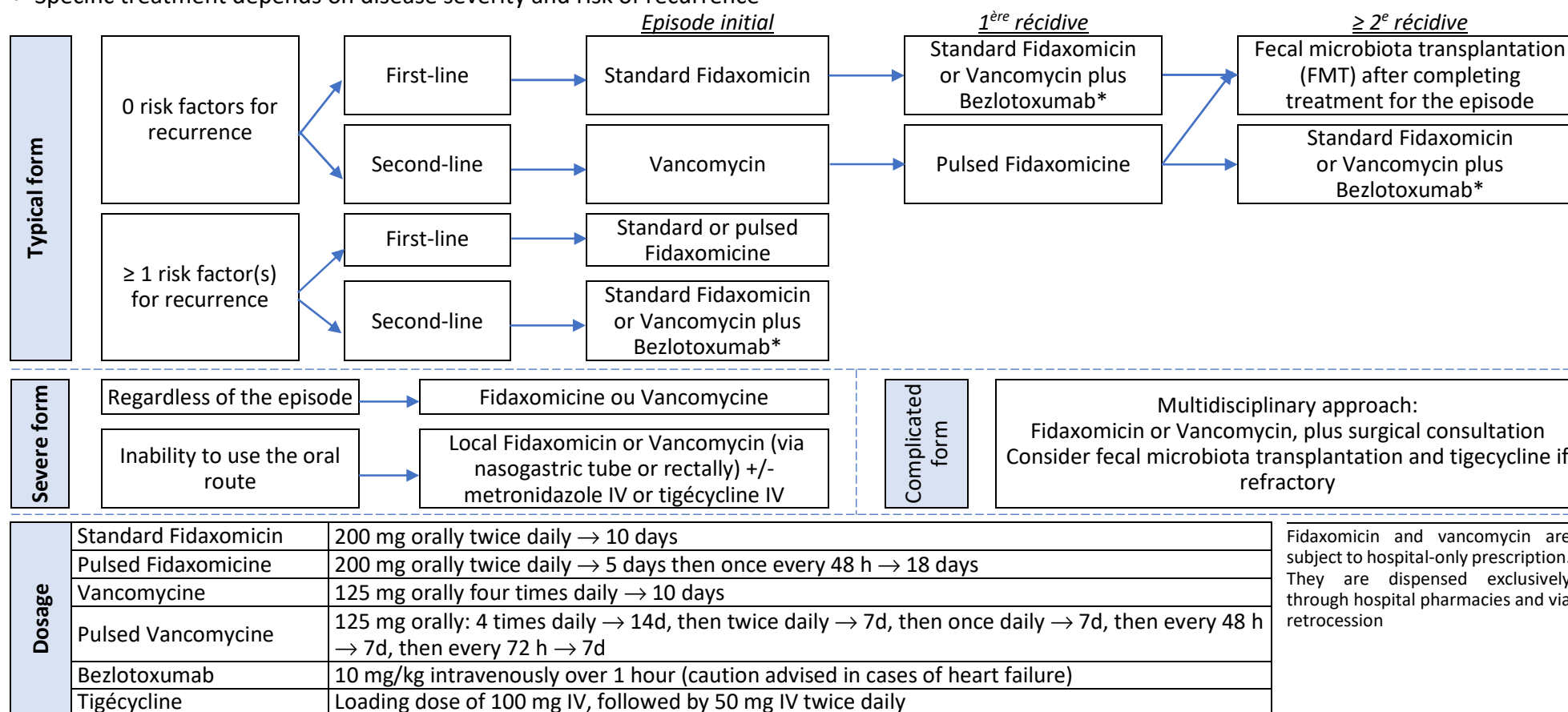
- Performed on **diarrheic stool samples (taking the shape of the container)**
- To detect the following:
  - **Glutamate dehydrogenase (GDH):** an enzyme specific to *C. difficile*, indicating the presence of the bacterium
  - **Free *C. difficile* toxin**, via rapid test or immunoassay: indicates a toxigenic strain and confirms active CDI
  - **Toxin gene by PCR:** detects the presence of the gene encoding the toxins, indicating a toxigenic strain, but does not confirm actual toxin production, or may reflect low-level expression
- Culture is not routinely performed due to its low sensitivity and prolonged turnaround time





## Treatment (2021 ESCMID European Guidelines)

- Discontinue predisposing factors when possible: antibiotics, proton pump inhibitors
- Symptomatic treatment: rehydration
- Contraindicated: antiperistaltic agents (e.g., loperamide)
- Metronidazole is no longer recommended for the treatment of CDI, except in cases where fidaxomicin and vancomycin are unavailable or contraindicated
- Specific treatment depends on disease severity and risk of recurrence



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## Assessment of Treatment Efficacy

- Evaluation of therapeutic response should be based solely on clinical criteria
- **Symptomatic improvement may be gradual and can take up to 72 hours**
- **Routine microbiological testing for *Clostridioides difficile* is not recommended for follow-up, as asymptomatic carriage is common post-infection**

## Precautionary measures

- The ability of *Clostridioides difficile* to form spores confers:
  - Resistance to standard disinfectants
  - Resistance to alcohol-based hand sanitizers
  - The capacity to persist in the environment, thereby facilitating transmission
- The following precautions are recommended:

In the hospital setting	Home Management
<ul style="list-style-type: none"> <li>- Précautions complémentaires contact</li> <li>- Implementation of contact precautions</li> <li>- Single-patient room placement</li> <li>- Hand hygiene using soap and water, followed by alcohol-based hand rub</li> <li>- Use of personal protective equipment (e.g., gown, gloves)</li> <li>- Enhanced environmental cleaning with sporicidal agents</li> <li>- Specific management and disposal of excreta</li> </ul>	<ul style="list-style-type: none"> <li>- Reinforcement of proper hand hygiene practices</li> <li>- No need for isolation measures</li> <li>- Recommendation to seek medical attention if diarrhea recurs</li> </ul>