LabID Event Analysis in Acute Care Hospitals: FAQs and Troubleshooting

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2021 NHSN Annual Training
Agenda

- Common questions sent to the NHSN Helpdesk
  - How I can see a monthly MRSA or CDI SIR for my facility?
  - My leadership has requested to see a CDI SIR for each of our ICUs. How do I get this out of NHSN?
  - I entered 3 MRSA LabID events in NHSN. I see 3 events on my line list, but only 2 are counted in the SIR. Something must be broken!
  - I have entered in all my data and cleared all my alerts, but when I run my quarterly SIR report my SIRs are missing. Why?
  - I think my SIR is inaccurate. What should I do?
  - My hospital’s laboratory is considering a change to our CDI test type. How will this impact my facility’s SIR?
  - Are there other steps I should take to ensure my data are ready for the upcoming CMS Quality Reporting deadline?
LabID Event SIRs: A Quick Review

- How does MRSA (or CDI) in my facility compare to the rest of the country?”

\[ SIR = \frac{\# \text{ observed HO LabID Events}}{\# \text{ predicted HO LabID Events}} \]

- **# Observed events**: Healthcare-onset (HO) events entered into NHSN that meet the SIR criteria

- **# Predicted events**: Calculated and risk adjusted specifically for your facility
How is the Predicted # of CDI Events Calculated?

- Negative binomial regression models were created using 2015 national data
- Incorporates several facility-level characteristics
- Review data table beneath the SIR report
  - Inaccurate risk adjustment factors will lead to inaccurate # of predicted events
  - Review this table whenever you run your SIR reports

Risk Adjustment Factors for FacwideIN CDI SIR

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Spotlight: Inpatient Community-onset CDI Prevalence Rate

- **CDI_COprevRate**: Inpatient community-onset (CO) CDI prevalence rate
- CO events collected from all inpatient units
- Calculated for the **entire quarter**

\[
\text{CDI_COprevRate} = \frac{\# \text{ unique CO events}}{\# \text{ inpatient admissions}} \times 100
\]
Spotlight: CDI Test Type

- **cdiTestType**: laboratory method used to detect *C. difficile*
- Reported on the facility-wide inpatient (FacWideIN) denominator form during the last month of each quarter

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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?

**Note:** PCR testing should be indicated by selecting NAAT *

GDHNAAT - GDH plus NAAT
LabID SIRs are Quarterly Measures

- MRSA & CDI SIRs based on quarterly community-onset prevalence rates
- CDI SIRs use CDI test type, which is collected once per quarter
- LabID event SIRs are not accurate until the quarterly risk adjustment calculations can be performed
- Hospitals should review these SIRs after all 3 months of data are entered for that quarter
Q1: How can I see a monthly SIR for my facility?

- Monthly MRSA and CDI SIRs are not available for acute care hospitals

- You can review some elements of MRSA and CDI data on a monthly basis
  - Number of healthcare-onset events and their location
  - Number of community-onset events and their location
  - Patient days and admissions
  - Incidence and prevalence rates

- If interested in monthly metrics, NHSN recommends use of the Rate Tables
  - FacWideIN rates can be tracked over time, each month
    - Single rate for the entire facility, per organism
  - Use the NHSN Statistics Calculator for a statistical comparison, if interested
Q2: My leadership has requested to see a CDI SIR for each of our ICUs. How do I get this out of NHSN?

- Unit-specific CDI SIRs (or MRSA) are not available for acute care hospitals
- Due to the most commonly reported denominator data in NHSN, SIRs are only available for facility-wide inpatient (FacWideIN)
- If interested in unit-specific metrics, we recommend:
  - Add those units to the MDRO/CDI section of the monthly reporting plan
  - Enter unit-specific denominator records into NHSN
  - Utilize the LabID Event Rate Tables to see unit-specific rates
Q3: I entered 3 MRSA LabID events in NHSN. I see 3 events on my line list, but only 2 are counted in the SIR. Something must be broken!

- Not all MRSA LabID events reported to NHSN will be counted in your facility’s SIR numerator
- The SIR numerator for MRSA bacteremia includes only healthcare facility-onset (HO), non-duplicate MRSA blood LabID events
- There is an indicator variable in Line Listing report; this variable will equal 1 on the line list for all events that are counted in the numerator of the SIR
- Indicator variables and SIR numerator algorithms can be found in the “Troubleshooting Guide,” here: https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/mrsacdi_tips.pdf
Q4: I have entered in all my data and cleared all my alerts, but when I run my quarterly SIR report my SIRs are missing. Why?

- The SIR will only be calculated when the number of predicted infections is at least 1.0
- When the predicted number of infections is less than 1.0, facilities have a few options for reviewing and interpreting data in NHSN:
  - A longer time period can be included in the SIR calculation in order to reach the threshold of 1.0 predicted infection (such as a half year or full year)
  - Infection rates can be used to track internal HAI incidence over time
  - Run the TAP Reports to review the CAD (cumulative attributable difference, which is the difference between the number of observed infections and the number of predicted infections, multiplied by the SIR goal)
Q5: I think my SIR is inaccurate. What should I do?

- Concern: Some facilities are entering in very low values for patient days or admissions on Line 2 and/or Line 3 of the facility-wide inpatient (FacWideIN) summary form compared to what is entered for Line 1 (total patient days and admissions)
Data Quality: Monthly FWI denominators (1 of 2)

- It is important that Line 2 and Line 3 on the summary form are accurately reported because those values are used in the quarterly MRSA and CDI SIR calculations
- Rare for a facility to be majority comprised of IRF and IPF units
Data Quality: Monthly FWI denominators (2 of 2)

- Currently only applies to Acute Care and Critical Access Hospitals
- A pop-up warning message will appear if a facility enters values on Line 2 or Line 3 that are less than 25% of the values entered on Line 1.
- Two choices to clear warning
  - Go Back and Edit
  - Confirm and Save
Q6: My hospital’s laboratory is considering a change to our CDI test type. How will this impact my facility’s SIR?

- The number of predicted events is based on several factors, see SIR Guide
- Moving to a more sensitive test such as PCR/NAAT, the number of predicted CDI events will increase
- Other variables
  - Number of patient days will naturally fluctuate
  - Inpatient community-onset prevalence rate
- SIR will change based on a combination variables, we are not able to calculate the degree of which the SIR will change.

Q7: Are there other steps I should take to ensure my data are ready for the upcoming CMS Quality Reporting deadline?

- Ensure all 3 months of data entry for quarter are complete
- Soft Alert
- If location or organism completed on Summary Form that is not listed on Monthly Reporting Plan
Data Quality: Complete all 3 months of data entry for quarter (1 of 3)

- Ensure FacWideIN, ED, & OBS are included on monthly reporting plans for all 3 months
- Analysis folder: Advanced > Plan Data > Line Listing
- Possible filters: mrsa_labID, mrsa_LabIDBId, cdif_labID
Data Quality: Complete all 3 months of data entry for quarter (2 of 3)

- Ensure FacWideIN, ED, & OBS completed denominator forms
- Analysis folder: Advanced > Summary-level Data > Line Listing
- Filter on SummaryType = MDRO
- Additional variables: eventType, location, cdiTestMeth, cdiTestMethOth, modifyDate, denominator data (numTotEncounters, numCdifEncounters, + see FacWideIN)
Data Quality: Complete all 3 months of data entry for quarter (3 of 3)

- Review SIR report, look at months

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NHSN CMS Resources

- CMS Resources by Facility Type:  
  https://www.cdc.gov/nhsn/cms/index.html

- More guidance about preparing for a CMS quarterly reporting deadline can be found in Monthly Checklist for Reporting  
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Training Questions: NHSNTrain@cdc.gov
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For more information, contact CDC
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