HRET HIIN
MEASUREMENT MATTERS:
Ground-breaking CDI Practices with Flowers Hospital in Alabama

June 5, 2018
12:00 p.m. – 1:00 p.m. CT
WELCOME AND INTRODUCTIONS

Lydie Marc, MPH, CHES
Program Manager, HRET
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<th>Time</th>
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| 12:00-12:05 p.m.| Welcome and Introductions                                 | Lydie Marc, MPH, CHES  
Program Manager, HRET |
| 12:05-12:15 p.m.| HRET HIIN CDI Education Strategy                          | Barb DeBaun, RN, MSN, CIC  
Improvement Advisor, Cynosure  
Steve Tremain, M.D., FACPE  
Improvement Advisor, Cynosure |
| 12:15-12:45 p.m.| CDI Practices from Flowers Hospital in Alabama            | Darla Silaurent, RN, BSN, CIC  
Director if Infection Control, Flowers Hospital  
Amy Butler, RN, BSN, CPHRM  
Chief Quality Officer, Flowers Hospital |
| 12:45-12:55 p.m.| You have questions? We have answers!                      | Presenters and Facilitators                                               |
| 12:55-1:00 p.m. | Bring it Home                                              | Lydie Marc, MPH, CHES  
Program Manager, HRET |
HRET HIIN CDI EDUCATION STRATEGY

Barb DeBaun, RN, MSN, CIC
Steve Tremain, M.D., FACPE
Improvement Advisors, Cynosure
Polling Question

My Primary role is:

a. Infection Prevention
b. Direct patient care provider
c. Physician/PA/NP
d. Clinical Laboratory
e. Pharmacy
f. Quality Leader
g. Other (type in chat box)
HRET HIIN CDI Education Strategy

Diagnostic Stewardship

Lab Stewardship
Flowers Hospital CDI Practices

Presenters:
Darla Silavent, RN, BSN, CIC
Director of Infection Control

Amy Butler, RN, BSN, CPHRM
Chief Quality Officer
Flowers Hospital

- 235 bed Community hospital
- 1,300 Employees
- 70 Adult and Teen Volunteers
- 400 Medical Staff members
- 11,700 Admissions, annually
- 1,300 Births, annually
- 46,800 ER visits, annually
- 20,600 Surgery cases, annually
  - 5,600 inpatient
  - 15,000 outpatient
- 50,400 Patient Days, annually
Objectives

• Describe the preferred population for *C. difficile* testing
• Discuss the most sensitive method of diagnosis of CDI based on clinical symptoms
• Identify three infection control and prevention strategies
• List two processes to improve timely identification
**Clostridium difficile**

**DEADLY DIARRHEA:**

**C. DIFFICILE CAUSES IMMENSE SUFFERING, DEATH**

**IMPACT**

- 500,000: Caused close to half a million illnesses in 1 year
- Comes back in less than 1 in 5 patients who get C. difficile
- Caused 14,800 deaths in one year
- For people over 65, 1 in 11 died of a healthcare-associated C. difficile infection after receiving a diagnosis with C. difficile

**RISK**

- People on antibiotics are 7-36 times more likely to get C. difficile in the 30 days after taking the medicine
- Being in healthcare settings, especially hospitals or nursing homes
- More than 90% of C. difficile deaths occurred in people 65 and older

**SPREAD**

- Touching a soiled surface, especially those in healthcare settings, contaminated with feces from a infected person
- Dirty hands
- Failing to properly wash hands when transferring patient with C. difficile

**PREVENT**

- Improve prescribing of antibiotics
- Use best tests for accurate results to prevent spread
- Rapidly identify and isolate patients with C. difficile
- Wear gowns and gowns when treating patients with C. difficile. Remember that antiseptic sanitizer doesn’t kill C. difficile
- Clean room surfaces with EPA-approved, sporicidal disinfectants (such as bleach), where C. difficile patients are treated

A Mode of Transmission

**George, 68 y/o**
Diagnosed with pneumonia. Prescribed antibiotics, drugs that put him at risk for *C. difficile* infection for several months.

**Source:** CDC, 2012

**Two days Later**
George transfers to a rehab facility for his leg and gets diarrhea. He is not tested for *C. diff*. The HCW doesn't wear gloves and infects other patients.

**One Month Later**
George breaks his leg and goes to a hospital. A HCW spreads *C. diff* to him after forgetting to wear gloves when treating a *C. diff* infected patient in the next room.

**Three days Later**
George goes back to the hospital for treatment of diarrhea and tests positive for *C. diff*. He is started on specific antibiotics to treat it. HCW wear gloves and a gown and do not spread *C. diff*. George recovers.

**Gown too!!**

**Source:** CDC, 2012
How does determining a HAI GI-CDI case differ from a CDI LabID event?

- These are two very different CDI event reporting methods that are each governed by different sets of rules and date timeframes.
- CDI LabID Event Reporting is based strictly on the number of hospital days between the specimen collection date and the date the patient is admitted to the facility. Facility admission date is considered Day 1. There is no consideration for clinical presentation.
- $\leq 3$ days = community-onset (CO)
- $\leq 3$ days but patient had prior discharge from the reporting facility in the previous 4 weeks = community-onset healthcare facility-associated (CO-HCFA)
- $\geq 4$ days = healthcare facility-onset (HO)

https://www.cdc.gov/nhsn/faqs/faq-mdro-cdi.html#q14
Look Good...or Be Good?
Polling Question

For this quarter, what is the primary testing method for *C. difficile* used most often by your facility’s laboratory or the outside laboratory where your facility’s testing is performed?

a) Enzyme immunoassay (EIA) for toxin
b) Cell cytotoxicity neutralization assay
c) Nucleic acid amplification test (NAAT) e.g., PCR
d) NAAT plus EIA, if NAAT positive (2-step algorithm)
e) Glutamate dehydrogenase (GDH) antigen plus EIA for toxin (2-step algorithm)
f) GDH plus NAAT (2-step algorithm)
g) GDH plus EIA for toxin, followed by NAAT for discrepant results
h) Toxigenic culture
i) Other (specify in chat box)
j) I don’t know
Our Personal Story

- 1st Quarter vs. 4th Quarter

\[ \begin{array}{c|c|c}
\text{Year} & \text{SIR} & \text{Uncollected List} \\
\hline
2015 & 0.982 & 0.284 \\
2016 & 0.651 & 0.298 \\
2017 & 1.044 & 0.482 \\
2018 & 0.467 & 0.182 \\
\end{array} \]

\( p \text{ value} < 0.05 \)

We're not sure

Diarrhea Decision Tree 1st QTR 16

Uncollected List 1st QTR 16

2 Step testing method 10/2017
There was a Decrease

- **YTD SIR**

![Graph showing YTD SIR from 2015 to 2018 with values 0.748, 0.458, 0.851, and 0.482]
Polling Question

In the last month, I have conducted the following in the laboratory that processes our specimens:

a. Visited them in-person
b. Had a phone conversation
c. Email correspondence
d. None of the above...but it is a priority
Polling Question

Our laboratory rejects stool samples that do not meet our established criteria (e.g. conforms to shape of the container)

a. Yes
b. No
c. No, but we are working on it
• **Nursing role:**
  – Crucial
  – The gate keeper

• **Lab role:**
  – Crucial
  – The last check

*Important* question:

*Does LabID = Diagnosis?*
• **Physician role:**
  – Determine if CDI
  – Like any other diagnosis, consider
    • History
    • Exam
    • Lab results
  – Then determine if patient has CDI

*Only if determined to have CDI by the physician does treatment for CDI and consideration for isolation occur*
VI. What is the preferred population for *C. difficile* testing, and should efforts be made to achieve this target?

**Recommendation**

Patients with unexplained and new-onset ≥3 unformed stools in 24 hours are the preferred target population for testing for CDI (*weak recommendation, very low quality of evidence*)...
VIII. What is the most sensitive method of diagnosis of CDI in stool specimens from patients likely to have CDI based on clinical symptoms?

**Recommendation**

Use a NAAT alone or a multistep algorithm for testing (ie, GDH plus toxin; GDH plus toxin, arbitrated by NAAT; or NAAT plus toxin) rather than a toxin test alone when there are preagreed institutional criteria for patient stool submission (*weak recommendation, very low quality of evidence*).
Additional Concepts to Consider

• Preferred Population
  – Patients with unexplained and new-onset ≥3 unformed stools in 24 hours are the preferred target population

  BUT, shouldn’t the assessment findings include Fever, and Abdominal Pain?

  “Diarrhea” vs Multiple Stools – does the patient understand there is a difference?
Additional Concepts to Consider

• Most sensitive method of diagnosis of *C. difficile* in stool specimens
  – Use a NAAT alone or a multistep algorithm for testing
    BUT, NAAT alone works well if stool specimen is *ALWAYS* correct or *ALWAYS* rejected if incorrect – prevent false positives

  – Multistep algorithm for testing
    NAAT followed by Toxin - a screen followed by confirmation
Diagnosis must be based on clinical signs and symptoms in combination with laboratory tests
For more information, please contact:

dsilavent@flowershospital.com
References


HRET Resources

http://www.hret-hiin.org/topics/clostridium-difficile-infection.shtml
Thank you!