Using the "SIR - CDI FacWideIN LabID Data for Hospital IQR" Report

The NHSN Analysis Report, "SIR - CDI LabID Data for Hospital IQR" was created in order to allow acute care facilities to review those *C. difficile* LabID data that would be submitted to CMS on their behalf. It's important to keep in mind the following as you begin to use this report:

- These data will only be submitted for those facilities that are participating in the CMS Inpatient Prospective Payment System (IPPS) Hospital IQR Program, as indicated by their CCN recorded in NHSN.

- **The SIRs generated in this output will be calculated using the 2015 national baseline data**. To learn more about the standardized infection ratio (SIR) under the 2015 baseline as it pertains to CDI data, please see: https://www.cdc.gov/nhsn/2015rebaseline/.

- This report will only include **in-plan FacWideIN (facility-wide inpatient) CDI LabID data beginning with January 2015 data**. Earlier years for which you may have reported these data will not be included in this output. Data that have previously been submitted to CMS for participation in a Quality Reporting Program can be found at the following folders: Baseline Set 1 > CMS Acute Care Hospitals (Hospital IQR) > SIR – CDI FacWideIN LabID Data for CMS IPPS.

- **IMPORTANT!** Facilities must appropriately **Report No Events** for those FacWideIN months for which no CDI LabID events were identified in an inpatient location.

- This output option represents an SIR report for each hospital, not each CCN. If your hospital shares a CCN, this SIR will only represent the data that your hospital has contributed to the overall SIR for all hospitals that share the CCN. You may wish to use the Group feature in NHSN to obtain a single SIR for all the hospitals that share a CCN. More information about the Group feature can be found here: http://www.cdc.gov/nhsn/group-users/index.html.

- The data in this report will represent data current as of the last time you generated datasets. **NOTE:** Data in the Provider Participation Report are not updated simultaneously with your data in NHSN. Data changes made in NHSN will be reflected in the next monthly submission to CMS. **EXCEPTION:** Quarterly data are frozen as of the final submission date for that quarter (e.g., first quarter (Q1) data will be frozen as of 3am ET on August 16th); any changes made to these data in NHSN after the final submission deadline will not be reflected in later months on the Provider Participation Report or on Hospital Compare.

- The information in this document should be used in conjunction with the document, "How to Set Up NHSN Reporting for Facility-Wide Inpatient MRSA Bacteremia and *C. difficile* LabID events for the CMS Inpatient Quality Reporting Program", available at: https://www.cdc.gov/nhsn/pdfs/cms/how-to-set-up-and-report-mrsa-cdi.pdf

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Example of the "SIR - CDI FacWideIN LabID Data for Hospital IQR": Interpretation and Data Checking

Before running this output option, remember to generate your datasets for the most up-to-date data reported to NHSN by your facility! To generate datasets, go to Analysis > Generate Data Sets, then click "Generate Reporting Data Sets".

1. After selecting Analysis > Reports, navigate through the following folders: CMS Reports > Acute Care Hospitals (Hospital IQR) > SIR - CDI FacWideIN LabID Data for Hospital IQR. After clicking the title of the report, click "Run" on the subsequent pop-up menu.
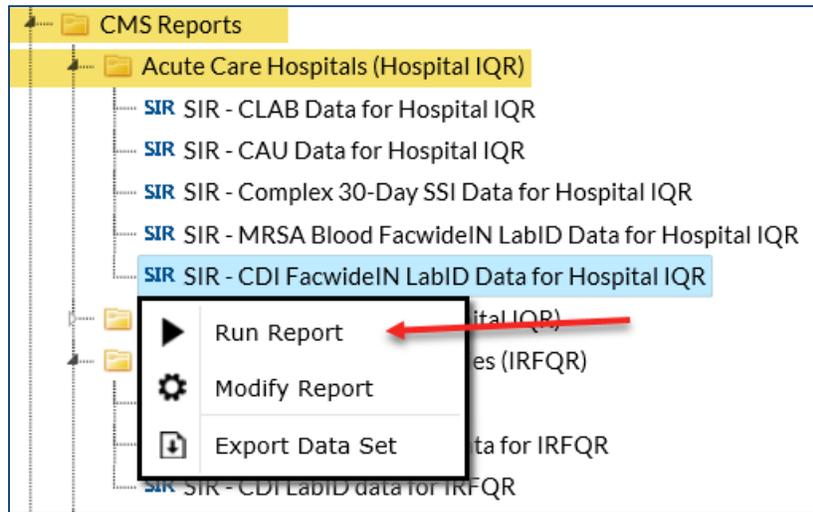
2. By default, the results will appear in an HTML window. If a second window does not pop-up, please be sure to check your pop-up blocker and allow pop-ups from *.cdc.gov.

3. Within the output, there may be multiple tables, each described below. ***Data presented below are fictitious.***

SIR Example Report:

a. **SIR Table**
    "SIR - CDI FacWideIN LabID Data for CMS Hospital IQR (2015 Baseline)"

    The table below represents an overall, single SIR for your facility, per calendar quarter. This is the information that will be submitted to CMS for each IPPS-participating facility, as indicated by the facility's CCN.

SIR for CDI FacwideIN for CMS Hospital IQR (2015 baseline)

orgID	ccn	location	summaryYQ	months	CDIF_facIncHOCount	numPred	numpatdays	SIR	SIR_pval	sir95ci
10401	999999	FACWIDEIN	2019Q1	3	1	1.151	2750	0.869	0.9967	0.043, 4.285

1. This report includes facility-wide inpatient data from acute care hospitals for 2015 and forward.
2. The SIR is only calculated if number predicted (numPred) is >= 1. Lower bound of 95% Confidence Interval only calculated when number of observed events > 0.
3. The # of predicted events is calculated based on national 2015 NHSN data. It is adjusted for inpatient community-onset CDI prevalence rate, ED/OBS reporting, CDI test type, medical school teaching status, facility type, # beds, and # ICU beds.
4. Events from rehabilitation wards and behavioral health/psych wards with a unique CCN are excluded. Information on how to determine which events are counted in the SIR can be found here: http://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/mrsacdi_tips.pdf
5. If any risk factor data are missing, the record is excluded from the SIR.

Using the table above, we can conclude the following:

- During the first quarter of 2019 (2019Q1), three months of CDI LabID data were submitted (*months*).
- The facility reported 1 incident, healthcare facility-onset (HO) CDI LabID event (*CDIF_facIncHoCount)* among 2,750 patient days (*numpatdays*). For more information about which events are counted in the numerator of the SIR, refer to the LabID SIR Troubleshooting document (see Additional Resources below).
- The number of predicted incident HO CDI LabID events (*numPred*) was 1.151.
- The SIR was 0.869, p-value (*SIR_pval*) was 0.9967, and 95% confidence interval (*sir95ci*) was (0.043 – 4.285) for CDI LabID events during this time period.
- The p-value and the 95% confidence interval were not statistically significant. Therefore, the number of events observed by the facility was not significantly different than the number predicted.

  NOTE: If the number of predicted events is less than 1, an SIR, p-value, and 95% confidence interval will not be calculated. However, assuming all other reporting requirements are met, the SIR data are considered "complete" and will still be submitted to CMS in order to comply with Quality Reporting Programs.

- Be sure to read the footnotes beneath the SIR report for important information about the SIR calculation.

b. **SIR Risk Factors Example Report**
"Risk Adjustment Factors for FacWideIN CDI SIR"

The table below presents the SIR-associated risk factors used in the calculation of your facility's SIR for each calendar quarter. This information is provided to help a facility understand their SIR calculation and ensure accuracy of each risk adjustment variable. These data are **not** submitted to CMS. Additional details regarding the SIR risk factors can be found here: https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/nhsn-sir-guide.pdf

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Risk Adjustment Factors for FacwideIN CDI SIR

orgID	ccn	summaryYQ	CDI_COprevRate	cdiTestType	numICUBeds	facType	numBeds	CDIF_EDOBSindicator	medType	numpatdays
10401	999999	2019Q1	0.000	EIA	100	HOSP-GEN	200	1	M	2750

1. The table above displays the values that are included in the calculation of your acute care hospital's CDI LabID Event SIR.
2. If any risk factor data are missing, the record is excluded from the SIR.

c. **Outlier Prevalence Rate**
"CDI Quarters with Outlier Prevalence Rate"

An additional table may appear if there are any quarters in which the inpatient community-onset (CO) prevalence rate is considered an outlier (greater than 2.6 CO events per 100 admissions). The number of predicted infections, and thus the SIR, cannot be calculated in such instances. However, in order to signify compliance with the reporting requirements that quarter will appear in the first SIR table (SIR - CDI FacWideIN LabID Data for CMS Hospital IQR) with the number of months indicated. In this situation, the number of observed CDI events and the total number of patient days will also be "missing" from the SIR report.

The data presented in the "Outlier Prevalence Rate" table should be used by the facility to verify the reported number of CO events and total admissions; these data are **not** submitted to CMS.

CDI Quarters with Outlier Prevalence Rate

orgID	ccn	location	summaryYQ	cdif_admprevcocount	numAdms	CDI_COprevRate
10401	999999	FACWIDEIN	2018Q4	1	31	3.226

1. This table displays quarters for which the inpatient community-onset prevalence rate is above the pre-determined threshold for calculating an SIR.

d. **Incomplete Quarters**
"CDI Data – Months Excluded from SIR Due to Missing CDI Test Type"

An additional table may appear if there are any incomplete/partial quarters of CDI LabID data entered into NHSN. The CDI SIR can only be calculated at the end of a quarter, once CDI Test Type has been reported. If CDI test type has not yet been entered into NHSN for a quarter, any months for which data have been entered in that quarter will be identified in the table below. These data are **not** submitted to CMS.

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CDI Data - Months Excluded from SIR Due to Missing CDI Test Type

orgID	ccn	location	summaryYM	CDIF_facIncHOCount	numPatDays	numAdms	cdiTestType
10401	999999	FACWIDEIN	2019M04	0	2000	300	
10401	999999	FACWIDEIN	2019M05	0	500	100	

1. This table displays months that are excluded from the SIR report. These months will be included in the SIR once reporting for the entire quarter has been completed and CDI test type has been reported.

Using the table above, we can conclude the following:

o This facility has entered April and May 2019 CDI LabID data into NHSN, but *has not yet entered June 2019 data*. In April and May, there were 0 incident, healthcare-onset CDI LabID events reported.

o The facility reported 2,000 patient days in April and 500 patient days in May. The facility reported 300 admissions in April and 100 admissions in May. These values are taken from Line 3 of the FacWideIN denominator form.

o April and May are currently excluded from the facility's SIR because CDI test type is missing for 2019 Q2 (i.e., June data have not been reported). Once CDI test type is reported on the June FacWideIN denominator form, these months will be included in the SIR.

4. What can be done if a quarter does not appear in the table or if the data are inaccurate?
   a. Check that summary data for the FacWideIN location have been entered for each month in the quarter and double-check the accuracy of these data, which includes patient days and admissions.
   b. If summary data have been entered, double-check your monthly reporting plan for each month in the quarter. Check to make sure that CDI LabID surveillance is included in your monthly reporting plan for FacWideIN.
   c. If summary data have been entered and no <u>inpatient</u> CDI LabID events have been identified, be sure to check the 'Report No Events' box on the FacWideIN summary record or through the "Missing Events" alerts tab.
   d. If the number of events is less than you reported *and* you've confirmed that the summary data have been entered in-plan, double check the CDI LabID events in NHSN using the CDI LabID Events Line List.

REMEMBER: If you have made any changes to your data, regenerate your datasets in order to review your output options with the most up-to-date data in NHSN.

Additional Resources:

Troubleshooting MRSA and CDI LabID Event SIR:
https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/mrsacdi_tips.pdf

CMS Resources for NHSN Users:
http://www.cdc.gov/nhsn/cms/index.html

Operational Guidance for ACHs to report CDI:
https://www.cdc.gov/nhsn/pdfs/cms/final-ach-cdi-guidance.pdf

Analysis Quick Reference Guides:
http://www.cdc.gov/nhsn/PS-Analysis-resources/reference-guides.html

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