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Leaders in Laboratory Medicine

Laboratory Bulletin

DATE:	21 July 2025
TO:	Providers in Edmonton Health Zone and at Non-Acute Care Sites in Central and North Zones
FROM:	Alberta Precision Laboratories
RE:	**REVISED: Testing for *C. difficile***

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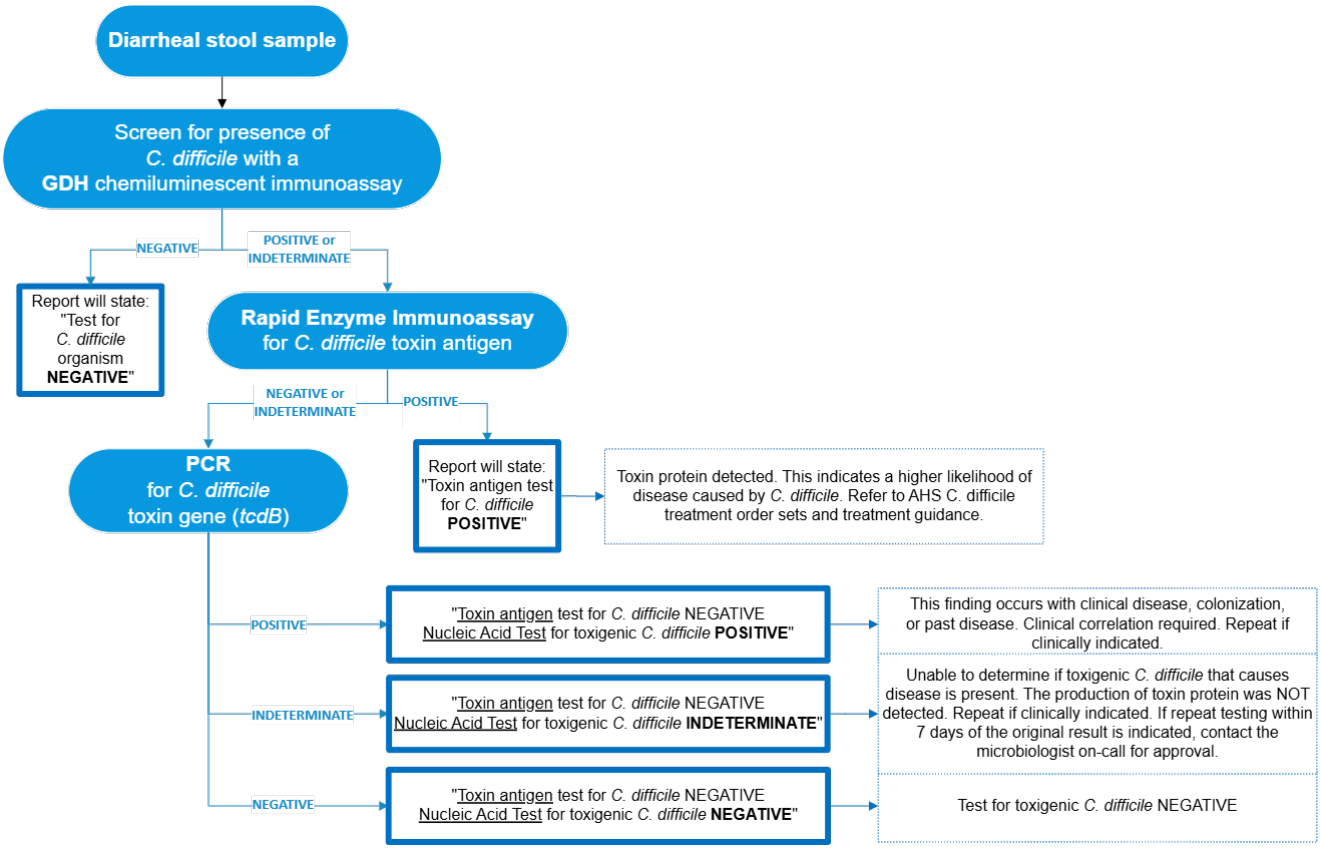
Key Message

- Effective July 22, 2025, *Clostridioides difficile* testing algorithm performed in the Edmonton APL Base Lab will be modified from a polymerase chain reaction (PCR)-based to a GDH (Glutamate dehydrogenase) chemiluminescent immunoassay-based screening algorithm with similar analytical performance (see diagram below):



- Clinical management remains unchanged and is to be guided by the patient's symptomatology and by the pre- and post-test probability of the patient having *C. difficile* colitis.

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Background

- The shift from a PCR-based to a GDH chemiluminescent immunoassay-based screening algorithm was driven by a provincial standardization initiative aimed to align *C. difficile* test methodologies between Edmonton and Calgary hub labs while finding cost efficiencies simultaneously.
- A positive test for *C. difficile* toxin in symptomatic patients generally confirms the diagnosis of *C. difficile* infection (CDI) as the presence of *C. difficile* toxin antigen indicates a higher likelihood of disease with a clinical specificity well above 90%.
- In the absence of *C. difficile* toxin antigen (as determined by the rapid enzyme immunoassay in leg 2 of the algorithm), detection of *C. difficile* toxin gene (*tcdB*) by nucleic acid amplification testing in the last leg of the algorithm may indicate clinical disease, colonization, or past disease. Clinical correlation is advised. Repeat this test after 7 days if clinically indicated.
- As with any test, false positive or false negative results may occur. Clinical correlation is advised.

Action Required

- Submit liquid/loose stool in a sterile container with no preservative/media as before. Stool must conform to the shape of the container. Formed stool will not be accepted for this test. For more collection information, please refer to the APL Test Directory.
- Repeat collection (“test of cure”) is not required. Infection control measures are based on clinical diarrheal symptoms.
- Do not test patients 2-years-old or younger as they are unlikely to get CDI.
- Do not repeat testing within 7 days of a prior test.
- If a patient develops new or worsening diarrhea, and there is a strong suspicion of a new CDI, repeat testing may be considered within 7 days of a negative result after proper consultation with the Microbiologist on call.

Questions/ Concerns

- For questions about ordering, collection, test selection, and interpretation contact the microbiologist on- call. For general program inquiries contact:
    - Dr. M.C. Lee, Microbiologist, Edmonton Base Laboratory, APL Mao-Cheng.Lee@aplabs.ca
    - Dr. Robert Verity, Microbiology Site Lead, Edmonton Base Laboratory, APL Robert.Verity@aplabs.ca

Approved by

- Dr. Erene Farag, Associate Medical Director, Edmonton Base Lab
- Dr. Carolyn O’Hara, Interim Chief Medical Laboratory Officer, APL