Introduction to the NHSN 2022 Baseline Models and Standardized Infection Ratio (SIR) Analysis Reports: CDI LabID

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Becky Lien, Statistics Team

Presented on behalf of the NHSN Rebaseline Team, DHQP, NCEZID, CDC

June 12, 2025

What you need to know before we begin

- **This webinar is designed to deepen your understanding of the SIR and the Rebaseline updates and help you effectively apply these concepts in your healthcare facility.**
- **Prerequisites:**
  - A working understanding of the SIR, including its purpose and calculation
  - Familiarity with the concept of a baseline in healthcare surveillance data
  - Basic knowledge of NHSN's Rebaseline process and how it impacts interpretation of SIR data
- **Resources to review:**
  - An Introduction to Updating the National Baseline
  - Prep Like a Pro: What to Expect from the 2022 HAI Rebaseline
  - Rebaseline Fact Sheet: What is the Rebaseline and Why it is Important?
  - How Will My SIR Change; Understanding the Impact of the 2022 HAI Rebaseline
  - Rebaseline FAQs

Disclaimers and Disclosures

On April 11, 2025, CMS published the fiscal year (FY 2026) Medicare Hospital Inpatient Prospective Payment System (IPPS) and Long-Term Care Hospital Prospective Payment System (LTCH PPS) proposed rule. CMS provided notice of technical updates the CDC National Healthcare Safety Network (NHSN) healthcare-associated infections (HAI) chart-abstracted measures with the new 2022 baseline, for both the Hospital-Acquired Condition (HAC) Reduction Program and the Hospital Value-Based Purchasing (VBP) Program. The HAI measures using the 2022 update to the standard population data will begin to be publicly reported on the Compare tool in Fall 2026 using four quarters of CY 2025 data.

Disclaimers and Disclosures – cont.

- **Questions about CMS Programs**:
  - **Acute Care Hospitals** (including PPS-Exempt Cancer Hospitals) - QualityNet Question and Answer Tool
    - Select “Ask a Question”, then select “HACRP – Hospital-Acquired Condition Reduction Program”
  - **Inpatient Rehabilitation Facilities (IRF)** - irf.questions@cms.hhs.gov
  - **Long-term Acute Care Hospitals (LTACH)** - ltchqualityquestions@cms.hhs.gov

Disclaimers and Disclosures (continued)

- **This presentation does not include Patient Health or Identifiable Information (PHI/PII) data.** Images of fictitious data and facility information are for illustrative purposes only and do not represent actual NHSN data.
- **Currently available 2022 Baseline SIRs in NHSN:**
  - **Acute Care Hospital only**
    - Central Line-Associated Bloodstream Infection (**CLABSI**)
    - Catheter-Associated Urinary Tract Infection (**CAUTI**)
    - *Clostridioides difficile* (**CDI**) LabID
  - **MRSA** bacteremia LabID and **SSI** Complex 30-day model for adult inpatient colon (**COLO**) and abdominal hysterectomy (**HYST**)
- **This webinar only covers CDI LabID.**
- A separate training webinar is available for each of the released 2022 Baseline SIRs available in NHSN **MRSA** bacteremia LabID, **SSI** – Complex 30-day, **CLABSI**, **CAUTI**, and **CDI** LabID.

Rebaseline Progress Tracker

- Additional 2022 baseline SIR and SUR reports will be added into NHSN in the future. Track our progress using the Rebaseline Progress Tracker.

5%

of 2022 Rebaseline models are available in NHSN

Progress Stage	Description	Status
Planning	• Establishing the timeline, scope, roles, and plan for the 2022 HAI Rebaseline project. • Developing an initial communications and partner outreach strategy, including sharing preliminary plans with external partners such as the Centers for Medicare and Medicaid Services (CMS). • Freezing NHSN HAI data from 2022; preparing analytic datasets that will be used for subsequent modeling work.	Stage Complete
Research	• Conducting a literature review of recent studies that identified factors that are potentially associated, or not associated, with the incidence of HAIs. • Evaluating clinical significance of potential risk factors to inform risk adjustment decisions.	Stage Complete

SIR/SUR Reports (2022 Baseline) Available in NHSN	SIR/SUR Reports (2022 Baseline) Under Development in NHSN
• MRSA Blood LabID • SSI – Complex 30-day • CLABSI in ACHs • CAUTI in ACHs • CDI LabID in ACHs	• CLABSI in CAHs, LTACHs, IRFs • CAUTI in CAHs, LTACHs, IRFs • CDI LabID in CAHs, LTACHS, IRFs • MBI-LCBI • VAE and pedVAE • SSI – Complex Admission/Readmission • SSI – All SSI • SUR Models

Objectives

At the end of this presentation, participants will be able to:

- Identify, locate, and use key components and resources for the CDI LabID SIR 2022 baseline, including:
  - Risk adjustment factors
  - Calculation for number of predicted events
  - 2022 Baseline SIRs and Data Quality Analysis Reports
  - 2022 Baseline Training Materials
- Explain the importance of risk adjustment factors and where these data are reported within NHSN
- Analyze the new CDI LabID SIR reports and evaluate the impact of different risk adjustment factors on the CDI LabID SIR

Plan for Today

1. Becky will present the **new risk adjustment models** for CDI LabID, discuss **statistical methods** for developing the new model, and will provide an example of how to manually calculate the number of predicted events (**SIR denominator**).
2. Karen will then provide details about the **new CDI LabID SIR reports**, information about each **risk factor** used in the model, and guidance on how to review those risk factors in NHSN.
3. Live **Q&A** will be open at the end for all presenters.
   - Please submit questions in the Q&A box throughout the presentation. NHSN staff are standing by to answer questions.

CDI LabID SIR 2022 baseline

Becky Lien, Statistics Team, NHSN

Standardized Infection Ratio (SIR)

$$= \frac{\#\ observed\ HAIs}{\#\ predicted\ HAIs}$$

HAIs reported to NHSN

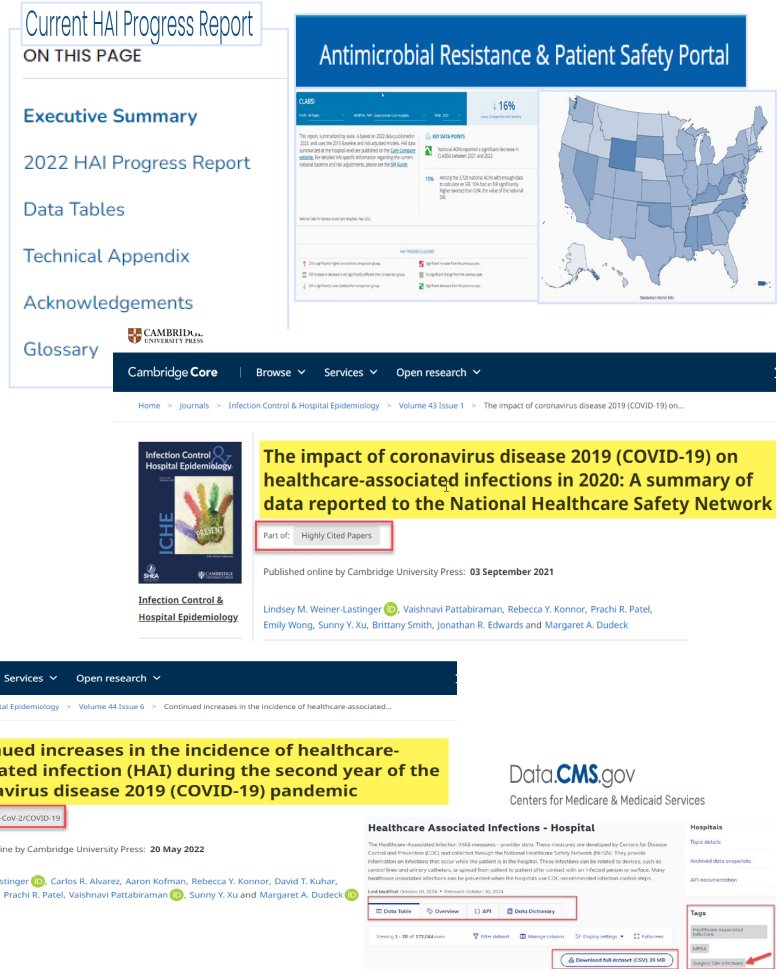
Calculated by CDC

Example → $\frac{\text{5 observed CDI LabID events}}{\text{3.221 predicted CDI LabID events}}$ = SIR of **1.552**

- When # of observed HAIs is greater than the # predicted, the SIR will be greater than 1
- If # observed HAIs is less than # predicted, the SIR will be less than 1
- P-values and 95% confidence intervals (CI) provide information about statistical significance
- NHSN Resources:
  - Statistics Calculator (https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/statscalc.pdf)
  - Guide to the 2022 Baseline SIRs (https://www.cdc.gov/nhsn/2022rebaseline/sir-guide.pdf)

Who Uses SIR Data?

- **The SIR value provides information about the number of HAIs reported in your facility.**
- **This summary statistic is used by various organizations:**
  - CMS: public reporting on Care Compare
  - State health departments may publish SIRs
  - Corporations
  - Non-profit or research groups
    - Leapfrog
  - CDC: national and state-level SIRs
  - Your facility!



HAI Progress Report: Current HAI Progress Report | HAIs CDC Care Compare: Healthcare Associated Infections - Hospital | Provider Data Catalog

Brief Pause - Burning Questions Answered!

- **2022 Baseline for SIRs and CMS Quality Reporting Programs:**
  - Yes, the model type used for risk adjustment for the CDI LabID SIR is the same type CMS has historically used for Quality Reporting Programs.
  - Currently, CMS continues to use the 2015 baseline models for Inpatient Prospective Payment System (IPPS).
  - HAI measures using the 2022 update to the standard population data will begin to be publicly reported on the Compare tool in Fall 2026 using four quarters of CY 2025 data.
- The **2022 Baseline** for **ACH CDI LabID SIR** is **now available** in the NHSN application for facility and group users:
  - Use for internal analyses and to aid in your surveillance and prevention efforts.
  - Begin to get comfortable with SIR values under the 2022 baseline – see how your facility compares to 2022 national data.
  - Check out the new Which baseline/report should I use? fact sheet.

Methods for obtaining the SIR formula

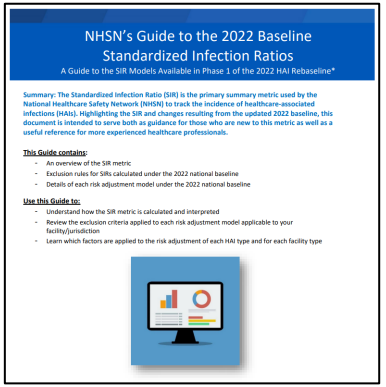
- **CDC obtains the formula (model) for the number of predicted events by obtaining the parameters based on a single baseline year.**
  - We use facility data reported to NHSN (with exclusion criteria applied) with the characteristics (covariates) that will be assessed for the model.
- **CDC uses negative binomial regression for CDI LabID events**
  - Models use characteristics (factors) reported to NHSN that significantly impact HAI incidence.
  - Each covariate is first evaluated in isolation in the ("univariate") model to determine the optimal parameterization for that variable.
  - The final model is a linear combination of the optimal set of statistically significant validated covariates.
  - Levels of covariates included in the optimal model that were not statistically significant were collapsed.
- **Standard model diagnostics are used to ensure the assumptions of the technique are appropriately met.**

Where do I find details of the risk adjustment models?

- **2022 NHSN Rebaseline webpage and resources:**
  https://www.cdc.gov/nhsn/2022rebaseline

- **Updated SIR Guide (pdf):**
  https://www.cdc.gov/nhsn/2022rebaseline/sir-guide.pdf

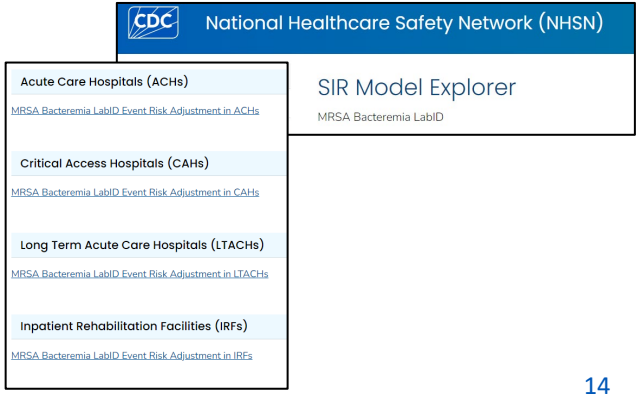
- **NHSN SIR Model Explorer, which includes parameters estimates for models:**
  https://www.cdc.gov/nhsn/2022rebaseline/sir-risk-factors.html


NHSN's Guide to the 2022 Baseline
Standardized Infection Ratios
A Guide to the SIR Models Available in Phase 1 of the 2022 HAI Rebaseline*

Summary: The Standardized Infection Ratio (SIR) is the primary summary metric used by the National Healthcare Safety Network (NHSN) to track the incidence of healthcare-associated infections (HAIs). Highlighting the SIR and changes resulting from the updated 2022 baseline, this document is intended to serve both as guidance for those who are new to this metric as well as a useful reference for more experienced healthcare professionals.

This Guide contains:
- An overview of the SIR metric
- Exclusion rules for SIRs calculated under the 2022 national baseline
- Details of each risk adjustment model under the 2022 national baseline

Use this Guide to:
- Understand how the SIR metric is calculated and interpreted
- Review the exclusion criteria applied to each risk adjustment model applicable to your facility/jurisdiction
- Learn which factors are applied to the risk adjustment of each HAI type and for each facility type



CDI LabID SIR 2022 baseline model for Acute Care Hospitals (ACH)

- **ACH 2022 baseline model includes 7 factors:**
  - Inpatient community-onset prevalence rate
  - CDI test type
  - Combined ED/OBS community-onset prevalence rate
  - Facility type (based on NHSN enrollment)
  - Number of ICU beds
  - Medical school affiliation
  - Average length of stay
- **See updated SIR guide for full details and footnotes:**

  https://www.cdc.gov/nhsn/2022rebaseline/sir-guide.pdf

CDI LabID 2022 baseline model for Acute Care Hospitals (ACH)

Risk factor	Levels	Parameter estimate
Intercept		-10.1452
Inpatient CO prevalence rate per 100 admissions	≥0.461 0.301-0.460 0.213-0.300 0.152-0.212 0.104-0.151 0.064-0.103 0.001-0.063 0	0.7994 0.6666 0.5137 0.4296 0.3211 0.2443 0.1118 REFERENT
CDI test type*	NAAT EIA or Other NAATEIA	0.2868 0.0960 REFERENT

* "NAAT" includes NAAT, GDHNAAT, and GDHEIA test types
"EIA or Other" includes EIA, GDH, OTH, ToxiCul, and Cyto test types

Risk factor	Levels	Parameter estimate
Combined ED/OBS CO prevalence rate per 100 encounters	≥0.048 0.025-0.047 0.012-0.024 <0.012 or no ED/OBS reporting	0.2914 0.2240 0.1064 REFERENT
Facility type	HOSP-ONC GEN-CHLD-MIL Specialty-other	1.6881 0.6225 REFERENT
Number of ICU beds	≥80 46-79 5-45 0-4	0.5765 0.3876 0.3330 REFERENT
Medical school affiliation	Major/Graduate/Non-teaching Undergraduate	0.1677 REFERENT
Average length of stay	≥5.4 days ≥1 to <5.4 days	0.0895 REFERENT

How do I calculate the SIR?
Facility risk factors

Data shown is fictitious, for an example ACH facility:

National Healthcare Safety Network
Risk Adjustment Factors for FacwideIN CDI SIR
As of: March 20, 2025 at 6:54 PM UTC
Date Range: BS3_LABID_RATESCDIF summaryYr 2023 to 2023

orgID=15328

orgID	ccn	summaryYQ	CDI_COprevRate_bs3	CDIF_EDOBSPrevRate	cdiTestType_bs3	factype	medType	numICUBeds	LOS	numpatdays
15328		2023Q1	0.000	0.000	NAATEIA	HOSP-GEN	M	0	6.0	34615
15328		2023Q2	0.000	0.012	NAAT	HOSP-GEN	M	0	6.0	34415
15328		2023Q3	0.037	0.000	NAAT	HOSP-GEN	M	0	6.0	36015
15328		2023Q4	0.000	0.019	NAAT	HOSP-GEN	M	0	6.0	37235

2023 Q2 example

Inpatient community-onset prevalence rate = 0.000
Combined ED/OBS community-onset prevalence rate = 0.012
…
…
Number of patient days = 34,415

How do I calculate the SIR?
Risk factor parameter estimates

Risk factor	Levels	Parameter estimate
Intercept		-10.1452
Inpatient CO prevalence rate per 100 admissions	≥0.461 0.301-0.460 0.213-0.300 0.152-0.212 0.104-0.151 0.064-0.103 0.001-0.063 0	0.7994 0.6666 0.5137 0.4296 0.3211 0.2443 0.1118 REFERENT
CDI test type	NAAT EIA or Other NAATEIA	0.2868 0.0960 REFERENT

Risk factor	Levels	Parameter estimate
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Medical school affiliation	Major/Graduate/Non-teaching Undergraduate	0.1677 REFERENT
Average length of stay	≥5.4 days ≥1 to <5.4 days	0.0895 REFERENT

Linear combination of parameter estimates = -10.1452 + 0 + 0.2868 + 0.1064 + …..

How do I calculate the SIR?
Putting it all together…..

Model for predicted number of CDI LabID events in 2023Q2:

Exp[-10.1452
+ 0 (Inpatient CO prev. rate: 0.000)
+ 0.2868 (CDI test type: NAAT)
+ 0.1064 (ED/OBS CO prev. rate: 0.001-0.024)
+ 0.6225 (Facility type: HOSP-BEN)
+ 0 (Number of ICU beds: 0-4)
+ 0.1677(Medical school affiliation: Major/Graduate/Non-teaching)
+ 0.0895 (Average length of stay: ≥5.4 days)]

x 34,415 (CDI LabID patient days) = 4.826 CDI LabID events

2023 Q2 SIR

$$\frac{\text{2 observed}}{\text{4.826 predicted}} = 0.414$$

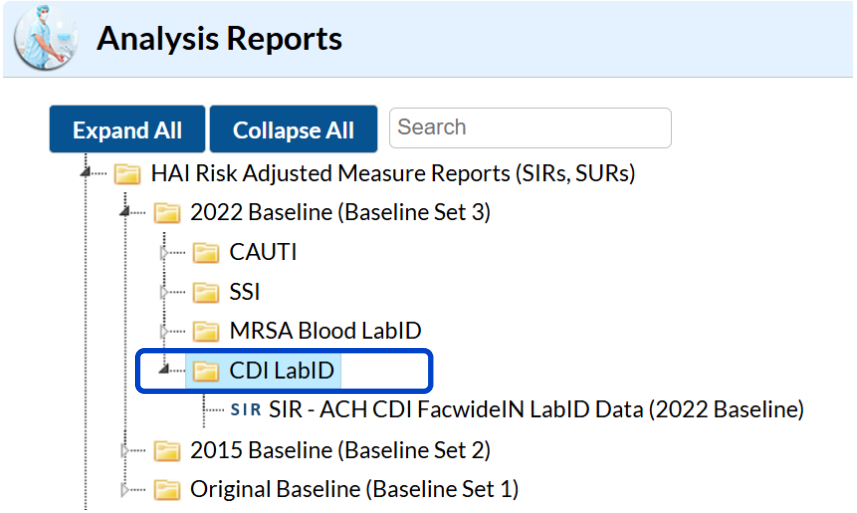
orgID	ccn	location	summaryYQ	months	CDIF_facIncHOCount	numPred	numpatdays	SIR	SIR_pval	sir95ci
15328		FACWIDEIN	2023Q1	3	1	3.276	34615	0.305	0.1994	0.015, 1.506
15328		FACWIDEIN	2023Q2	3	2	4.826	34415	0.414	0.1869	0.069, 1.369
15328		FACWIDEIN	2023Q3	3	0	5.077	36015	0.000	0.0062	, 0.590
15328		FACWIDEIN	2023Q4	3	0	5.221	37235	0.000	0.0054	, 0.574

CDI LabID SIR Reports (2022 baseline)

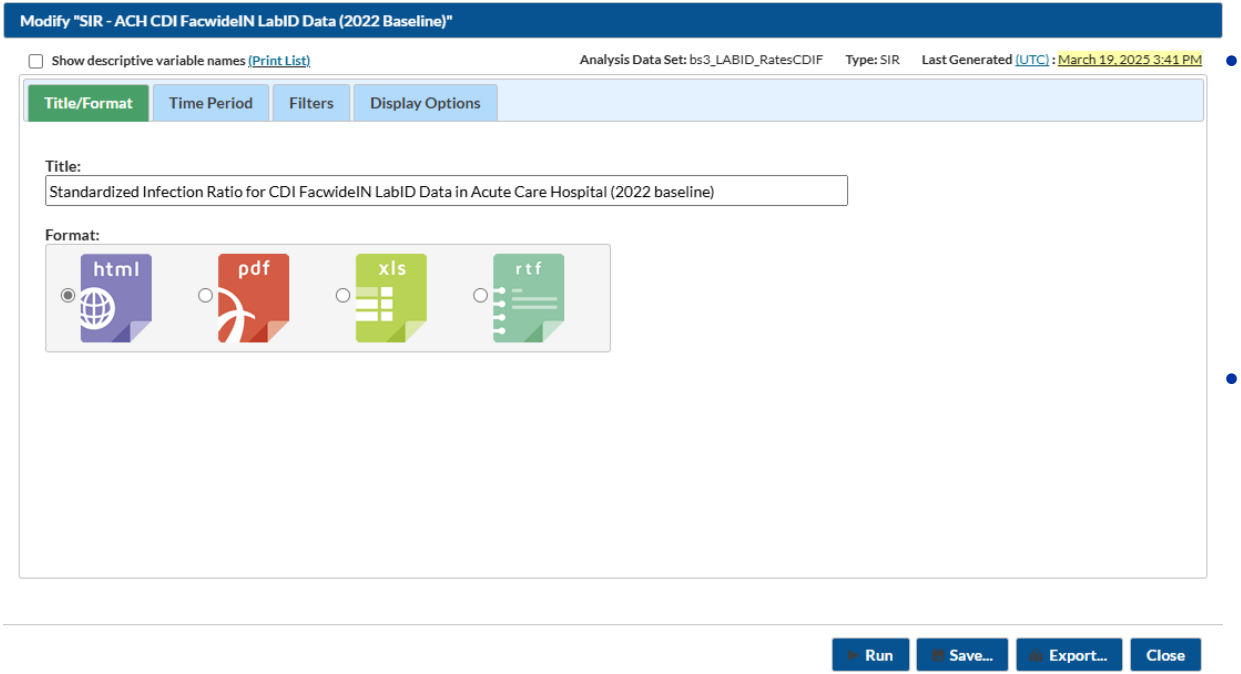
How to run and use the new reports

Analysis and Reporting Treeview

- **Required:** Generate datasets before running the new reports.
- Analysis treeview has been updated to include a new folder for the 2022 Baseline (Baseline Set 3) SIR reports under the ‘HAI Risk Adjusted Measure Reports’ folder.
- New CDI LabID SIR (2022 Baseline) reports can be found under the ‘CDI LabID’ subfolder.



Report Modifications



- Users will have the same options to modify the 2022 Baseline SIR reports in the NHSN application as the current reports.
- The following can be modified:
  - Title / Format
  - Time Period
  - Filters
  - Display Options

For more information on how to modify NHSN reports: [How to Modify a Report (cdc.gov)]

Details for the SIR Report for Acute Care Hospitals (ACH)

Getting Started: Fundamentals for the new CDI LabID SIR Reports (Part 1)

- The CDI SIR for acute care hospitals (ACHs) is only calculated on the facility-wide inpatient (FacWideIN) level and cannot be calculated for any individual location.
  - Note: IRF units within a hospital will receive a separate SIR.
- The new SIR reports under the 2022 Baseline folder will only run for data from 2022 and forward.
- Footnotes have been updated with new details specific for the 2022 baseline model.
- 2022 Baseline SIR Guide: https://www.cdc.gov/nhsn/2022rebaseline/sir-guide.pdf

Getting Started: Fundamentals for the new CDI LabID SIR Reports (Part 2)

- **Report Cadence: The CDI SIR reports are available at the quarterly-level by default. Users will have the option to generate monthly results.**
  - Monthly results will use quarterly inpatient community-onset and outpatient community-onset prevalence rates and monthly number of patient days.
  - More details about generating monthly results are coming later in the presentation!

- **Psych & Veteran's Affairs (VA) Hospitals are excluded**
  - These facilities can still run 2015 baseline SIR reports, line listings, and rate tables.

Example CDI SIR Report

Table #1

National Healthcare Safety Network
Standardized Infection Ratio for CDI FacwideIN LabID Data in Acute Care Hospital (2022 baseline)
As of: April 3, 2025 at 3:50 PM UTC
Date Range: BS3_LABID_RATESCDIF summaryYr After and Including 2022

orgID=15328

orgID	ccn	location	summaryYQ	months	CDIF_facIncHOCount	numPred	numpatdays	SIR	SIR_pval	sir95ci
15328		FACWIDEIN	2023Q1	3	1	3.276	34615	0.305	0.1994	0.015, 1.506
15328		FACWIDEIN	2023Q2	3	2	4.826	34415	0.414	0.1869	0.069, 1.369
15328		FACWIDEIN	2023Q3	3	0	5.077	36015	0.000	0.0062	, 0.590
15328		FACWIDEIN	2023Q4	3	0	5.221	37235	0.000	0.0054	, 0.574

1. 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.
2. The number of predicted events is calculated based on national 2022 NHSN data. Please see the SIR Guide for details on the HAI-specific risk adjustment and inclusion/exclusion criteria: https://www.cdc.gov/nhsn/2022rebaseline/analysis-resources.html
3. By default, this report includes all data that meet the report criteria, which includes data not specified on the monthly reporting plans.
4. This report includes facility-wide inpatient data from hospitals for 2022 and forward.
5. 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
6. If any risk factor data are missing, the record is excluded from the SIR.

Source of aggregate data: 2022 NHSN CDI LabID Data
Data contained in this report were last generated on April 1, 2025 at 5:16 PM UTC to include data beginning January 2021 .

Fictitious data used for illustrative purposes only.

Example CDI SIR Report – cont.

Table #1

National Healthcare Safety Network
Standardized Infection Ratio for CDI FacwideIN LabID Data in Acute Care Hospital (2022 baseline)
As of: April 3, 2025 at 3:50 PM UTC
Date Range: BS3_LABID_RATESCDIF summaryYr After and Including 2022

orgID=15328

orgID	ccn	location	summaryYQ	months	CDIF_facIncHOCount	numPred	numpatdays	SIR	SIR_pval	sir95ci
15328		FACWIDEIN	2023Q1	3	1	3.276	34615	0.305	0.1994	0.015, 1.506

- The display of the first table in the SIR report has not changed.
- BS3_LABID_RATESCDIF analysis dataset is used for the 2022 baseline ACH SIR report and Rates Table report.
- SIRs are still not calculated when the number of predicted infections is less than 1.0.

Fictitious data used for illustrative purposes only.

Example CDI SIR Report- cont.

Table #1

National Healthcare Safety Network
Standardized Infection Ratio for CDI FacwideIN LabID Data in Acute Care Hospital (2022 baseline)
As of: April 3, 2025 at 3:50 PM UTC
Date Range: BS3_LABID_RATESCDIF summaryYr After and Including 2022

orgID=15328

orgID	ccn	location	summaryYQ	months	CDIF_facIncHOCount	numPred	numpatdays	SIR	SIR_pval	sir95ci
15328		FACWIDEIN	2023Q1	3	1	3.276	34615	0.305	0.1994	0.015, 1.506

SIR Data Explained

- **Months: 3**
- **SIR numerator (CDIF_facIncHOCount): 1**
- **SIR denominator (numPred): 3.276**
- **Total CDI patient days for the quarter (numpatdays): 34,615**
- **SIR: 1 / 3.276 = 0.305**

Note: The methods for calculating/ displaying SIR numerator, patient days, p-value and 95% CI are not changing

Fictitious data used for illustrative purposes only.

Example CDI SIR Report- cont.

Table #1

National Healthcare Safety Network
Standardized Infection Ratio for CDI FacwideIN LabID Data in Acute Care Hospital (2022 baseline)
As of: April 3, 2025 at 3:50 PM UTC
Date Range BS3_LABID_RATESCDIF summaryYr After and Including 2022

orgID=15328

orgID	ccn	location	summaryYQ	months	CDIF_facIncHOCount	numPred	numpatdays	SIR	SIR_pval	sir95ci
15328		FACWIDEIN	2023Q1	3	1	3.276	34615	0.305	0.1994	0.015, 1.506

- **SIR denominator (numPred): 3.276**
  - This is calculated using the 2022 baseline CDI model for acute care hospitals (ACHs)
  - https://www.cdc.gov/nhsn/2022rebaseline/tables/table-8.html

Fictitious data used for illustrative purposes only.

Example CDI SIR Report - cont.

Table #1

National Healthcare Safety Network
Standardized Infection Ratio for CDI FacwideIN LabID Data in Acute Care Hospital (2022 baseline)
As of: April 3, 2025 at 3:50 PM UTC
Date Range: BS3_LABID_RATESCDIF summaryYr After and Including 2022

orgID=15328

orgID	ccn	location	summaryYQ	months	CDIF_facIncHOCount	numPred	numpatdays	SIR	SIR_pval	sir95ci
15328		FACWIDEIN	2023Q1	3	1	3.276	34615	0.305	0.1994	0.015, 1.506

- **If the SIR < 1.0, then fewer CDI LabID events were observed than predicted, based on the 2022 national aggregate data.**
- **If the p-value > 0.05, then we can conclude that the number of observed infections is not statistically significantly different than the number of predicted infections.**
- **If the confidence interval includes the value of 1, then the SIR is not significantly different than 1.**

Keys to Success with NHSN Data
https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/keys-to-success-h.pdf

Fictitious data used for illustrative purposes only.

Example CDI SIR Report-cont.

Table #1

National Healthcare Safety Network
Standardized Infection Ratio for CDI FacwideIN LabID Data in Acute Care Hospital (2022 baseline)
As of: April 3, 2025 at 3:50 PM UTC
Date Range: BS3_LABID_RATESCDIF summaryYr After and Including 2022

orgID=15328

orgID	ccn	location	summaryYQ	months	CDIF_facIncHOCount	numPred	numpatdays	SIR	SIR_pval	sir95ci
15328		FACWIDEIN	2023Q1	3	1	3.276	34615	0.305	0.1994	0.015, 1.506

- **P-value is > 0.05**
- **The 95% confidence interval includes 1.0**
  - 95% CI: (0.015, 1.506)
- **SIR is not statistically significantly different than 1.0 in this example**
- ***Note: The SIR, SIR p-value and confidence intervals are displayed because the number of predicted CDI events is ≥ 1.***

Fictitious data used for illustrative purposes only.

What if numPred is less than 1?

- SIR, p-value, and 95% confidence interval would be missing/blank

Table #1

National Healthcare Safety Network
Standardized Infection Ratio for CDI FacwideIN LabID Data in Acute Care Hospital (2022 baseline)
As of: April 3, 2025 at 6:29 PM UTC
Date Range: BS3_LABID_RATESCDIF summaryYr After and Including 2024

orgID=16038

orgID	ccn	location	summaryYQ	months	CDIF_facIncHOCount	numPred	numpatdays	SIR	SIR_pval	sir95ci
16038		FACWIDEIN	2024Q1	3	0	0.720	5020	.	.	
16038		FACWIDEIN	2024Q2	3	0	1.082	7545	0.000	0.3391	, 2.770

Fictitious data used for illustrative purposes only.

What if numPred is less than 1? - cont.

- A longer time period can be included in the SIR calculation in order to reach the threshold of 1.0 predicted infection.
- Infection rates can be used to track internal CDI incidence over time.
- New TAP reports for the 2022 Baseline will be coming soon.
  - 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).

How is the # of predicted events calculated?

- Negative binomial regression models were created using 2022 national data.
- The second table in the CDI ACH SIR report displays 7 risk factors and patient days used to calculate your facility's number of predicted CDI events (SIR denominator) using the 2022 baseline model.

Table #2

National Healthcare Safety Network

Risk Adjustment Factors for FacwideIN CDI SIR

As of: April 3, 2025 at 3:50 PM UTC

Date Range: BS3_LABID_RATESCDIF summaryYr After and Including 2022

orgID=15328

orgID	ccn	summaryYQ	CDI_COprevRate_bs3	CDIF_EDOBSPrevRate	cdiTestType_bs3	factype	medType	numICUBeds	LOS	numpatdays
15328		2023Q1	0.000	0.000	NAATEIA	HOSP-GEN	M	0	6.0	34615
15328		2023Q2	0.000	0.012	NAAT	HOSP-GEN	M	0	6.0	34415
15328		2023Q3	0.037	0.000	NAAT	HOSP-GEN	M	0	6.0	36015
15328		2023Q4	0.000	0.019	NAAT	HOSP-GEN	M	0	6.0	37235

Note: CDI ACH model inputs available at SIR Model Explorer https://www.cdc.gov/nhsn/2022rebaseline/tables/table-8.html

Fictitious data used for illustrative purposes only.

Risk Factors Table: Community-onset prevalence rates

National Healthcare Safety Network
Risk Adjustment Factors for FacwideIN CDI SIR
As of: April 3, 2025 at 3:50 PM UTC
Date Range: BS3_LABID_RATESCDIF summaryYr After and Including 2022

Table #2

orgID=15328

orgID	ccn	summaryYQ	CDI_COprevRate_bs3	CDIF_EDOBSPrevRate	cdiTestType_bs3	factype	medType	numICUBeds	LOS	numpatdays
15328		2023Q1	0.000	0.000	NAATEIA	HOSP-GEN	M	0	6.0	34615

Inpatient community-onset (CO) prevalence rate (CDI_COprevRate_bs3)

$$\frac{\#\ inpatient\ CO\ CDI\ events}{\#\ of\ admissions\ (quarter)}\ x\ 100$$

(based on FACWIDEIN)

Outpatient community-onset (CO) prevalence rate (CDIF_EDOBSPrevRate)

$$\frac{\#\ outpatient\ CO\ CDI\ events}{\#\ of\ encounters\ (quarter)}\ x\ 100$$

(based on Emergency Depts & 24-hour Observation locations)

Fictitious data used for illustrative purposes only.

Risk Factors Table: CDI Test Type

National Healthcare Safety Network
Risk Adjustment Factors for FacwideIN CDI SIR
As of: April 3, 2025 at 3:50 PM UTC
Date Range: BS3_LABID_RATESCDIF summaryYr After and Including 2022

Table #2

orgID=15328

orgID	ccn	summaryYQ	CDI_COprevRate_bs3	CDIF_EDOBSPrevRate	cdiTestType_bs3	factype	medType	numICUBeds	LOS	numpatdays
15328		2023Q1	0.000	0.000	NAATEIA	HOSP-GEN	M	0	6.0	34615

- **CDI test method, reported 3rd month of each quarter on MDRO/CDI Monthly Denominator Forms (Mar, Jun, Sep, Dec)**

For this quarter, what is the standard testing method or algorithm for C. difficile used by your facility laboratory or the outside laboratory where your facility's testing is performed (check one): *

NAATEIA - NAAT plus EIA, if NAAT positive (2-step algorithm)

Fictitious data used for illustrative purposes only.

Risk Factors Table: CDI Test Type – cont.

National Healthcare Safety Network
Risk Adjustment Factors for FacwideIN CDI SIR
As of: April 3, 2025 at 3:50 PM UTC
Date Range: BS3_LABID_RATESCDIF summaryYr After and Including 2022

Table #2

orgID=15328

orgID	ccn	summaryYQ	CDI_COprevRate_bs3	CDIF_EDOBSPrevRate	cdiTestType_bs3	factype	medType	numICUBeds	LOS	numpatdays
15328		2023Q1	0.000	0.000	NAATEIA	HOSP-GEN	M	0	6.0	34615

For this quarter, what is the standard testing method or algorithm for C. difficile used by your facility laboratory or the outside laboratory where your facility's testing is performed (check one): *
NAATEIA - NAAT plus EIA, if NAAT positive (2-step algorithm)

- **cdiTestType_bs3 classification for ACH as**
  - EIA-Other: EIA, GDH, OTH, ToxiCul, Cyto
  - NAAT: GDHNAAT, GDHEIA, NAAT
  - NAATEIA: NAATEIA
- **Classification differs for CAH and IRF**

Fictitious data used for illustrative purposes only.

Risk Factors Table: Annual Survey and Enrollment

Table #2

National Healthcare Safety Network
Risk Adjustment Factors for FacwideIN CDI SIR
As of: April 3, 2025 at 3:50 PM UTC
Date Range: BS3_LABID_RATESCDIF summaryYr After and Including 2022

orgID=15328

Note: The survey used for risk adjustment aligns with the year of data being analyzed (i.e., 2023 survey would be used for 2023 SIR calculations, if available). If corresponding survey isn't reported in NHSN yet, the SIR will then use the most recent survey available.

orgID	ccn	summaryYQ	CDI_COprevRate_bs3	CDIF_EDOBSPrevRate	cdiTestType_bs3	factype	medType	numICUBeds	LOS	numpatdays
15328		2023Q1	0.000	0.000	NAATEIA	HOSP-GEN	M	0	6.0	34615

These values are collected from the annual hospital survey or during NHSN enrollment:

- **Facility type (facType)**
- **Medical school affiliation (medType)**
- **Number of ICU beds (numICUBeds)**
- **Average length of stay (LOS = numPatDaysSurv / numAdmitsSurv)**

Fictitious data used for illustrative purposes only.

Risk Factors Table: CDI Patient Days

National Healthcare Safety Network
Risk Adjustment Factors for FacwideIN CDI SIR
As of: April 3, 2025 at 3:50 PM UTC
Date Range: BS3_LABID_RATESCDIF summaryYr After and Including 2022

Table #2

orgID=15328

orgID	ccn	summaryYQ	CDI_COprevRate_bs3	CDIF_EDOBSPrevRate	cdiTestType_bs3	factype	medType	numICUBeds	LOS	numpatdays
15328		2023Q1	0.000	0.000	NAATEIA	HOSP-GEN	M	0	6.0	34615

- **Patient days are collected on the FacWideIN denominator form and summed for the quarter (numpatdays)**
  - For CDI, CMS-certified IRF, CMS-certified IPF, NICU, and Well Baby Units are excluded.
  - Patient days used in CDI SIR can be different from MRSA SIR (MRSA could include NICU and Well Baby Units).

Fictitious data used for illustrative purposes only.

Exclusions from Number of Predicted Calculation due to Missing Risk Factor

- **The number of predicted events cannot be calculated if any risk factors are missing in NHSN.**
- **If number of predicted events cannot be calculated, a third table will display at the bottom of the SIR report.**
  - The 'months excluded' table can be used to identify missing risk factor(s).
- **Common reasons for missing risk factors:**
  - Newly enrolled facility has not completed annual survey → missing required survey risk factors
  - Zero admissions for a quarter → inpatient community-onset prevalence rate cannot be calculated if the number of admissions summed for the quarter (collected on the FacWideIN denominator form) is zero
  - CDI test type missing for quarter → CDI test method not reported on 3rd month of quarter

Exclusions from Number of Predicted Calculation due to Missing Risk Factor – cont.

National Healthcare Safety Network

CDI Data - Months Excluded from SIR Due to Missing Risk Factor

As of: April 3, 2025 at 7:54 PM UTC

Date Range: BS3_LABID_RATESCDIF summaryYr After and Including 2022

Table #3

orgID=10811

orgID	ccn	summaryYM	CDIF_facIncHOCount	factype	medType	numICUBeds	numPatDaysSurv	numAdmitsSurv	cdiTestMeth	numAdms	numPatDays
10811		2024M01	2	HOSP-GEN		.	.	.	NAAT	625	2505
10811		2024M02	0	HOSP-GEN		.	.	.	NAAT	626	2515
10811		2024M03	0	HOSP-GEN		.	.	.	NAAT	627	2525

- **Facility did not complete recent annual survey and survey risk factors are missing or cannot be calculated**
  - Medical school affiliation (medType) and number of ICU beds (numICUBeds) are missing
  - Annual patient days (numPatDaysSurv) and annual admissions (numAdmitsSurv) are missing; therefore, average length of stay (LOS) cannot be calculated (numPatDaysSurv / numAdmitsSurv)
- **Facility should review data entry to ensure accurate denominators were provided on the monthly summary forms**

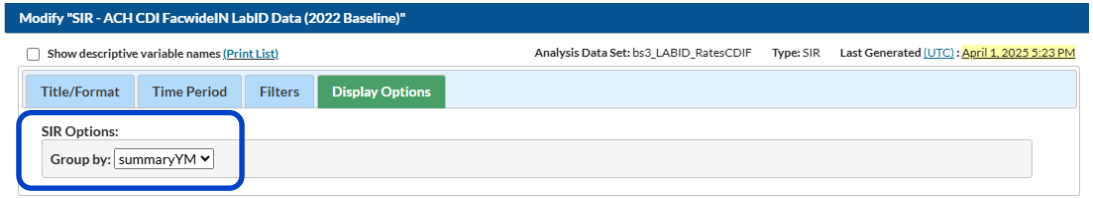
Fictitious data used for illustrative purposes only.

View monthly results for CDI

- **Step 1: Wait for the quarter to be finished.**
  - All 3 months of data for a calendar quarter must be entered into NHSN before producing a monthly SIR report for any month in that quarter (e.g., January, February, and March must be completed to view quarter 1 results).
- **Step 2: Ensure new analysis datasets have been generated to capture all monthly data entry.**
- **Step 3: Use the Modify screen of the SIR Report to change the “Group by” option to SummaryYM.**

How do I view monthly results for CDI?

- **Using the same SIR Report, navigate to the Display Options tab**
- **Select Group by option SummaryYM**



National Healthcare Safety Network
Standardized Infection Ratio for CDI FacwideIN LabID Data in Acute Care Hospital (2022 baseline)
As of: April 3, 2025 at 8:18 PM UTC
Date Range: BS3_LABID_RATESCDIF summaryYM 2023M01 to 2023M03

orgID=10315

orgID	ccn	location	summaryYM	CDIF_facIncHOCount	numPred	numpatdays	SIR	SIR_pval	sir95ci
10315		FACWIDEIN	2023M01	0	0.071	400	.	.	
10315		FACWIDEIN	2023M02	0	0.072	405	.	.	
10315		FACWIDEIN	2023M03	0	0.073	410	.	.	

Fictitious data used for illustrative purposes only.

Data Quality

How to ensure the quality and accuracy of the SIR report

Data Quality: SIR numerator

Table #1

National Healthcare Safety Network
Standardized Infection Ratio for CDI FacwideIN LabID Data in Acute Care Hospital (2022 baseline)
As of: April 3, 2025 at 3:50 PM UTC
Date Range: BS3_LABID_RATESCDIF summaryYr After and Including 2022

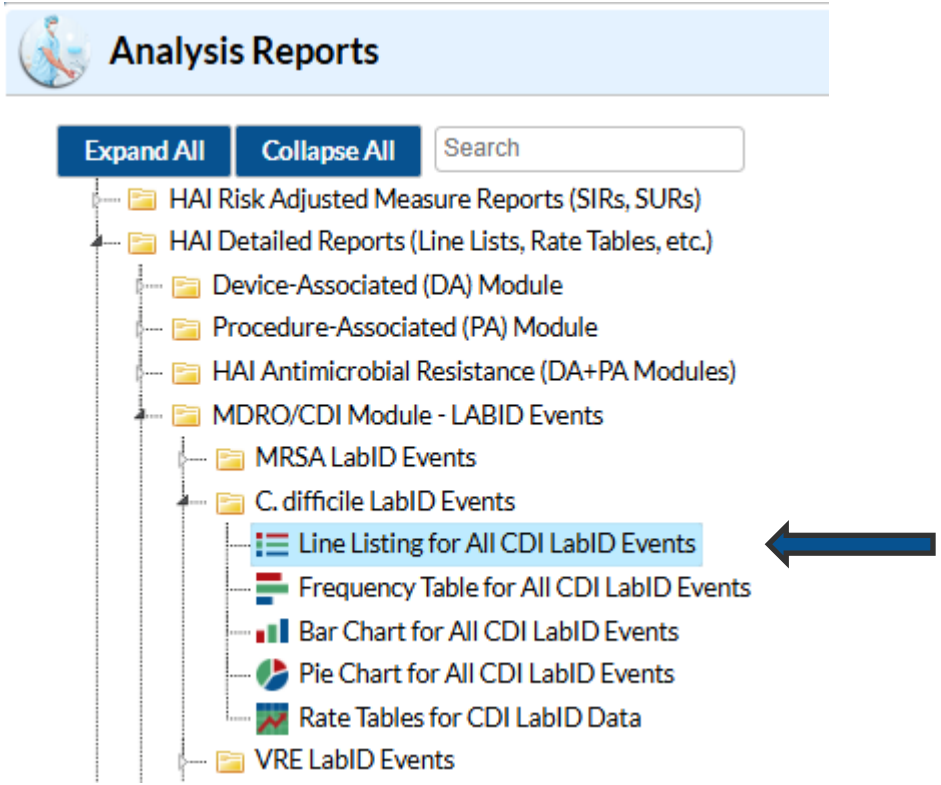
orgID=15328

orgID	ccn	location	summaryYQ	months	CDIF_facIncHOCount	numPred	numpatdays	SIR	SIR_pval	sir95ci
15328		FACWIDEIN	2023Q1	3	1	3.276	34615	0.305	0.1994	0.015, 1.506

- **To confirm the accuracy of the CDI SIR numerator (CDIF_facIncHOCount), run and review the 'Line Listing for All CDI LabID Events' report** *(next slide).*

Fictitious data used for illustrative purposes only.

Data Quality: SIR numerator -- CDI Line Listing Report



Data Quality: SIR numerator -- CDI Line Listing Report – cont.

National Healthcare Safety Network
Line Listing - All CDI LabID Events
As of: April 4, 2025 at 1:18 PM UTC
Date Range: All LABID_EVENTS
If (((spcOrgType = "CDIF")))

orgID	patID	eventID	spcOrgType	location	outpatient	onset	cdiAssay	admitDate	locationAdmitDate	specimenSource	specimenDate	ageAtSpec	facToSpecDays	FWCDIF_facIncHOCount	FWCDIF_admPrevCOCount	FWCDIF_admPrevCOCount_bs3
10315	003	123331	CDIF	MED CC	N	CO	INCIDENT	02/22/2023	02/22/2023	STOOL	02/22/2023	39	1	0	2	2
10315	005	123333	CDIF	MED CC	N	CO	INCIDENT	06/15/2023	06/15/2023	STOOL	06/15/2023	35	1	0	2	2
10315	004	123332	CDIF	MED CC	N	HO	INCIDENT	06/14/2023	06/14/2023	STOOL	06/28/2023	40	15	2	0	0
10315	006	123334	CDIF	MED CC	N	CO	INCIDENT	07/19/2023	07/19/2023	STOOL	07/19/2023	30	1	0	2	2
10315	007	123335	CDIF	MED CC	N	HO	INCIDENT	09/01/2023	09/01/2023	STOOL	09/17/2023	36	17	2	0	0
10315	008	123336	CDIF	MEDSURGCC	N	HO	INCIDENT	10/11/2023	10/11/2023	STOOL	10/19/2023	35	9	2	0	0
10315	009	123337	CDIF	MEDSURGCC	N	CO	INCIDENT	10/24/2023	10/24/2023	STOOL	10/24/2023	39	1	0	2	2

- **Indicator variable on the Line Listing for All CDI LabID Events report can be used to verify the events counted in the SIR numerator (FWCDIF_facIncHOCount)**
  - If FWCDIF_facIncHOCount = 1, the event is counted in the SIR numerator
  - There is an additional indicator variable for the events counted in the inpatient CO prevalence rate (FWCDIF_admPrevCOCount_bs3)

Fictitious data used for illustrative purposes only.

Data Quality: SIR denominator

Table #1

National Healthcare Safety Network
Standardized Infection Ratio for CDI FacwideIN LabID Data in Acute Care Hospital (2022 baseline)
As of: April 3, 2025 at 3:50 PM UTC
Date Range: BS3_LABID_RATESCDIF summaryYr After and Including 2022

orgID=15328

orgID	ccn	location	summaryYQ	months	CDIF_facIncHOCount	numPred	numpatdays	SIR	SIR_pval	sir95ci
15328		FACWIDEIN	2023Q1	3	1	3.276	34615	0.305	0.1994	0.015, 1.506

To confirm the accuracy of the CDI SIR denominator (numPred), review Risk Adjustment Factors (second table) and/or Months Excluded (third table) within the SIR report.

Fictitious data used for illustrative purposes only.

Data Quality: SIR denominator -- SIR Report Risk Factors Table

National Healthcare Safety Network
Risk Adjustment Factors for FacwideIN CDI SIR
As of: April 3, 2025 at 3:50 PM UTC
Date Range: BS3_LABID_RATESCDIF summaryYr After and Including 2022

Table #2

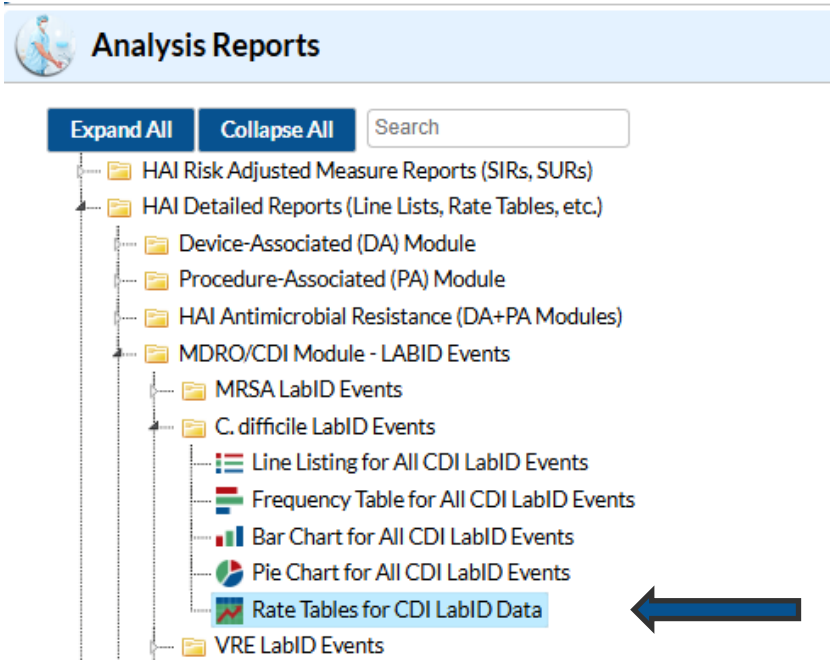
orgID=15328

orgID	ccn	summaryYQ	CDI_COprevRate_bs3	CDIF_EDOBSPrevRate	cdiTestType_bs3	factype	medType	numICUBeds	LOS	numpatdays
15328		2023Q1	0.000	0.000	NAATEIA	HOSP-GEN	M	0	6.0	34615

- **The second table generated by the CDI SIR report displays the values of the covariates used when calculating number of predicted events.**
  - To confirm the prevalence rates in this table, run and review the Rate Tables for CDI LabID Data (HAI Detailed Reports > MDRO/CDI Module-LabID Events).
  - To confirm the survey risk factors in this table, manually review the hospital annual survey or run the 'Line Listing – Hospital Survey' report (Supplemental Reports > Facility-level Data).

Fictitious data used for illustrative purposes only.

Data Quality: SIR denominator -- CDI Rate Tables Report



National Healthcare Safety Network
Rate Table - All CDI LabID Events by Location
BS3 CDI Prevalence - Community-Onset Admission Prevalence Rate
As of: April 4, 2025 at 2:23 PM UTC
Date Range: BS3_LABID_RATESCDIF summaryYM 2023M01 to 2023M03

orgID=15328 locCDC=' '

summaryYQ	months	location	CDIF_admPrevCOCount_bs3	numadms	CDI_COprevRate_bs3
2023Q1	3	FACWIDEIN	0	2115	0.000

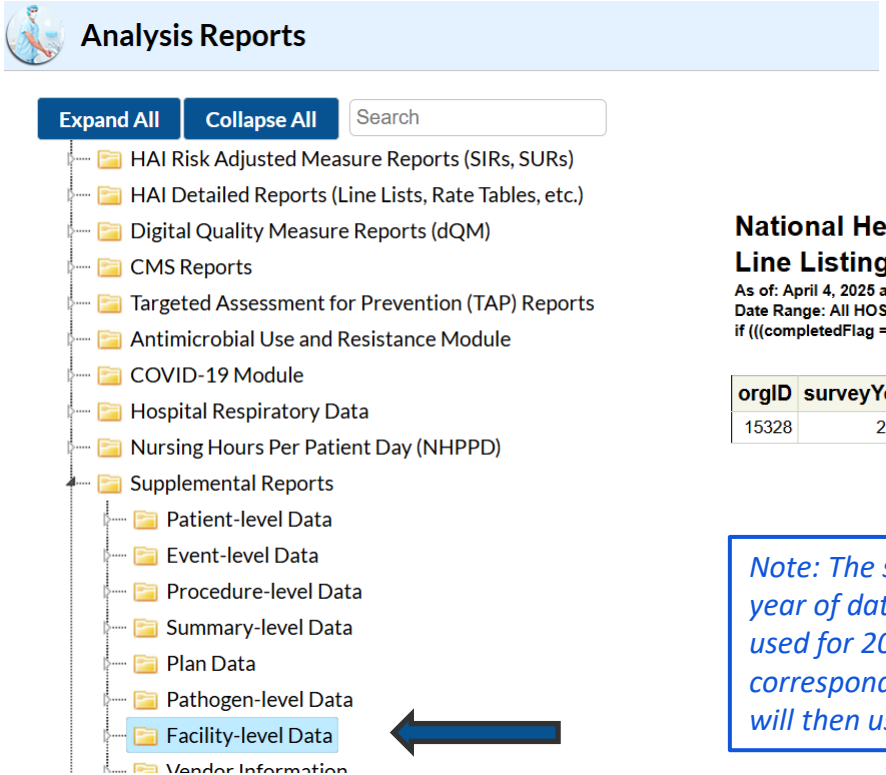
National Healthcare Safety Network
Rate Table - All CDI LabID Events by Location
Combined ED/Observation Unit CDIF Prevalence Rate
As of: April 4, 2025 at 4:55 PM UTC
Date Range: BS3_LABID_RATESCDIF summaryYM 2023M01 to 2023M03

orgID=15328

summaryYQ	months	location	CDIF_EDOBSprevCount	numEncounters	CDIF_EDOBSPrevRate
2023Q1	.	FACWIDEIN	0	6021	0.000

Fictitious data used for illustrative purposes only.

Data Quality: SIR denominator -- Hospital Survey Line Listing Report



National Healthcare Safety Network
Line Listing - Hospital Survey (2023)
As of: April 4, 2025 at 5:01 PM UTC
Date Range: All HOSPSURVEYV8ALL
if (((completedFlag = "Y")))

orgID	surveyYear	factype	medAff	medType	medTypeDesc	numICUBeds	numPatDays	numAdmits
15328	2023	HOSP-GEN	Y	M	M - Major	0	147000	24500

Note: The survey used for risk adjustment aligns with the year of data being analyzed (i.e., 2023 survey would be used for 2023 SIR calculations, if available). If corresponding survey isn't reported in NHSN yet, the SIR will then use the most recent survey available.

Data Quality: SIR denominator, Months Excluded Table

Table #3

National Healthcare Safety Network
CDI Data - Months Excluded from SIR Due to Missing Risk Factor
As of: April 4, 2025 at 1:58 PM UTC
Date Range: BS3_LABID_RATE$CDIF summaryYr After and including 2022

orgID=10315

orgID	ccn	summaryYM	CDIF_facIncHOCount	factype	medType	numICUBeds	numPatDaysSurv	numAdmitsSurv	cdiTestMeth	numAdms	numPatDays
10315		2023M07	0	HOSP-WOM	G	90	15005	2831		90	500
10315		2023M08	0	HOSP-WOM	G	90	15005	2831		95	505
10315		2024M01	0	HOSP-WOM	G	90	15005	2831	GDH	0	0
10315		2024M02	0	HOSP-WOM	G	90	15005	2831	GDH	0	0
10315		2024M03	0	HOSP-WOM	G	90	15005	2831	GDH	0	0

- **The third table (if applicable) generated by the CDI SIR report will display if there are any missing covariates, which is preventing number of predicted events to be calculated.**
  - If cdiTestMeth is missing, review the MDRO summary form for the quarter of the months listed.
  - If numAdms is zero for all three months of the quarter, review the MDRO summary forms for the months listed.
  - If any of the following are missing, review the annual survey: medType, numICUBeds, numPatDaysSurv, numAdmitsSurv *(not depicted in image above).*

Fictitious data used for illustrative purposes only.

Data Quality: Patient days

Table #1

National Healthcare Safety Network
Standardized Infection Ratio for CDI FacwideIN LabID Data in Acute Care Hospital (2022 baseline)
As of: April 3, 2025 at 3:50 PM UTC
Date Range: BS3_LABID_RATESCDIF summaryYr After and Including 2022

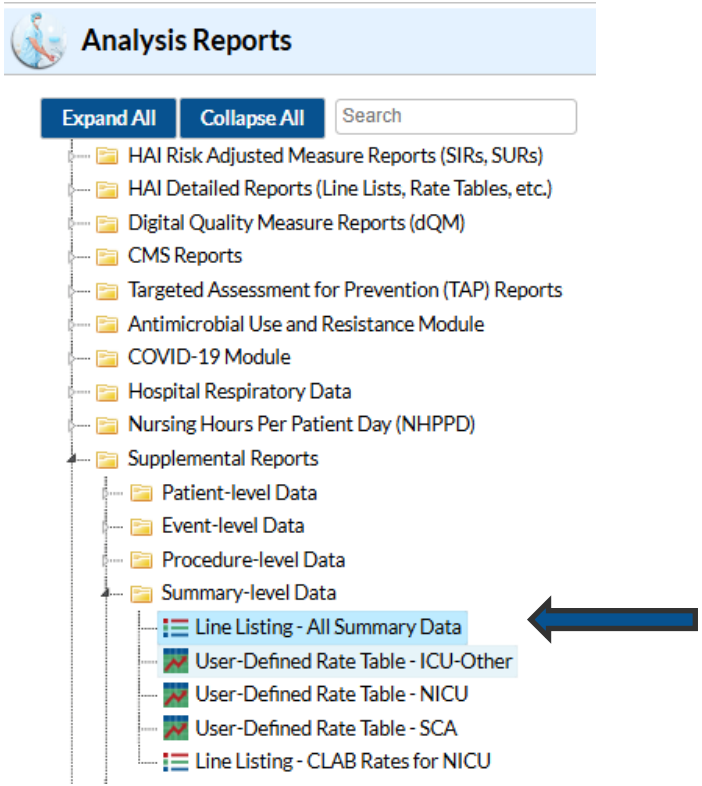
orgID=15328

orgID	ccn	location	summaryYQ	months	CDIF_facIncHOCount	numPred	numpatdays	SIR	SIR_pval	sir95ci
15328		FACWIDEIN	2023Q1	3	1	3.276	34615	0.305	0.1994	0.015, 1.506

- **To confirm the accuracy of the patient days used to calculate number of predicted events, review the MDRO summary forms (Line 3 patient days) or review the 'Line Listing for All Summary Data' report**

Fictitious data used for illustrative purposes only.

Data Quality: Patient Days -- Summary Line Listing Report



National Healthcare Safety Network
Line Listing for All Summary Data
As of: April 4, 2025 at 2:15 PM UTC
Date Range: PS SUMMARY summaryYM 2023M01 to 2023M03
If (((location = "FACWIDEIN") AND (eventType = "CDIF")))

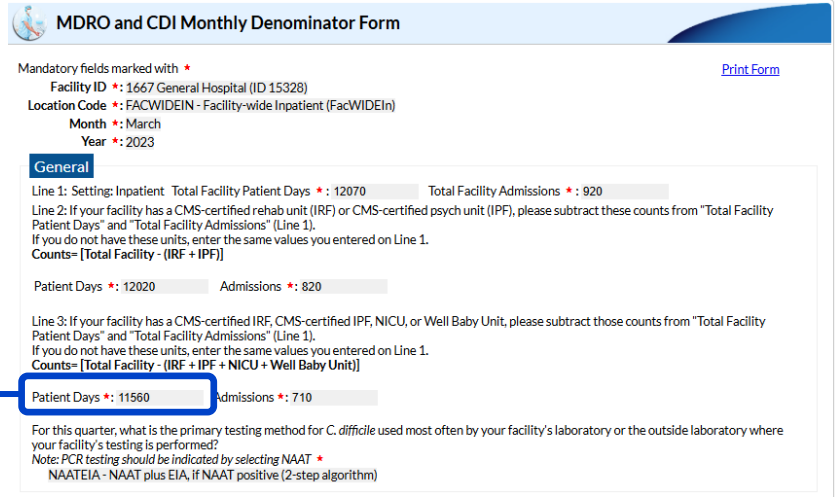
orgid	summaryYM	summarytype	location	loccdc	eventtype	cdiTestMeth	numCdifPatDays
15328	2023M01	MDRO	FACWIDEIN		CDIF		11500
15328	2023M02	MDRO	FACWIDEIN		CDIF		11555
15328	2023M03	MDRO	FACWIDEIN		CDIF	NAATEIA	11560

- **Apply filters for eventType = CDI AND location = FACWIDEIN when running the 'Line Listing for All Summary Data' report for this reason.**
  - The 'Line Listing for All Summary Data' report can be found under Supplemental Reports > Summary-level Data.

Data Quality: Patient days -- Summary Line Listing Report to User Interface

National Healthcare Safety Network
Line Listing for All Summary Data
As of: April 4, 2025 at 2:15 PM UTC
Date Range: PSSUMMARY summaryYM 2023M01 to 2023M03
If (((location = "FACWIDEIN") AND (eventType = "CDIF")))

orgid	summaryYM	summarytype	location	loccdc	eventtype	cdiTestMeth	numCdifPatDays
15328	2023M01	MDRO	FACWIDEIN		CDIF		11500
15328	2023M02	MDRO	FACWIDEIN		CDIF		11555
15328	2023M03	MDRO	FACWIDEIN		CDIF	NAATEIA	11560

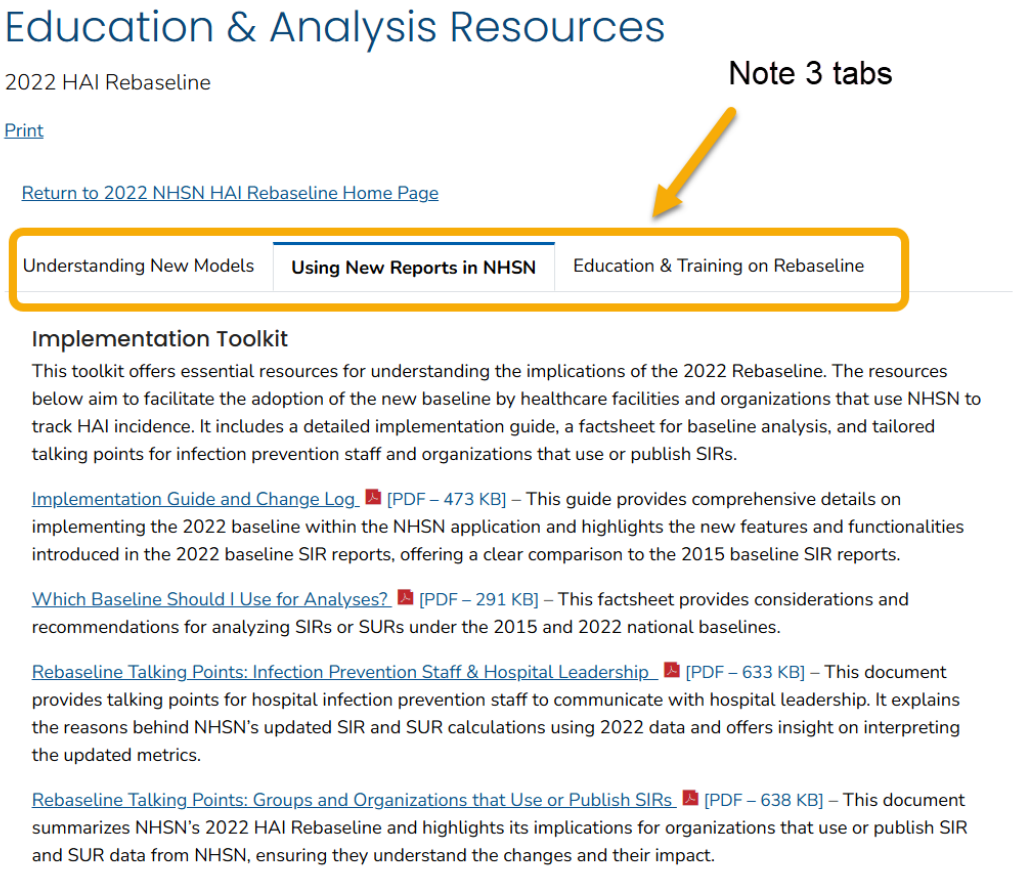


Fictitious data used for illustrative purposes only.

New Resources for Understanding the Rebaseline

Education & Analysis Resources Webpage

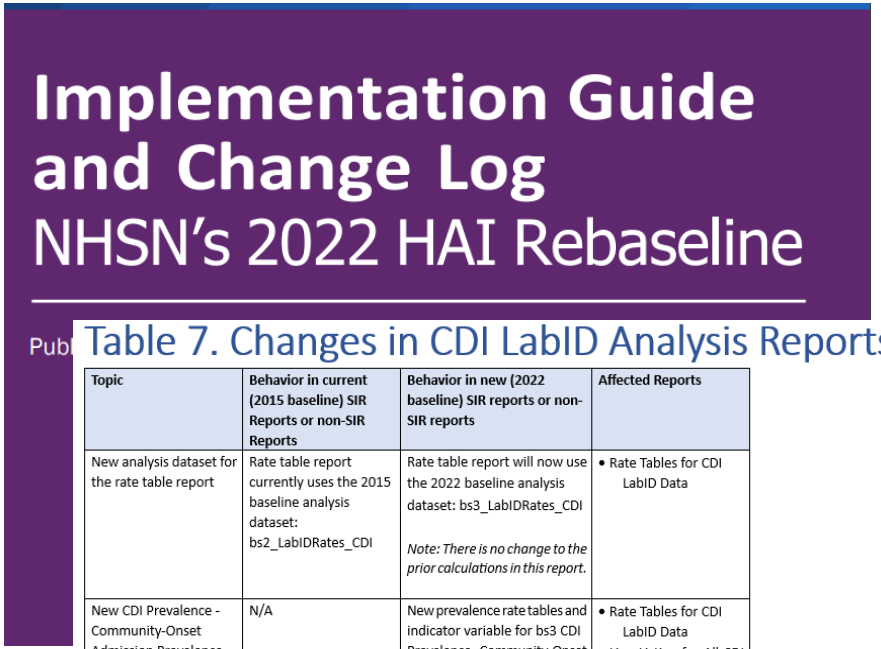
- **Explore three tabs on this webpage:**
  - Understanding New Models
  - Using New Reports in NHSN
  - Education & Training on the Rebaseline



https://www.cdc.gov/nhsn/2022rebaseline/analysis-resources.html

Need more information on the new CDI SIR Reports?

- **Review Implementation Guide & Change Log**
  - Covers inclusion & exclusion rules
  - Lists the differences in functionality between the 2022 baseline SIR report and the 2015 baseline SIR report
  - Highlights minor changes made to CDI reports due to rebaseline implications (e.g., names of analysis datasets)



Implementation Guide and Change Log
NHSN's 2022 HAI Rebaseline

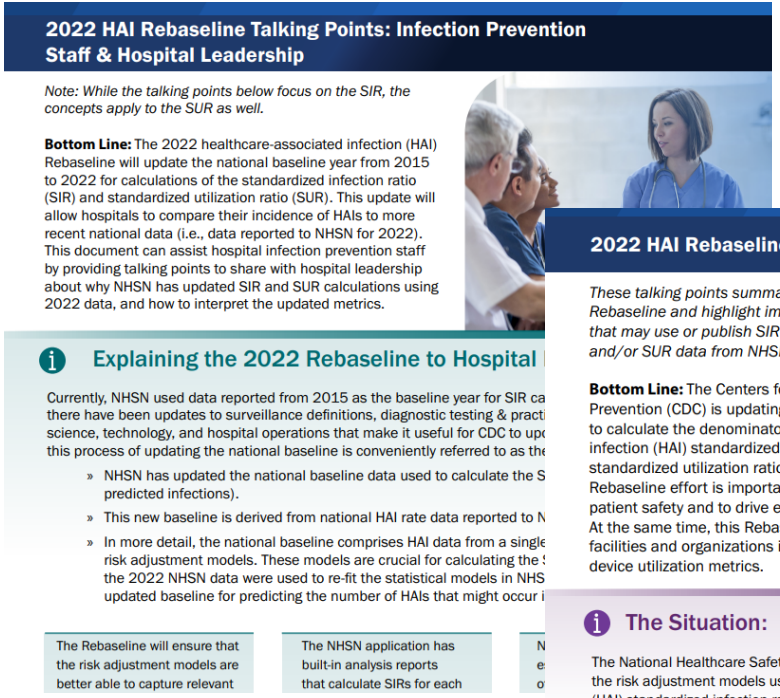
Pub

Table 7. Changes in CDI LabID Analysis Reports

Topic	Behavior in current (2015 baseline) SIR Reports or non-SIR Reports	Behavior in new (2022 baseline) SIR reports or non-SIR reports	Affected Reports
New analysis dataset for the rate table report	Rate table report currently uses the 2015 baseline analysis dataset: bs2_LabIDRates_CDI	Rate table report will now use the 2022 baseline analysis dataset: bs3_LabIDRates_CDI *Note: There is no change to the prior calculations in this report.*	• Rate Tables for CDI LabID Data
New CDI Prevalence - Community-Onset Admission Prevalence LabID Count	N/A	New prevalence rate tables and indicator variable for bs3 CDI Prevalence - Community-Onset Admission Prevalence LabID Count (CDIF_admPrevCOCount_bs3)	• Rate Tables for CDI LabID Data • Line Listing for All CDI LabID Events
New order and display of default variables in the line listing report	The line listing report currently includes the	The line listing report will now display ageAtSpec and facToSpecDays variables by	• Line Listing for All CDI LabID Events

https://www.cdc.gov/nhsn/pdfs/rebaseline/Implementation-Guide-Change-Log.pdf

Explaining the Rebaseline to Colleagues



2022 HAI Rebaseline Talking Points: Infection Prevention Staff & Hospital Leadership

Note: While the talking points below focus on the SIR, the concepts apply to the SUR as well.

Bottom Line: The 2022 healthcare-associated infection (HAI) Rebaseline will update the national baseline year from 2015 to 2022 for calculations of the standardized infection ratio (SIR) and standardized utilization ratio (SUR). This update will allow hospitals to compare their incidence of HAIs to more recent national data (i.e., data reported to NHSN for 2022). This document can assist hospital infection prevention staff by providing talking points to share with hospital leadership about why NHSN has updated SIR and SUR calculations using 2022 data, and how to interpret the updated metrics.

Explaining the 2022 Rebaseline to Hospital

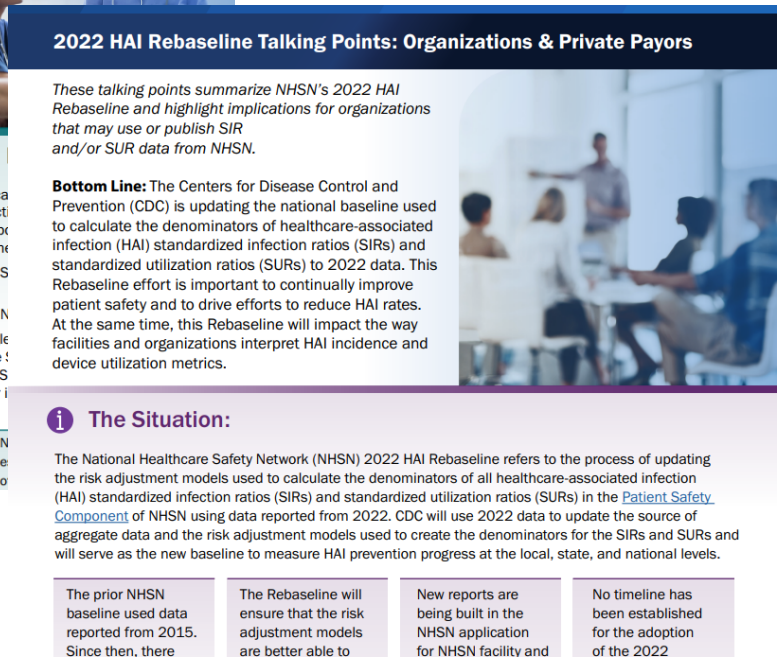
Currently, NHSN used data reported from 2015 as the baseline year for SIR ca
there have been updates to surveillance definitions, diagnostic testing & practi
science, technology, and hospital operations that make it useful for CDC to upd
this process of updating the national baseline is conveniently referred to as the

- NHSN has updated the national baseline data used to calculate the S predicted infections).
- This new baseline is derived from national HAI rate data reported to N
- In more detail, the national baseline comprises HAI data from a single risk adjustment models. These models are crucial for calculating the S the 2022 NHSN data were used to re-fit the statistical models in NHS updated baseline for predicting the number of HAIs that might occur i

The Rebaseline will ensure that the risk adjustment models are better able to capture relevant

The NHSN application has built-in analysis reports that calculate SIRs for each

https://www.cdc.gov/nhsn/pdfs/rebaseline/Talking-Points-Hospital-Leadership.pdf



2022 HAI Rebaseline Talking Points: Organizations & Private Payors

These talking points summarize NHSN's 2022 HAI Rebaseline and highlight implications for organizations that may use or publish SIR and/or SUR data from NHSN.

Bottom Line: The Centers for Disease Control and Prevention (CDC) is updating the national baseline used to calculate the denominators of healthcare-associated infection (HAI) standardized infection ratios (SIRs) and standardized utilization ratios (SURs) to 2022 data. This Rebaseline effort is important to continually improve patient safety and to drive efforts to reduce HAI rates. At the same time, this Rebaseline will impact the way facilities and organizations interpret HAI incidence and device utilization metrics.

The Situation:

The National Healthcare Safety Network (NHSN) 2022 HAI Rebaseline refers to the process of updating the risk adjustment models used to calculate the denominators of all healthcare-associated infection (HAI) standardized infection ratios (SIRs) and standardized utilization ratios (SURs) in the Patient Safety Component of NHSN using data reported from 2022. CDC will use 2022 data to update the source of aggregate data and the risk adjustment models used to create the denominators for the SIRs and SURs and will serve as the new baseline to measure HAI prevention progress at the local, state, and national levels.

The prior NHSN baseline used data reported from 2015. Since then, there

The Rebaseline will ensure that the risk adjustment models are better able to

New reports are being built in the NHSN application for NHSN facility and

No timeline has been established for the adoption of the 2022

https://www.cdc.gov/nhsn/pdfs/rebaseline/Groups-Organizations-Use-Publish-SIRs.pdf

- **Talking Points to help you present the Rebaseline to colleagues, leadership, or other organizations that may use NHSN data**

Model Explorer

- **Review risk adjustment factors used in the calculation of number of predicted events**
- **View risk adjustment tables directly in web browser, organized by facility type**

CDI LabID Event Risk Adjustment (ACHs)

The number of predicted CDI LabID events under the 2022 baseline is calculated using a negative binomial regression model and is risk adjusted based on the following variables found to be statistically significant predictors of CDI incidence. Information about the statistical properties of NHSN risk adjustment models, including how the number of predicted events is calculated, is available in NHSN's Guide to the SIR (2022 baseline).

Parameter	Parameter Estimate	Standard Error	P-value
Intercept	*-10.1452*	*0.1063*	*<0.0001*
Inpatient CO prevalence rate[1]: ≥0.461 per 100 admissions	0.7994	0.0371	<0.0001
Inpatient CO prevalence rate[1]: 0.301-0.460 per 100 admissions	0.6666	0.0349	<0.0001
Inpatient CO prevalence rate[1]: 0.213-0.300 per 100 admissions	0.5137	0.0346	<0.0001
Inpatient CO prevalence rate[1]: 0.152-0.212 per 100 admissions	0.4296	0.0341	<0.0001
Inpatient CO prevalence rate[1]: 0.104-0.151 per 100 admissions	0.3211	0.0340	<0.0001
Inpatient CO prevalence rate[1]: 0.064-0.103 per 100 admissions	0.2443	0.0339	<0.0001
Inpatient CO prevalence rate[1]: 0-0.063 per 100 admissions	0.1118	0.0338	0.0010
Inpatient CO prevalence rate[1]: 0 per 100 admissions	REFERENT	-	-
	0.0960	0.0260	0.0002
	0.2868	0.0193	<0.0001
	FERENT	-	-
	0.2914	0.0224	<0.0001
	0.2240	0.0215	<0.0001
	0.1064	0.0221	<0.0001
	FERENT	-	-

CDI LabID Event Risk Adjustment (LTACHs)

The number of predicted CDI Lab ID events under the 2022 baseline is calculated using a negative binomial regression model and is risk adjusted based on the following variables found to be statistically significant predictors of CDI incidence. Information about the statistical properties of NHSN risk adjustment models, including how the number of predicted events is calculated, is available in NHSN's Guide to the SIR (2022 baseline).

Parameter	Parameter Estimate	Standard Error	P-value
Intercept	*-9.6565*	*0.2476*	*<0.0001*
Proportion of admissions on hemodialysis[1]: >0	0.9840	0.2174	<0.0001
Proportion of admissions on hemodialysis[1]: 0	REFERENT	-	-
Inpatient CO prevalence rate[2]: >0 per 100 admissions	0.4575	0.1121	<0.0001
Inpatient CO prevalence rate[2]: 0 per 100 admissions	REFERENT	-	-
Average length of stay[1]: <25.3 days	0.4027	0.1157	0.0005
Average length of stay[1]: ≥29.4 days	0.2451	0.0982	0.0126
Average length of stay[1]: 25.3-29.3 days	REFERENT	-	-
Proportion of beds that are high observation[1]: <0.238	0.3083	0.0979	0.0016
Proportion of beds that are high observation[1]: ≥0.238	REFERENT	-	-
Proportion of admissions on a ventilator[1]: ≥0.141	0.2363	0.0915	0.0099
Proportion of admissions on a ventilator[1]: <0.141	REFERENT	-	-
Number of ICU beds[1]: >0 beds	0.1707	0.0772	0.0271
Number of ICU beds[1]: 0 beds	REFERENT	-	-

https://www.cdc.gov/nhsn/2022rebaseline/tables/table-8.html

NHSN 2022 Rebaseline Resources

Title	Link
2022 NHSN Rebaseline Webpage	https://www.cdc.gov/nhsn/2022rebaseline
MRSA/CDI Troubleshooting Guide (2015 baseline)	https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/mrsacdi_tips.pdf
2022 Baseline SIR Guide	https://www.cdc.gov/nhsn/2022rebaseline/sir-guide.pdf
Implementation Guide	https://www.cdc.gov/nhsn/pdfs/rebaseline/Implementation-Guide-Change-Log.pdf
Model Explorer	https://www.cdc.gov/nhsn/2022rebaseline/tables/table-8.html
Which baseline should I use? Fact Sheet	https://www.cdc.gov/nhsn/pdfs/rebaseline/Which-Baseline-Should-I-Use.pdf

NHSN Patient Safety Analysis Resources

Title	Link
Patient Safety Analysis Resources Webpage	https://www.cdc.gov/nhsn/ps-analysis-resources/index.html
Patient Safety Analysis Quick Reference Guides	https://www.cdc.gov/nhsn/ps-analysis-resources/reference-guides.html
Patient Safety Data Quality Webpage	https://www.cdc.gov/nhsn/ps-analysis-resources/data-quality/index.html
How to Modify a Report	https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/howtomodifyreport.pdf
NHSN's Statistics Calculator	https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/statscalc.pdf

NHSN 2022 Rebaseline Resources – cont.

Title	Link
Infection Prevention Staff & Hospital Leadership Talking Points	https://www.cdc.gov/nhsn/pdfs/rebaseline/Talking-Points-Hospital-Leadership.pdf
Groups and Organizations that Use or Publish SIRs Talking Points	https://www.cdc.gov/nhsn/pdfs/rebaseline/Groups-Organizations-Use-Publish-SIRs.pdf
Rebaseline FAQs	https://www.cdc.gov/nhsn/pdfs/rebaseline/22-Rebaseline-FAQs-Final-Version.pdf
Intro to Rebaseline Quick Learn	https://www.youtube.com/watch?v=pMYwYIV86Ek

NHSN Rebaseline Questions

- **NHSN Users with SAMS access:**
  - Submit questions through **NHSN-ServiceNow** (https://servicedesk.cdc.gov/nhsncsp).

- **Those without SAMS or ServiceNow access:**
  - Email the NHSN Help Desk at nhsn@cdc.gov.

- **Questions about CMS Programs:**
  - **Acute Care Hospitals** (including PPS-Exempt Cancer Hospitals) - QualityNet Question and Answer Tool
    - Select “Ask a Question”, then select “HACRP – Hospital-Acquired Condition Reduction Program”
  - **Inpatient Rehabilitation Facilities (IRF)** - irf.questions@cms.hhs.gov
  - **Long-term Acute Care Hospitals (LTACH)** - ltchqualityquestions@cms.hhs.gov

For any questions or concerns, contact the NHSN Helpdesk:

- **Use subject line: “2022 HAI Rebaseline”**
- **NHSN-ServiceNow** to submit questions to the NHSN Help Desk.
- Access new portal at **https://servicedesk.cdc.gov/nhsncsp**.
- If you do not have a SAMS login, or are unable to access ServiceNow, you can still email the NHSN Help Desk at nhsn@cdc.gov.
- All media inquiries please contact CDC Media Office at media@cdc.gov

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov