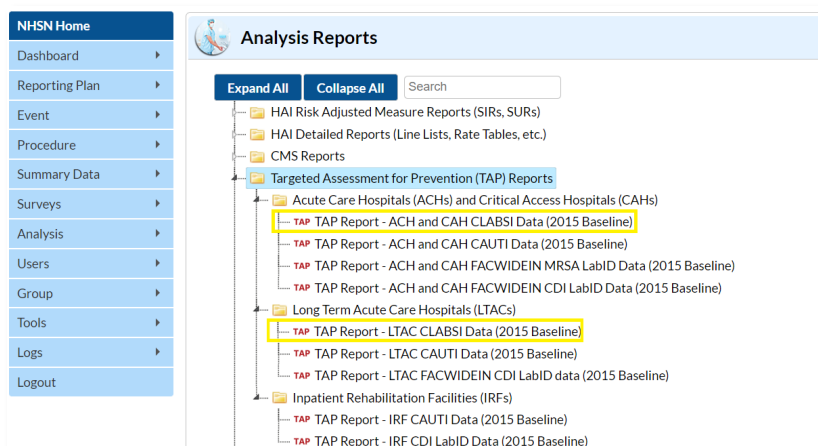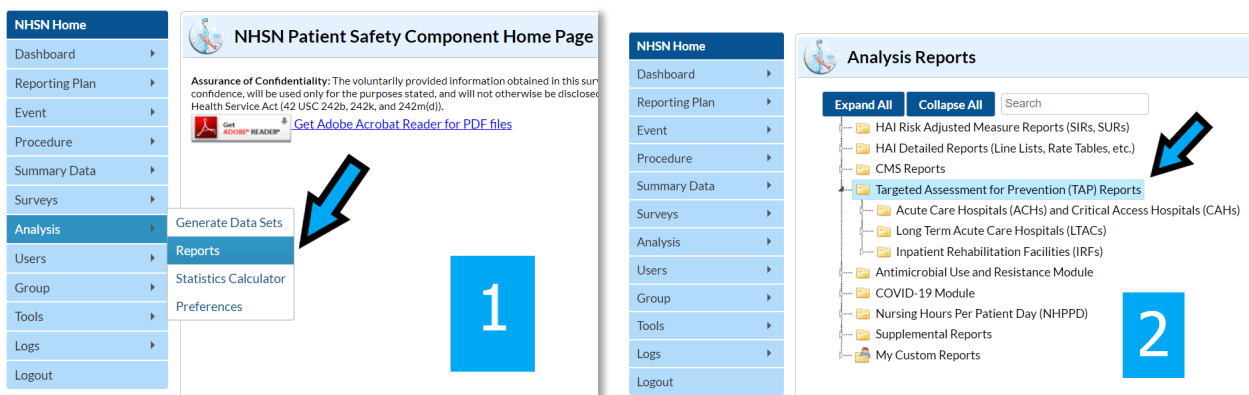# NHSN Group TAP Reports – CLABSI

## Description

CDC's Targeted Assessment for Prevention (TAP) strategy allows for the ranking of facilities and/or locations to identify and target those areas with the greatest need for improvement using a metric known as the Cumulative Attributable Difference (CAD). This is the number of infections that must be prevented to achieve a HAI reduction goal. TAP Reports can be generated within NHSN for CLABSI, CAUTI, and CDI LabID data. The ranking is established using the overall Hospital CAD (highest to lowest) and location CAD for locations within the facility. TAP Reports can help to prioritize the facilities (or locations) where the greatest prevention impact could be achieved.

This quick reference guide will describe how a group can generate a TAP report for CLABSI data within NHSN. It will also explain how to interpret the TAP report output for group users. For more information about the TAP Strategy, please visit: http://www.cdc.gov/hai/prevent/tap.html.

## Generate a CLABSI TAP Report

1.  Select Analysis on the NHSN home screen. Then select "Reports" (formerly known as Output Options) from the dropdown menu that opens. Expand the "TAP Reports" folder. The TAP reports are organized by facility type. Expand the folder for the facility type relevant to your analysis to see the available TAP Report options.

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2. Choose to either Run or Modify an Acute Care Hospitals (ACH) or Long Term Acute Care Hospitals (LTACs) CLABSI TAP Report. Please note: ACH TAP Reports contain both Acute Care and Critical Access Hospital (CAH) data and will exclude IRF-unit data.
    a. Click Run to create a TAP Report that is inclusive of all data reported to NHSN and available in the analysis datasets (e.g., all CLABSI data from 2015 to present).
    b. Click Modify to customize the TAP Report.
        i. It is recommended that users check the box above Title/Format titled "Show descriptive variable names". Not only will this show more descriptive variable names while modifying a TAP report, it will also create more descriptive column headers in the tables created.
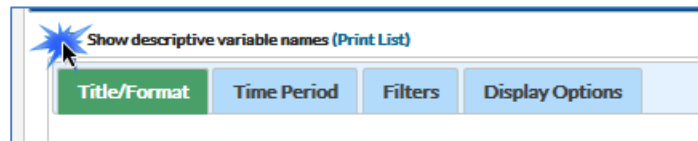


        ii. Use the Title/Format tab to change the name of the Report generated or to change the format (HTML, PDF, CSV, and RTF). TIP: If the format is changed to PDF or RTF, change the orientation of the report to Landscape in order to allow all columns to fit on a single page.
        iii. Use the Time Period tab to modify the date variable by months, quarters, half-years, or year (e.g., summaryYr 2020 to 2021).
        iv. Display Options. Choose the source value of the SIR goal. The SIR goal can be a custom/value or the user can use the HHS Goal or CLABSI National SIR. These are available in the source drop down menu. If a custom value is used, remember that the multiplier must be <1.

*CLABSI and CAUTI TAP reports are generated using similar formats, but each uses a different HAI reduction goal in the calculation of the CAD. CLABSI also includes NICU Data in the CAD calculations whereas CAUTI does not.*

# Example TAP Report Output – CLABSI

The following table is an example of a CLABSI TAP report generated by a Group with ten member hospitals for the calendar year 2016. The footnotes provided with each table define the data that appear in the derived columns. Please see page 3 for an example interpretation of the tables.

**National Healthcare Safety Network**
**TAP Report for CLABSI Data for Acute Care and Critical Access Hospitals (2015 Baseline)**
**Totals for all Facilities in Group**
**SIR Goal: HHS Goal = 0.5**

> **Table 1 of the CLABSI Group TAP Report**

A TAP Report is the first step in the CDC TAP Strategy. For more informatin on the TAP Strategy, please visit: http://www.cdc.gov/hai/prevent/tap.html
As of February 16, 2017 at 2:00 PM
Date Range: BS2_CLAB_TAP summaryYr2016 to 2016

| Number of Facilities | Number of Beds | Location (LC) | Events (LC) | Device Days (LC) | DUR % (LC) | CAD (LC) | SIR (LC) | SIR Test | ICU No. Pathogens (CNS,YS,SA,ES,KS,EC) | NICU No. Pathogens (CNS,YS,SA,ES,KS,EC) | Ward+ No. Pathogens (CNS,YS,SA,ES,KS,EC) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 2,420 | 87 (15, 6, 66) | 44 (17, 0, 27) | 60186 (20966, 569, 38651) | 17 (45, 7, 13) | 19 (7.5, -0.3, 11.8) | 0.9 (0.9, ., 0.9) | | 19 (2, 8, 0, 2, 1, 0) | 0 (0, 0, 0, 0, 0, 0) | 28 (4, 8, 4, 1, 2, 1) |

1. This report includes CLABSI data for 2015 and forward. Following the 2015 rebaseline, Mucosal Barrier Injury Laboratory-Confirmed Bloodstream Infections (MBI-LCBI) are excluded from CLABSI rates, SIRs and TAP reports.
2. If location-level CADs are the same in a given facility, their ranks are tied.
3. (CNS,YS,SA,ES,KS,EC) = No. of CNS, Yeast (both candida and non-candida species), Staph aureus, Enterococcus species, K. pneumoniae/K. oxytoca, E. coli
4. SIR is set to '.' when predicted number of events is <1.0.
5. LOCATION CAD = (OBSERVED_LOCATION - PREDICTED_LOCATION* SELECTED SIR Goal)
6. SIR TEST = 'SIG' means SIR > SIR Goal significantly
Source of aggregate data: 2015 NHSN CLABSI Data
Data contained in this report were last generated on February 14, 2017 at 10:57 AM.

**National Healthcare Safety Network**
**TAP Report for CLABSI Data for Acute Care and Critical Access Hospitals (2015 Baseline)**
**Facilities within the Group ranked by CAD**
**SIR Goal: HHS Goal = 0.5**

> **Table 2 of the CLABSI Group TAP Report**

A TAP Report is the first step in the CDC TAP Strategy. For more informatin on the TAP Strategy, please visit: http://www.cdc.gov/hai/prevent/tap.html
As of February 16, 2017 at 2:00 PM
Date Range: BS2_CLAB_TAP summaryYr2016 to 2016

| Facility Rank | Facility Org ID | Facility Name | State | Type of Affiliation | Number of Beds | Location (LC) | Events (LC) | Device Days (LC) | DUR % (LC) | CAD (LC) | SIR (LC) | SIR Test | ICU No. Pathogens (CNS,YS,SA,ES,KS,EC) | NICU No. Pathogens (CNS,YS,SA,ES,KS,EC) | Ward+ No. Pathogens (CNS,YS,SA,ES,KS,EC) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10000 | DHQP Memorial Hospital | GA | M | 354 | 10 (1, 1, 8) | 12 (4, 0, 8) | 11121 (5073, 28, 6020) | 20 (54, 2, 13) | 6.4 (1.3, 0, 5) | 1.1 (0.8, ., 1.3) | | 4 (0, 2, 0, 2, 0, 0) | 0 (0, 0, 0, 0, 0, 0) | 8 (2, 2, 1, 0, 0, 0) |
| 2 | 10401 | DHQP Memorial Annex | GA | | 453 | 17 (4, 1, 12) | 11 (5, 0, 6) | 13808 (5479, 65, 8264) | 16 (54, 4, 11) | 5.4 (2.6, 0, 2.8) | 1 (1.1, ., 0.9) | | 5 (1, 2, 0, 0, 0, 0) | 0 (0, 0, 0, 0, 0, 0) | 6 (0, 1, 1, 0, 2, 1) |
| 3 | 90001 | Dudeck Regional Life Center | IL | M | 181 | 7 (1, 1, 5) | 5 (0, 0, 5) | 2575 (963, 7, 1605) | 14 (49, 2, 10) | 3.9 (-0.4, 0, 4.4) | 2.3 (., ., 3.8) | | 0 (0, 0, 0, 0, 0, 0) | 0 (0, 0, 0, 0, 0, 0) | 5 (1, 1, 2, 1, 0, 0) |
| 4 | 10587 | CDC Health Hospital | GA | | 117 | 7 (2, 0, 5) | 3 (3, 0, 0) | 2677 (1173, 0, 1504) | 14 (35, ., 9) | 2.1 (2.5, 0, -0.5) | 1.6 (., ., .) | | 3 (1, 2, 0, 0, 0, 0) | 0 (0, 0, 0, 0, 0, 0) | 0 (0, 0, 0, 0, 0, 0) |
| 5 | 10018 | Weiner Center of Medicine | CA | G | 150 | 10 (2, 1, 7) | 3 (2, 0, 1) | 4204 (2079, 37, 2088) | 11 (33, 3, 7) | 1.2 (1.1, 0, 0.2) | 0.9 (1.1, ., 0.6) | | 3 (0, 1, 0, 0, 0, 0) | 0 (0, 0, 0, 0, 0, 0) | 1 (0, 1, 0, 0, 0, 0) |
| 6 | 10297 | Arcement Medical Center | LA | | 150 | 8 (1, 0, 7) | 2 (0, 0, 2) | 2713 (352, 0, 2361) | 17 (15, ., 18) | 1.1 (-0.1, 0, 1.2) | 1.1 (., ., 1.3) | | 0 (0, 0, 0, 0, 0, 0) | 0 (0, 0, 0, 0, 0, 0) | 2 (0, 0, 0, 0, 0, 0) |
| 7 | 10064 | Falcon Memorial Hospital | GA | G | 345 | 7 (1, 1, 5) | 3 (1, 0, 2) | 3929 (1648, 9, 2272) | 14 (39, 1, 10) | 1.1 (0.1, 0, 0.9) | 0.8 (0.6, ., 0.9) | | 2 (0, 0, 0, 0, 0, 0) | 0 (0, 0, 0, 0, 0, 0) | 3 (0, 1, 0, 0, 0, 0) |
| 8 | 10957 | All Saints Medical | LA | | 114 | 4 (1, 0, 3) | 3 (1, 0, 2) | 6582 (1575, 0, 5007) | 33 (61, ., 29) | 0.8 (0.4, 0, 0.4) | 0.7 (0.9, ., 0.6) | | 1 (0, 1, 0, 0, 0, 0) | 0 (0, 0, 0, 0, 0, 0) | 2 (1, 1, 0, 0, 0, 0) |
| 9 | 10962 | Louisiana Hospital of Texas | TX | | 278 | 7 (1, 0, 6) | 1 (1, 0, 0) | 4043 (1433, 0, 2610) | 13 (40, ., 9) | -0.4 (0.5, 0, -0.8) | 0.4 (1, ., 0) | | 1 (0, 0, 0, 0, 1, 0) | 0 (0, 0, 0, 0, 0, 0) | 0 (0, 0, 0, 0, 0, 0) |
| 10 | 10946 | Georgia Hospital of Louisiana | LA | | 278 | 10 (1, 1, 8) | 1 (0, 0, 1) | 8534 (1191, 423, 6920) | 17 (40, 17, 15) | -2.5 (-0.5, -0.3, -1.7) | 0.1 (0, ., 0.2) | | 0 (0, 0, 0, 0, 0, 0) | 0 (0, 0, 0, 0, 0, 0) | 1 (0, 1, 0, 0, 0, 0) |

1. This report includes CLABSI data for 2015 and forward. Following the 2015 rebaseline, Mucosal Barrier Injury Laboratory-Confirmed Bloodstream Infections (MBI-LCBI) are excluded from CLABSI rates, SIRs and TAP reports.
2. If location-level CADs are the same in a given facility, their ranks are tied.
3. (CNS,YS,SA,ES,KS,EC) = No. of CNS, Yeast (both candida and non-candida species), Staph aureus, Enterococcus species, K. pneumoniae/K. oxytoca, E. coli
4. SIR is set to '.' when predicted number of events is <1.0.
5. LOCATION CAD = (OBSERVED_LOCATION - PREDICTED_LOCATION* SELECTED SIR Goal)
6. SIR TEST = 'SIG' means SIR > SIR Goal significantly
Source of aggregate data: 2015 NHSN CLABSI Data
Data contained in this report were last generated on February 14, 2017 at 10:57 AM.

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National Healthcare Safety Network
**TAP Report for CLABSI Data for Acute Care and Critical Access Hospitals (2015 Baseline)**
**Locations Ranked by CAD Within a Facility**
**SIR Goal: HHS Goal = 0.5**

Table 3 of the CLABSI Group TAP Report

A TAP Report is the first step in the CDC TAP Strategy. For more informatin on the TAP Strategy, please visit: http://www.cdc.gov/hai/prevent/tap.html
As of February 16, 2017 at 2:00 PM
Date Range: BS2_CLAB_TAP summaryYr2016 to 2016

| FACILITY | | | | | LOCATION | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Facility Rank | Facility Org ID | Facility Name | Facility CAD | Location Rank | Location | CDC Location | Events | Central Line Days | DUR % | CAD | SIR | SIR Test | No. Pathogens (CNS,YS,SA,ES,KS,EC) |
| 1 | 10000 | DHQP Memorial Hospital | 6.35 | | OP WARD | OUT:ACUTE:WARD | 0 | 56 | . | . | | | |
| | | | | 1 | STEP1 | IN:ACUTE:STEP | 3 | 1120 | 11 | 2.41 | 2.6 | | 3 (1, 1, 0, 0, 0, 0) |
| | | | | 2 | 2W | IN:ACUTE:WARD:M | 2 | 1312 | 22 | 1.39 | 1.6 | | 2 (0, 0, 0, 0, 0, 0) |
| | | | | 3 | ICU | IN:ACUTE:CC:MS | 4 | 5073 | 54 | 1.33 | 0.8 | | 4 (0, 2, 0, 2, 0, 0) |
| | | | | 4 | STEP2 | IN:ACUTE:STEP | 2 | 2105 | 21 | 0.89 | 0.9 | | 2 (0, 1, 1, 0, 0, 0) |
| | | | | 5 | 1E | IN:ACUTE:WARD:MS | 1 | 402 | 9 | 0.81 | . | | 1 (1, 0, 0, 0, 0, 0) |
| | | | | 6 | 2E | IN:ACUTE:WARD:PP | 0 | 4 | 0 | 0 | . | | |
| | | | | 7 | 1W | IN:ACUTE:WARD:M | 0 | 28 | 2 | -0.01 | . | | |
| | | | | 8 | TELE | IN:ACUTE:WARD:TEL | 0 | 457 | 7 | -0.21 | . | | |
| | | | | 9 | ICU2 | IN:ACUTE:CC:MS | 0 | 564 | 10 | -0.26 | . | | |
| 2 | 10401 | DHQP Memorial Annex | 5.35 | 1 | ICU | IN:ACUTE:CC:MS | 3 | 2181 | 53 | 2.06 | 1.6 | | 3 (1, 1, 0, 0, 0, 0) |
| | | | | 2 | 2 West | IN:ACUTE:WARD:TEL | 2 | 654 | 6 | 1.75 | . | | 2 (0, 0, 1, 0, 0, 1) |
| | | | | 3 | 6 West | IN:ACUTE:WARD:N | 1 | 382 | 7 | 0.85 | . | | 1 (0, 0, 0, 0, 1, 0) |
| | | | | 4 | ICU4 | IN:ACUTE:CC:MS | 2 | 2692 | 60 | 0.84 | 0.9 | | 2 (0, 1, 0, 0, 0, 0) |
| | | | | 5 | ICU3 | IN:ACUTE:CC:M | 1 | 496 | 6 | 0.81 | . | | 1 (0, 1, 0, 0, 0, 0) |
| | | | | 6 | 7 East | IN:ACUTE:WARD:S | 1 | 1169 | 14 | 0.55 | . | | 1 (0, 0, 0, 0, 1, 0) |
| | | | | 7 | 5 West | IN:ACUTE:WARD:M | 1 | 2194 | 21 | 0.16 | 0.6 | | 1 (0, 0, 0, 0, 0, 0) |

# Interpretation

➢ The header above each table describes what information has been included in the table. The second line of the header is a descriptive title for the table. The title names which hospital types are included in the report and what baselines data sets are used for the analysis. The third line of the header describes how the data has been arranged (i.e., "Locations Ranked by CAD within a Facility"). The fourth line displays the value for the SIR goal. For the TAP report in this example, HHS Goal = 0.5 was used as the SIR goal. Lastly, the final line of the header helps users find out more about the CDC TAP Strategy. For more information about the TAP strategy, please visit: https://www.cdc.gov/hai/prevent/tap.html.

➢ The footnote for each table (see page 2) includes the rules for interpreting the data, meanings for abbreviation used in the table, pathogen names, and the date datasets were generated. For example, footnote #4 states, "the SIR is set to '.' when predicted number of events is <1.0." This would be helpful to know if an SIR value is not given in the table. Additionally, the formula for calculating the CAD can also be found in the footnotes.

➢ The **first table** in the group TAP Report output (see page 2) provides cumulative totals for all facilities in the group. The total number of facilities contributing to the cumulative results in each subsequent column in the table can be found in the very first column labelled, "Number of facilities". The column labelled "Location" gives the total location count and breaks down the locations contributing to the CAD into location categories. Location Category, abbreviated as (LC), gives a breakdown of the different types of locations contributing to the total in the following order: ICU, NICU, Ward+ (i.e., non-ICU/NICU). For example, if "Location (LC)" equals "87 (15, 6, 66)", then the group has 87 total locations; 15 ICUs, 6 NICUs, and 66 wards. The Events, Device Days, Device Utilization Ratio percentage,

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CAD and SIR columns follow this pattern. Cumulative totals for the facilities in the group are followed by a location category breakdown within parenthesis (LC).

- ➤ The **second table** in the group TAP Report output (see page 3), Facilities within the Group Ranked by CAD, provides a list of facilities ranked by facility CAD in descending order. The first column in the facility-level table provides a rank by facility CAD; a Facility Rank of 1 indicates that the facility had the highest CAD among all hospitals in the group.
    - o Facility specific information follows the facility ranking: Facility Org ID, Facility Name, state where the facility is located, medical school affiliation (M – Major, G – Graduate, U - Undergraduate).
    - o Location, Events and Device Day totals are presented in the next 3 columns as a cumulative total for each facility. Once again, this total is broken down by location category.
    - o The device utilization ratio (DUR) is presented as a percent; that is, the percentage of patient days that are also device days. In this example, the DUR % represents the percentage of patient days that are central line days.
    - o Looking at the data for DHQP Memorial Hospital, the facility CAD was 6.4, indicating that at least 7 infections would need to be prevented in order to meet the HAI reduction goal that was set (SIR goal = 0.5).
        - ▪ The overall SIR for this facility was 1.1. The absence of SIG in the "SIR Test" column indicates that the SIR is NOT significantly greater than the SIR Goal.
        - ▪ "Ward+ No. Pathogens" indicates that of the 8 CLABSI pathogens reported in Ward+ locations, 5 events were caused by common CLABSI pathogens. In this example, 3 events were caused by Coagulase Negative Staph species, 2 by Yeast (both candida and non-candida species, YS) and one by *S. aureus* (SA).

- ➤ The **third table** in the group TAP report output (see page ), Locations Ranked by CAD within a Facility, ranks facilities by facility CAD. Then within each facility, the facility's locations are ranked by location CAD. Reviewing and interpreting the TAP report at the location level, allows user to target prevention efforts within specific locations or location types. For example:
    - o The STEP1 location is ranked as the #1 location within DHQP Memorial Hospital (see Location Rank) – meaning, this location has the highest number of "excess" infections amongst all other locations for which CLABSI data was reported from this facility during 2016.
    - o There were 3 CLABSIs (Events) identified in the ICU location in 1,120 central line days.
    - o The CAD in this location was 2.41 and the SIR was 2.6. Even though the ICU location has more events (4), it has a lower CAD. Therefore, it has a lower ranking than STEP1.
    - o The device utilization ratio (DUR) for STEP1, as a percent, was 11%. This means that 11% of the patient days in this unit were also central line days.
    - o NOTE: Location OP WARD is not included in the ranking. This location is omitted from the SIR calculation because it is an outpatient location. As a result, it is also omitted from the CAD calculation.

# Addition Resources:

- • The Five "W"s of the Targeted Assessment for Prevention (TAP) Strategy: http://www.cdc.gov/hai/prevent/tap.html
- • Introduction to NHSN Analysis: https://www.cdc.gov/nhsn/training/analysis/index.html
- • How to filter your data by time period: http://www.cdc.gov/nhsn/PS-Analysis-resources/PDF/FilterTimePeriod.pdf
- • How to filter your data on additional criteria: http://www.cdc.gov/nhsn/PS-Analysis-resources/PDF/SelectionCriteria.pdf

- Analysis Quick Reference Guides: http://www.cdc.gov/nhsn/PS-Analysis-resources/reference-guides.html
- HHS Action Plan to Prevent Healthcare-associated Infections: http://health.gov/hcq/prevent-hai.asp
- HAI Progress Report: https://www.cdc.gov/hai/data/portal/progress-report.html