



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"> • Less than 3% in the general population • Up to 30% in hospitalized patients • Up to 50% in children under 1 year of age • Up to 25% following a <i>C. difficile</i> infection 	<ul style="list-style-type: none"> • Children under 3 years of age • Asymptomatic individuals • Patients who have clinically recovered from a <i>C. difficile</i> infection

Manifestations

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

Risk Factors for Clostridioides difficile Infection (CDI) and Recurrence

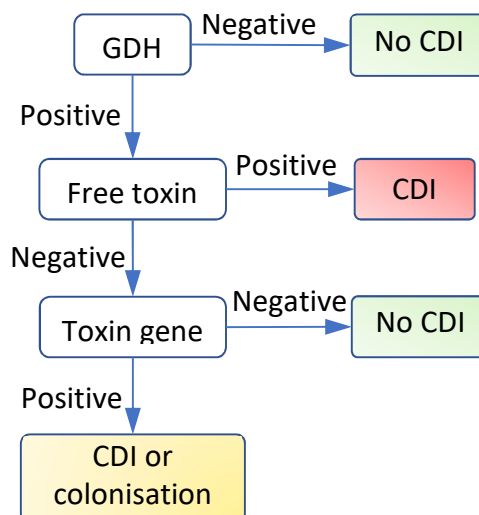
- Antibiotic use within the past 3 months or continuation of antibiotics following a CDI episode
- Age > 65 years
- Recent hospitalization within the past 3 months or prolonged hospital stay
- History of *C. difficile* infection
- Use of proton pump inhibitors
- Comorbidities such as malignancy, immunosuppression,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

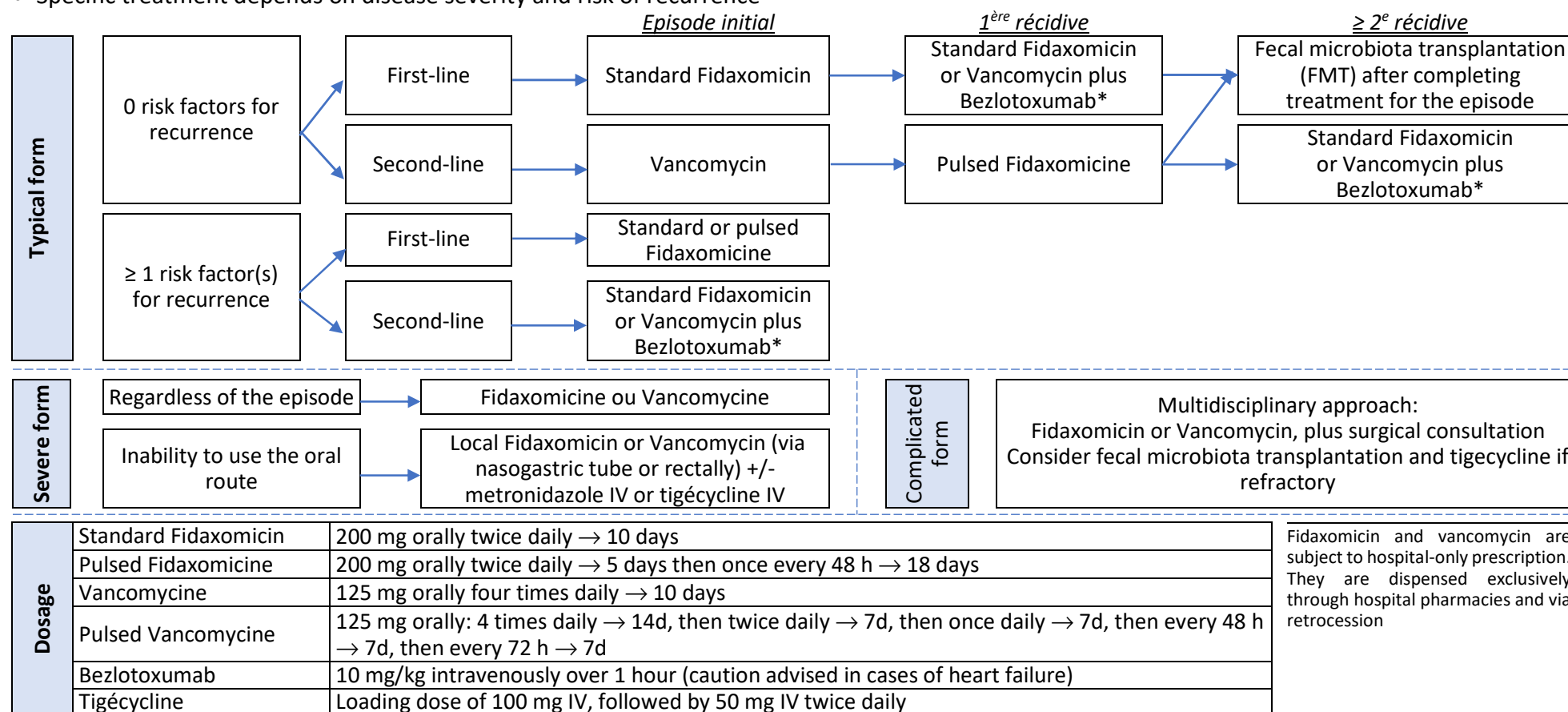
Diagnostic algorithm





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





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