HRET HIIN
MEASUREMENT MATTERS:
NHSN CDI Surveillance
Definition Review

May 3, 2018
1:00 p.m. – 2:00 p.m. CT
WELCOME AND INTRODUCTIONS

Lydie Marc, MPH, CHES
Program Manager, HRET
**Agenda**

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00-1:05 p.m.</td>
<td>Welcome and Introductions</td>
<td>Lydie Marc, MPH, CHES</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Program Manager, HRET</td>
</tr>
<tr>
<td>1:05-1:15 p.m.</td>
<td>HRET HIIN CDI Education Strategy</td>
<td>Barb DeBaun, RN, MSN, CIC</td>
</tr>
<tr>
<td></td>
<td>Provide an overview of the HRET HIIN CDI education strategy. Topics</td>
<td>Improvement Advisor, Cynosure</td>
</tr>
<tr>
<td></td>
<td>include:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Diagnostic and Laboratory Stewardship</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• NHSN Data Submission</td>
<td></td>
</tr>
<tr>
<td>1:15-1:40 p.m.</td>
<td>NHSN <em>Clostridium difficile</em> (CDI) Module: Practical Approaches</td>
<td>Denise Leaptrot, MSA, SM/BSMT (ASCP), CIC</td>
</tr>
<tr>
<td></td>
<td>to LabID Event Reporting</td>
<td>MDRO/CDI Subject Matter Expert</td>
</tr>
<tr>
<td></td>
<td>Review the January 2018 CDC MDRO/CDI Module update. Share best</td>
<td>NHSN Protocol and Validation Team, CDC</td>
</tr>
<tr>
<td></td>
<td>practices to assist participants in adopting, implementing, and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>evaluating the guidelines that support the impact of targeted</td>
<td></td>
</tr>
<tr>
<td></td>
<td>prevention efforts.</td>
<td></td>
</tr>
<tr>
<td>1:40-1:55 p.m.</td>
<td>You have questions? We have answers!</td>
<td>Presenters and Facilitators</td>
</tr>
<tr>
<td></td>
<td>Open Line Question and Answers</td>
<td></td>
</tr>
<tr>
<td>1:55-2:00 p.m.</td>
<td>Bring it Home</td>
<td>Lydie Marc, MPH, CHES</td>
</tr>
<tr>
<td></td>
<td>Close today’s event with key learnings and share HRET HIIN CDI</td>
<td>Program Manager, HRET</td>
</tr>
<tr>
<td></td>
<td>resources</td>
<td></td>
</tr>
</tbody>
</table>
HRET HIIN CDI EDUCATION STRATEGY

Barb DeBaun, RN, MSN, CIC
Improvement Advisor, Cynosure
HRET HIIN CDI Education Strategy

Diagnostic Stewardship

Lab Stewardship
1. My Primary role is:
   a. Infection Prevention
   b. Clinical Laboratory
   c. Pharmacy
   d. Other (type in chat box)
2. We have a reliable process in place for rejecting stool specimens that are not appropriate
   a. Yes
   b. No
   c. No, but this is a priority
3. We test for C. difficile LabID events using:
   a. GDH antigen plus EIA for toxin
   b. GDH plus EIA for toxin, if results differ, follow by NAAT
   c. NAAT (PCR) if positive follow with EIA toxin
   d. NAAT (PCR) stand alone
   e. Other or not sure
4. We have an algorithm/decision tree to guide decisions about testing stool for *C. difficile*
   a. Yes
   b. No
NHSN Data Submission

• Data & Quality Improvement
• Using Data to Improve
• Tracking Safety Across the Board
NHSN *Clostridium difficile* (CDI) Module: Practical Approaches to LabID Event Reporting

Denise Leaptrot, MSA, SM/BSMT(ASCP), CIC®
MDRO/CDI Subject Matter Expert
NHSN Protocol and Validation Team
Centers for Disease Control and Prevention

May 3, 2018
The steps you take don’t need to be big ones, they just need to take you in the right direction.
Today’s Goals:

1. Understand *C. difficile* laboratory assay definition
2. Interpret *C. difficile* laboratory reports accurately
3. Confirm FacWideIN denominator entries are appropriate
## National Healthcare Safety Network (NHSN)

### Surveillance for C. difficile, MRSA, and other Drug-resistant Infections

- [Facebook](#)
- [Twitter](#)
- [Share](#)

**Resources for NHSN Users Already Enrolled**

- **Training**
- **Protocols**
- **Frequently Asked Questions**
- **Data Collection Forms**
- **MDRO & CDI LabID Event Calculator**
- **CMS Supporting Materials**
- **Supporting Material**
- **Analysis Resources**

### New Users - Start Enrollment Here

- Step 1: Enroll into NHSN
- Step 2: Set up NHSN
- Step 3: Report

[Click here to enroll](#)
Multidrug-Resistant Organism & *Clostridium difficile* Infection (MDRO/CDI) Module

Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Background</td>
<td>2</td>
</tr>
<tr>
<td>Table 1: Core and Supplemental Reporting Choices for MDRO and CDI Module</td>
<td>3</td>
</tr>
<tr>
<td><strong>Section I: Core Reporting</strong></td>
<td>6</td>
</tr>
<tr>
<td>Option 1: Laboratory-Identified (LabID) Event Reporting</td>
<td>6</td>
</tr>
<tr>
<td>1A: MDRO LabID Event Reporting</td>
<td>7</td>
</tr>
<tr>
<td>Table 2: Reporting Options for the MDRO Module</td>
<td>9</td>
</tr>
<tr>
<td>1B: <em>Clostridium difficile</em> (<em>C. difficile</em>) LabID Event Reporting</td>
<td>19</td>
</tr>
<tr>
<td>Table 3: Reporting Options for the CDI Module</td>
<td>19</td>
</tr>
<tr>
<td>Table 4: Measures Delivered to CMS For Facilities Participating in Quality Reporting Programs: MRSA Bloodstream Infection and <em>C. difficile</em> LabID Events</td>
<td>29</td>
</tr>
<tr>
<td>Option 2: Infection Surveillance Reporting</td>
<td>30</td>
</tr>
<tr>
<td>2A: MDRO Infection Surveillance Reporting</td>
<td>30</td>
</tr>
<tr>
<td>2B: <em>Clostridium difficile</em> (<em>C. difficile</em>) Infection Surveillance Reporting</td>
<td>31</td>
</tr>
<tr>
<td><strong>Section II: Supplemental Reporting</strong></td>
<td>22</td>
</tr>
</tbody>
</table>
LabID Event reporting is based strictly on laboratory testing data without clinical evaluation of the patient, allowing for a much less labor intensive method to track *C. difficile* and MDROs, such as MRSA. Symptoms are NOT used in LabID event reporting.

These provide proxy infection measures of healthcare acquisition, exposure burden, and infection burden based on laboratory findings and limited admission data.

LabID event reporting does not make a judgment of infection and is not intended to be used to identify treatment pathways.
- LabID event reporting is by **patient AND location**. NHSN does NOT use ‘status’ for reporting. An ‘inpatient’ is a patient housed on an inpatient location. An ‘outpatient’ is a patient housed on an outpatient unit such as the ED or a dedicated 24-hour observation unit. Facility specific status designations such as ‘observation’, ‘inpatient’, ‘outpatient’, ‘swing bed patient’ or ‘short stay patient’ are not considered in NHSN reporting.

- For NHSN reporting purposes, the ‘date admitted to facility” is the calendar day the patient locates to an inpatient location. Time spent in the ED or on a dedicated 24-hour observation unit is time prior to admission.
- LabID Event reporting is by single facility; positives outside your facility will not influence reporting at your facility. Events are reported by patient AND location.

- ***the ‘Transfer Rule’ does NOT apply to LabID event reporting

- LabID Events are attributable to the location where the positive specimen is collected.
Definition: \textit{C. difficile} LabID Event

- A (+) laboratory test result for \textit{C. difficile} toxin A and/or B, (includes molecular assays [PCR] and/or toxin assays) tested on unformed stool specimen (must conform to the container)
  OR
- A toxin-producing \textit{C. difficile} organism detected by culture or other laboratory means performed on an unformed stool sample (must conform to container) for a patient in a location
- with no prior (+) \textit{C. difficile} specimen result reported within 14 days for the patient and location (also called the 14-day rule).

*excludes locations known to predominately house babies (NICU, Nursery, Step-down Nursery, etc.)

\textit{C. difficile} testing only on \underline{unformed stool samples}!!
Stool should conform to shape of container.
Figure 2. C. difficile test Results Algorithm for Laboratory-Identified (LabID) Events

1. (+) C. difficile test results
2. Prior (+) in ≤ 2 weeks per patient and location
3. If No, LabID Event; if Yes, Duplicate C. difficile
4. Not a LabID Event
CDI Laboratory Assay Definition:

CDI-positive laboratory assay:
A positive laboratory test result for *C. difficile* toxin A and/or B, (includes molecular assays [PCR] and/or toxin assays) tested on an unformed stool specimen (must conform to the container)
OR
A toxin-producing *C. difficile* organism detected by culture or other laboratory means performed on an unformed stool sample (must conform to the container).

Note:
- When using a multi-testing methodology for CD identification, the final result of the last test finding which is placed onto the patient medical record will determine if the CDI positive laboratory assay definition is met.
  - for a patient in a location with no prior *C. difficile* specimen result reported within 14 days for the patient and location

January 2018 12 - 21
What is a multi-step* testing algorithm for C. difficile?

Many variations of testing qualify as multistep including, but not limited to:

a. GDH antigen plus EIA for toxin
b. GDH antigen plus EIA for toxin, followed by NAAT (PCR) on all specimens
c. GDH plus EIA for toxin. If GDH and EIA results differ, follow by NAAT (either by standard protocol or by physician order)
d. NAAT first. If NAAT positive, follow by EIA toxin testing

*all testing performed on the same unformed stool specimen
Knowledge Check: Is this a CDI LabID event?

Laboratory finding:
GDH Antigen = Positive
EIA Toxin = Negative
PCR test = Positive

A. Yes, this is a CDI LabID event
B. No, this is not a CDI LabID event
Knowledge Check: Is this a CDI LabID event?

Laboratory finding:
- PCR test = Positive
- GDH Antigen = Positive
- EIA Toxin = Negative

A. Yes, this is a CDI LabID event
B. No, this is not a CDI LabID event
Knowledge Check: Is this a CDI LabID event?

**Laboratory finding:**
- PCR test = Positive
- EIA Toxin = Negative

A. Yes, this is a CDI LabID event
B. No, this is not a CDI LabID event
Clarification for situations where ‘formed’ stool is tested:

- The CDI laboratory assay definition includes the requirement for testing on unformed stool specimens.
- To ensure this requirement is met, NHSN recommends each testing laboratory have a ‘rejection’ protocol in place where inappropriate specimens submitted for CD testing – specifically, ‘formed’ stool specimens – are rejected and not tested.
- By having a rejection protocol in place at the laboratory level, there is a quality check in place which avoids inappropriate testing as well as making LabID event decisions more clear.
- A rejection policy involves clinical judgment so should be reflective of appropriate clinical laboratory guidance such as a criteria based on the Bristol Stool Chart algorithm.
NHSN will Categorize *C. difficile* LabID Events Based on Inpatient Admission & Specimen Collection Dates

- **Community-Onset (CO):** LabID Event specimen collected in an **outpatient** location or in an **inpatient** location ≤ 3 days after admission to the facility (hospital days 1 (admit date), 2, or 3)

- **Community-Onset Healthcare Facility-Associated (CO-HCFA):** **CO LabID Event** collected from a patient who was discharged from the facility ≤ 4 weeks (28 days) prior to the date **current** stool specimen was collected.

- **Healthcare Facility-Onset (HO):** LabID Event specimen collected > 3 days after admission to the facility (on or after hospital day 4)
NHSN will Further Categorize *C. difficile* LabID Events based on current Specimen Collection Date & Prior Specimen Collection Date of a Previous CDI LabID Event (that was entered into NHSN at this facility)

- **Incident CDI Assay:** Any CDI LabID Event from a specimen obtained > 56 days (day 57) after the most recent CDI LabID Event (or with no previous CDI LabID Event documented) for that patient at this facility.

- **Recurrent CDI Assay:** Any CDI LabID Event from a specimen obtained > 14 days (day 15) and ≤ 56 days (day 57) after the most recent CDI LabID Event for that patient at this facility.
FacWideIN Denominator Form

- **Row 1**: Counts from all inpatient locations in the facility
- **Row 2**: Counts from all inpatient locations in the facility except CMS-certified Rehab and Psych units
- **Row 3**: Counts from all inpatient locations in the facility except CMS-certified Rehab and Psych units, NICUs, and well-baby units

**Rows 2 and 3 are subsets of Row 1**
Example: Incorrect Data Entry

- Row 2 and Row 3 refer to the total number of patients housed in inpatient locations (FacWideIN) in your facility, regardless of the patient’s MDRO or C. difficile infection status. Identifies risk for condition not diagnosis.
Denominator Data

Emergency Department / 24-hour observation

- On the summary data entry screen, use the ‘Location Code” drop down menu to select ED or 24-hour observation as the location for which you are entering the summary data.
- After selecting the appropriate unit, month, and year, one summary data field will become required (Total Encounters). Repeat steps for 24-hour observation locations. **1 visit = 1 encounter**
Denominator Data

Select CDI Test type quarterly (last month of each calendar-year quarter – March; June; September; December)
LabID Event Calculator:

- Available for use with C. difficile and MDRO LabID Event reporting
- Aids in decision making around the 14-day rule
- External calculator

Welcome to Version 2.0 of the MDRO & CDI LabID Event Calculator. Version 2.0 operates based upon the currently posted LabID Event protocols in the NHSN Multidrug-Resistant Organism (MDRO) & Clostridium difficile Infection (CDI) Module. The calculator is a web-based tool that is designed to help users learn how to accurately apply the MDRO & CDI LabID Event algorithms and assist users in making the correct MDRO & CDI LabID Event determinations.

Please note that the MDRO & CDI LabID Event Calculator does not ask users to enter any patient identifiers (other than dates of specimen collection, which can be changed as needed). The MDRO & CDI LabID Event Calculator does not save, store, or report any data that is entered. Likewise, LabID Event determination data are NOT reported to the NHSN application, and users will not be able to export data entered into the Calculator. Therefore, events that are determined by the Calculator to be LabID Events will need to be entered into the NHSN application either manually or via CDA.

If you have questions or suggestions about the Calculator, please feel free to send them to the NHSN mailbox: nhsn@cdc.gov.

- MDRO & CDI LabID Event Calculator Ver 2.0 (must have javascript enabled)
Links to CDI Analysis:

- SIR Guide, to learn more about the SIR & how it’s calculated: https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/nhsn-sir-guide.pdf

- Introduction to NHSN Analysis: https://www.cdc.gov/nhsn/PDFs/training/intro-AnalysisBasics-PSC.pdf

Thank you for your time and attention!
Questions: nhsn@cdc.gov
PREVENTING C. DIFFICILE TRANSMISSION AND INFECTION

Clostridium Difficile Infections (CDI) Top Ten Checklist

- Develop or enhance your antibiotic stewardship program to ensure optimal antibiotic prescribing and reduce overuse and misuse of antibiotics.
- Evaluate the use of antibiotics by infection type and by unit to better understand where the opportunities for stewardship exist; be sure to include patients with urinary tract infections and lower respiratory infections.
- Evaluate the use of antimicrobials among patients with CDI and provide feedback to medical staff and facility leadership.
- Develop processes to minimize testing of patients at low probability for CDI to minimize false positive polymerase chain reaction results for CDI.
- Establish a lab-based alert system to immediately notify the infection prevention team and providers of newly-identified patients with positive CDI lab results. Ensure the system includes holiday and weekend notification.
- Remembering that CDI is a clinical diagnosis and not a lab diagnosis, develop processes where discussion occurs between physicians and other clinicians when a lab test for CDI is reported as positive.
- Establish cleaning protocols for a cleaning solution that is effective against CDI spores.
- Utilize a monitoring system to evaluate and validate effective room-cleaning, and to provide feedback, reward and recognition to those responsible.
- Engage and educate patients, visitors, families and community partners (e.g., home care agencies, nursing homes) to prevent CDI across the continuum of care.
- Establish and maintain an effective, creative, innovative and engaging hand hygiene program.

http://www.hret-hiin.org/topics/clostridium-difficile-infection.shtml
Upcoming HRET HIIN Virtual Event

• **Name of Event:** Measurement Matters: *Ground-breaking CDI Practices from Flowers Hospitals in Dothan, Alabama*

• **When:** June 5, 2018

• Register [here](#)
Thank you!