

## Using the “SIR – CAU Data for CMS LTCH PPS” Report

The NHSN Analysis Output Option, “SIR – CAU Data for CMS LTCH PPS” was created in order to allow long term care hospitals (known as long term acute care hospitals, or LTACHs, in NHSN) to review those data that would be submitted to CMS on their behalf if they are participating in the CMS LTCH Quality Reporting Program. It’s important to keep in mind the following as you begin to use this report:

- a. These data will only be submitted for those facilities that are participating in the CMS Long Term Care Hospital Quality Reporting Program, as indicated by their CCN recorded in NHSN.
- b. This report will only include **in-plan CAUTI data for all bedded inpatient locations in a LTACH beginning with January 2014 data**. Earlier time periods for which you may have reported CAUTI data will not be included in this output. Note that rates were used through 2013 for CMS submission.
- c. **IMPORTANT!** Facilities must appropriately **Report No Events** for those locations and months for which no CAUTI events were identified.
- d. This output option provides a SIR for each LTACH, not each CCN. If your LTACH shares a CCN, the SIR will only represent the data that your LTACH has contributed to the overall SIR for all LTACHs that share the CCN. You may wish to use the Group function in NHSN to be able to view the SIR for all LTACHs that share a CCN. More information about the Group function can be found here: <http://www.cdc.gov/nhsn/group-users/index.html>.
- e. The SIR that will be shared with CMS and presented in this output option is calculated at the facility- level. Separate SIRs will be calculated for each LTACH location to allow for data accuracy checks.
- f. The data in this report will represent data current as of the last time you generated datasets. Data changes made in NHSN will be reflected in the next monthly submission to CMS.  
**EXCEPTION:** Quarterly data are frozen as of the final submission date for that quarter. For example, Q4 data will be frozen as of 7am UTC\* (3am ET on May 16<sup>th</sup>). Any changes made to these data in NHSN after the final submission deadline will not be reflected in data shared with CMS.
- g. The information in this document should be used in conjunction with the document, “Monthly Checklist for the CMS Long Term Care Hospital Quality Reporting Program”, available at <https://www.cdc.gov/nhsn/pdfs/cms/ltch-monthly-checklist-cms-iqr.pdf>.

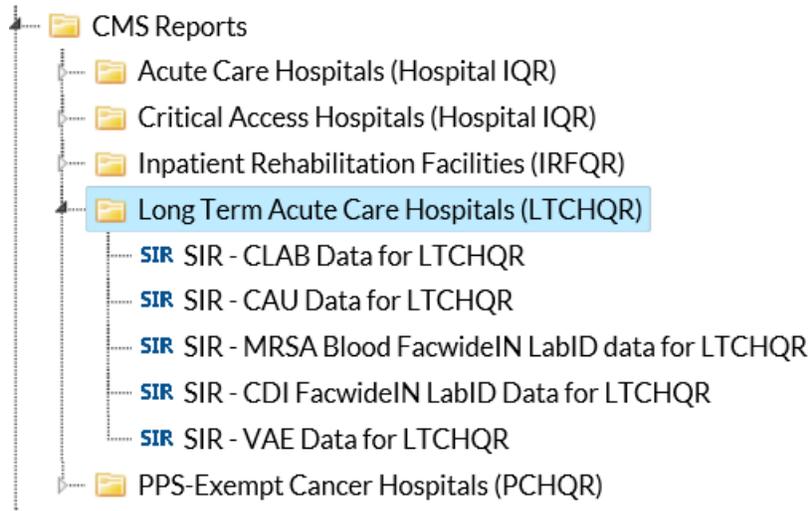
*\*All NHSN timestamps are displayed in the UTC Time Standard. To convert UTC to Eastern Time:*

- *Between second Sunday in March – first Sunday in November: subtract 4 hours from UTC to get Eastern Daylight Time (EDT).*
- *Between first Sunday in November – second Sunday in March: subtract 5 hours from UTC to get Eastern Standard Time (EST).*

**Example of the “SIR – CAU Data for CMS LTCHQR” Output Option:**

*Before running this output option, remember to generate your datasets for the most up-to-date data reported to NHSN by your facility! To generate datasets, go to Analysis > Generate Data Sets, then click “Generate New”.*

1. After selecting Analysis > Reports, navigate through the following folders: CMS Reports > Long Term Acute Care Hospitals (LTCHQR), as shown below. Click on “SIR – CAU Data for LTCHQR” then click Run Report.



2. By default, the results will appear in an HTML window. If a second window does not pop-up, please be sure to check your pop-up blocker and allow pop-ups from \*.cdc.gov.
3. There will be four tables within the output, each described below:
  - i. **“SIR for Urinary Catheter-associated UTI Data for LTCHQR (2015 Baseline) – By OrgID”**  
The first table presents an SIR for each calendar-year quarter, for the entire facility. This is the information that will be submitted to CMS for your facility.

**National Healthcare Safety Network  
SIR for Urinary Catheter-associated UTI Data for LTCHQR (2015 Baseline) - By OrgID**

As of: March 19, 2018 at 1:45 PM  
Date Range: All BS2\_CAU\_RATESLTAC  
if (((utiPlan = "Y" )))

orgid=10546 medType=' '

orgid	ccn	summaryYQ	infcount	numPred	numucathdays	SIR	SIR_pval	SIR95CI
10546	33312P	2015Q1	0	0.756	350	.	.	.
10546	33T312	2016Q1	0	0.437	271	.	.	.
10546	33T312	2016Q2	0	1.222	760	0.000	0.2946	, 2.451
10546	33T312	2017Q1	0	0.392	271	.	.	.
10546	33T312	2017Q2	0	0.062	50	.	.	.

1. This report includes CAUTI data from long term acute care hospitals for 2015 and forward.
2. 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.
3. The number of predicted events is calculated based on national aggregate NHSN data from 2015. It is risk adjusted for CDC location, length of stay, and setting.
4. If the risk factor data are missing, the record will be excluded from the SIR.

From this output, we can conclude the following:

- During the second quarter of 2016 (*summaryYQ*), the facility reported 0 CAUTIs (*infCount*) and 760 urinary catheter days (*numucathdays*).
- Based on the National baseline data, 1.222 CAUTIs were predicted (*numExp*). This results in an SIR of 0.000 (*SIR*).
- The p-value is 0.2946 (*SIR\_pval*) and the 95% confidence interval is (, 2.451) (*SIR95CI*); The p-value results indicate that the facility’s SIR is not statistically significantly different than 1.
- Per the footnotes, the lower bound of the 95% confidence interval is not calculated when there are 0 CAUTIs reported.

ii. **“SIR for Urinary Catheter-associated UTI Data for LTCHQR (2015 Baseline) - By OrgID/Location Type”**

The second table provides an SIR for each quarter and location type. The LTAC Locations are categorized as follows:

Location Type	CDC Location Description	CDC Location Code ( <i>locCDC</i> )
CC_LTAC	LTAC ICU	IN:ACUTE:CC:LTAC
CC_LTAC	Pediatric LTAC ICU	IN:ACUTE:CC:LTAC_PED
WARD_LTAC	LTAC Ward	IN:ACUTE:WARD:LTAC
WARD_LTAC	Pediatric LTAC Ward	IN:ACUTE:WARD:LTAC_PED

For example, if your LTAC has both an LTAC Ward and a Pediatric Ward, the data for both of these locations would be combined into the SIR for the WARD\_LTAC location type. Note that the SIR is not calculated if the number of expected infections (numExp) is less than 1. However, even though the SIR is not calculated, each location’s data will contribute to the overall SIR for the LTACH.

**National Healthcare Safety Network  
SIR for Urinary Catheter-associated UTI Data for LTCHQR (2015 Baseline) - By OrgID/Location Type**

As of: March 19, 2018 at 1:45 PM  
Date Range: All BS2\_CAU\_RATESLTAC  
if (((utiPlan = "Y" )))

orgid=10546 medType=' '

orgid	ccn	locationtype	summaryYQ	infcount	numPred	numcathdays	SIR	SIR_pval	SIR95CI
10546	33312P	CC_LTAC	2015Q1	0	0.488	200	.	.	.
10546	33T312	CC_LTAC	2016Q1	0	0.239	127	.	.	.
10546	33T312	CC_LTAC	2016Q2	0	0.659	350	.	.	.
10546	33T312	CC_LTAC	2017Q1	0	0.215	127	.	.	.
10546	33312P	WARD_LTAC	2015Q1	0	0.267	150	.	.	.
10546	33T312	WARD_LTAC	2016Q1	0	0.198	144	.	.	.
10546	33T312	WARD_LTAC	2016Q2	0	0.563	410	.	.	.
10546	33T312	WARD_LTAC	2017Q1	0	0.178	144	.	.	.
10546	33T312	WARD_LTAC	2017Q2	0	0.062	50	.	.	.

1. This report includes CAUTI data from long term acute care hospitals for 2015 and forward.
2. 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.
3. The number of predicted events is calculated based on national aggregate NHSN data from 2015. It is risk adjusted for CDC location, length of stay, and setting.
4. If the risk factor data are missing, the record will be excluded from the SIR.

iii. **“SIR for Urinary Catheter-associated UTI Data for LTCHQR (2015 Baseline) - By OrgID/CDC Location Code”**

The third table provides an SIR for each quarter and CDC location (e.g., pediatric LTAC ward). Note that if your facility reports data for more than one location of the same CDC location code (for example, 2 LTAC Wards), these locations will be grouped into one SIR in this table.

**National Healthcare Safety Network  
SIR for Urinary Catheter-associated UTI Data for LTCHQR (2015 Baseline) - By OrgID/CDC  
Location Code**

As of: March 19, 2018 at 1:45 PM  
Date Range: All BS2\_CAU\_RATESLTAC  
if ((utiPlan = "Y" ))

orgid=10546 medType=''

orgid	ccn	loccdc	summaryYQ	infcount	numPred	numcathdays	SIR	SIR_pval	SIR95CI
10546	33312P	IN:ACUTE:CC:LTAC	2015Q1	0	0.488	200	.	.	.
10546	33T312	IN:ACUTE:CC:LTAC	2016Q1	0	0.239	127	.	.	.
10546	33T312	IN:ACUTE:CC:LTAC	2016Q2	0	0.659	350	.	.	.
10546	33T312	IN:ACUTE:CC:LTAC	2017Q1	0	0.215	127	.	.	.
10546	33312P	IN:ACUTE:WARD:LTAC	2015Q1	0	0.267	150	.	.	.
10546	33T312	IN:ACUTE:WARD:LTAC	2016Q1	0	0.198	144	.	.	.
10546	33T312	IN:ACUTE:WARD:LTAC	2016Q2	0	0.563	410	.	.	.
10546	33T312	IN:ACUTE:WARD:LTAC	2017Q1	0	0.178	144	.	.	.
10546	33T312	IN:ACUTE:WARD:LTAC	2017Q2	0	0.062	50	.	.	.

1. This report includes CAUTI data from long term acute care hospitals for 2015 and forward.
2. 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.
3. The number of predicted events is calculated based on national aggregate NHSN data from 2015. It is risk adjusted for CDC location, length of stay, and setting.
4. If the risk factor data are missing, the record will be excluded from the SIR.

iv. **“SIR for Urinary Catheter-associated UTI Data for LTCHQR (2015 Baseline) - By OrgID/Location”**

The fourth table provides an SIR for each quarter and individual location within your facility. This is also the **only** table that will allow you to see how many months of data are included in each location’s quarterly SIR.

For example, looking at the LTAC CC location below, we can see that the “months” column shows a value of 3 in the first quarter of 2016, indicating that three months of data have contributed to the quarterly SIR for this location (as one would expect). However, notice that only one month is indicated for the LTAC CC location for the first quarter of 2015. **If less than three months contribute to a quarterly SIR, then this indicates that the SIR for that quarter is incomplete and additional data checking is needed.**

**National Healthcare Safety Network  
SIR for Urinary Catheter-associated UTI Data for LTCHQR (2015 Baseline) - By  
OrgID/Location**

As of: March 19, 2018 at 3:25 PM  
Date Range: All BS2\_CAU\_RATESLTAC  
if (((utiPlan = "Y" )))

orgid=10546 medType=''

orgid	ccn	location	summaryYQ	months	infcount	numPred	numcathdays	SIR	SIR_pval	SIR95CI
10546	33312P	LTAC CC	2015Q1	1	0	0.488	200	.	.	.
10546	33T312	LTAC CC	2016Q1	3	0	0.239	127	.	.	.
10546	33T312	LTAC CC	2016Q2	3	0	0.659	350	.	.	.
10546	33T312	LTAC CC	2017Q1	3	0	0.215	127	.	.	.
10546	33312P	LTAC WARD	2015Q1	1	0	0.267	150	.	.	.
10546	33T312	LTAC WARD	2016Q1	3	0	0.198	144	.	.	.
10546	33T312	LTAC WARD	2016Q2	3	0	0.563	410	.	.	.
10546	33T312	LTAC WARD	2017Q1	3	0	0.178	144	.	.	.
10546	33T312	LTAC WARD	2017Q2	1	0	0.062	50	.	.	.

1. This report includes CAUTI data from long term acute care hospitals for 2015 and forward.
2. 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.
3. The number of predicted events is calculated based on national aggregate NHSN data from 2015. It is risk adjusted for CDC location, length of stay, and setting.
4. If the risk factor data are missing, the record will be excluded from the SIR.

4. What can be done if data are incomplete or if the number of infections or urinary catheter days is incorrect?
  - i. To pinpoint which month(s) is missing from the quarter, the report can be modified to display by month. To make this modification, after selecting Analysis > Reports, navigate through the following folders: CMS Reports > Long Term Acute Care Hospitals (LTCHQR). Click on "SIR – CAU Data for LTCHQR" then click Modify Report.
    - a. On the Modify Report screen, click on the Display Options tab. Use the drop down menu next to "Group by" to select "Summary YM" to display the SIR report by month. Click the blue "Run" button to run the report.

Modify "SIR - CAU Data for LTCHQR"

Show descriptive variable names ([Print List](#))      Analysis Data Set: bs2\_CAU\_RatesLTAC    Type: SIR    Data Set Generated On: 01/22/2018 15:28:00

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

SIR Options:  
Group by: **summaryYM** ▼

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**▶ Run**    Save...    Export...    Close

Sample output for the fourth table, "SIR for Urinary Catheter-associated UTI Data for LTCHQR (2015 Baseline) - By OrgID/Location" is displayed by month below; this sample output shows that CAUTI data are missing for February through December for 2015 in the LTAC CC location:

## National Healthcare Safety Network

### SIR for Urinary Catheter-associated UTI Data for LTCHQR (2015 Baseline) - By OrgID/Location

As of: March 19, 2018 at 3:44 PM

Date Range: All BS2\_CAU\_RATESLTAC

if (((utiPlan = "Y" ) ))

orgid=10546 medType=' '

orgid	ccn	location	summaryYM	infcount	numPred	numcathdays	SIR	SIR_pval	SIR95CI
10546	33312P	LTAC CC	2015M01	0	0.488	200	.	.	
10546	33T312	LTAC CC	2016M01	0	0.098	52	.	.	
10546	33T312	LTAC CC	2016M02	0	0.075	40	.	.	
10546	33T312	LTAC CC	2016M03	0	0.066	35	.	.	
10546	33T312	LTAC CC	2016M04	0	0.377	200	.	.	
10546	33T312	LTAC CC	2016M05	0	0.141	75	.	.	
10546	33T312	LTAC CC	2016M06	0	0.141	75	.	.	
10546	33T312	LTAC CC	2017M01	0	0.088	52	.	.	
10546	33T312	LTAC CC	2017M02	0	0.068	40	.	.	
10546	33T312	LTAC CC	2017M03	0	0.059	35	.	.	
10546	33312P	LTAC WARD	2015M01	0	0.267	150	.	.	
10546	33T312	LTAC WARD	2016M01	0	0.137	100	.	.	
10546	33T312	LTAC WARD	2016M02	0	0.047	34	.	.	
10546	33T312	LTAC WARD	2016M03	0	0.014	10	.	.	
10546	33T312	LTAC WARD	2016M04	0	0.082	60	.	.	
10546	33T312	LTAC WARD	2016M05	0	0.206	150	.	.	
10546	33T312	LTAC WARD	2016M06	0	0.275	200	.	.	
10546	33T312	LTAC WARD	2017M01	0	0.123	100	.	.	
10546	33T312	LTAC WARD	2017M02	0	0.042	34	.	.	
10546	33T312	LTAC WARD	2017M03	0	0.012	10	.	.	
10546	33T312	LTAC WARD	2017M04	0	0.062	50	.	.	

- ii. Once the missing month(s) has been identified, double check the below data elements:
  - a. Check that the summary data for this location have been entered for the month. This includes urinary catheter days and patient days.
  - b. If summary data have been entered, double-check your monthly reporting plan for that month. Check to make sure that each location is included in your monthly reporting plan, with the CAUTI box checked.
  - c. If summary data have been entered and no CAUTIs have been identified, be sure to check the 'Report No Events' box either on the summary record, next to the Urinary Catheter days count, or through the "Missing Events" tab on the Alerts page.
  - d. If the number of infections is less than you reported *and* you've confirmed that the summary data have been entered in-plan, double check the UTI events in NHSN: if urinary catheter is entered as "Neither", the event is *not* considered a CAUTI and will not appear in this report. Note that you can edit the event with the correct information.

REMEMBER: If you have made any changes to your data, regenerate your datasets in order to review your output options with the most up-to-date data in NHSN.

Updated August 2024

**Additional Resources:**

CMS Resources for NHSN Users: <http://www.cdc.gov/nhsn/cms/index.html>

Operational Guidance: [http://www.cdc.gov/nhsn/PDFs/CMS/LTCH-CAUTI-Guidance\\_2015.pdf](http://www.cdc.gov/nhsn/PDFs/CMS/LTCH-CAUTI-Guidance_2015.pdf)

Analysis Quick Reference Guides: <http://www.cdc.gov/nhsn/PS-Analysis-resources/reference-guides.html>

