

2020 NHSN Training Webinar

Patient Safety Component Analysis Updates

February 12, 2020

Agenda

- Changes to NHSN Dataset Generation (DSG) – Maggie Dudeck
- Adjusted Ranking Metric (ARM) & the Reliability-Adjusted Rankings Dashboard – Sunny Xu
- MDRO/CDI Module Analysis Updates – Karen Jones and Sunny Xu
- 2020 CLABSI Analysis Changes and Introduction to SIR/SUR Percentile Distribution – Prachi Patel
- 2020 changes to the HAI-AR analysis reports, Recently published NHSN surveillance reports, and the Patient Safety Portal – Kathryn Haass

Changes to NHSN Dataset Generation (DSG)

Maggie Dudeck, MPH

2020 PS Analysis Updates

Changes to NHSN Dataset Generation (DSG)

- Background:
 - Generating data sets is the first step in NHSN analysis
 - Data will be frozen, for your use, at a specific point in time and copy those data into defined data sets.
 - Regenerate datasets for updates to be reflected in reports
 - Each user in NHSN who wishes to analyze data must generate data sets.
- Recent release of NHSN rolled out enhanced features for DSG
- Enhancements intended to improve DSG process, speed, and user experience

Previous Method for Data Set Generation:



Generate Data Sets

Generate Patient Safety Analysis Data Sets

Datasets generated will include data for the 3 most recent full calendar years up until today's date for the Patient Safety Component. To include all years check the box below.

For all other components, datasets generated will include all years. Note that any analysis options you run will be limited to the time period shown on the date range bar.

☐ Include all data reported to NHSN for this component within the parameters of rights conferred.



Generate New

Last Generated: Aug 28 2019 7:03AM

Previous Method for Data Set Generation:

 **Generate Data Sets**

Generate Patient Safety Analysis Data Sets

Datasets generated will include data for the 3 most recent full calendar years up until today's date for the Patient Safety Component. To include all years check the box below.

For all other components, datasets generated will include all years. Note that any analysis options you run will be limited to the time period shown on the date range bar.

☐ Include all data reported to NHSN for this component within the parameters of rights conferred.

1/2016

9/2019



Generate New

Last Generated: Aug 28 2019 7:03AM

Previously, time parameters were not *truly* customizable

New: Enhanced Timeboxing!

- Original intent of previous framework was to allow custom timeframes
 - This is known as **timeboxing**
- In 9.4, released on December 7, 2019, facility and group users are able to specify month/year for analysis datasets, prior to generating
 - Lowers size of datasets
 - Faster generation of datasets
 - Improves system resources
 - Improves experience for users

New Data Set Generation screen

 **Generate Data Sets (Patient Safety)**

Reporting Data Sets



Include data for the following time period:

Beginning		Ending		
06/2018		05/2019		

 **Generate Reporting Data Sets**

Last Generated:
September 3, 2019 9:16 AM
to include data beginning 06/2018 and ending 05/2019

This information will appear in report footnotes

New Data Set Generation screen

Generate Data Sets (Patient Safety)

Reporting Data Sets

Include data for the following time period:

Beginning: 06/2018 | Ending: 05/2019 | Clear Time Period

Jun | 2018

Today | Done

to include data beginning 01/2016

When clicking in the date box, the month and year drop downs will appear for selection. Once selected, click “Done”.



Generate Data Sets (Patient Safety)

Reporting Data Sets

Include data for the following time period:

Beginning: 06/2018 | Ending: 05/2019 | Clear Time Period

Generate Reporting Data Sets

Warning

The current data sets will be updated. Are you sure you want to continue?

OK | Cancel

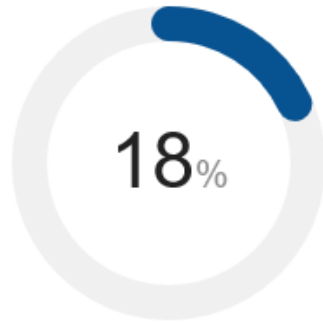
After date parameters are set, click “Generate Reporting Data Sets”.

New Data Set Generation screen



Generate Data Sets (Patient Safety)

Reporting Data Sets 18%



Processing HospSurveyV4

Your data set generation has been scheduled. You may log out or continue to work in other areas of NHSN. When you return to this screen you will see a progress bar if still processing, otherwise, you will see a time completed.

- When process starts, a new progress image will appear
- You can navigate to other areas of NHSN or log off
 - You cannot run analysis reports while data sets are generating

More about Specifying Dates

Include data for the following time period: Beginning Ending 01/20191 03/20191 ⌵ Clear Time Period	Both beginning and ending = nonblank Will include all data within the time period (e.g., 01/01/19 thru 03/31/19)
Include data for the following time period: Beginning Ending 01/20161 mm/yyyy1 ⌵ Clear Time Period	Ending date = blank Will include all data from 01/2016 through present day
Include data for the following time period: Beginning Ending mm/yyyy1 12/20181 ⌵ Clear Time Period	Beginning date = blank Will include all data through 12/2018
Include data for the following time period: Beginning Ending mm/yyyy1 mm/yyyy1 ⌵ Clear Time Period	Both beginning and ending = blank Will include all data reported, regardless of time period

Special Rules for PS

- Survey data will not be limited by time period
 - All surveys completed by the facility will be included, regardless of survey year
- SSIs with event dates up to 90 days past the “ending” date will be included
 - 90 days is the max surveillance period for a number of procedure categories
- DSG process will include all LabID events
 - Once algorithms are applied, events outside the time period will be removed from final analysis data sets (ADS)

Extra Data Set Generation for PS Group Users

- In 9.4, the ParticipationAlerts analysis dataset (ADS) is **separate** from main DSG process
- Group Users will have two tabs on “Generate Data sets” screen
 - Reporting data sets (same as Facility option)
 - Participation Alerts data Set (optional)
- Generating this data set is **optional**
 - This data set is used *only* for the Participation Alerts reports
 - This data set should only be generated if you’re interested in reviewing unresolved alerts and is not needed for any other report in NHSN

Generate Data Sets (Patient Safety)

Reporting Data Sets Participation Alerts Data Set (Optional)

Include data for the following time period:

Beginning Ending

01/2019 1 03/2019 1 Clear Time Period

Generate Reporting Data Sets

Last Generated:
September 3, 2019 11:11 AM
to include data beginning 01/2016

Participation Alerts ADS

Reporting Data Sets

Participation Alerts Data Set (Optional)



Include alerts for the following time period:

Time Period	Beginning	Ending	
Month ▼	09/2018 1	mm/yyyy 1	Clear Time Period

Include the following Alerts:

- ☒ All Alerts
- ☒ Missing Survey
- ☒ Incomplete Survey
- ☒ Incomplete Events
- ☒ Missing Events
- ☒ Incomplete Procedures
- ☒ Missing Procedures
- ☒ Incomplete Summary Items
- ☒ Missing Summary Items
- ☒ Conferred Rights Not Accepted

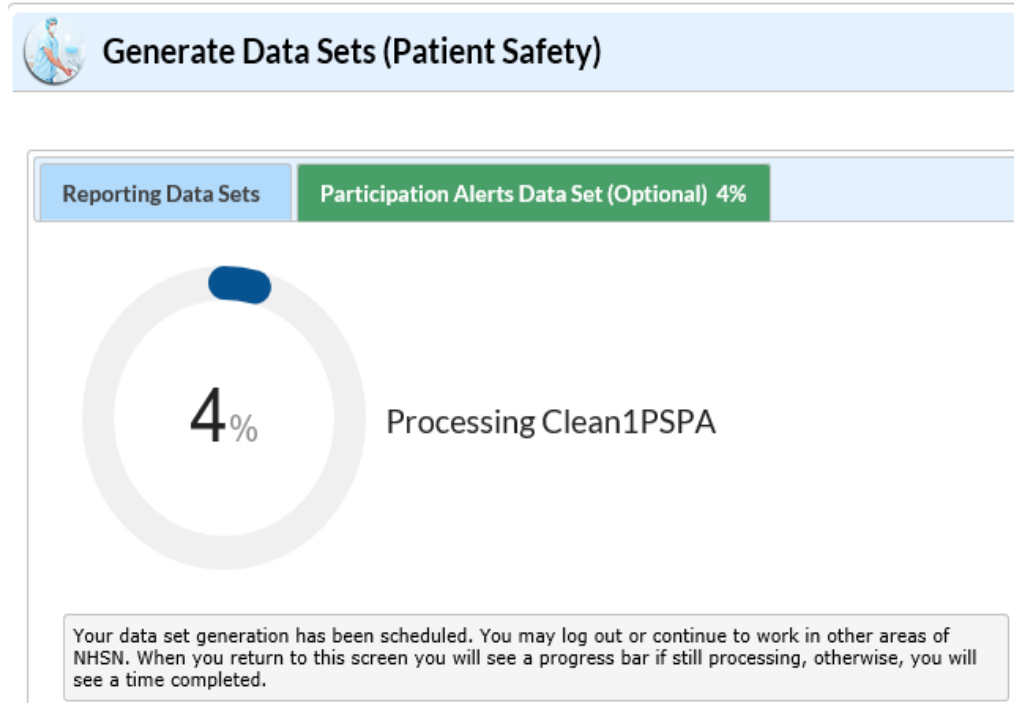
[Generate Participation Alerts Data Set](#)

Last Generated:
May 7, 2019 3:40 PM
to include all data

- Group Users can select a time period for Participation Alerts
 - Smaller time period, fewer alerts = quicker DSG
- Group users can select which alerts to include
 - Can also select “All Alerts”
- “Last Generated” time stamp on this tab will always be specific to Participation Alerts ADS

Participation Alerts ADS

- A new progress image appear on the Participation Alerts Data Set tab.
- You can navigate to other areas of NHSN, or log off.
 - NOTE: You cannot run the Participation Alerts reports while this data set is generating, however you **can** generate other reporting data sets or run other analysis reports.



Participation Alerts ADS

- Once generated, you'll receive an alert that the data sets generated successfully.
- The date and time Last Generated will be updated and will appear next to the Participation Alerts reports.

 Line Listing - Participation Alerts **Last Generated:** November 15, 2019 11:09 AM

 Frequency Table - Participation Alerts **Last Generated:** November 15, 2019 11:09 AM

Additional Information

- <https://www.cdc.gov/nhsn/ps-analysis-resources/reference-guides.html>

Analysis Quick Reference Guides

General Tips

- [General Tips for NHSN Analysis](#)  [PDF – 111 KB]
- **New!** [How to Generate Data Sets](#)  [PDF – 400 KB]
- **New!** [How to Generate Participation Alerts Data Set \(Group Users\)](#)  [PDF – 400 KB]
- [Keys to Success with NHSN Data](#)
- [How to Modify a Report](#)  [PDF – 375 KB]
- [Exporting Modified Analysis Data Sets](#)  [PDF – 574 KB]
- [Reporting Height and Weight for Procedures in NHSN](#)  [PDF – 361 KB]
- [How to Add and Find the Patient Safety Component Annual Survey](#)  [PDF – 574 KB]

Adjusted Ranking Metric (ARM) & the Reliability-Adjusted Rankings Dashboard

New Measure & NHSN Dashboard

Sunny Xu, MPH

What is the ARM?

- The Adjusted Ranking Metric (ARM)
- Available for Acute Care Hospitals at this time
- Accounts for differences in volume of exposure between facilities and is preferable for ranking facilities
- Individual hospitals are ranked against all other acute care hospitals for the same year

How is the ARM calculated?

- The ARM is calculated as a ratio of numerator divided by denominator, where the ARM denominator is identical to that of the SIR.
- Explicitly, the ARM is the reliability-adjusted number of events divided by the risk-adjusted predicted number of events, whereas, the SIR is the number of events divided by the risk-adjusted predicted number of events.

ARM

$$\frac{\text{Reliability adjusted number of events}}{\text{Risk adjusted predicted number of events}}$$

SIR

$$\frac{\text{Number of events}}{\text{Risk adjusted predicted number of events}}$$

Reliability-Adjusted Ranking

- Annual, facility-specific Reliability-Adjusted Rankings based on the ARM are displayed as percentiles on the Reliability-Adjusted Ranking dashboard within NHSN.
 - Where lower percentiles imply better performance
- Reliability-Adjusted Rankings are available for CLABSI, CAUTI, MRSA, CDI, SSI-COLO and SSI-HYST.

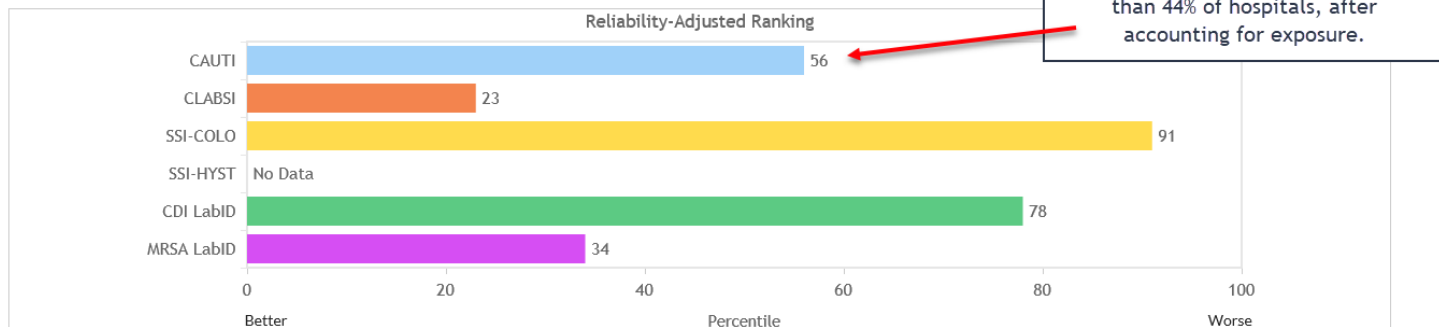
Reliability-Adjusted Ranking

Name:

Year:

Data as of: July 01, 2019

Print

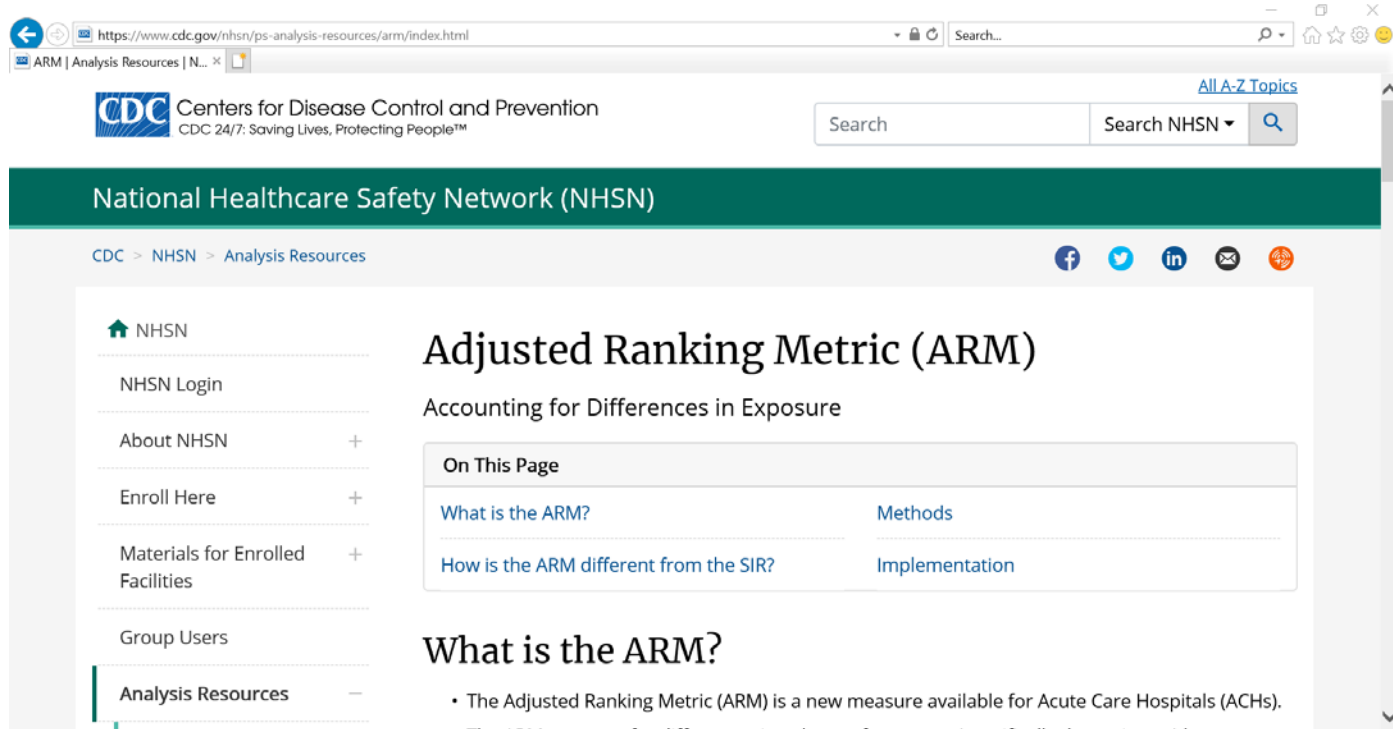


About these data:

1. The reliability-adjusted ranking for each HAI is based on the Adjusted Ranking Metric (ARM) score.
2. This score is unique to your hospital and accounts for differences in exposure (or patient group "at risk") between acute care hospitals.
3. Your acute care hospital is ranked against all other participating acute care hospitals and this rank is presented as a percentile, where a lower score is better. For example, a percentile of 31 out of 100 means that your hospital is performing better than 69% of hospitals, for the same HAI and year, after accounting for exposure.

For more information, please visit the NHSN website: <https://www.cdc.gov/nhsn/ps-analysis-resources/arm/index.html>

- For more information please visit the ARM webpage:
<https://www.cdc.gov/nhsn/ps-analysis-resources/arm/index.html>



The screenshot shows a web browser displaying the CDC NHSN ARM webpage. The browser's address bar shows the URL <https://www.cdc.gov/nhsn/ps-analysis-resources/arm/index.html>. The page header includes the CDC logo and the text "Centers for Disease Control and Prevention" and "CDC 24/7: Saving Lives, Protecting People™". A search bar is visible on the right. The main content area has a green header with the text "National Healthcare Safety Network (NHSN)". Below this, a breadcrumb trail reads "CDC > NHSN > Analysis Resources". A sidebar on the left lists various links: "NHSN", "NHSN Login", "About NHSN", "Enroll Here", "Materials for Enrolled Facilities", "Group Users", and "Analysis Resources". The main content area features the title "Adjusted Ranking Metric (ARM)" and the subtitle "Accounting for Differences in Exposure". Below this, a section titled "On This Page" contains links to "What is the ARM?", "Methods", "How is the ARM different from the SIR?", and "Implementation". The "What is the ARM?" link is highlighted. Below this section, the text "What is the ARM?" is displayed, followed by a bullet point stating: "The Adjusted Ranking Metric (ARM) is a new measure available for Acute Care Hospitals (ACHs)."

MDRO/CDI Module Analysis Updates

Sunny Xu, MPH and Karen Jones, PhD, MPSH

MDRO/CDI Module Analysis Updates 2020

- Updates to the “Incomplete Data” table located in the CDI SIR report
- Edits to the Summary Data Line List
- MRSA bacteremia de-duplication algorithm improvement
- New Combined ED/OBS CDI prevalence rate

Data Excluded from the CDI SIR Report

- CDI SIRs are only available on a quarterly-basis or longer (e.g., annual)
- CDI SIRs are not available until the quarter is complete
 - 2020 Q1 CDI SIRs are not available until March 2020 data entry is complete
 - CDI test type is necessary for the SIR, and is not entered until the March 2020 FacWideIN denominator
- If running a CDI SIR report on an *incomplete* quarter, the SIR report contains an extra data table in the results
 - Recent improvements to this table

Data Excluded from the CDI SIR Report *continued*

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

As of: October 28, 2019 at 2:50 PM

Date Range: BS2_LABID_RATE\$CDIF_CMS summaryYr After and Including 2015

if (((cdifLabIDPlan = "Y")))

orgID	ccn	location	summaryYM	CDIF_facIncHOCCount	numPatDays	numAdms	cdiTestType
10401	991999	FACWIDEIN	2020M01	3	1400	205	
10401	991999	FACWIDEIN	2020M02	2	1250	345	

This column is 'blank' because CDI Test Type is missing for the quarter

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.

Updates to the Summary Data Line List

- Analysis Reports > Advanced > “Line Listing- All Summary Data”
- Shortened list of “Selected Variables” on the Modify screen

Title/Format	Time Period	Filters	Display Variables	Sort Variables	Display Options
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Display Variables:

Available Variables:		Selected Variables:	
admASTEligible	All	orgID	Up
admASTPerformed	Selected	summaryYM	Down
CCN	Selected	summaryType	
cdiTestMethOth	All	location	
custom1		locCDC	Undo
custom10		eventType	
custom11		birthWtCode	
custom12		numpatdays	
custom13		numddays	
custom14		cdiTestMeth	
custom15		numTotAdm	
custom16		numTotPatDays	
custom17		numTotEncounters	
custom18		numCdifAdm	
custom19		numCdifPatDays	

MRSA bacteremia de-duplication algorithm

- An improvement has been made to the de-duplication algorithms used for the MRSA bacteremia SIR numerator.
- This improvement adjusts the de-duplication that occurs in rare scenarios when a single patient has multiple positive MRSA bacteremia events that cross multiple units within the facility and multiple calendar months.

MRSA bacteremia de-duplication algorithm

National Healthcare Safety Network Line Listing - All MRSA LabID Events

As of: October 23, 2019 at 2:39 PM
Date Range: All LABID_EVENTS

orgID	patID	eventID	spcOrgType	location	outpatient	prevPos	onset	admitDate	locationAdmitDate	specimen Source	specimenDate	FWMRSA_admPrevBldCount	FWMRSA_bldIncCount
10401	9516	86962	MRSA	MED	N	N	HO	06/17/2019	06/17/2019	BLDSPC	06/20/2019	0	1
10401	9516	86964	MRSA	PSYCH	N	N	HO	06/17/2019	06/23/2019	BLDSPC	06/23/2019	0	0
10401	9516	86965	MRSA	TELE	N	Y	HO	06/17/2019	07/01/2019	BLDSPC	07/04/2019	0	0

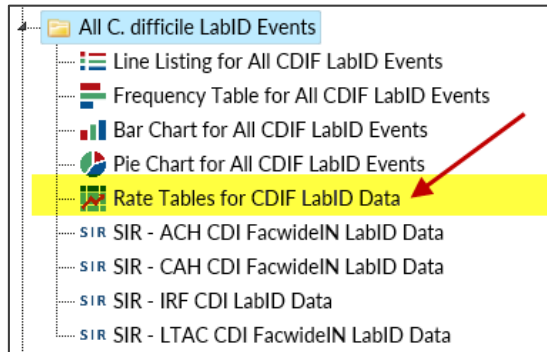
- A positive MRSA bacteremia will not be counted in the SIR if the patient had a prior positive MRSA bacteremia in the previous 14 days (where the first specimen date is considered Day 1).
- Updates and additional examples can be found in the LabID SIR Troubleshooting Guide: https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/mrsacdi_tips.pdf

New CDI prevalence rate

- Combined Outpatient Prevalence Rate for ED and 24 hour Observation Locations:

$$\frac{\text{Total number of unique CO CDI LabID Events identified in an ED or 24 hour Observation location}}{\text{Total patient encounters in ED and 24 hour Observation location(s)}} \times 100$$

Note: This rate has been added for informational purposes only and is *not* used in the risk adjustment calculations for the SIR.



Rate Table - All CDIF LabID Events by Location
Combined ED/Observation Unit CDIF Prevalence Rate
As of: October 28, 2019 at 1:54 PM
Date Range: BS2_LABID_RATE\$CDIF summaryYM 2019M04 to 2019M06

summaryYM	location	CDIF_EDOB\$prevCount	numEncounters	CDIF_EDOB\$PrevRate
2019M04	FACWIDEIN	1	1100	0.091
2019M05	FACWIDEIN	0	800	0.000
2019M06	FACWIDEIN	1	607	0.165

Notable mentions

- The MRSA bacteremia SIR reports that are located in the “CMS Reports” analysis folder for Inpatient Rehabilitation Facilities (IRFs) and Long-term Acute Care Hospitals (LTACHs) will not contain data beyond 2018 Q3.
- Additional guidance and examples have been provided to assist users in accurate reporting of primary CDI test type method. This clarification will assist facilities that use a single-step or conditional multi-step testing algorithm.

2020 CLABSI Analysis Changes and Introduction to SIR/SUR Percentile Distribution

Prachi Patel, MPH

*Surveillance Branch, DHQP, NCEZID
Centers for Disease Control and Prevention*

CLABSI Numerator exclusions

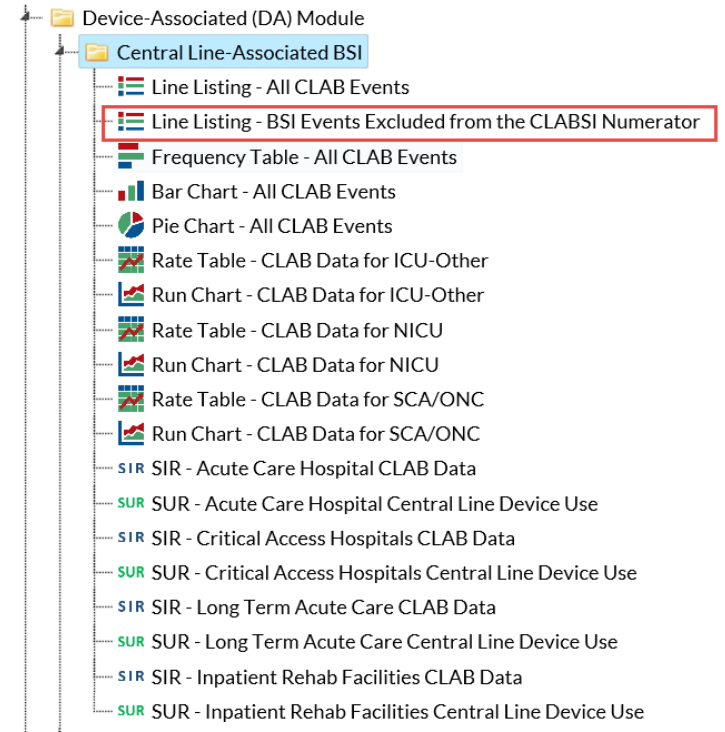
- 2015 : MBI-LCBI events
- 2019: Extracorporeal life support (ECMO) and Ventricular Assist Device (VAD) BSI events
- 2020: Munchausen Syndrome by Proxy (MSBP), Epidermolysis bullosa (EB), Patient self-injection, and Pus at vascular access site

Analysis Options Impacted

- CLABSI SIR and Rate tables
 - Excludes: MBI-LCBI, ECMO, VAD, MSBP, EB, Patient self injection, Pus at vascular site
- MBI-LCBI SIR and Rate tables
 - Excludes: ECMO, VAD, MSBP, EB, Patient self injection, Pus at vascular site

New Analysis Options

- BSI Events Excluded from the CLABSI Numerator line list
 - Will include all events that will not be included in the CLABSI numerator/event count
 - New analysis variable called `clab_exclude`
 - If any of the previously mentioned risk factors are met, this variable will show as “Yes”



Line List Example

National Healthcare Safety Network

Line Listing for BSI Events Excluded from the CLABSI Numerator

As of: January 2, 2020 at 9:06 AM

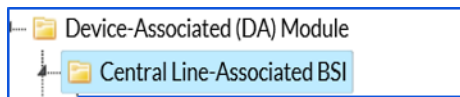
Date Range: CLAB_EVENTS evntDateYr 2019 to 2019

orgID	patID	dob	gender	admitDate	eventID	eventDate	eventType	spcEvent	location	ecmo	vad	mbi_lcbi	msbp	eb	patInj	siteBldMatch	matchSite	clab_exclude
10000	01250605	06/02/1982	M	12/11/2018	34939026	01/21/2019	BSI	LCBI	CMICU_N	N	Y	N	Y	Y	N	N		Y
10000	05184123	03/21/1972	M	12/03/2018	35002183	01/16/2019	BSI	LCBI	CC_ONC	Y	N	N						Y
10000	1234	12/01/1918	F	01/01/2019	35043655	01/04/2019	BSI	LCBI	CMICU_N	Y	N	N	N	N	N	N		Y
10000	1234	12/01/1918	F	01/01/2019	35172159	01/28/2019	BSI	LCBI	CMICU_N	N	Y	Y	N	N	N	N		Y
10000	CM0130	01/13/1983	M	01/01/2019	35134732	01/05/2019	BSI	LCBI	9 SOUTH	Y	Y	N	Y	Y	Y	N		Y
10000	CM0219-STAG-A	05/05/2005	M	01/12/2019	35397483	01/19/2019	BSI	LCBI	CARDCRIT	Y	Y	N	Y	Y	Y	N		Y
10000	CM0305-BSI-A	05/05/1955	F	01/10/2019	35610047	01/12/2019	BSI	LCBI	CARDCRIT	Y	Y	N	Y	Y	Y	N		Y
10000	CM0427-BSI-A	05/05/1955	F	01/03/2019	36334508	01/05/2019	BSI	LCBI	CARDCRIT	Y	Y	N	Y	Y	Y	Y	ARTERCATH	Y
10000	MD55543	10/16/1947	M	01/01/2019	35802895	01/20/2019	BSI	LCBI	NSICU	Y	N	N						Y
10000	MD777543	12/01/2018	M	01/01/2019	35150350	01/15/2019	BSI	LCBI	NICU 3	Y	N	N						Y

The New SIR/SUR Percentile Distribution

- Percentile distribution of facility-specific SIRs/SURs are now included on SIR and SUR reports
 - Based on the national SIR and SUR distribution published in the annual HAI Progress Report
 - <https://www.cdc.gov/hai/data/portal/progress-report.html>
- The percentile distribution of facility-specific SIRs/SURs are available for
 - Device-associated HAIs (CLABSI, CAUTI and VAE)
 - By orgID overall
 - By Location Type
 - ICU, WARD and NICU (CLABSI only)
 - Surgical Site Infections: Complex Admission/Readmission SIR Model only
 - MDRO: CDI and MRSA at facility-wide

The Percentile Distribution and How to Interpret Them: CLABSI SIR Example



-SIR SIR - Acute Care Hospital CLAB Data
-SUR SUR - Acute Care Hospital Central Line Device Use
-SIR SIR - Critical Access Hospitals CLAB Data
-SUR SUR - Critical Access Hospitals Central Line Device Use
-SIR SIR - Long Term Acute Care CLAB Data
-SUR SUR - Long Term Acute Care Central Line Device Use
-SIR SIR - Inpatient Rehab Facilities CLAB Data
-SUR SUR - Inpatient Rehab Facilities Central Line Device Use

National Healthcare Safety Network

SIR for Central Line-Associated BSI Data for Acute Care Hospitals (2015 baseline) - By OrgID

As of: December 19, 2019 at 2:01 PM

Date Range: BS2_CLAB_RATE SALL summaryYr After and Including 2018

orgID=10018 medType=M

orgID	ccn	summaryYr	infCount	numPred	numcldays	SIR	SIR_pval	sir95ci	SIR_pctl
10018	12345	2018	16	5.889	5915	2.717	0.0006	1.608, 4.318	99

- The SIR/SUR percentiles are available for the CLABSI reports listed in above
- Using the output table above as example
 - This can be interpreted as 99% of facilities in the nation (with at least 1 predicted infection) had a overall CLABSI SIR equal to or lower than 2.717

How to Interpret the SIR/SUR Percentile Distribution: CLABSI Example

National Healthcare Safety Network
SIR for Central Line-Associated BSI Data for Acute Care Hospitals (2015 baseline) - By OrgID/Location Type
As of: December 19, 2019 at 2:01 PM
Date Range: BS2 CLAB RATE SALL summaryYr After and Including 2018

orgID=10018 medType=M

orgID	ccn	locationType	summaryYr	infCount	numPred	numcldays	SIR	SIR_pval	sir95ci	SIR_pctl
10018	12345	CC	2018	3	4.106	4025	0.731	0.6359	0.186, 1.988	56
10018	12345	CC_N	2018	0	0.237	180	-	-		-
10018	12345	OTHER	2018	4	0.354	500	-	-		-
10018	12345	STEP	2018	8	0.184	210	-	-		-
10018	12345	WARD	2018	0	0.085	100	-	-		-
10018	12345	WARD_ONC	2018	1	0.922	900	-	-		-

- On the Location Type table of our report output,
- Only the ICU location type, highlighted, has an SIR therefore the SIR percentile is calculated
- The other location types had less than 1 predicted infections and no SIR calculated
 - Therefore the SIR percentile is not calculated

2020 Analysis Update Webinar

- 2020 changes to the HAI-AR analysis reports
- Recently published NHSN surveillance reports
- Patient Safety Portal

Kathryn Haass, MPH, CPH, M(ASCP)BB

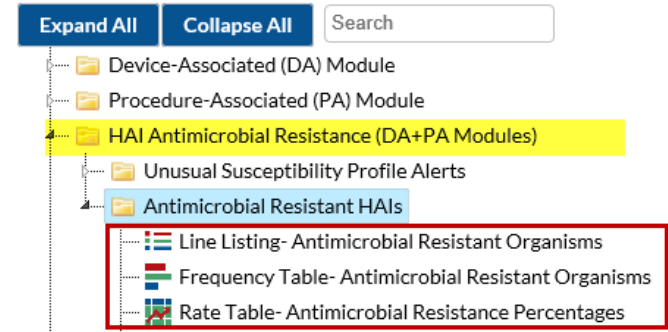
Changes to HAI Antibiotic Resistance Analysis Reports

- Line list, frequency table, and rate table are available to show antibiotic-resistant pathogens reported for an HAI

- CLABSIs, CAUTIs, SSIs, VAEs, pedVAEs

- CRE definition change in analysis reports for 2020:

- CRE-E.coli, CRE-Klebsiella, CRE-Enterobacter
 - In 2020, NHSN adopted the new SNOMED classification for *Enterobacter aerogenes*
 - Starting in 2020, *Enterobacter aerogenes* will be known as *Klebsiella aerogenes*
 - Carbapenem-resistant *Klebsiella aerogenes* will be counted as **CRE-Klebsiella**
 - If reported as *Enterobacter aerogenes*, NHSN will re-classify as **Klebsiella**
 - No other changes to CRE definitions



Line List for CRE Klebsiella

National Healthcare Safety Network

Line Listing- Antimicrobial Resistant Organisms

CREklebsiella_HAI - Carbapenem-resistant Klebsiella pneumoniae/oxytoca/aerogenes



As of: January 2, 2020 at 10:41 AM

Date Range: ANTIBIOGRAM_HAI evtntDateYQ 2020Q1 to 2020Q1

orgID	patID	dob	gender	admitDate	eventID	eventDate	eventType	location	pathogenDesc	phenotype
10401	12345	01/01/1960	F	12/17/2019	91129	01/02/2020	BSI	MED	Klebsiella aerogenes - EA	CREklebsiella_HAI
10401	12567	09/01/2019	M	11/12/2019	91130	01/01/2020	BSI	MED	Klebsiella aerogenes - EA	CREklebsiella_HAI
10401	83726	01/18/1955	F	12/29/2019	91131	01/01/2020	BSI	MED	Klebsiella oxytoca - KO	CREklebsiella_HAI
10401	527485	12/16/1991	M	12/02/2019	91132	01/01/2020	BSI	MED	Klebsiella pneumoniae - KP	CREklebsiella_HAI

- Updated titles to reflect pathogen change
- New footnotes beneath the report
- Guidance documents are available on the use of these reports, resistance definitions, etc.:

<https://www.cdc.gov/nhsn/ps-analysis-resources/reference-guides.html>

New Publications: Common Pathogens and Resistance Patterns among HAIs in the U.S.

- CDC released two surveillance reports highlighting common pathogens and antibiotic resistance in U.S. healthcare facilities, 2015-2017

- **1. Adult HAI Report:**

- Frequent pathogens for CLABSIs, CAUTIs, SSIs, & VAEs
 - SSI pathogens available for each NCHS operative procedure code
 - Data shown separately for ICUs, Wards, Oncology Units, LTACHs, IRFs
- Resistance data stratified by infection type, location, and surgical category
- <https://doi.org/10.1017/ice.2019.296>

Table 3. Distribution and Rank Order of the 15 Most Frequently Reported Pathogens Across All Types of Adult Healthcare-Associated Infections (HAIs), 2015–2017

Pathogen ^a	No. (%) Pathogens	Rank
<i>Escherichia coli</i>	62,571 (17.5)	1
<i>Staphylococcus aureus</i>	42,132 (11.8)	2
Selected <i>Klebsiella</i> spp	31,530 (8.8)	3
<i>Pseudomonas aeruginosa</i>	28,513 (8.0)	4
<i>Enterococcus faecalis</i> ^b	28,236 (7.9)	5
Coagulase-negative staphylococci	24,199 (6.8)	6
<i>Enterobacter</i> spp	16,568 (4.6)	7
<i>Enterococcus faecium</i> ^b	13,687 (3.8)	8

Reference: Weiner-Laster, L., et al. "Antimicrobial-resistant pathogens associated with adult healthcare-associated infections: Summary of data reported to the National Healthcare Safety Network, 2015–2017." *Infection Control & Hospital Epidemiology* 41(1); 2020: 1-18.

- **2. Pediatric HAI Report:** <https://doi.org/10.1017/ice.2019.297>
 - CLABSIs, CAUTIs, SSIs, & pediatric VAPs
 - Pathogen and resistance data are stratified by infection type, location type, and surgical category
 - Data shown separately for NICUs, pediatric ICUs, pediatric wards, pediatric oncology units

- Both reports, as well as supplemental data tables, are available at: <https://www.cdc.gov/nhsn/datastat/index.html>

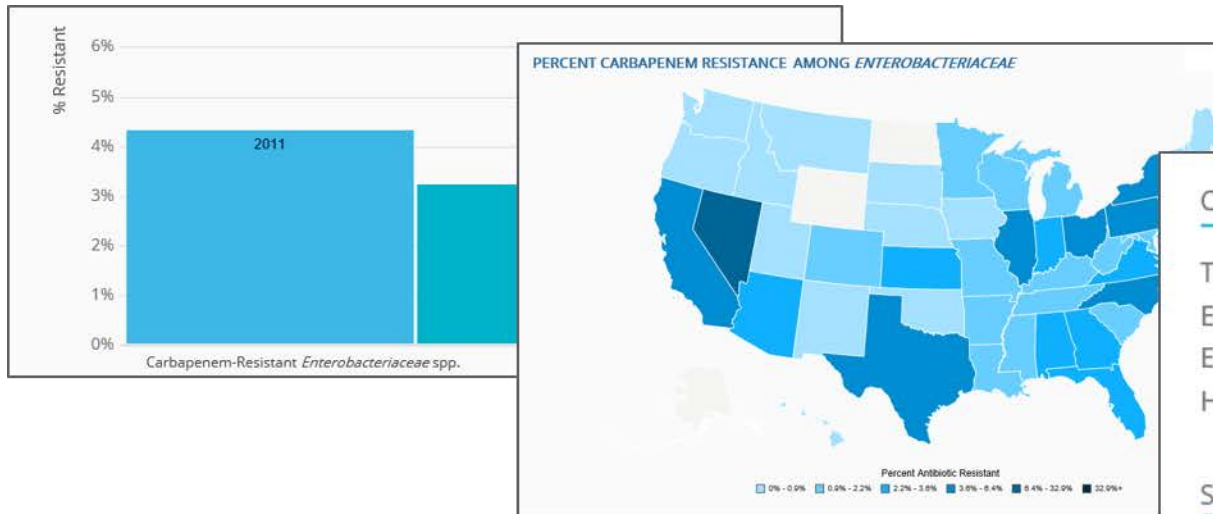
Table 5. Distribution and Rank Order^a of the 15 Most Commonly Reported Pediatric Central Line-Associated Bloodstream Infection (CLABSI) Pathogens, by Location Type,^b 2015–2017

Pathogen	NICUs ^b		Pediatric ICUs ^a		Pediatric Oncology Units ^a		Pediatric Wards ^{a,b}	
	No. (%) Pathogens	Rank	No. (%) Pathogens	Rank	No. (%) Pathogens	Rank	No. (%) Pathogens	Rank
<i>Staphylococcus aureus</i>	1,381 (25.2)	1	420 (12.6)	2	266 (7.7)	5	313 (12.4)	2
Coagulase-negative staphylococci	1,145 (20.9)	2	345 (10.4)	4	316 (9.1)	4	289 (11.4)	3
<i>Escherichia coli</i>	596 (10.9)	3	151 (4.5)	9	429 (12.4)	2	205 (8.1)	5

Reference: Weiner-Lastinger, L., et al. Antimicrobial-resistant pathogens associated with pediatric healthcare-associated infections: Summary of data reported to the National Healthcare Safety Network, 2015–2017. *Infection Control & Hospital Epidemiology*, 41(1); 2020: 19-30.

Antibiotic Resistance & Patient Safety Portal

- A re-designed web-based platform that allows users to explore HAI and antibiotic resistance data in their state, region, and across the country
- Replaces the Patient Safety Atlas



<https://arpsp.cdc.gov>

CURRENT THREAT REPORT

THREAT LEVEL	● URGENT
ESTIMATED CASES	13,100
ESTIMATED DEATHS	1,100
HEALTHCARE COSTS (USD)	\$130 M

Source: Antibiotic Resistance Threats in the United States, 2019

2018 National and State HAI Progress Report

- The 2018 HAI Progress Report, which summarizes national and state-level progress in the prevention of HAIs, was released late last year
- SIR and SUR data for:
 - Device-Associated HAIs: CLABSI, CAUTI, & VAE
- SIR data for:
 - SSIs for All NHSN Operative Procedures
 - MRSA and CDI LabID Event
- SIR and SUR data are separated by four healthcare settings:
 - Acute care hospitals (ACHs)
 - Critical access hospitals (CAHs)
 - Inpatient rehabilitation facilities (IRFs)
 - Long-term acute care hospitals (LTACHs)

Nationally, among ACHs, the highlights in this report include:

- Overall, about 9% decrease in CLABSI between 2017 and 2018
 - Largest decrease in ICU (11%)
- Overall, about 8% decrease in CAUTI between 2017 and 2018
 - Largest decrease in ICU (10%)
- Overall there was no significant change in VAE between 2017 and 2018
- Overall, there was no significant change in SSI related to the 10 select procedures tracked in the report between 2017 and 2018.
 - The 10 select procedures are Surgical Care Improvement Project (SCIP) procedures. For a list of the SCIP procedures, please see: <https://health.gov/hcq/pdfs/ssi2012.pdf> [PDF - 2 pages]
 - No significant changes in abdominal hysterectomy SSIs
 - No significant changes in colon surgery SSIs
- No significant changes in hospital onset MRSA bacteremia between 2017 and 2018
- About 12% decrease in hospital onset *C. difficile* infections between 2017 and 2018

2018 National and State HAI Progress Report

- Includes state-level reporting mandates and data validation activities performed by states
- The full report consists of
 - Executive Summary
 - National and State-level Data Highlights
 - Technical Appendix which describes the analytic methodology used in the report
 - Data Tables (by healthcare setting)
- The report is located on the HAI Data Page:
 - <https://www.cdc.gov/hai/data/portal/progress-report.html>
- Also available on the newly redesigned Antibiotic Resistance & Patient Safety Portal (AR & PSP)
 - <https://arpsp.cdc.gov>

The screenshot displays the CDC Healthcare-associated Infections (HAI) Data Portal. On the left is a navigation menu with links to HAI Data, Data Portal, Current HAI Progress Report (highlighted), Progress Report FAQs, Antibiotic Resistance & Patient Safety Portal, Patient Safety Atlas, Data Archive, Types of Infections, Diseases and Organisms, Preventing HAIs, Containment Strategy, and State-based HAI Prevention Activities. The main content area is titled 'Current HAI Progress Report' and includes the subtitle '2018 National and State Healthcare-Associated Infections Progress Report'. It features an 'Executive Summary' section with a paragraph about CDC's commitment to preventing HAIs and a 'Table of Contents' sidebar with links to Executive Summary, 2018 HAI Progress Report, Data Tables, Technical Appendix, References, Acknowledgements, and Glossary. Below the executive summary, there is a section for 'DATA TABLES' with two categories: '2018 SIR Data' and '2018 SUR Data'. Each category lists four data tables with their respective file formats and sizes.

Healthcare-associated Infections (HAI)

HAI Data

Data Portal

Current HAI Progress Report

Progress Report FAQs

Antibiotic Resistance & Patient Safety Portal

Patient Safety Atlas

Data Archive

Types of Infections

Diseases and Organisms

Preventing HAIs

Containment Strategy

State-based HAI Prevention Activities

Current HAI Progress Report

2018 National and State Healthcare-Associated Infections Progress Report

Executive Summary

The Centers for Disease Control and Prevention (CDC) is committed to protecting patients and healthcare personnel from adverse healthcare events and promoting safety, quality, and value in healthcare delivery. Preventing healthcare-associated infections (HAIs) is a top priority for CDC and its partners in public health and healthcare. The 2018 *National and State Healthcare-Associated Infections (HAI) Progress Report* provides a summary of select HAIs across four healthcare settings: acute care hospitals (ACHs), critical access hospitals (CAHs), inpatient rehabilitation facilities (IRFs) and long-term acute care hospitals (LTACHs). Data from CAHs are provided in the detailed technical tables but not in the report itself. The designation of CAH is assigned by the Centers for Medicare and Medicaid Services (CMS) to hospitals that have 25 or fewer acute care inpatient beds and that maintain an annual average length of stay of 96 hours or less for acute care patients. IRFs include hospitals, or part of a hospital, that provide intensive rehabilitation services using an interdisciplinary team approach. LTACHs provide treatment for patients who are generally very sick and stay, on average, more than 25 days. To view HAI data from individual hospitals, LTACHs and IRFs, please see: [CMS Hospital Compare](#), [LTACH Compare](#), and [IRF Compare](#).

This report, along with the detailed technical tables, provides national and state-

Table of Contents

- Executive Summary
- 2018 HAI Progress Report
- Data Tables
- Technical Appendix
- References
- Acknowledgements
- Glossary

DATA TABLES

- 2018 SIR Data
 - 2018 National and State HAI Progress Report SIR Data – Acute Care Hospitals. [XLS – 557 KB]
 - 2018 National and State HAI Progress Report SIR Data – Critical Access Hospitals. [XLS – 364 KB]
 - 2018 National and State HAI Progress Report SIR Data – Inpatient Rehabilitation Facilities. [XLS – 125 KB]
 - 2018 National and State HAI Progress Report SIR Data – Long-Term Acute Care Hospital. [XLS – 147 KB]
- 2018 SUR Data
 - 2018 National and State HAI Progress Report SUR Data – Acute Care Hospitals. [XLS – 273 KB]
 - 2018 National and State HAI Progress Report SUR Data – Critical Access Hospital. [XLS – 159 KB]
 - 2018 National and State HAI Progress Report SUR Data – Inpatient Rehabilitation Facilities. [XLS – 90 KB]
 - 2018 National and State HAI Progress Report SUR Data – Long-Term Acute Care Hospitals. [XLS – 94 KB]