

Appendix 3a External Validation; Targeted Facility Selection

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Methods:

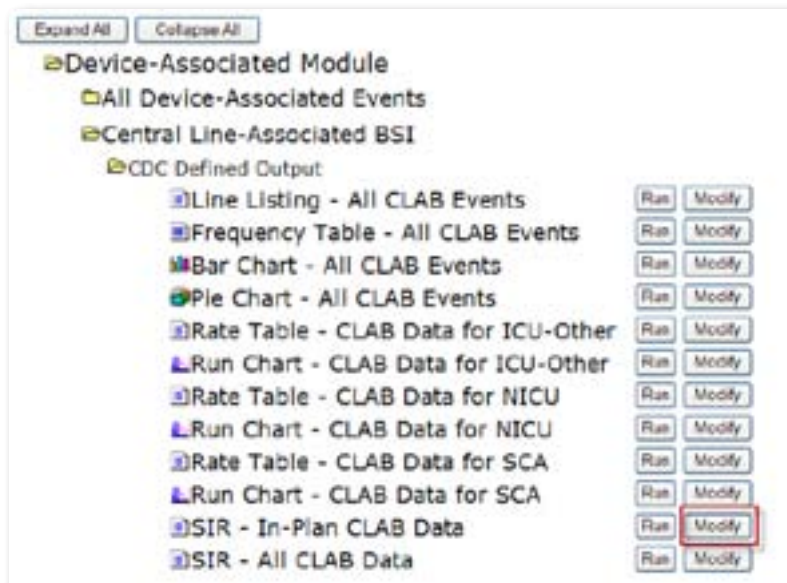
1. Generate new datasets in NHSN to ensure any updates are integrated for analysis. On the NHSN Landing Page, navigate to [YOUR State Users' Group] → Patient Safety Component. Select the "Analysis" tab and click "Generate Datasets". Click the Generate New button. Allow the dataset generation process to complete; you are able to leave NHSN during the generation process.



2. After successful dataset generation, navigate to Analysis → Output Options to display the tree view list of all analysis reports available within NHSN's analysis tool.



3. Use the tree view structure to navigate to the SIR report of interest. In this example, we will select the Device Associated Module, → Central Line Associated BSI, → CDC-defined Output, → SIR for In-Plan CLABSI data. This uses data reported to NHSN that has been shared with the group. Click the Modify button to proceed to the modification screen, which you can use to filter and export data from NHSN.



4. A modification screen will open titled “Analysis SIR”. On the modification screen, there are two key areas to modify, one that controls the time interval of data that is analyzed and displayed and one that controls the level of aggregation of that data.
 - ◇ Use the “Select a time period” option to limit the time period of data that is included in the report to be exported:

Select a time period or Leave Blank for Cumulative Time Period:

Date Variable	Beginning	Ending	
<input type="text" value="SummaryYr"/>	<input type="text" value="2012"/>	<input type="text" value="2012"/>	<input type="button" value="Clear Time Period"/>

- ◇ Set Date Variable to SummaryYr, Beginning to 2012 and Ending to 2012:
- ◇ Scroll down to “Specify Other Selection Criteria. Retain bsiPlan = Y. In column 2, select “Location type” from the dropdown list, Click in the space below “Location Type” to pop up new window (shown here in gray):

Specify an operator and value(s) for selection criteria:

<u>Variable</u>	<u>Operator</u>	<u>Value(s)</u>
locationType	=	

Select a time period or Leave Blank for Cumulative Time Period:

Date Variable	Beginning	Ending
summaryYr	2012	2012

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

Specify Other Selection Criteria:

[Show Criteria](#) [Column +](#) [Row +](#) [Clear Criteria](#)

bsiPlan	locationType
= Y	

- ◇ Set “Operator” = “in” and Value(s) to “CC-CC” and “CC_N-CC_N”. Scroll to the bottom of the pop-up screen and select “Save”:

variable	Operator	value(s)
locationType		CC - CC
		CC_N - CC_N

- ◇ Under the “Other Options” section, use the “Group by” option to view the data at a particular level of aggregation. By default, this is set to SummaryYH, or half-years. Change the Group by option to “SummaryYr”:

Other Options:

Group by: summaryYr

5. After making these modifications, scroll to the bottom of the modification screen. Click the Export Output Data Set button to export the data selected by your modifications to a different file format.



6. Clicking the Export Output Data Set button will take you to the Export Output Options screen. Use the dropdown menu to select the file format to export the data. In this example, we will export to an Excel spreadsheet (*.xls). Click the Export button to begin the export process. NHSN will create a .zip file with your data export in it and prompt you to specify a location to save the file at on your computer.



7. For Device-Associated Module data, the exported SIR report file will be displayed at several levels, which are color coded and displayed in the screenshot on the next page. They are:
- ◇ An overall SIR for all data shared with the group
 - ◇ A facility-wide SIR for each individual facility that has joined the group
 - ◇ Within each facility, a location type-specific SIR (either ICU/Other, NICU, or SCA, based on the denominator form type)
 - ◇ Within each facility, a CDC location code-specific SIR (e.g.: – an SIR for all medical ICUs within the facility)
 - ◇ Within each facility, an individual location-specific SIR (example – 5W ICU)

TABLE 1 DATA PREPARATION													
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	A	B	C	D	E	F	G	H	I	J	K	L	N
	InfCount	numCLDay	numExp	SIR	SIR_gval	SIR95CI	summary	Y	orgid	locationtype	locdc	location	months
1	27	6491	13.203	2.045	0.0006	1.347, 2.975	1/1/2012	15164	Overall SIR for all facilities in group combined				
2	4	1617	2.553	1.567	0.2538	0.427, 4.012	1/1/2012	15164					
3	4	204	0.528				1/1/2012	15165					
4	19	4403	9.664	1.966	0.0052	1.183, 3.070	1/1/2012	15634	Facility-wide SIR for each facility in the group				
5	0	267	0.632				1/1/2012	15635					
6	4	1517	2.318	1.726	0.2043	0.470, 4.418	1/1/2012	15164	ICU-OTHER				
7	0	100	0.235				1/1/2012	15164	NICU				
8	4	204	0.528				1/1/2012	15165	ICU-OTHER				
9	19	4403	9.664	1.966	0.0052	1.183, 3.070	1/1/2012	15634	ICU-OTHER				
10	0	267	0.632				1/1/2012	15635	NICU				
11	3	1427	2.141	1.401	0.3614	0.289, 4.095	1/1/2012	15164	IN-ACUTE:CC:MS				
12	0	30	0.039				1/1/2012	15164	IN-ACUTE:CC:M_PED				
13	0	100	0.235				1/1/2012	15164	IN-ACUTE:CC:NURS				
14	1	60	0.138				1/1/2012	15164	IN-ACUTE:CC:S				
15	4	200	0.52				1/1/2012	15165	IN-ACUTE:CC:M				
16	0	4	0.008				1/1/2012	15165	IN-ACUTE:CC:MS				
17	2	927	3.059	0.654	0.4101	0.079, 2.362	1/1/2012	15034	IN-ACUTE:CC:CT_PED				
18	17	3476	6.604	2.574	0.0006	1.499, 4.122	1/1/2012	15034	IN-ACUTE:CC:M				
19	0	145	0.344				1/1/2012	15035	IN-ACUTE:CC:NURS				
20	0	122	0.289				1/1/2012	15035	IN-ACUTE:CC_STEP:NURS				
21	3	1427	2.141	1.401	0.3614	0.289, 4.095	1/1/2012	15104	ICU-OTHER				
22	0	100	0.235				1/1/2012	15104	NICU				
23	0	30	0.039				1/1/2012	15164	ICU-OTHER				
24	1	60	0.138				1/1/2012	15164	ICU-OTHER				
25	4	200	0.52				1/1/2012	15165	ICU-OTHER				
26	0	4	0.008				1/1/2012	15165	ICU-OTHER				
27	17	3476	6.604	2.574	0.0006	1.499, 4.122	1/1/2012	15034	ICU-OTHER				
28	2	927	3.059	0.654	0.4101	0.079, 2.362	1/1/2012	15634	ICU-OTHER				
29	0	145	0.344				1/1/2012	15635	NICU				
30													
31													
32													

Aggregation Levels for SIRs (by group, facilities, location types, location codes, and individual locations)

8. In Excel, select the second aggregation level (Facility-wide SIR for each facility in the group). Copy this information to a second spread sheet. Arrange the facilities in rank order according to the expected/predicted number of CLABSI [numExp], (high to low)
9. Select the top 33% of facilities by expected/predicted CLABSI. This “Top Tertile” of facilities, where CLABSI are most expected, may have the greatest potential for prevention success.
10. Within the top tertile, create new columns for “Deltacount”, defined as the absolute value of the difference between the reported number and expected number of CLABSI; for “Stratum”, and for “Targeted Selection Number”.
11. Within the top tertile, sort by SIR from highest to lowest, and identify the current median SIR for the top Tertile.
12. Assign stratum A to facilities with SIR above the current median SIR, stratum B for remaining facilities with SIR above zero (but not above the median), and stratum C for facilities with zero reported infections (and SIR of 0).
13. Re-sort within each stratum A, B, and C, by numExp from highest to lowest.
14. Prioritize and assign a sequential Targeted Selection Number to facilities with the highest numExp from stratum A, then B, then C, alternating until no facilities remain or the target number of facilities (18 or 21) is reached. All remaining facilities in the middle and lower tertile (and excluding top tertile) will be subject to random selection under the 5% rule.