NHSN Quarterly Validation Call
For State HAI Coordinators

Friday, June 29, 2018

2:00pm – 3:00pm EST
Today’s Agenda

- Introduction – HAI Data Validation Team
- Quarterly Validation Calls
- 2018 Validation Guidance & Toolkits
- Presentation - Massachusetts
- Presentation - Nevada
- Question & Answer Session
- Wrap-up
Introduction

- NHSN HAI Validation Team
  - Suparna Bagchi, MSPH, DrPH, HAI Validation Lead
    • iyj9@cdc.gov
  - Bonnie Norrick, MT(ASCP), EdM, CIC, CPHQ
    • ojd8@cdc.gov
  - Jennifer Watkins, RN, BSN, MPH
    • nub7@cdc.gov
Quarterly HAI Validation Calls

- **Purpose**
  - To provide a forum where state health departments (SHDs) can share their HAI Data Validation results and experiences with their colleagues

- **Objectives**
  - NHSN will provide SHDs with HAI data validation guidance
  - SHDs will present their successes and challenges with data validation
  - NHSN and SHDs will build a collaborative sharing of validation methodologies and tools
  - SHDs will seek guidance from and provide feedback to the NHSN HAI Data Validation team
2018 Validation Guidance and Toolkits

- 2018 External and Internal Validation Guidance and Toolkits are coming....
  - https://www.cdc.gov/nhsn/validation/index.html
- 2018 External Validation Guidance
  - New facility selection methodology based on CAD method
  - Entire guidance document reformatted for ease of use
  - Updated directions on obtaining data from NHSN application
  - MRATs updated and reformatted
- 2018 Internal Validation Guidance
  - Addition of Data Quality checklists
Today’s Speakers

- Christina Brandenburg, MPH
  - HAI Epidemiology Coordinator
  - Massachusetts Department of Public Health
  - Christina.Brandenburg@MassMail.State.MA.US

- Chidinma Njoku
  - Antibiotic Resistance Coordinator
  - Nevada Department of Health and Human Services
  - cnjoku@health.nv.gov
Massachusetts Department of Public Health’s External Validation of Long-term Care Facility (LTCF) National Healthcare Safety Network (NHSN) Data

June 2018
Quarterly State HAI Validation Call

Christina Brandeburg, MPH
Epidemiologist
Massachusetts Department of Public Health
Bureau of Infectious Disease
August 2013, MDPH received ELC grant funding to conduct external validation of NHSN data using CDC-developed toolkit.
**Preparation**

- Review NHSN definitions and trainings
- Freeze NHSN data and select LTCFs for validation
- Update validation documents
  - Task lists and guidance documents for MDPH staff
  - *C. difficile* result line list instructions and template for selected facilities
  - Medical Record Abstraction Tool (MRAT)
  - Surveillance Method Survey (SurveyMonkey)
- Email notifying LTCF of validation
• As of March 7th, 89 LTCFs were reporting CDI LabID data in NHSN for at least one month in 2017
  – LTCF CDI LabID reporting is currently voluntary in MA

• Targeted selection approach to identify 10 LTCFs:
  – Reported complete data for at least six months in 2017
  – Transfer residents to or receive residents from a selected acute care hospital
Pre-site Visit Activities

• Phone call with LTCF
  – Request required materials and access to facility medical records
    • Line list of all tested specimens (*positive and negative for C. difficile*)
    • Surveillance methods survey
  – Establish timeline
  – Schedule site visit

• Identify positive *C. difficile* results for review
  – Email facility a list of selected records to be reviewed during site visit

• Prepare materials for visit
• At the site visit
  – Review medical records using MRAT
  – Meet with facility staff for discrepancy adjudication and to review facility’s Surveillance Methods Survey
  – Provide facility with additional resources (i.e. ICAR Toolkit, One-page “cheat sheet” of important NHSN CDI definitions)

• After the site visit
  – Prepare and share validation summary report with facility
  – Confirm facility has made necessary changes in NHSN
2017 CDI LabID Medical Record Abstraction Tool

This tool follows 2017 CDI LabID definitions and methods for validation of long-term care facility events.

<table>
<thead>
<tr>
<th>Patient and Medical Record Identifiers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility # (NHSN) = orgid</td>
</tr>
<tr>
<td>Review Start Time:</td>
</tr>
<tr>
<td>Resident Name: «First_Name» «Last_Name»</td>
</tr>
<tr>
<td>Resident ID: «resID»</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Positive CDI Toxin-Positive Specimens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note all C. difficile positive laboratory assay results identified for this resident, as defined by the NHSN LTCF CDI LabID Event Surveillance Protocol. Arrange the positive results chronologically. Include all specimens obtained while the resident is receiving care from the LTCF, including specimens collected from an emergency department (ED) or outpatient (OP) setting during a resident’s selected admission. Use a calendar to help you determine which events are duplicate events (&lt;15 days since the last positive specimen).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date of specimen collection</th>
<th>Location of specimen collection</th>
<th>Date of prior CDI toxin-positive from the same location</th>
<th>Was this a “duplicate specimen” (collection &lt;15 days since last positive CDI toxin-positive specimen)</th>
<th>Should this event be reported to NHSN?</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ LTCF: ____________________</td>
<td>□ ED □ OP</td>
<td>□ no prior</td>
<td>□ Yes □ No</td>
<td>□ Yes □ No</td>
</tr>
<tr>
<td>□ LTCF: ____________________</td>
<td>□ ED □ OP</td>
<td>□ no prior</td>
<td>□ Yes □ No</td>
<td>□ Yes □ No</td>
</tr>
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<td>□ Yes □ No</td>
<td>□ Yes □ No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Note: The LabID Event algorithm for determining duplicate events (&lt;15 calendar days between positive specimens) applies across current admission:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• No prior C. difficile positive laboratory assay for the resident while receiving care from this LTCF</td>
</tr>
<tr>
<td>• More than 14 calendar days since the last C. difficile positive laboratory result for the patient</td>
</tr>
</tbody>
</table>
### Notes:


### Outcome of 2017 CDI audit

- (a) Chart review for this resident completed and no CDI LabID events were found during the evaluation time period.
- (b) CDI LabID events identified, reportable in NHSN
  - Date of First Admission to Facility: _____________
  - Date of Current Admission to Facility: _____________

<table>
<thead>
<tr>
<th>Specimen Date</th>
<th>Resident Care Location</th>
<th>Discordant</th>
<th>Provide detail of reason for discordance</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDI LabID Event 1</td>
<td>Yes</td>
<td>Missed</td>
<td>No</td>
</tr>
<tr>
<td>CDI LabID Event 2</td>
<td>Yes</td>
<td>Missed</td>
<td>No</td>
</tr>
<tr>
<td>CDI LabID Event 3</td>
<td>Yes</td>
<td>Missed</td>
<td>No</td>
</tr>
<tr>
<td>CDI LabID Event 4</td>
<td>Yes</td>
<td>Missed</td>
<td>No</td>
</tr>
<tr>
<td>CDI LabID Event 5</td>
<td>Yes</td>
<td>Missed</td>
<td>No</td>
</tr>
</tbody>
</table>

- Potential reasons for missed CDI event: Incorrect understanding of protocol definition; Laboratory records missed
- Potential reasons for overcalled CDI events: Incorrect specimen; Duplicate record

***Don’t forget to record the abstraction end time on page 1.***
MDPH Validation Database

- Track progress
- Collect aggregate data for each LTCF
- Generate summary report for facility
### Part 4. Summary of Cases with Discordant Outcomes

#### A. CDI LabID events missed:

### Part 5. Discordant Outcomes Summary

### Part 6. Estimate of CDI LabID Event sensitivity, specificity, and concordance

<table>
<thead>
<tr>
<th></th>
<th>Final CDI: YES</th>
<th>Final CDI: NO</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reported CDI: YES</td>
<td>35</td>
<td>23</td>
<td>58</td>
</tr>
<tr>
<td>Reported CDI: NO</td>
<td>12</td>
<td>42</td>
<td>54</td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>65</td>
<td>112</td>
</tr>
</tbody>
</table>

- Sensitivity: 74%
- Specificity: 63%
- Concordance: 69%
MDPH One-page “Cheat Sheet”
• 2/10 facilities reported at least 1 CDI event in NHSN

• 6/10 validations completed
  – 22 missing events
  – One facility correctly reported 0 events
• Frequent staff turnover, necessary to maintain at least two contacts throughout the validation process

• Hybrid medical records systems, paper and EMR
  – Some facilities utilize reports to collect denominator data
  – Many use personal line lists to track positive *C. difficile* results

• Need for additional LTCF staff education in NHSN definitions and accurate reporting of HAI events into NHSN
  – Little distinction between clinical surveillance and reporting surveillance
  – Incorrectly incorporating patient’s history of CDI when determining whether a lab is a reportable NHSN event

• Collecting the specimen line list prior to setting up site visit will avoid the need to reschedule
Thank you

Validation Team
Barbara Bolstorff
Christina Brandenburg
Alexandra DeJesus
Jessica Leaf
Eileen McHale
Katie Reilly
Sarah Scotland
Scott Troppy
State of Nevada
Department of Health and Human Services
Nevada Division of Public and Behavioral Health

Chidinma Njoku
Nevada CLABSI Validation
Division of Public & Behavioral Health
June 29, 2018
Nevada Facilities

53 Hospitals

South
39

North
14
Validation Methodology

• Contractor from Yale New Haven Health System.
• Looked at the 2016 NHSN records and selected top 5, bottom 6, and 1 random facility.
• We sorted through line lists including as many as 3,000 events and broke them down into strata.
**Stratums**

- **Stratum 1**: Infections noted in the facility’s report to the NHSN
- **Stratum 2**: Infections among Newborn ICU (NICU) patients and other patients with infections from specific, targeted pathogens
- **Stratum 3**: A mixture of remaining infections such that the entire selection includes up to 60 events
Before the Visit

Facilities provide the following in the line lists:

- Patient’s name
- Date of Birth
- MRN, Date of admission
- Date of discharge
- Central line
- Admit to Event Days
- Event ID #
- Date of lab draw
- Reported pathogen
- Location at time of lab draw
During the Visit

• Reviewed data collection method for frequency, reliability, and consistency.

• Looked at definition, reporting, and any data entry issues with 2-3 OPHIE staff members and 1 contractor.

• Electronic Medical Records
  • Familiarity
  • IP guidance
Guidelines

• CDC Guideline
• Central line day counts
• Assess facility reporting
• Discuss case-status
Results

- Out of the 12 we assessed, 3 had a discrepancy from their NHSN report

<table>
<thead>
<tr>
<th>Facility A</th>
<th>Facility B</th>
<th>Facility C</th>
</tr>
</thead>
<tbody>
<tr>
<td>49 Records Reviewed</td>
<td>31 Records Reviewed</td>
<td>60 Records Reviewed</td>
</tr>
<tr>
<td>• 11 unreported</td>
<td>• 1 unreported</td>
<td>• 4 CLABSIs unreported</td>
</tr>
<tr>
<td>• 1 non-CLABSI with incorrect organism attributed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

60 Record reviews were the target. Some facilities had less than 60 records reviewed after POAs were removed.
Results

Based on IP interviews, IPs were found to have a good understanding of reporting guidelines.

Some findings from the interview:

- No specific time that denominator is taken (each unit has a time that they collect it)
- Denominator count is taken at midnight
- Facilities separate temporary line days and permanent line days
- No mechanism in place for quality control of denominator data (no review process)
- Someone checks denominator data with the records and IP compares for discrepancy
Lessons Learned

• Validation team had to learn how to navigate each medical record system
• IP assistance speeds up EMR navigation process
• Lists had to be narrowed down to central lines only
• Present on Admission (POA) removed from line list

Opportunities:
• TAP reports to highlight units
• Face to face with Infection Prevention staff
HAI Program
Contact Information

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Questions??
Wrap-Up

- Next Quarterly Call is scheduled for Friday, September 28, 2018 2-3pm EST
  - Is there anyone else we should invite? Please forward their name and email to Jennifer Watkins at nub7@cdc.gov.
  - Interested in sharing your validation experience? Reach out to the NHSN HAI Validation Team
- Review of External Validation Guidance & Toolkit
  - New CAD methodology for facility selection
  - Updated MRATS
  - Please bring your questions!
Thank You!

Please Join us for the Next

NHSH Quarterly Validation Call for HAI Coordinators

Friday September 28th from 2:00pm—3:00pm EST

For Questions Email NHSN@cdc.gov

For more information, contact CDC
1-800-CDC-INFO (232-4636)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.