ProMedica Laboratories

Test Update

ProMedica Laboratories moving to 2-Step *C. difficile* Algorithm Positive

Notification Date: 12/15/2025

Additional notification will occur in the next few weeks with a go-live date of this reflex test change.

Overview

The clinical microbiology laboratory is implementing a two-step testing algorithm for *Clostridioides difficile* (*C. diff*). This approach provides more information by detecting both the gene of toxigenic *C. diff* (PCR) and the presence or absence of toxin produced by *C. diff*. (EIA).

Testing Workflow

- **Step 1: *C. diff* PCR**
  - Detects the **toxin gene (tcdB)**
  - Indicates the organism is present and capable of producing toxin.
- **Step 2: *C. diff* Toxin Test (Performed ONLY if PCR is positive)**
  - Detects **free toxin** in stool being produced by *C. diff*.

Both results are reported together when PCR is positive.

Result Interpretation

PCR Positive / Toxin Positive

- **What this means:**
  - Toxin gene present AND toxin detected (indicates *active toxin production)*.
  - Patients have higher likelihood of severe disease and recurrence.

- **Clinical Action:**
  - High likelihood of true CDI.
  - Note – High levels of toxin can be seen in asymptomatically colonized patients as well.
  - Treat based on clinical presentation and severity.

PCR Positive / Toxin Negative

- **What this means:**
  - Toxin gene present, but toxin not detected.
  - Represents either:
    - Colonization,
    - Toxin degradation in transport
    - Early or low-level toxin production, or
    - Intermittent toxin expression.

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- **Important Note:**
    - **A negative toxin result does NOT rule out *C. difficile* infection.**
    - **Clinical presentation should determine if patients have true CDI.**
    - **PCR +/toxin - CDI cases have similar rates of CDI complications (except severe CDI and recurrence rates) to PCR+/toxin+ patients.**

- **Clinical Action:**
    - Evaluate symptoms, stool frequency, leukocytosis, creatinine, and risk factors.
    - Treat ONLY if clinical picture supports CDI.
    - Avoid treating asymptomatic colonization.

PCR Negative

- **What this means:**
    - No toxin gene detected.
    - CDI is unlikely.
- **Clinical Action:**
    - Seek alternative causes for diarrhea.
    - Repeat testing is **not recommended** unless new, high-risk symptoms develop.

Key Clinical Considerations

- Test only **unformed stool** from symptomatic patients (≥3 loose stools in 24 hours).
- **Do not test for cure**; PCR can remain positive for weeks.
- Avoid testing patients on laxatives.
- Do not test patients under the age of one (per IDSA guidelines).
- Consider infection prevention measures for PCR-positive patients per facility policy.

Reference:

Tansarli GS, Falagas ME, Fang FC. 2025. Clinical significance of toxin EIA positivity in patients with suspected *Clostridioides difficile* infection: systematic review and meta-analysis. J Clin Microbiol 63: e00977-24. https://doi.org/10.1128/jcm.00977-24