

How to Run and Interpret SUR Reports in NHSN

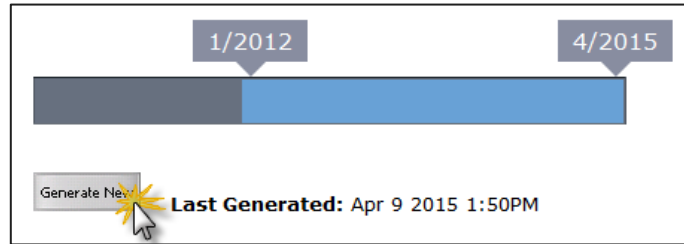
Patient Safety Component Device-Associated Module

Overview

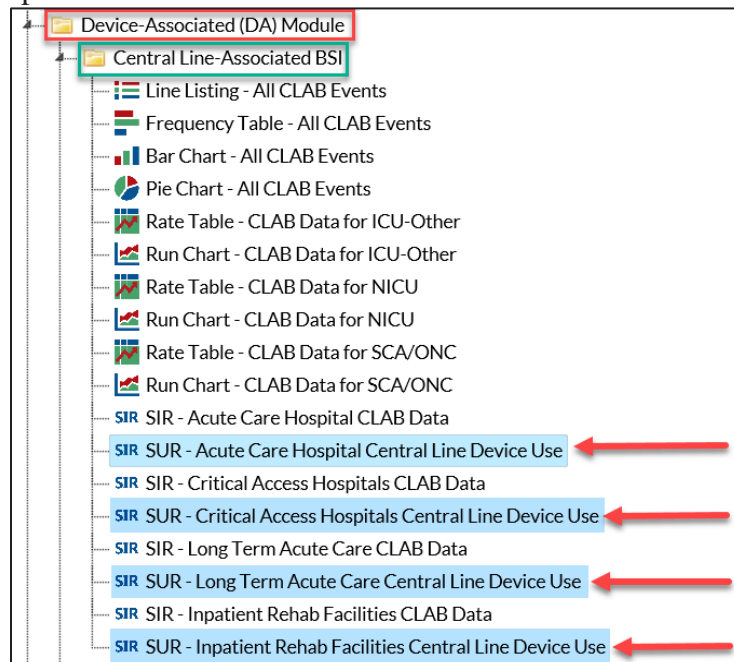
Standardized Utilization Ratios (SURs) are used to compare the number of observed device days (the numerator) to the number of predicted device days (the denominator). The number of predicted device days is calculated using a logistic regression model. Because each SUR is based on a logistic regression model, each SUR is risk-adjusted and comparable across different locations and facilities.

Instructions

- Prior to running any of the NHSN output reports, generate a new dataset to ensure all data are included in the analyses. A new dataset can be generated by clicking Analysis > Generate Data Sets > Generate New.



- Once a new dataset has been generated, navigate to: Analysis > Reports > Device-Associated (DA) Module.
- Because there is a different SUR Report for each device (i.e. ventilator, central line, urinary catheter), SUR reports are located in the event-related folders: Central Line-Associated BSI, Ventilator-Associated Events, and Urinary Catheter-Associated UTI. The SUR reports are separated even further by facility type (i.e. Acute Care Hospital [ACH], Critical Access Hospital [CAH], Long-term Acute Care Hospital [LTACH], and Inpatient Rehabilitation Facility [IRF]).
 - **IMPORTANT:** If you have an IRF location within your NHSN ACH or CAH, you should click on the IRF SUR Report to run the SUR for that specific location. IRF unit data will not show up in the ACH or CAH SUR Reports.



- Click on the device folder that you're interested in calculating an SUR for, such as "SUR-Acute Care Hospital Central Line Device Use". To modify your SUR, click on "Modify Report".
- On the modification screen, click on the Time Period tab to change the report to match the time period you're interested in seeing.

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

Time Period:

Date Variable	Beginning	Ending	
summaryYM ▼	01/2016	06/2016	Clear Time Period
<input type="checkbox"/> Enter Date variable/Time period at the time you click the Run button			

- You can filter your report by certain variables in the Filters tab.

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

Additional Filters: Show Clear

AND OR Add group

AND OR Add rule

location ▼ equal ▼ MED CC - MEDICAL CRITICAL CARE ▼ Delete

- Finally, you can change the group by option in the Display Options tab. This will change the way your SUR is compiled.

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

SIR Options:

Group by: Cumulative ▼

- Click Run > and view the modified output.

National Healthcare Safety Network

SUR for Central Line Device Use for Acute Care Hospitals (2015 baseline) - By OrgID

As of: June 8, 2017 at 2:43 PM
 Date Range: BS2_CLAB_RATESALL summaryYM 2016M01 to 2016M06
 if (((location = "MED CC")))

orgID=10315 CCN=N/A medType=M

orgID	numCLDays	numPredDDays	SUR	SUR_pval	SUR95CI
10315	797	443.221	1.798	0.0000	1.677, 1.926

1. This report includes central line utilization data from acute care hospitals for 2015 and forward.
2. The SUR is only calculated if number of predicted device days (numPredDDays) is >= 1. Lower bound of 95% Confidence Interval only calculated when number of observed device days > 0.
3. The predicted device utilization days is calculated based on national aggregate NHSN data from 2015. It is risk adjusted for CDC location, hospital beds, medical school affiliation type, and facility type.



- Similar to the SIRs, the SUR report will provide multiple levels of granularity. Facilities will receive the following tables: Overall, By Location Type, By CDC Location, and By Location. This example shows a single table from the output.
- The SUR reports show the number of observed device days, the number of predicted device days, the calculated SUR, a p-value, and a 95% confidence interval (CI).
- The SUR can be interpreted similar to the SIRs:
 - If the SUR is greater than 1, as it is in this fictitious example, the number of observed device days is greater than the number of predicted device days.
 - If the SUR is equal to 1, the number of observed device days is the same as the number of predicted device days.
 - If the SUR is less than 1, the number of observed device days is less than the number of predicted device days.
- Just like in the SIR report, the p-value and 95% CI indicate if the SUR is statistically significant when compared to the nominal value of 1.
 - Generally, a p-value less than .05 indicates a statistically significant SUR.
 - A 95% CI that does not include 1.000 indicates a statistically significant SUR.
- The footnotes of an SUR report specify which time period the SURs can be calculated for, when an SUR cannot be calculated, and the variables included in the SUR model.

Additional Resources

- Patient Safety Analysis Quick Reference Guides: <https://www.cdc.gov/nhsn/ps-analysis-resources/reference-guides.html>
- How to Modify a Report: <https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/howtomodifyreport.pdf>