How Good is Your LTCF Data?

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Protocol and Validation Team

National Healthcare Safety Network Annual Training
Long-term Care Facility Component
July 11, 2019
Session Objectives

• Attributes of LTCF HAI surveillance
• HAI Data Validation in LTCF settings
• Types of HAI Data Validation
  • External Data Validation
  • Internal Data Validation (Data Quality Checks)
Long-term Care Facility Component

Healthcare-associated Infections (HAI) Module
  - Urinary Tract Infections (UTI)

Laboratory-Identified (LabID) Event Module
  - Multi-drug Resistant Organisms (MDRO)
  - *Clostridium difficile* Infection (CDI)

Prevention Process Measures Module
  - Hand Hygiene
  - Gowns/Gloves
Facilities Eligible for Enrolling in NHSN LTCF Component

- Certified skilled nursing facilities (SNF) and nursing homes (NH)
- Intermediate/chronic care facilities for the developmentally disabled
- Assisted living facilities and residential care facilities
  - *Currently limited to Prevention Process Measures*
NHSN Enrolled LTCFs By State Aug 2013

Total Number of LTCFs: 138
~0.9% of 15,600 US LTCFs
Total Number of LTCFs: 334
~2.1% of 15,600 US LTCFs
Total Number of LTCFs: 3,374
~ 22% of 15,600 US LTCFs
Among the 2,389 NHs evaluated
- 2,361 (98.8%) at least one month of complete data
- Noted month to month variation in the number of complete reporters
- 87.6% (2,092/2,389) reported 12 consecutive months
- 53.8% (1,286/2,389) reported zero events
- 46.2% (1,103/2,389) reported ≥1 events
  - Median 1/Mean 1.4 (min 1, max 7)
- Among NHs reporting at least one month of complete data (N=2,360)
  - Total CDI rate=0.56/10,000 resident days
Healthcare Associated Infections (HAI) Surveillance

- Ongoing
- Systematic collection
- Analysis
- Interpretation
- Dissemination

Of HAI data that is essential to planning and implementing prevention measures
Quality HAI Surveillance System Requires

- Simplicity
- Objectivity
- Flexibility
- **Data quality**
- Acceptability
- Sensitivity
- Positive predictive value
- Representativeness
- Timeliness
- Stability
Data Quality of HAI Surveillance Reflects

- Consistency of data
  - completeness, timeliness, confidence on your data

- Validity
  - accuracy of data

These surveillance attributes can be achieved by HAI Data Validation
## Types of HAI Data Validation

<table>
<thead>
<tr>
<th>Internal Validation</th>
<th>External Validation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active efforts by a reporting facility to assure <em>completeness</em> and <em>consistency</em> of NHSN data</td>
<td>Survey and audit process by external agency to <em>assure accuracy</em> of NHSN surveillance and reporting</td>
</tr>
<tr>
<td>Built in as a routine facility process</td>
<td>Requires additional resources</td>
</tr>
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</table>
HAI Data Validation

**Internal Validation**
- Consistency
- Data Completeness
- Timeliness

**External Validation**
- Data Accuracy

Improves
Why Should You Validate Data Reported to NHSN

• Accuracy of data reported to NHSN by LTC settings
• Barriers in data collection and reporting
• Remediable errors in reporting
• Staff understanding of the methods and definitions in protocol
• Feedback to CDC:
  • Clarification of protocol and definitions
  • Improvement of the data validation tools, development of optimal and standardized data evaluation methods
Internal Data Quality Checks for LTCF
WHEN ARE DATA CONSIDERED COMPLETE IN NHSN?

Data are considered complete in NHSN when:

- Monthly reporting plan is submitted
- Event data to NHSN (if events are found) is submitted
  - If no event check “no event” in summary data form
- Summary data to NHSN is submitted
ANALYSIS REPORTS
NHSN ANALYSIS REPORTS FOR DATA VALIDATION

- Facility survey data line list
- Plan data report
- Event level data report
- Summary level data report
ANALYSIS REPORTS
### ANALYSIS REPORTS

- **Line Listing Of Facility Survey Data**

  **Data source: Annual survey**

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<th>Facility Org ID</th>
<th>Survey Year</th>
<th>National Provider ID</th>
<th>State Provider ID</th>
<th>CMS Certification Number</th>
<th>Facility Ownership</th>
<th>Certification</th>
<th>Affiliation</th>
<th>Average Daily Census</th>
<th>Number of Short-Stay Residents</th>
<th>Number of Long-Stay Residents</th>
<th>Number of New Admissions</th>
<th>Number of Beds</th>
<th>Number of Pediatric Beds</th>
<th>Total Resident Census</th>
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Sorted by orgID

Data contained in this report were last generated on April 10, 2018 at 3:00 PM.
### Line Listing of Monthly Reporting Plans

- **Data source**: Monthly Reporting Plan form

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#### National Healthcare Safety Network
**Line Listing of Monthly Reporting Plans**

As of June 8, 2016 at 12:15 PM
Data Range: 10/1/2015 to 10/31/2015

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<tr>
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<th>Facility Org ID</th>
<th>Plan YM</th>
<th>Location</th>
<th>No LTCF Modules Followed this Month</th>
<th>CAU Plan?</th>
<th>Lab ID MRSA?</th>
<th>Lab ID VRE?</th>
<th>Lab ID ACINE?</th>
<th>Lab ID CEPHRKLBEL?</th>
<th>Lab ID CREECOLI?</th>
<th>creEntero labID</th>
<th>Lab ID CREKLBEL?</th>
<th>Lab ID CDP?</th>
<th>Lab Hygiene In-Plan</th>
<th>Gown and Gloves</th>
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Sorted by orgID planYM

Data contained in this report were last generated on April 10, 2018 at 3:00 PM.
ANALYSIS REPORTS

- Analyze the number of events submitted by month
  - Review line list for any missing months
    - Reasons for missing month in line list
      - No events for the month
      - Missing or incomplete events
## ANALYSIS REPORTS

### Line listing – All Summary Data

**National Healthcare Safety Network**

**Line Listing for All Summary Data**

As of: June 8, 2018 at 2:25 PM

Date Range: LTC SUMMARY summaryYM 2017M01 to 2017M03

<table>
<thead>
<tr>
<th>Facility Org ID</th>
<th>Summary Year/Month</th>
<th>Type of summary record</th>
<th>Location</th>
<th>Event Type</th>
<th>Number of Resident Days</th>
<th>Urinary Catheter Days</th>
<th>Number of Resident Admissions</th>
<th>No Events</th>
<th>Number of Urine Cultures Ordered</th>
<th>Admissions on C. diff Treatment</th>
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Sorted by orgID summaryYM

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Summary

- Credible data is vital to HAI prevention

- In the era of “publicly looking good” ongoing validation is the key to improvement in prevention practices
Reach Out to NHSN for Validation Questions!

Questions: email user support
nhsn@cdc.gov

NHSN Website:
http://www.cdc.gov/nhsn/

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.