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C. Diff Diagnosis & Prevention System Clinical Advisory

Introduction

This advisory for the diagnosis and prevention of Clostridium difficile Infection (CDI) was developed jointly by Infection Prevention, nursing leadership and physician partners, and the MLH process improvement team. Multiple sources were used, including expert opinion, Centers for Disease Control and Prevention, and Clinical Practice Guidelines for Clostridium difficile Infection in Adults and Children: 2017 Update by the Infectious Diseases Society of America (IDSA) and Society for Healthcare Epidemiology of America (SHEA).

► KEY POINTS

- ***C. diff colonization vs. CDI:*** a positive PCR test does not necessarily mean that a patient has a *C. diff* colitis infection. A more severe case of *C. diff* may include T >38.5°C; WBC ≥15K, Cr 1.5
- *C. diff* testing should only be performed on patients with **clinically significant diarrhea** as defined by new-onset ≥3 unformed stools (Bristol stool chart ≥5) in 24 hours
- Do not test patients **taking laxatives** 48h prior
- Follow up testing on a treated patient as **a test of cure should not be performed**
- Perform hand hygiene with soap and water before and after contact of a patient with CDI
- All patients with CDI receive routine UV room disinfection

Goals

- Reduce CDI by 25% from prior Quality Year
- Appropriately test patients for *C. diff*
- Prevent spread of *C. diff* by optimizing infection prevention practices

C. Diff Process Measures

1) *C. diff* tests per 100 patient days
2) *C. diff* orders if patient has < 3 unformed stools in 24 hours
3) *C. diff* testing on patients taking laxatives or stool softeners < 48h

► WHY FOCUS

- *C. diff* Infection (CDI) is the **most common healthcare-associated infection.** (IDSA)
  - 29,300 deaths attributed to CDI in 2011
  - From 2001 to 2012 CDI increased 43% (Annals)
  - During the same time, multiply recurrent *C. diff* increased 189% (CDC)
- In the United States, *C. diff* causes nearly **half a million** infections a year and 15,000 deaths per year, costing **over $1 billion** in excess medical costs per year. (CDC)
- Direct and indirect evidence suggests **overdiagnosis of CDI**. Stanford screened 5,934 adults with unformed stools for CDI using PCR, and found 785 (13%) with positive results. However, only 210 of these patients had clinically significant diarrhea (≥3 unformed stools in 24hr), and half of those had received laxatives in the preceding 48hrs. (NEJM)
- Over 12 months across MLHS, there were **2,227 *C. diff* toxin tests**, many of which were unnecessary.

Key Interventions

Testing

- ***C. diff* colonization vs. CDI**: a positive PCR test does not necessarily mean that a patient has a *C. diff* colitis infection. A more severe case of *C. diff* may include T >38.5°C; WBC ≥15K, Cr 1.5

Recommended

- Perform testing patients with unexplained and new-onset ≥3 unformed stools in 24 hours (a)
- Stool sample should be liquid enough to take the shape of container (Bristol stool chart ≥5) (b)
- Cancel orders if no evidence of diarrhea

Not Recommended

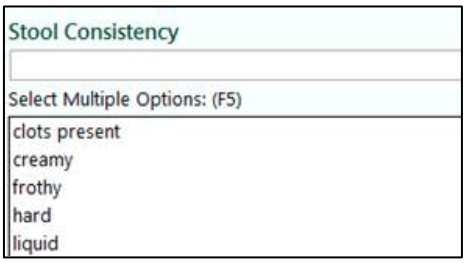
- Testing for *C. diff* if patient only has 1 or 2 loose stools
- Testing on patients taking laxatives or stool softeners 48h prior
- Follow up testing on a treated patient as a test of cure
- Repeat testing to confirm cure if symptoms have resolved

Prevention (c)

- Use gloves on entry to room of a patient with CDI
- Perform hand hygiene with soap and water before and after contact of a patient with CDI
- Patients with suspected CDI should be placed on preemptive special contact precautions pending the *C. diff* test results
- Continue special precautions through the hospital stay. If a patient has an extended hospital admission and diarrhea has resolved, reach out to your Infection Prevention team for guidance

Epic Stool Documentation

- RNs/PCTs must document the stool consistency for each BM in the Patient Care Summary
- This documentation is needed to assess the indications for ordering *C. diff* testing
- Each episode of diarrhea must be documented



Antibiotics and Risk of *C. difficile* Infection (CDI)

High Risk	Medium Risk	Low Risk
• Clindamycin • 2nd - 4th Generation Cephalosporins • Fluoroquinolones • Carbapenems	• Macrolides • Penicillins • TMP/sulfamethoxazole • 1st Generation Cephalosporins	• Aminoglycosides • Tetracyclines

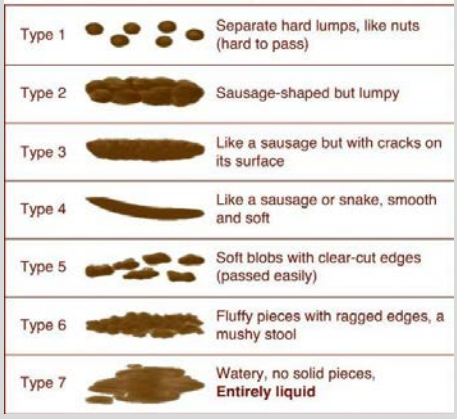
NOTE: Essentially every abx class has been associated with the risk of developing CDI.

Intervention Notes

a) Exceptions to this general recommendation include patients with one liquid stool and:

- Admitted to Critical Care units
- Hemodynamically unstable
- Evolving Ileus
- Severe abdominal pain
- CDI in past 9 months

b) Bristol Stool Chart



c) Disinfection guidelines:

- Use bleach sanicloths in place of purple top sanicloths
- All *C. diff* rooms receive routine UV room disinfection on both transfer and discharge

References

CDC — Centers for Disease Control and Prevention. Antibiotic/ Antimicrobial Resistance Biggest Threats.

IDSA — McDonald, L. et al. 2018. Clinical Practice Guidelines for *Clostridium difficile* Infection in Adults and Children: 2017 Update by IDSA and SHEA.

NEJM — Lessa et al. Burden of *Clostridium difficile* Infection in the United States. February 2015 and Letters to the Editor by Banaei and Anikst.

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