



## 2015 NHSN Rebaseline Webinar: New and Upcoming!

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## Objectives

- Preview of the new application interface
- New output options
- Putting the re-baseline into practice
- Annual surveys
- Upcoming events and planned documentation

**NHSN HAS A NEW LOOK!!**

## Summary of New Measures:

- SIRs for critical access hospitals separate from acute care hospitals
- MBI SIRs
- VAE SIRs
  - Total VAE
  - IVAC Plus
- Pediatric SSI SIRs
- MRSA and CDI LabID SIRs for LTACHs and IRFs
- Standardized Utilization Ratios (SURs) for all device types

## What Has Changed?

- Addition of new reports
- Separation of reports by facility type
- More user friendly (and intuitive)
- Visually different
  - Alerts
  - Data entry screen
  - Monthly reporting plans
  - Analysis reports/Analysis modify screen
- New variables

# NHSN Patient Safety Component Home Page

**CDC** Centers for Disease Control and Prevention  
CDC 24/7: Saving Lives. Protecting People™

**NHSN** National Healthcare Safety Network

NHSN - National Healthcare Safety Network [apt-v-nhsn-test:8001]

REBECCA  
DHQP MEMORIAL HOSPITAL

### NHSN Home

- Alerts
- Reporting Plan ▶
- Patient ▶
- Event ▶
- Procedure ▶
- Summary Data ▶
- Import/Export
- Surveys ▶
- Analysis ▶
- Users ▶
- Facility ▶
- Group ▶
- Tools ▶
- Logout

## NHSN Patient Safety Component Home Page

**COMPLETE THESE ITEMS**

Confer Rights  
**Not Accepted**

**ALERTS**

<b>84</b> Incomplete Events	<b>227</b> Missing Events	<b>56</b> Incomplete Summary Items	<b>322</b> Missing Summary Items
<b>29</b> Incomplete Procedures	<b>142</b> Missing Procedures	<b>5</b> Missing Procedure-Associated Events	<b>1</b> Unusual Susceptibility Profile

# Monthly Reporting Plans



Centers for Disease Control and Prevention  
CDC 24/7: Saving Lives, Protecting People™

NHSN - National Healthcare Safety Network (apt-v-nhsn-test:8001)

NHSN Home

Alerts

Reporting Plan

Patient

Event

Procedure

Summary Data

Import/Export

Surveys

Analysis

Users

Facility

Group

Tools

Logout



## Add Monthly Reporting Plan

Mandatory fields marked with \*

Facility ID \*:

Month \*:

Year \*:

No NHSN Patient Safety Modules Followed this Month

### Device-Associated Module

	Locations	CLABSI	VAP	CAUTI	CLIP
<input type="checkbox"/>	<input type="text" value="PEDSURG_CC - PEDSURG_CC"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="text" value="AMAU - ADULT MIXED ACUTY UNIT"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Add Row

Clear All Rows

Copy from Previous Month

### Procedure-Associated Module

	Procedures	SSI	Post-procedure PNEU
<input type="checkbox"/>	<input type="text" value="COLO - Colon surgery"/>	IN: <input checked="" type="checkbox"/> OUT: <input type="checkbox"/>	<input type="text" value="IN - Inpatient"/>
<input type="checkbox"/>	<input type="text" value="HYST - Abdominal hysterectomy"/>	IN: <input checked="" type="checkbox"/> OUT: <input type="checkbox"/>	<input type="text" value="IN - Inpatient"/>

Add Row

Clear All Rows

Copy from Previous Month

# Accessing Data Entry Screens



Centers for Disease Control and Prevention  
CDC 24/7: Saving Lives. Protecting People™

NHSN - National Healthcare Safety Network (apt-v-nhsn-test:8001)

**NHSN Home**

- Alerts
- Reporting Plan ▶
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- Group ▶
- Tools ▶
- Logout

 **Find Procedure**

- Enter search criteria and click Find
- Fewer criteria will return a broader result set
- More criteria will return a narrower result set

**Procedure Information**

Facility ID:

Procedure #:

NHSN Procedure Code:

ICD-9-CM Code:

Procedure Date:  To:

**Patient Information**

Patient ID:

Last Name:

First Name:

Social Security #:

Secondary ID:

**General Information**

Completion Status:



# Generating Datasets

**CDC** Centers for Disease Control and Prevention  
CDC 24/7: Saving Lives, Protecting People™

**NHSN** National Healthcare Safety Network

NHSN - National Healthcare Safety Network (apt-v-nhsn-test:8001)

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**NHSN Home**

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- Group
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## 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.

1/2013 11/2016

**Generate New** Last Generated: Nov 7 2016 1:36PM

Don't forget to check the check box to include all years of data!

# Statistics Calculator



Centers for Disease Control and Prevention  
CDC 24/7: Saving Lives. Protecting People™



NHSN  
National Healthcare  
Safety Network



NHSN - National Healthcare Safety Network (apt-v-nhsn-test:8001)



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## NHSN Home

- Alerts
- Reporting Plan ▶
- Patient ▶
- Event ▶
- Procedure ▶
- Summary Data ▶
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- Surveys ▶
- Analysis ▶
- Users ▶
- Facility ▶
- Group ▶
- Tools ▶
- Logout



## Statistics Calculator

- ▣ [Compare Two Proportions](#)
- ▣ [Compare Single SIR to 1](#)
- ▣ [Compare Two Standardized Infection Ratios](#)
- ▣ [Compare Two Incidence Density Rates](#)
- ▣ [Compare Single Proportion to a Benchmark](#)
- ▣ [Compare Single SIR to Nominal Value](#)

Generate Data Sets

Reports

Statistics Calculator



# Analysis Reports

## NHSN Home

- Alerts
- Reporting Plan ▶
- Patient ▶
- Event ▶
- Procedure ▶
- Summary Data ▶
- Import/Export
- Surveys ▶
- Analysis ▶**
- Users ▶
- Facility ▶
- Group ▶
- Tools ▶
- Logout



## Analysis Reports

Output Options are now called **Analysis Reports!**

Expand All

Collapse All

Search



- Device-Associated (DA) Module
- Procedure-Associated (PA) Module
- HAI Antimicrobial Resistance (DA+PA Modules)
- Antimicrobial Use and Resistance Module
- MDRO/CDI Module - LABID Event Reporting
- MDRO/CDI Module - Infection Surveillance
- MDRO/CDI Module - Process Measures
- MDRO/CDI Module - Outcome Measures
- CMS Reports
- TAP Reports
- Baseline Set 1
- Advanced
- My Custom Reports
- Published Reports

### NEW Features:

- ✓ Quickly access your desired reports by searching key words, such as CLABSI SIR
- ✓ Expand all folders / Collapse all folders
- ✓ See the tree view of the report folders and sub folders

# Analysis Reports

## NHSN Home

- Alerts
- Reporting Plan ▶
- Patient ▶
- Event ▶
- Procedure ▶
- Summary Data ▶
- Import/Export
- Surveys ▶
- Analysis ▶**
- Users ▶
- Facility ▶
- Group ▶
- Tools ▶
- Logout



## Analysis Reports

Expand All

Collapse All

Search

- Device-Associated (DA) Module
- Procedure-Associated (PA) Module
- HAI Antimicrobial Resistance (DA+PA Modules)
- Antimicrobial Use and Resistance Module
- MDRO/CDI Module - LABID Event Reporting
- MDRO/CDI Module - Infection Surveillance
- MDRO/CDI Module - Process Measures
- MDRO/CDI Module - Outcome Measures
- CMS Reports
- TAP Reports
- Baseline Set 1**
- Advanced
- My Custom Reports
- Published Reports

Locating reports based on 2015 baseline:

All folders displayed here, with the exception of the folder named Baseline Set 1, contain reports using the new 2015 baseline

Locating reports based on 'old' baseline:

Please find reports using the old baseline here in the Baseline Set 1, also called BS1 folder.  
Reports are organized by HAI type

# Analysis Reports-New Reports

**Analysis Reports**

Expand All Collapse All Search

- Device-Associated (DA) Module
  - Central Line-Associated BSI
    - Line Listing - All CLAB Events
    - Frequency Table - All CLAB Events
    - Bar Chart - All CLAB Events
    - Pie Chart - All CLAB Events
    - Rate Table - CLAB Data for ICU-Other
    - Run Chart - CLAB Data for ICU-Other
    - Rate Table - CLAB Data for NICU
    - Run Chart - CLAB Data for NICU
    - Rate Table - CLAB Data for SCA/ONC
    - Run Chart - CLAB Data for SCA/ONC
    - SIR SIR - Acute Care Hospital CLAB Data**
    - SIR SIR - Critical Access Hospitals CLAB Data**
    - SIR SIR - Long Term Acute Care CLAB Data**
    - SIR SIR - Inpatient Rehab Facilities CLAB Data**
  - Custom Reports
    - TEST: Line Listing - All CLAB Events

SIR reports by facility types

- MDRO/CDI Module - LABID Event Reporting
  - All LabID Events
    - All MRSA LabID Events
      - Line Listing for All MRSA LabID Events
      - Frequency Table for All MRSA LabID Events
      - Bar Chart for All MRSA LabID Events
      - Pie Chart for All MRSA LabID Events
      - Rate Table - MRSA LabID Data
      - SIR SIR - ACH MRSA Blood FacwideIN LabID Data**
      - SIR SIR - CAH MRSA Blood FacwideIN LabID Data**
      - SIR SIR - IRF MRSA Blood LabID Data**
      - SIR SIR - LTAC MRSA Blood FacwideIN LabID Data**

SIR reports by facility types

# Analysis Reports

The screenshot displays the NHSN (National Healthcare Safety Network) interface. At the top left is the CDC logo with the text "Centers for Disease Control and Prevention" and "CDC 24/7: Saving Lives. Protecting People™". At the top right is the NHSN logo with the text "National Healthcare Safety Network". Below the NHSN logo, the user's name "REBECCA" and hospital "DHQP MEMORIAL HOSPITAL" are displayed. The main header reads "NHSN - National Healthcare Safety Network (apt: v-nhsn-test:8001)".

On the left is a navigation menu with the following items: NHSN Home, Alerts, Reporting Plan, Patient, Event, Procedure, Summary Data, Import/Export, Surveys, Analysis, Users, Facility, Group, Tools, and Logout.

The main content area is titled "Analysis Reports" and contains a search bar with "Expand All" and "Collapse All" buttons. Below this is a tree view of report categories:

- Device-Associated (DA) Module
  - Central Line-Associated BSI
    - Line Listing - All CLAB Events
    - Frequency Table - All CLAB Events
    - Bar Chart - All CLAB Events
    - Pie Chart - All CLAB Events
    - Rate Table - CLAB Data for ICU-Other
    - Run Chart - CLAB Data for ICU-Other
    - Rate Table - CLAB Data for NICU
    - Run Chart - CLAB Data for NICU
    - Rate Table - CLAB Data for SCA/ONC
    - Run Chart - CLAB Data for SCA/ONC
    - SIR SIR - Acute Care Hospital CLAB Data

A context menu is open over the "SIR SIR - Acute Care Hospital CLAB Data" item, showing the following options:

- Run Report
- Modify Report
- Export Data Set

# Modifying Reports-SIR Reports

### Modify "SIR - Acute Care Hospital CLAB Data"

Show descriptive variable names ([Print List](#)) Analysis Data Set: bs2\_CLAB\_RatesICU    Type: SIR    Data Set Generated On: 11/07/2016 13:36:00

**Title/Format**    Time Period    Filters    Display Options

**Title:**

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

▶ Run    Save...    Export...    Close

### Modify "SIR - Acute Care Hospital CLAB Data"

Show descriptive variable names ([Print List](#)) Analysis Data Set: bs2\_CLAB\_RatesICU    Type: SIR    Data Set Generated On: 11/07/2016 13:36:00

**Title/Format**    **Time Period**    Filters    Display Options

**Time Period:**

Date Variable	Beginning	Ending	
<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>	<span>⌘ Clear Time Period</span>

Enter Date variable/Time period at the time you click the Run button

▶ Run    Save...    Export...    Close

# Modifying Reports-SIR Reports

Modify "SIR - Acute Care Hospital CLAB Data"

Show descriptive variable names (Print List) Analysis Data Set: bs2\_CLAB\_RatesICU Type: SIR Data Set Generated On: 11/07/2016 13:36:00

Title/Format Time Period **Filters** Display Options

Additional Filters:

AND OR

AND OR

locationType equal CC - CC

bsiPlan equal Yes

Modify "SIR - Acute Care Hospital CLAB Data"

Show descriptive variable names (Print List) Analysis Data Set: bs2\_CLAB\_RatesICU Type: SIR Data Set Generated On: 11/07/

Title/Format Time Period **Filters** **Display Options**

SIR Options:

Group by: **Cumulative**  
summaryYH  
summaryYM  
summaryYQ  
summaryYr

Get a cumulative SIR for your specified time period

# Modifying Reports-Line Listing Reports

Modify "Line Listing - All SSI Events"

Show descriptive variable names (Print List) Analysis Data Set: SSI\_Events Type: Line Listing Data Set Generated On: 10/03/2016 13:54:00

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

Display Variables:

Available Variables:		Selected Variables:	
acine	All >>	orgID	^ Up
admDateYH	Selected >	patID	
admDateYM		dob	
admDateYQ	< Selected	gender	
admDateYr		admitDate	
admToDisDays		eventID	
admToEvtDays	<< All	eventDate	
ageAtEvent		eventType	
approach		spcEvent	
approachDesc		procDate	
asaDesc		procCode	
birthWt		procDurationHr	
birthWtCode		procDurationMin	
birthWtCodeDesc		anesthesia	
bidLoss		asa	

# Modifying Reports-Line Listing Reports

**Modify "Line Listing - All SSI Events"**

Show descriptive variable names (Print List)      Analysis Data Set: SSI\_Events    Type: Line Listing    Data Set Generated On: 11/07

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

**Sort Variables:**

Available Variables:		Selected Variables:	
disDateYr	All >>	eventType	Up
dob	Selected >		Down
emergency	< Selected		
ethnicity	<< All		Undo
ethnicityDesc			
eventDate			
<b>eventID</b>			
eventTypeDesc			
evntDateYH			
evntDateYM			
evntDateYQ			
evntDateYr			
evntToDisDays			
gender			
hpro			

# My Custom Reports

The screenshot displays the NHSN - National Healthcare Safety Network (apt-v-nhsn-test:8001) interface. On the left is a navigation menu with items like Alerts, Reporting Plan, Patient, Event, Procedure, Summary Data, Import/Export, Surveys, Analysis, Users, Facility, Group, Tools, and Logout. The main area is titled 'Analysis Reports' and contains a tree view. The tree view includes folders for various modules such as Device-Associated (DA), Procedure-Associated (PA), HAI, Antimicrobial Use and Resistance, MDRO/CDI, Baseline Set 1, and Advanced. The 'My Custom Reports' folder is highlighted in yellow. A context menu is open over this folder, listing actions: Run Report, Modify Report, Delete Report, Export Data Set, Publish Report, and Rename Report. The 'REBECCA - bs1\_SIR\_AIISSIProc' folder is also visible in the tree.

**CDC** Centers for Disease Control and Prevention  
CDC 24/7: Saving Lives, Protecting People™

**NHSN - National Healthcare Safety Network** (apt-v-nhsn-test:8001)

**NHSN Home**

- Alerts
- Reporting Plan ▶
- Patient ▶
- Event ▶
- Procedure ▶
- Summary Data ▶
- Import/Export
- Surveys ▶
- Analysis ▶
- Users ▶
- Facility ▶
- Group ▶
- Tools ▶
- Logout

**Analysis Reports**

Expand All Collapse All Search

- Device-Associated (DA) Module
- Procedure-Associated (PA) Module
- HAI Antimicrobial Resistance (DA+PA Modules)
- Antimicrobial Use and Resistance Module
- MDRO/CDI Module - LABID Event Reporting
- MDRO/CDI Module - Infection Surveillance
- MDRO/CDI Module - Process Measures
- MDRO/CDI Module - Outcome Measures
- Baseline Set 1
- Advanced
- My Custom Reports**
- Create New Custom Report...
- My Report Sets
- REBECCA - bs1\_SIR\_AIISSIProc

- Run Report
- Modify Report
- Delete Report
- Export Data Set
- Publish Report
- Rename Report

# Creating Custom Reports

Analysis Data Set:

bs1\_SIR\_AISSISProc  
bs1\_SIR\_AISSISurg  
bs1\_SIR\_Cmpx30dSSISProcPCH  
bs1\_SIR\_Complex30dSSISProc  
bs1\_SIR\_Complex30dSSISurg  
bs1\_SIR\_ComplexSSISProc  
bs1\_SIR\_ComplexSSISurg  
bs1\_VAE\_RatesICU\_SCA  
bs1\_VAE\_RatesLTAC\_CMS  
bs2\_CAU\_Rates\_CMS  
bs2\_CAU\_RatesCAH  
bs2\_CAU\_RatesCAH\_CMS  
bs2\_CAU\_RatesICU\_SCA  
bs2\_CAU\_RatesIRF  
bs2\_CAU\_RatesLTAC  
bs2\_CAU\_RatesNICU  
bs2\_CAU\_RatesONC  
bs2\_CAU\_TAP  
bs2\_CAU\_TAPIRF  
bs2\_CAU\_TAPLTAC  
bs2\_CLAB\_Rates\_CMS  
bs2\_CLAB\_RatesCAH  
bs2\_CLAB\_RatesCAH\_CMS  
bs2\_CLAB\_RatesICU  
bs2\_CLAB\_RatesIRF  
bs2\_CLAB\_RatesLTAC  
bs2\_CLAB\_RatesNICU  
bs2\_CLAB\_RatesONC  
bs2\_CLAB\_RatesSCA  
bs2\_CLAB\_TAP

Type:

Bar Chart  
TAP  
Bar Chart Summary  
Frequency Table Summary  
Line Listing  
Run Chart  
Rate Table  
Pie Chart Summary  
Pie Chart  
SIR  
Frequency Table

New Report

Show descriptive variable names (Print List)

Analysis Data Set: bs2\_CAU\_RatesCAH

Type: Line Listing

Data Set Generated On: 11/09/2016 07:16:39

Title/Format

Time Period

Filters

Display Variables

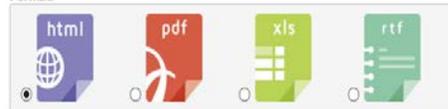
Sort Variables

Display Options

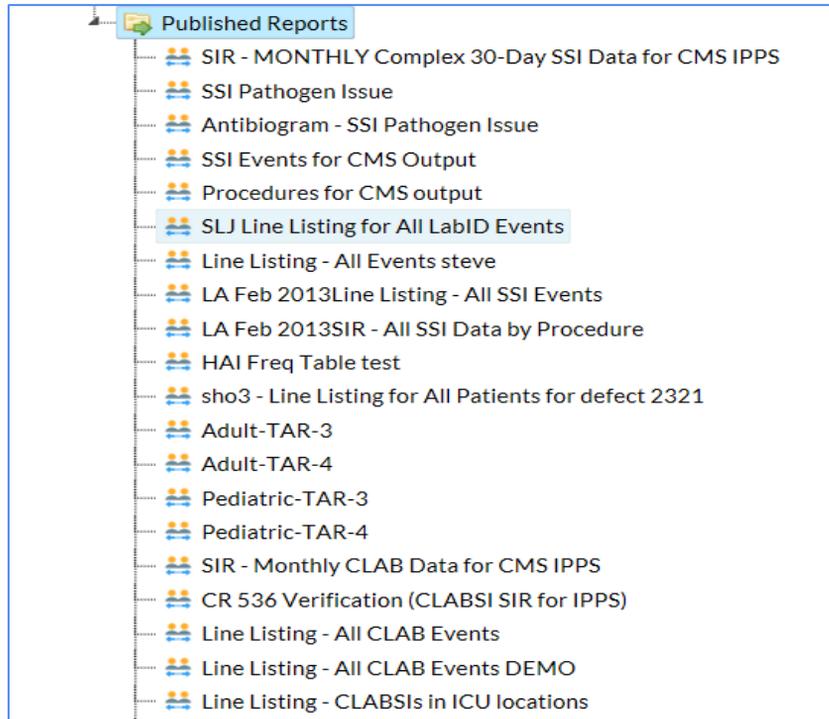
Title:

bs2\_CAU\_RatesCAH

Format:



# Published Reports

- 
- Published Reports
  - SIR - MONTHLY Complex 30-Day SSI Data for CMS IPPS
  - SSI Pathogen Issue
  - Antibiogram - SSI Pathogen Issue
  - SSI Events for CMS Output
  - Procedures for CMS output
  - SLJ Line Listing for All LabID Events
  - Line Listing - All Events steve
  - LA Feb 2013Line Listing - All SSI Events
  - LA Feb 2013SIR - All SSI Data by Procedure
  - HAI Freq Table test
  - sho3 - Line Listing for All Patients for defect 2321
  - Adult-TAR-3
  - Adult-TAR-4
  - Pediatric-TAR-3
  - Pediatric-TAR-4
  - SIR - Monthly CLAB Data for CMS IPPS
  - CR 536 Verification (CLABSI SIR for IPPS)
  - Line Listing - All CLAB Events
  - Line Listing - All CLAB Events DEMO
  - Line Listing - CLABSI in ICU locations

# Additional Changes to NHSN Application, Coming Soon

Lindsey Weiner

# Running Analysis Reports in NHSN

- New variables
  - Indicator variables for SSI events
  - Exclusion variables for procedures
- New names for existing variables
  - Denominator of the SIR: number of predicted events
    - Previously called numExp; now called “**numPred**”
  - Total patient days from the annual survey
    - Previously called numPatDays; now called “**numPatDaysSurv**”
  - Total admissions from the annual survey
    - Previously called numAdmits; now called “**numAdmitsSurv**”
- New naming convention for analysis datasets (exporting)
  - Datasets are prefixed with “bs1” or “bs2”
    - BS1: original baseline
    - BS2: new baseline

# Modify Screen

- MDRO/CDI Module - LABID Event Reporting
  - All LabID Events
  - All MRSA LabID Events
  - All MSSA LabID Events
  - All C. difficile LabID Events
    - Line Listing for All CDIF LabID Events
    - Frequency Table for All CDIF LabID Events
    - Bar Chart for All CDIF LabID Events
    - Pie Chart for All CDIF LabID Events
    - Rate Tables for CDIF LabID Data
    - SIR SIR - ACH CDI FacwideIN LabID Data
    - SIR SIR - CAH CDI FacwideIN LabID Data

### Modify "SIR - ACH CDI FacwideIN LabID Data"

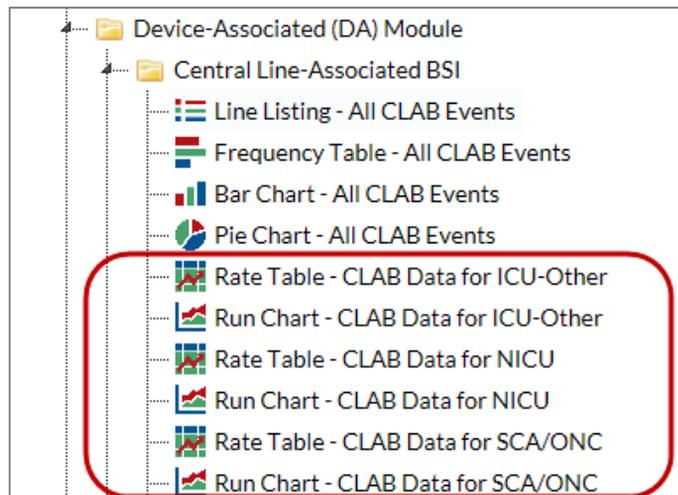
Show descriptive variable names (Print List) **Analysis Data Set: bs2\_LABID\_RatesCDIF** Type: SIR

Title/Format	Time Period	Filters	Display Options
--------------	-------------	---------	-----------------

**Title:**

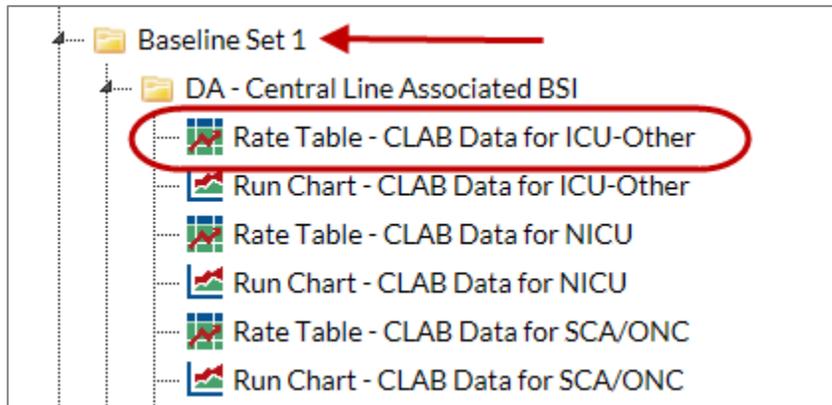
## Pooled Means (National Benchmark Rates)

- 2014 is the last year NHSN will publish device-associated national pooled means
  - Infection rate and device utilization ratio (DUR)
  - Moving forward, benchmarks will be published annually as SIRs
- Typically, rate tables provided the facility's rate and DUR, with a comparison to national pooled means
- Pooled means will no longer appear in the default device-associated rate tables for 2015 data and forward



## Rate Tables in “Baseline Set 1” Folder

- Review the comparison between your facility’s rates and the **2014** national pooled mean rates in the “Baseline Set 1” folder
  - 2015 + 2016 device-associated rates will be compared to **2014** national pooled mean



- Reminder: 2014 is the last pooled mean in the “Baseline Set 1” rate tables
- 2015 national pooled means will be available in the Rate Calculator

# Rate Calculator

- \*New\* online tool launching next year, 2017
- Public website outside of the NHSN application
- User will enter risk factors as they apply to the facility/HAI of interest
  - e.g., bed size, medical school affiliation
- Calculator will produce a national pooled mean rate for the facility based on **2015 national data**
  - No annual updates
- All HAI types (including SSI, MRSA & *C.difficile* LabID, etc.)
- More information will be provided next year

# **Analyzing SIRs Under the Updated Baseline**

*Interpretation, Graphical Display, Communication*

# Generating SIRs in NHSN: *C.difficile* Example

- MDRO/CDI Module - LABID Event Reporting
  - All LabID Events
  - All MRSA LabID Events
  - All MSSA LabID Events
  - All *C. difficile* LabID Events
  - All VRE LabID Events
  - All CephR-Klebsiella LabID Events
  - All CRE LabID Events

**National Healthcare Safety Network**  
**SIR for CDI FacwideIN LabID in Acute Care Hospital (2015 baseline)**  
 As of: November 16, 2016 at 10:34 AM  
 Date Range: All BS2\_LABID\_RATE\$CDIF

orgID	location	summaryYQ	months	CDIF_facIncHOCCount	numPred	numpatdays	SIR	SIR_pval	sir95ci
10401	FACWIDEIN	2016Q1	3	4	6.627	10621	0.604	0.3132	0.192, 1.456

- This report includes facility-wide inpatient data from acute care hospitals for 2015 and forward.
- The SIR is only calculated if number predicted (numPred) is >= 1. Lower bound of 95% Confidence Interval only calculated number of observed events > 0.
- 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.
- 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](http://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/mrsacdi_tips.pdf)
- If any risk factor data are missing, the record is excluded from the SIR.

Source of aggregate data: 2015 NHSN CDI LabID Data  
 Data contained in this report were last generated on November 15, 2016 at 5:01 PM.

- Facility-wide inpatient (FACWIDEIN) *C.difficile* SIR, 2016 Q1
- Baseline year(s) are indicated in the report title
- New footnotes!

# Interpretation of SIRs under the New Baseline

$$\text{SIR} = \frac{\text{\# Observed Events}}{\text{\# Predicted Events}}$$

- # predicted events is calculated from a regression model, using variables found to be statistically significant predictors of the HAI in 2015 national data
- SIR under the new baseline is still compared to 1!
- **SIR > 1:**
  - more HAIs observed than predicted, based on 2015 national experience
- **SIR < 1:**
  - fewer HAIs observed than predicted, based on 2015 national experience
- The SIR is only calculated when # of predicted infections is  $\geq 1$
- The # observed HAIs is significantly different than # predicted HAIs if:
  - p-value  $\leq 0.05$
  - 95% confidence interval does *not* include the value of 1

# Interpretation of SIRs under the New Baseline

## National Healthcare Safety Network

### SIR for CDI FacwideIN LabID in Acute Care Hospital (2015 baseline)

As of: November 16, 2016 at 10:34 AM

Date Range: All BS2\_LABID\_RATE SCDIF

orgID	location	summaryYQ	months	CDIF_facIncHOCcount	numPred	numpatdays	SIR	SIR_pval	sir95ci
10401	FACWIDEIN	2016Q1	3	4	6.627	10621	0.604	0.3132	0.192, 1.456

- Complete data from all 3 months of the quarter are included
- Facility observed 4 hospital-onset *C.difficile* events
- Number of predicted events (numPred) = 6.627
- SIR = 0.604
  - Facility observed fewer CDI events than predicted, based on 2015 baseline
  - P-value and 95% confidence interval tell us the SIR is not statistically significant

# Review of Available Time Periods for the SIR Calculation

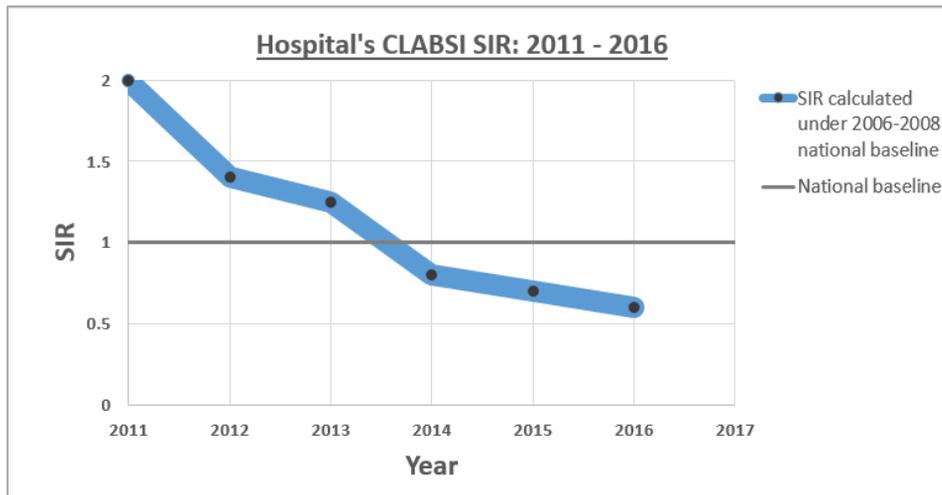


- SIRs under the [new](#) baseline can be calculated starting with 2015 data
- SIRs under the original baselines\* can continue to be calculated through 2016 data
  - Will be used by CMS: Hospital Value-Based Purchasing (HVBP) program
  - Can be used by NHSN users when comparing to prior years of data
- Starting with 2017 data, SIRs will only be calculated in NHSN under new risk models

\*Original Baselines: CLABSI, SSI: 2006-2008; CAUTI: 2009; MRSA, CDI: 2010-2011

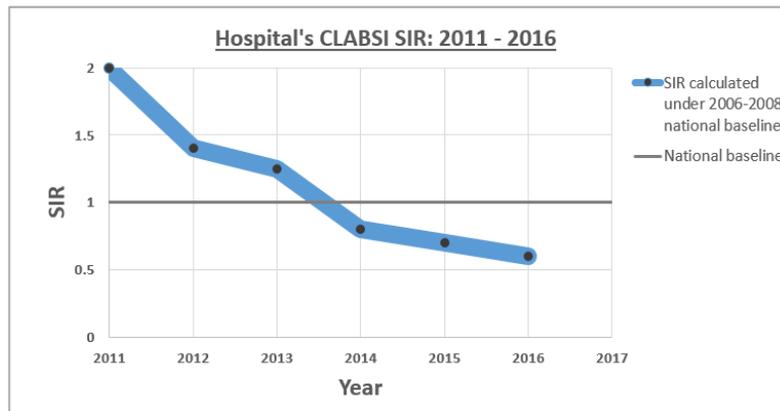
## Example: Review SIRs Under Original Baseline Through 2016

- Our example hospital has been tracking their CLABSI SIRs since 2011
  - Recently implemented a new CLABSI prevention measure in 2015
  - Any visible changes in the CLABSI SIR between 2015 and 2016?



# Best Practices for Graphical Display of SIR

- SIRs have been labeled with the corresponding baseline
- Continuous SIR display stops at 2016; 2017 data must use the new baseline
- For descriptive purposes only
  - No statistical analyses were performed



## Transition Period: Which SIRs Do We Use?



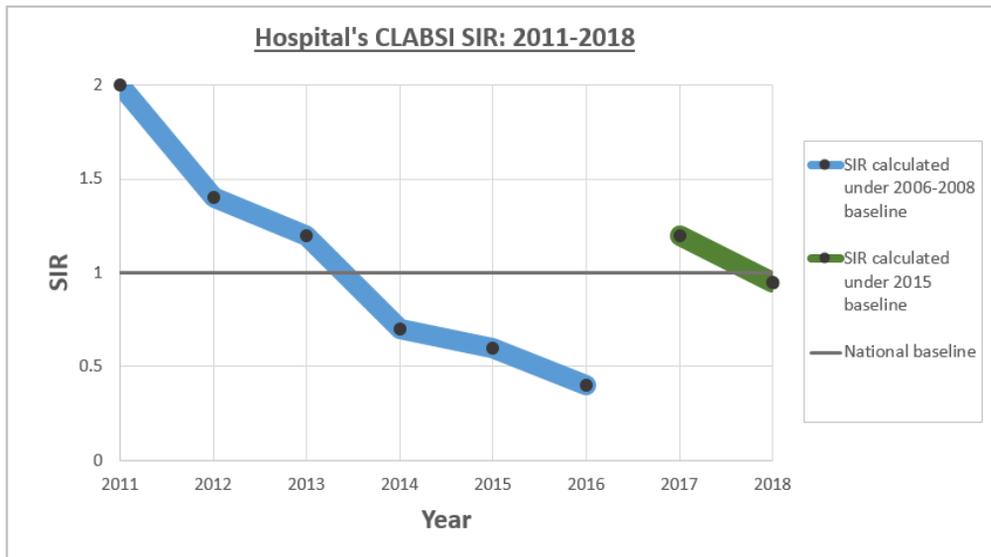
- If needed, continue reviewing SIRs under original baseline through 2016
  - Show effectiveness of prevention activities
  - Progress over time from the original baseline population
  - Review data that will be used in HVBP
- Begin reviewing SIRs under the new baseline from 2015 and forward
  - New starting place for measuring HAIs
  - Hospital Compare will display 2015 SIRs under the new baseline
  - 2015 SIRs under the new baseline will be used in future HVBP
- CDC will start using the new baseline with 2015 data
  - HAI Progress Report
  - National and state 2015 SIRs will use the updated risk models

# SIR Display

- The following slides will show examples and recommendations for how to display and interpret SIRs during this transition period, calculated under either baseline.
- Basic principles of SIR display during transition:
  - Understand which time periods are available for each baseline
  - If displaying SIRs over time in a continuous line, the SIRs from all time periods must be calculated under the *same* baseline
  - SIRs under the new baseline cannot be directly compared to SIRs from the original baseline
  - When presenting or discussing your hospital's SIRs, be sure to clearly label the baseline time period used
- There are MANY more ways to display SIR data!

# Incorporate New Baseline

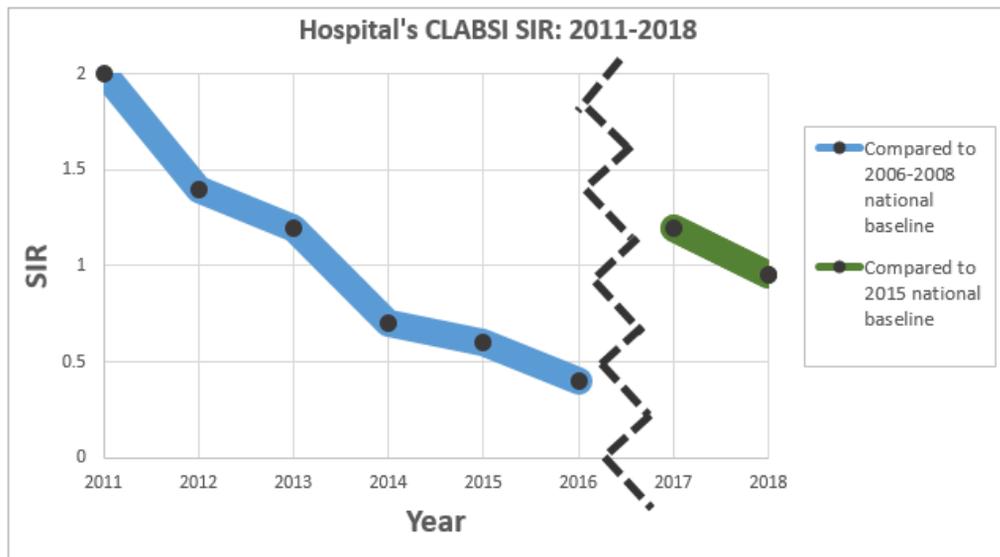
- Our example hospital has been tracking their CLABSI SIRs since 2011
- IP would like to continue monitoring SIRs on a single graph beyond 2016
  - Must incorporate new baseline!



*Note: SIR = 1 always represents the national baseline*

## Incorporate New Baseline

- SIRs under new baseline cannot be compared to SIRs from original baseline!
- Acceptable to show SIRs under both baselines in a single figure, given:
  - Line graph is *not* connecting points between different baselines
  - Each baseline is clearly labeled



## Alternative Example: Transition at 2015



- When presenting SIRs under new baseline for the first time, consider showing SIRs under the old baseline for context & as an indication of past progress

# Talking Points: Discussing SIRs During Transition Period



- 2011 – 2014 SIRs under original baseline
- 2014 SIR = 0.50
- Interpretation: In 2014, our facility saw 50% fewer CLABSIs than predicted, compared to the **2006-2008** national experience
- 2015 SIR under new baseline-transition year
- 2015 SIR = 1.20
- Interpretation: In 2015, our facility saw 20% more CLABSIs than predicted, based on the **2015** national experience

## Assessing Changes in HAI Experience Over Time

- SIRs under the original baseline **cannot** be directly compared to any SIRs calculated under the new baseline
  - Different risk adjustment, different baseline population
- When comparing SIRs from two time periods, both SIRs must have been calculated under the *same* baseline
  - 2014 vs. 2015 SIRs: original baseline
  - 2015 vs. 2016 SIRs: use *either* the new baseline or original baseline for both SIRs in the comparison
  - 2016 vs. 2017 SIRs: new baseline

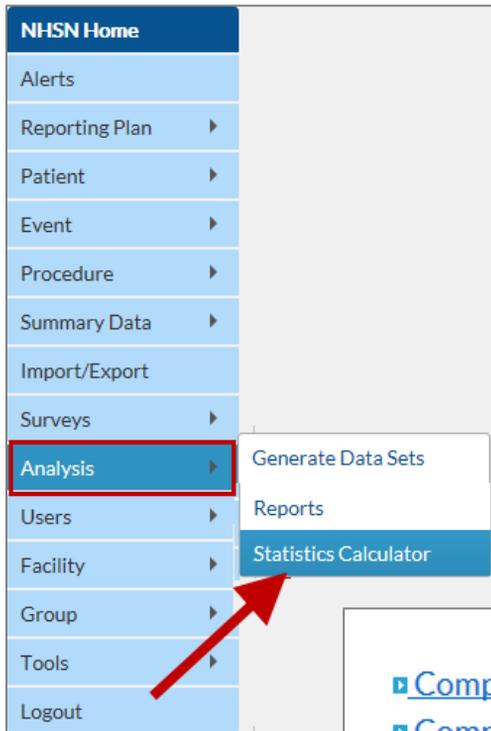


- Perform statistical comparison of 2 SIRs directly in NHSN

## Example

- Our hospital has been participating in a prevention collaborative for MRSA bacteremia
- IP would like to determine whether there was a significant change in MRSA bacteremia in 2016 compared to 2015
- SIRs calculated under either baseline could be used for this comparison. IP decided to use the 2015 national baseline:
  - 2015 MRSA bacteremia SIR = 1.216
  - 2016 MRSA bacteremia SIR = 0.771

# NHSN Statistics Calculator



- ▣ [Compare Two Proportions](#)
- ▣ [Compare Single SIR to 1](#)
- ▣ [Compare Two Standardized Infection Ratios](#)
- ▣ [Compare Two Incidence Density Rates](#)
- ▣ [Compare Single Proportion to a Benchmark](#)
- ▣ [Compare Single SIR to Nominal Value](#)

# NHSN Statistics Calculator

	Data Source #1	Data Source #2
Group Labels:	2015 SIR - new baseline	2016 SIR - new baseline
Number observed:	9	6
Number predicted:	7.401	7.779
Standardized Infection Ratio:	1.216	0.771

Title: MRSA Bacteremia SIRs: 2015 vs. 2016

Calculate Back

## Example- 2015 vs. 2016 SIR

- 2015 SIR: 9 observed / 7.401 predicted infections = 1.216
- 2016 SIR: 6 observed / 7.779 predicted infections = 0.771
- Optional fields: Group Labels, Title

# NHSN Statistics Calculator

National Healthcare Safety Network MRSA Bacteremia SIRs: 2015 vs. 2016 As of: November 16, 2016 at 10:18 AM		
	2015 SIR - new baseline	2016 SIR - new baseline
Observed	9	6
Predicted	7.401	7.779
SIR	1.216	0.771

Relative ratio of SIRs (data column 2 / data column 1): $0.771/1.216 = 0.634$ (63.4%)	
Two-tailed p-value: 0.3995	
95% Conf. Interval: 0.21, 1.803	

Interpretation: Is the 2016 SIR different from the 2015 SIR?

- P-value = 0.3995
- 95% confidence interval = (0.2 , 1.8)
- Because the p-value is greater than 0.05, and the confidence interval crosses 1, we conclude that the 2016 SIR is **not** significantly different from 2015 SIR

# NHSN Annual Facility Surveys

Scott Decker

# 2016 Patient Safety Annual Survey Annual Survey

- 2016 Annual Survey for ACH's, LTACH's, IRF's and ASC's will be available at the beginning of the 2017 calendar year
- Complete survey on the NHSN application after the 8.6 release on January 7<sup>th</sup>, 2017
  - Please do not complete the survey until the release of NHSN 8.6
- Survey deadline: March 1, 2017
- CMS Certified IRF units within Hospitals have to complete additional supplemental survey

**Add Annual Survey**

Mandatory fields marked with \*

Facility ID: \*

Survey Type: \*

Survey Year: \*

## Survey FAQ's/Reminders

- Medical school affiliation can include medical and/or nursing students for Undergraduate level
- Use data that was collected during the 2016 calendar year
  - Must wait until 2016 has passed in order to capture all data for the full calendar year
  - If changes to your facility were made during a calendar year and impact survey responses, use information that was in place for the majority of the year
- CDI Test Type– Question on survey, but not used for risk adjustment. NHSN uses quarterly summary reports (march, June, September, December) for this question
- Print a copy of the survey to review with hospital personnel that may answer certain questions before completing in NHSN
- Full list of survey FAQ's: [http://www.cdc.gov/nhsn/pdfs/faqs/psc/faqs\\_annual-surveys.pdf](http://www.cdc.gov/nhsn/pdfs/faqs/psc/faqs_annual-surveys.pdf)

# Review Survey in NHSN

- Use NHSN analysis options to check if 2016 survey is completed
  - Can also compare recent survey to ones completed in the past

The screenshot displays the NHSN software interface. On the left, a file tree shows the following structure:

- Advanced
  - Patient-level Data
  - Event-level Data
  - Procedure-level Data
  - Summary-level Data
  - Plan Data
  - Pathogen-level Data
  - Facility-level Data
    - Line Listing - Facility Enrollment Data
    - Line Listing - Conferred Rights
    - Line Listing - Hospital Survey (2002-2009)
    - Line Listing - Hospital Survey (2010-2013)
    - Line Listing - Hospital Survey (2014)
    - Line Listing - Hospital Survey (2015 and later)

A blue arrow points to the 'Line Listing - Hospital Survey (2015 and later)' item. A context menu is open over this item, showing the following options:

- Run Report
- Modify Report
- Export Data Set

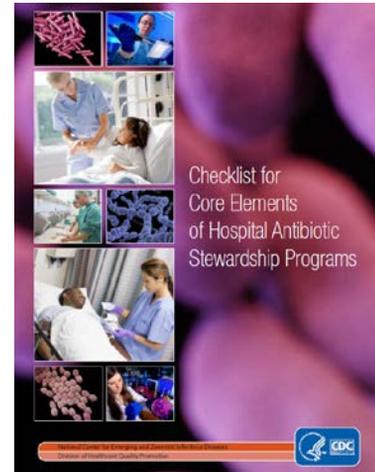
Below the file tree, the following text is visible:

reference to Stewardship Co...  
 015 and forward)  
**National Healthcare Safety Network**  
**Line Listing - Hospital Survey (2015 and later)**  
 As of: November 17, 2016 at 1:54 PM  
 Date Range: All HOSP SURVEYV5

orgID	surveyYear	name	facOwnerDesc	numICP	totHrSurv	totHrOth	medAff	medTypeDesc	numBeds	numICUBeds
10018	2015	DHQP MEMORIAL HOSPITAL	GOV - Government	32.00	60	65	Y	M - Major	501	101
10018	2016	DHQP MEMORIAL HOSPITAL	P - For Profit	6.00	23	12	N		7	3

# Core Elements of Antibiotic Stewardship Line List

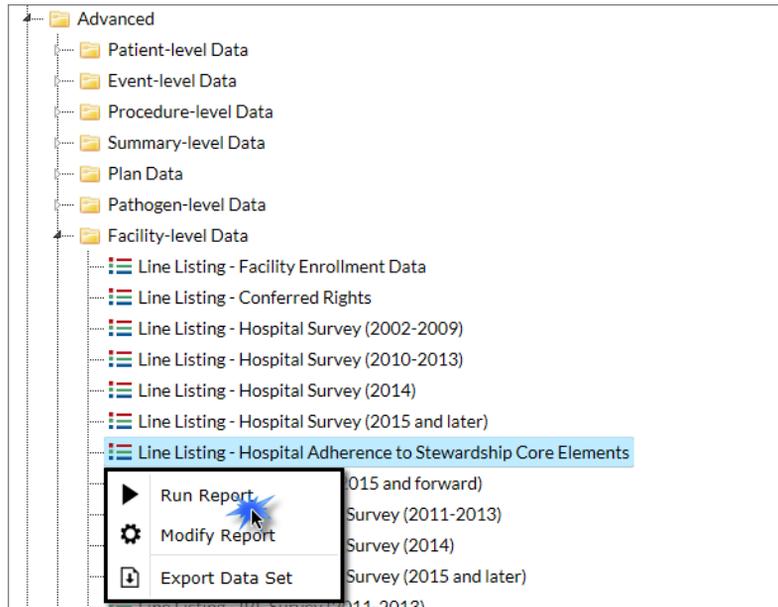
- New Output option using the PS Hospital Annual Survey responses
- Questions 23-33 on the Hospital Survey align with the 7 Core Elements of Hospital Antibiotic Stewardship Programs
  - Leadership
  - Accountability
  - Drug Expertise
  - Action
  - Tracking
  - Reporting
  - Education



More information about hospital antibiotic stewardship programs:  
<http://www.cdc.gov/getsmart/healthcare/implementation/core-elements.html>

# Core Elements Line List- New Report Option

- Located in the Advanced folder in NHSN where other survey data reports are found
- Only available for 2015 Surveys and later
- Select “Run Report” to obtain line list



## Core Elements Line List

- Responses from questions 23-33 on survey will generate either a Yes ('Y') or No ('N') on the line list for each of the 7 elements
- Total number of 'Y' responses will be summed for the 'coreElementsMet' variable

### National Healthcare Safety Network

#### Line Listing - Hospital Adherence to Seven Core Elements of Hospital Antibiotic Stewardship Program

As of: November 18, 2016 at 2:42 PM

Date Range: All ABX STEWARDSHIP

orgID	surveyYear	Leadership_CE	Accountability_CE	DrugExpertise_CE	Action_CE	Tracking_CE	Reporting_CE	Education_CE	coreElementsMet
10018	2015	Y	Y	Y	Y	Y	Y	N	6
10018	2016	N	N	N	Y	N	Y	N	2

- The above table indicates that in 2015 6 out of 7 core elements were achieved in 2015, but only 2 out of 7 in 2016
- Resource guide for this output will be made available prior to new release

## Upcoming Change with Survey Data

- NHSN currently uses the most recent PS Annual Survey for all risk adjustment calculations:

Quarterly SIR Report	Survey Used
2015 Q1 CLABSI	2015 PS Annual Survey
2014 Q4 CLABSI	2015 PS Annual Survey

- Upcoming release will align the year of data with the corresponding survey year:

Quarterly SIR Report	Survey Used
2015 Q1 CLABSI	2015 PS Annual Survey
2014 Q4 CLABSI	2014 PS Annual Survey

- Where survey is missing for a particular year, most recent survey in NHSN will be used for risk adjustments

## Quick Data Quality Reminder!

- Entry or deletion of events
- Changes to numbers of patient days, device days, admissions
- Removal or addition to monthly reporting plans
- Change in admission date, previous discharge date on LABID events
- Changes to relevant factors in the annual survey (e.g., medical school affiliation, facility bedsize)
- Resolution of “Report No Events” alerts

**All can have a potential impact on your facilities SIR!**

# Places to Look for Data Quality Issues

- Monthly reporting plans
  - “Are all my “Active” locations here?”
  - “Have I selected all my appropriate procedures?”
  - “Have I selected the appropriate lab specimens to collect for LABID data?”
- Annual Survey
  - “Did I update the number of beds from the previous survey year?”
  - “Has our hospitals medical school affiliation changed?”
- Using NHSN Analysis
  - “Did I generate new datasets?”
  - “Did I enter new events after I ran my analysis?”

**Upcoming events and planned documentation**

# Upcoming Events/ Links to Other Training Materials

- **2017 NHSN Training:** March 20-24, 2017 at Centers for Disease Control and Prevention, Atlanta, GA
  - Entire week of presentations will live streamed on the web
  - Information about registration will be forthcoming via email
- **NHSN Rebaseline Website**
  - Updated information about what to expect with the upcoming rebaseline (FAQ documents, training videos, timelines, and definitions)
  - <http://www.cdc.gov/nhsn/2015rebaseline/index.html>
- **NHSN Rebaseline Webinar, Part 1**
  - <http://streaming.cdc.gov/vod.php?id=6c0af6b3c0105fd24878aafe5065005920161101143220038>
- **Analysis Resource Documents and Guidelines:** Being updated at present and are either available now or will be by the time of release

**Thank You!**  
**NHSN@cdc.gov**

**QUESTIONS?**