

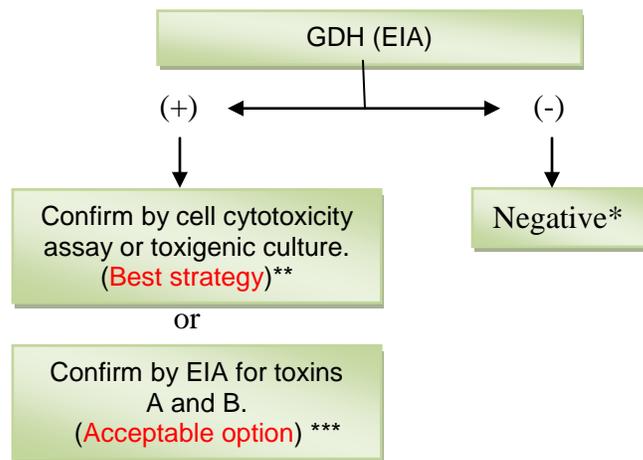
Algorithm for the diagnosis of *Clostridium difficile* infection (CDI)

This article has the intention of summarizing the current recommendations by the SHEA and IDSA regarding laboratory diagnosis of *Clostridium difficile* infection. Further discussion on the strategy will be presented in an upcoming issue of Connections.

Documenting *C. difficile* disease has become a high profile issue because of the increasing awareness of *C. difficile* as both an institutional infection control and as a community based problem. The Society for Healthcare Epidemiology of America (SHEA) and the Infectious Diseases Society of America (IDSA) have recently developed new consensus guidelines¹ which include testing recommendations.

These guidelines recommend a two step strategy to diagnose CDI in the clinical laboratory.

TESTING STRATEGY ALGORITHM



The IDSA and SHEA stress that there is currently no testing strategy with optimal sensitivity and specificity so this approach remains an interim recommendation.

Notes

*A stool sample negative for glutamate dehydrogenase (GDH) test is considered negative for the pathogen. Although most studies have shown a high negative predictive value for the GDH assay, some studies have questioned its sensitivity.

**The sensitivity of cytotoxin detection as a single test for the laboratory diagnosis of CDI is reported to range from 67% to 100%. Toxigenic culture is considered the most sensitive methodology, but it could take up to 9 days to obtain results.

***EIA tests to identify toxins are faster and easier to perform however, the sensitivity of these tests is suboptimal (63% - 94%) when compared with more time-intensive methodologies. Because toxin EIAs have suboptimal specificity, when used alone, the positive predictive value of the results can be unacceptably low.

PCR tests for toxigenic *C. difficile* are sensitive and specific but more data on utility are necessary before it can be recommended for routine testing.

TO TEST OR NOT TO TEST

To test: diarrheal (unformed) stool; may test formed stool if ileus due to *C.difficile* is suspected.

Not to test: asymptomatic patients, test of cure.

The guidelines also state that repeat testing during the same episode of diarrhea is of limited value and should be discouraged however, recognizing that with the poor sensitivity of many EIA kits for toxin detection, it is possible for patients with *C. difficile* associated diarrhea to not be confirmed (false negative result). In that situation, it may be reasonable to consider a single repeat test.

1. Cohen S, Gerding D, Johnson S, et al. Clinical practice guidelines for *Clostridium difficile* infection in adults: 2010 update by the society for healthcare epidemiology of America (SHEA) and the infectious diseases society of America (IDSA). *Infection Control and Hospital Epidemiology*. 2010;31:431-455.