Clostridium difficile
Infection Surveillance
Objectives

• Review CDI surveillance methods and definitions
• Discuss importance of accurate data collection
• Demonstrate how to report CDI data to in National Healthcare Safety Network (NHSN)
• Discuss NHSN data analysis and feedback to staff
Perform CDI Surveillance to Assess Prevention Progress – Primary Strategy

- LabID method is the nationally-recognized quality measure for the surveillance of CDI (NQF endorsed)
- Requires no clinical review or further evaluation of positive lab finding
- Include ALL *C. difficile* toxin-positive tests from inpatients, ED patients, and 24-hour observation patients
CDI LabID Surveillance

NHSN algorithm categorizes CDI cases according to the admission date and specimen collection dates entered.

<table>
<thead>
<tr>
<th>Community-Onset (CO)</th>
<th>For Inpatient surveillance, a LabID event collected ≤3 days after admission to the facility (i.e., days 1, 2, 3 or admission)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare Facility-Onset (HO)</td>
<td>LabID event collected &gt;3 days after admission to the facility (on or after day 4)</td>
</tr>
</tbody>
</table>

Community-Onset Healthcare Facility-Associated (CO-HCFA) | LabID event collected from a patient who was discharged from the facility ≤4 weeks prior to current date of stool specimen collection.

NHSN Patient Safety Manual: Chapter 12
CDI LabID Surveillance Data Collection

• Important data to collect for NHSN SIR calculation
  • Annual Survey data
  • Date of admission
  • Date of specimen collection
  • Location at time of collection
• Do not enter a repeat specimen from the same location if less than 14 days since last positive specimen
• If the patient is transferred to a new location and a new specimen is positive in less than 14 days since the last specimen – REPORT it
CDI LabID Surveillance, continued

• NHSN also tracks if CDI case is new or recurrent
  • Considered **recurrent** if >2 weeks and ≤8 weeks after last CDI event reported for that patient

• All CDI cases should be identified and entered into NHSN
  • There is no advantage to **not** identifying and entering all CDI cases into NHSN

NHSN Patient Safety Manual: Chapter 12
Interpreting CDI Surveillance Data

• Differences/changes in laboratory testing method and patient populations make it difficult to compare CDI rates over time in the same hospital or among different hospitals.

• NHSN analysis applies risk adjustment for:
  - Type of laboratory test*
  - Community onset CDI
  - Hospital size *
  - Facility Type*
  - Medical school affiliation*
  - Number of ICU beds*
  - Reporting from ED or 24 hour observation unit

* Data in the hospital Annual Survey

NHSN: A Guide to the SIR
NHSN: A Guide to the SIR

- How to interpret SIR
- How SIR is calculated
- Risk adjustment factors for specific HAI

LabID Event Protocol MDRO / CDI Module

• **All** CDI specimens are reported for facility including emergency departments (ED) and 24 hour observation units

• Attribute the infection to the location where the specimen was **collected**
  • unless admitted from another affiliated outpatient location and admitted on the same calendar day – then attribute infection to the admitting unit

• For denominator, enter monthly facility wide patient days, admissions, and ED and 24 hour observation encounters (i.e. visits)
MDRO/CDI LabID Event Calculator

• Help users learn how to accurately apply MDRO/CDI LabID Event algorithms

• Assist users to make the correct MDRO & CDI LabID Event determinations

• Note: California hospitals are required to report CDI from inpatient, ED and 24 hour observation locations

[Link to MDRO & CDI LabID Event Calculator]
https://nhsn.cdc.gov/nhsntraining/labid-calculator/mdrolabidcalc.html
### Add Monthly MDRO/CDI Summary Data to NHSN

**MDRO and CDI Prevention Process and Outcome Measures Monthly Monitoring**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Inpatient Total Facility Patient Days</th>
<th>Total Facility Admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5927</td>
<td>1247</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Setting</th>
<th>Outpatient Total Facility Encounters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If monitoring MDRO in a FACWIDE location, then subtract all counts from patient care units with unique CCNs (IRF and IPF) from Totals:

<table>
<thead>
<tr>
<th>MDRO Patient Days</th>
<th>MDRO Admissions</th>
<th>MDRO Encounters</th>
</tr>
</thead>
<tbody>
<tr>
<td>4874</td>
<td>1100</td>
<td></td>
</tr>
</tbody>
</table>

If monitoring *C. difficile* in a FACWIDE location, then subtract all counts from patient care units with unique CCNs (IRF and IPF) as well as NICU and Well Baby counts from Totals:

<table>
<thead>
<tr>
<th>CDI Patient Days</th>
<th>CDI Admissions</th>
<th>CDI Encounters</th>
</tr>
</thead>
<tbody>
<tr>
<td>4570</td>
<td>1007</td>
<td></td>
</tr>
</tbody>
</table>

- **Total facility patient days**
- **Total facility admissions**
- **Total facility MDRO patient days** *(Facility Pt Days minus units with unique CCN such as IRF and IPF)*
- **Total facility MDRO patient admissions** *(Facility Pt Days minus units with unique CCN such as IRF and IPF)*
- **CDI Patient Days** *(Facility Pt Days minus NICU/Well baby and units with unique CCN such as IRF and IPF)*
- **CDI Patient Admissions** *(Facility Pt Days minus NICU/Well baby and units with unique CCN such as IRF and IPF)*
- **ED and 24 hour Observation encounters entered separately**
Add Monthly MDRO/CDI Summary Data to NHSN -2

- Enter ED and 24 hour Observation encounters separately
Enter all CDI events

- Inpatient
- ED
- 24 hour observation

Event Information

- **Event Type**: LABID - Laboratory-identified MDRO or CDI Event
- **Date Specimen Collected**: 10/01/2017
- **Specific Organism Type**: CDIF - C. difficile
- **Outpatient**: N - No
- **Specimen Body Site/Source**: DIGEST - Digestive System
- **Specimen Source**: STOOL - Stool specimen
- **Date Admitted to Facility**: 10/01/2017
- **Location**: 2 WEST - M/S ICU
- **Date Admitted to Location**: 10/01/2017
- **Has patient been discharged from your facility in the past 4 weeks?**: Y - Yes
- **Date of last discharge from your facility**: 9/28/2017

Documented evidence of previous infection or colonization with this specific organism type from a previously reported LabID Event in any prior month?
NHSN CDI Analysis Reports

- Generate data set prior to creating a report
- Choose report according to need
  - SIR report - Your incidence compared to expected incidence
  - TAP report – Number of events that needed to be prevented to reach facility targeted goal
Targeted Assessment for Prevention (TAP) Reports - CDI

<table>
<thead>
<tr>
<th>Number of Beds</th>
<th>Patient Days</th>
<th>COHCFA Prevalence</th>
<th>CDIF Facility Incident HO LabID Event Count</th>
<th>CDIF Facility Incident HO LabID Number Expected</th>
<th>Facility CAD</th>
<th>SIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>354</td>
<td>60059</td>
<td>0.14</td>
<td>61</td>
<td>55.034</td>
<td>22.48</td>
<td>1.108</td>
</tr>
</tbody>
</table>

- Identifies the **number of infections that needed to be prevented** to reach targeted goal (CAD)
Track CDI Progress Over Time

SAMPLE: California General Hospital
2016 C. difficile Progress

- Began C. difficile Initiative with ASP
- New EVS contract personnel
- IP on LOA
- IP returned to work
- EVS Education and competencies
- All staff hand hygiene Competencies
CDI Surveillance Summary

- Report all CDI-positive stool specimens o NHSN
- Accurate denominator summary data are necessary for accurate calculation of CDI SIR analysis
  - Admission date
  - Specimen collection date
  - Patient location at time of specimen collection
  - Facility Annual Survey
- Perform surveillance and feedback CDI SIR with adherence monitoring results to all units and leadership
Questions?

For more information, please contact any HAI Program Team member

Or email HAIProgram@cdph.ca.gov