

# Facility Targeted Assessment for Stewardship (TAS) Dashboard

## Description

The Targeted Assessment for Stewardship (TAS) Dashboard allows NHSN facilities to visualize locations with the greatest need for antimicrobial stewardship via an interactive chart. The TAS Dashboard displays a metric known as the Antimicrobial Use Cumulative Attributable Difference (AU-CAD) over time, by quarter, for the most recent complete four calendar quarters at the facility and location level. The AU-CAD is the number of antimicrobial days needed to achieve a desired Standardized Antimicrobial Administration Ratio (SAAR) target. The higher the AU-CAD value, the greater the number of antimicrobial days that need to be reduced to meet the SAAR target. The TAS Dashboard uses SAAR data reported by your facility and your SAAR targets to calculate the AU-CAD for each SAAR type and location using the following formula, rounded to the nearest whole number:

$$\text{AU-CAD} = \text{Observed antimicrobial days} - (\text{Predicted antimicrobial days} \times \text{SAAR target})$$

The predicted antimicrobial days are calculated using the 2017 SAAR baseline models for adult and pediatric patient care locations, and the 2018 SAAR baseline models are used for neonatal locations. The AU-CAD can be greater than or less than zero. A positive AU-CAD value means the SAAR target was less than the current SAAR value for that category. A positive AU-CAD value represents the number of antimicrobial days to reduce per time period to decrease the SAAR value and reach your SAAR target. A negative AU-CAD value means the SAAR target was greater than the current SAAR value for that category. A negative AU-CAD value represents the number of antimicrobial days to add per time period to increase the SAAR value and reach your SAAR target.

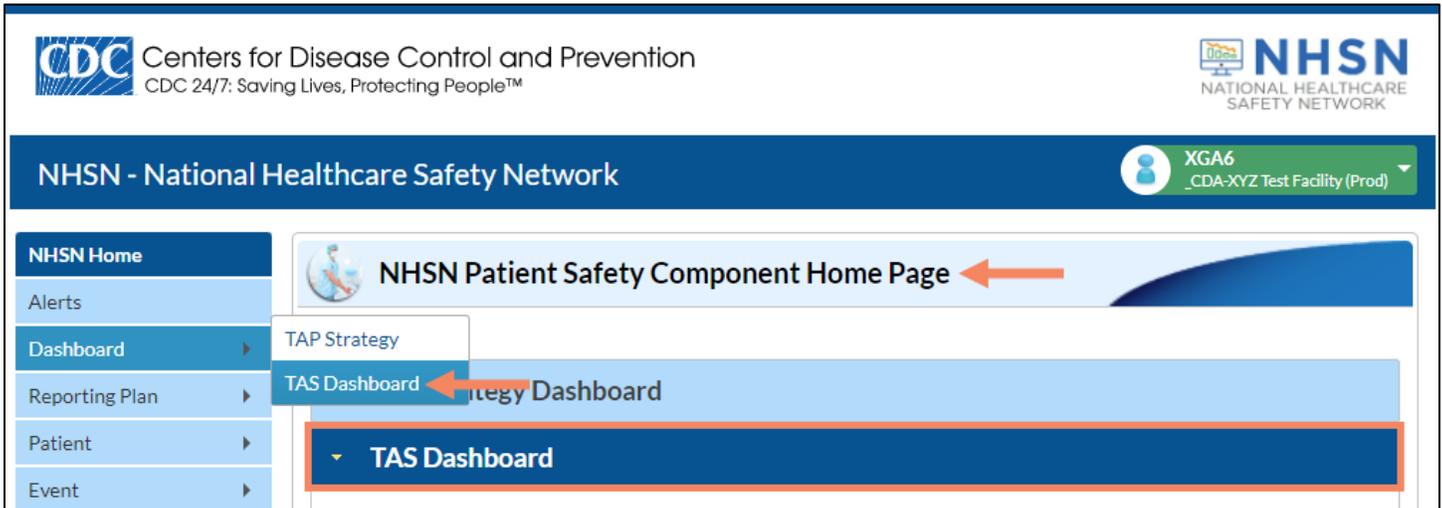
**Note:** SAAR and AU-CAD are not measures of the appropriateness or judiciousness of antimicrobial use. Facilities should assess the appropriateness of courses of therapy for select antibiotics or infections to inform the clinical relevance of AU-CAD reductions or additions.



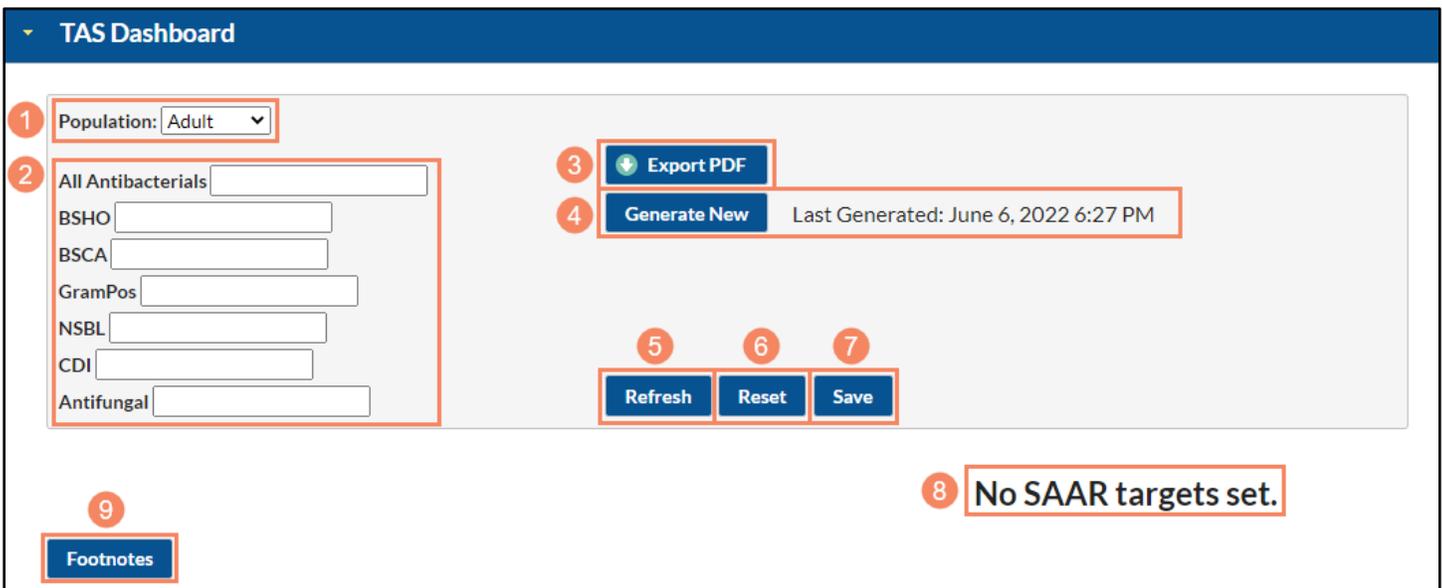
Centers for Disease Control  
and Prevention  
National Center for Emerging and  
Zoonotic Infectious Diseases

## Set-Up

The TAS Dashboard is located on the NHSN Patient Safety Component Home Page and can also be accessed by navigating to Dashboard and then TAS Dashboard from the left-hand menu in NHSN.



The TAS Dashboard will display “No SAAR targets set.” if you have not set SAAR targets via the TAS Dashboard or TAS Reports. You will have to enter and save SAAR targets to view the TAS Dashboard. Below are the components and associated set-up instructions for the TAS Dashboard.



1. **Population:** This drop-down menu can be used to display the TAS Dashboard for each of the available populations. The TAS Dashboard can be generated for different patient populations (i.e., “Adult”, “Pediatric”, or “Neonatal”) by selecting from the drop-down menu. Only one population can be displayed at a time and the adult population is selected by default.
2. **SAAR targets:** These are the desired SAAR values your facility would like to work towards for each SAAR category (abbreviations listed in the table below). While SAAR values are rounded to three numbers beyond the decimal point (for example, 1.255), the SAAR targets will be automatically rounded to two numbers beyond the decimal point (for example, if you enter 1.255 as a SAAR target it will be rounded to 1.26). The SAAR targets can be different for each combination of population and SAAR type. They can be changed at any time by editing the targets and clicking the Save button. These

targets are also used for the TAS Reports and are unique to your NHSN user account. They do not affect the rest of your AU data or SAAR reports in any way.

Abbreviation	SAAR Type Description	Applicable Population(s)*
ALL	All antibacterial agents	Adult, Pediatric, Neonatal
BSHO	Broad spectrum antibacterial agents predominantly used for hospital-onset infections	Adult, Pediatric, Neonatal
BSCA	Broad spectrum antibacterial agents predominantly used for community-acquired infections	Adult, Pediatric
GRAMPOS	Antibacterial agents predominantly used for resistant Gram-positive infections (e.g., Methicillin-resistant <i>Staphylococcus aureus</i> [MRSA])	Adult, Pediatric
NSBL	Narrow spectrum beta-lactam agents	Adult, Pediatric
CDI	Antibacterial agents posing the highest risk for <i>Clostridioides difficile</i> infection (CDI)	Adult, Pediatric
ANTIFGL	Antifungal agents predominantly used for invasive candidiasis	Adult, Pediatric
AZITH	Azithromycin	Pediatric
VANC	Vancomycin predominantly used for treatment of late-onset sepsis	Neonatal
CEPH	Third generation cephalosporins	Neonatal
AMP	Ampicillin predominantly used for treatment of early-onset sepsis	Neonatal
AMINO	Aminoglycosides predominantly used for treatment of early-onset and late-onset sepsis	Neonatal
FLUCO	Fluconazole predominantly used for candidiasis	Neonatal

\*Drugs within each SAAR type may differ by population. See the [AUR Module Protocol](#) for the list of drugs included in each SAAR.

- Export PDF button:** Clicking this button generates a printer-friendly version of the TAS Dashboard that can be printed or saved as a PDF file.
- Generate New button and Last Generated date:** The “Generate New” button can be used to generate new data sets just like navigating to Analysis and then Generate Data Sets from the left-hand menu in NHSN. The Last Generated date displays the last time you ran a data set generation (DSG). If you have not generated data sets or your user rights have changed, the TAS Dashboard will display “No data. Please run DSG.” Please note this button generates new data sets for all NHSN Patient Safety Component modules.
- Refresh button:** Clicking this button will apply the SAAR targets you have entered to the TAS Dashboard display without saving them to the database. This function can be used to test changes to your SAAR targets for the selected population.
- Reset button:** Clicking this button resets your SAAR targets to the last targets you saved. For example, if you changed the SAAR target from 1.20 to 1.10 and then clicked Refresh to update the dashboard to show the AU-CAD values for a target of 1.10, you could click Reset to change the SAAR target back to the target value that was last saved (1.20).
- Save button:** Clicking this button saves the SAAR targets entered for the selected population to the database so they will be available even if you log out of NHSN or navigate away from the TAS Dashboard. Please note this only affects your NHSN account and will not affect other facility users’ SAAR targets.
- TAS Dashboard display:** The TAS Dashboard will display here once you have entered and saved your SAAR targets. If you have not set SAAR targets via the TAS Dashboard or TAS Reports, it will display “No SAAR targets set.”
- Footnotes button:** This button can be used to show or hide the TAS Dashboard footnotes. Footnotes are shown by default.

## Example and Interpretation

Let’s look at the TAS Dashboard for the adult population. By default, NHSN compares SAAR values to 1.000 to produce SAAR p-values and 95% confidence intervals. For this example, let’s set our SAAR targets to 0.40 for all SAAR types as a benchmark.

Data shown in this example are fictitious and a SAAR target of 0.40 may not be appropriate for your facility. Please work with your facility's antimicrobial stewardship program to identify appropriate, achievable SAAR targets. For guidance on selecting a SAAR target, please see the [TAS Guide](#). Once we enter the SAAR targets and click Save, the high-level TAS Dashboard will appear.



# High-level TAS Dashboard

Population: Adult

1  0.40

0.40

0.40

0.40

0.40

0.40

0.40

[Export PDF](#)

[Generate New](#) Last Generated: June 20, 2022 12:33 PM

1 [Refresh](#) [Reset](#) [Save](#)

2 Facility AU TAS Report Dashboard by Quarter



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Facility AU-CAD				
SAAR Type	2021Q2	2021Q3	2021Q4	2022Q1
ALL	ND	5717	ND	5147
BSHO	-821	-1454	-1321	-700
BSCA	1195	1195	971	975
GRAMPOS	482	435	323	408
NSBL	2152	2321	ND	1850
CDI	550	276	201	445
ANTIFGL	570	588	603	423

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- Footnotes**
1. Abbreviations: ALL - All antibacterial agents; BSHO - Broad spectrum antibacterial agents predominantly used for hospital-onset infections; BSCA - Broad spectrum antibacterial agents predominantly used for community-acquired infections; GRAMPOS - Antibacterial agents predominantly used for resistant Gram-positive infections (e.g., MRSA); NSBL - Narrow spectrum beta-lactam agents; CDI - Antibacterial agents posing the highest risk for CDI; ANTIFGL - Antifungal agents predominantly used for invasive candidiasis.
  2. ND = No SAAR data available; NT = SAAR data but no SAAR Target available. As a reminder, AU-CAD values only appear if you've entered a SAAR target and have uploaded AU data for locations that can generate SAARs.
  3. AU-CAD = Observed Antimicrobial Days - (Predicted Antimicrobial Days \* Facility Identified SAAR Target)
  4. Data include the most recent complete four calendar quarters.
  5. A negative AU-CAD value means the SAAR Target was greater than the current SAAR value for that category. To increase your SAAR value, the negative AU-CAD value represents the number of antimicrobial days to add per time period to reach your SAAR Target.

*Note: Data are fictitious and for demonstration purposes only.*

1. **SAAR targets and Save button:** Once you enter SAAR targets and click Save, the TAS Dashboard displays AU-CAD data based on the SAAR targets you entered. In this example, we have entered a SAAR target of 0.40 for every SAAR type
2. **High-level TAS Dashboard title:** The title indicates what data are displayed and at what level of aggregation (calendar quarter) in the chart and table below it.
3. **High-level TAS Dashboard y-axis:** The y-axis displays the numeric AU-CAD value. This axis automatically adjusts to accommodate the range of AU-CAD values for your facility and displays AU-CAD values above and below zero.
4. **High-level TAS Dashboard x-axis:** The x-axis displays each SAAR type available for the selected population. In this example, because we selected the adult population, the x-axis displays ALL, BSHO, BSCA, GRAMPOS, NSBL, CDI, and ANTIFGL. The full names for the SAAR Types can be found in the TAS Dashboard footnotes.
5. **High-level TAS Dashboard legend:** The legend displays the colors that correspond with each calendar quarter included in the TAS Dashboard. The TAS Dashboard displays the most recent four complete calendar quarters. The time period and level of aggregation displayed by the TAS Dashboard cannot be changed.
6. **High-level TAS Dashboard display:** The high-level Facility TAS Dashboard displays a graphical interpretation of the AU-CADs for each SAAR type over time by quarter for the most recent complete four calendar quarters at the facility-level. AU-CAD values will only appear if you've entered a SAAR target and have uploaded AU data for locations that can generate SAARs. "ND" in place of an AU-CAD value indicates no data are available for that SAAR type/quarter combination and "NT" indicates no

SAAR target was entered for that SAAR type. “ND” is also displayed when an AU-CAD for the specific SAAR type/quarter cannot be generated. Please see the [TAS Guide](#) for situations where NHSN cannot generate an AU-CAD.

7. **High-level Facility AU-CAD table:** The high-level Facility AU-CAD table repeats the information in the high-level Facility TAS Dashboard display in tabular format
8. **High-level TAS Dashboard Footnotes:** The TAS Dashboard displays footnotes relevant to the selected population. Footnote #1, which lists the SAAR type abbreviations for the population displayed, changes depending on which population is selected. Footnotes #2-5 stay the same regardless of which population is selected.

Now that we’ve walked through the layout of the High-level TAS Dashboard, let’s interpret the AU-CAD for adult antibacterial agents predominantly used for resistant Gram-positive infections (GRAMPOS) during the second quarter of 2021 (2021Q2). The adult GRAMPOS AU-CAD value at our facility in 2021Q2 was 482, as shown by the arrows on the chart and table. To reduce our 2021Q2 adult GRAMPOS SAAR to meet our SAAR target of 0.40, we would have needed to reduce use of adult antibacterial agents predominantly used for resistant Gram-positive infections at our facility by at least 482 antimicrobial days during that quarter.

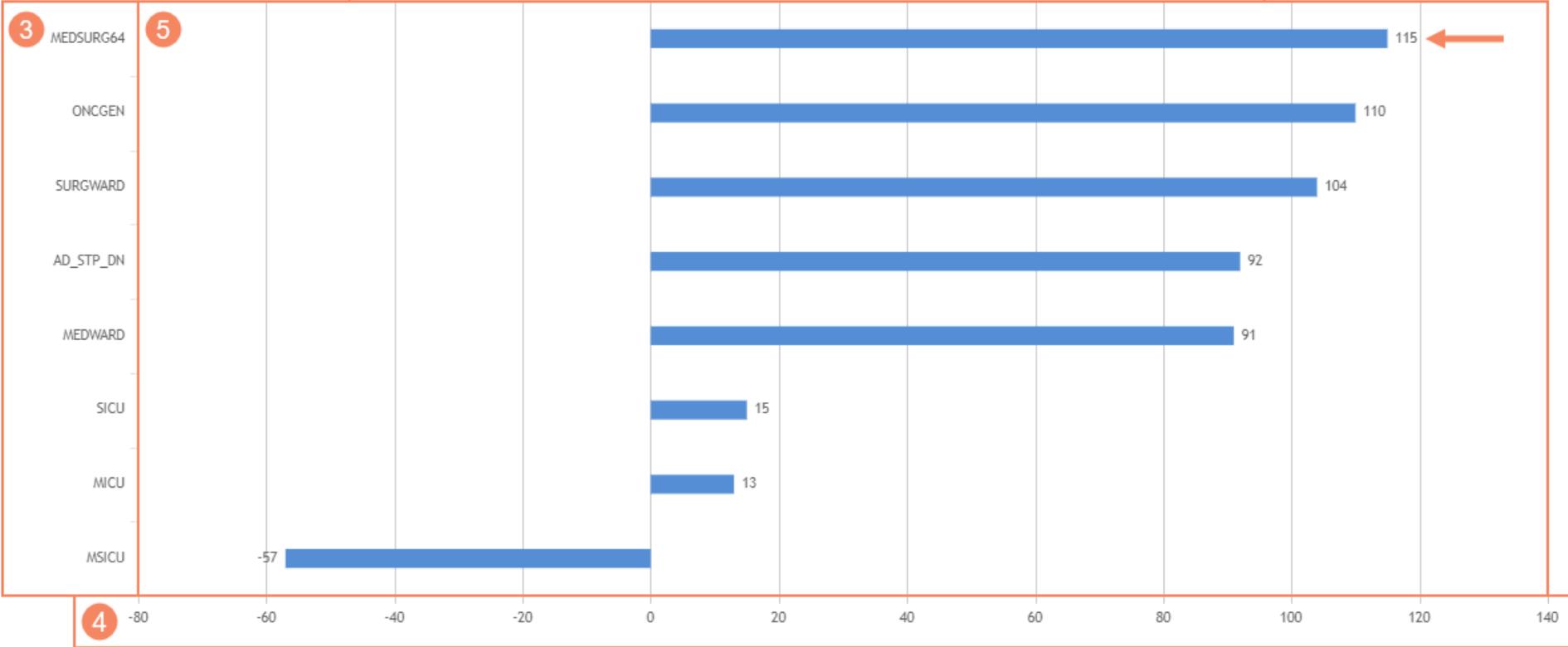
To continue the example, let’s explore how to reduce our 2021Q2 adult GRAMPOS SAAR. Clicking on either the colored bar (as shown in the screenshot above) or the number above/below the bar takes you to the Facility TAS Dashboard drilldown for each SAAR type and quarter combination. Let’s click on the bar on the chart that corresponds with GRAMPOS 2021Q2.



# TAS Dashboard Drilldown

1 [Back](#)

2 GRAMPOS SAAR Number of Antimicrobial Days to Reduce to Reach Facility Specific SAAR



SAAR Type	Summary Year/Quarter	Location Rank	Location	Location Code	AU Days Predicted	Observed Antimicrobial Days	Location AU-CAD	Three highest use drugs within SAAR Type
GRAMPOS	2021Q2	1	MEDSURG64	IN:ACUTE:WARD:MS	325.114	245	115	CEFTAR(14); DALBA(14); ORITAV(14);
		2	ONCGEN	IN:ACUTE:WARD:ONC_HONC	321.301	239	110	CEFTAR(16); DALBA(16); ORITAV(14);
		3	SURGWARD	IN:ACUTE:WARD:S	281.105	216	104	DAPTO(17); DALBA(15); TEDIZ(15);
		4	AD_STP_DN	IN:ACUTE:STEP	361.01	236	92	ORITAV(15); LNZ(14); TELAV(13);
		5	MEDWARD	IN:ACUTE:WARD:M	282.987	204	91	TEDIZ(16); CEFTAR(14); ORITAV(14);
		6	SICU	IN:ACUTE:CC:S	466.633	202	15	DAPTO(15); LNZ(15); CEFTAR(14);
		7	MICU	IN:ACUTE:CC:M	575.707	243	13	CEFTAR(17); LNZ(15); TEDIZ(13);
		8	MSICU	IN:ACUTE:CC:MS	647.553	202	-57	QUINWD(16); LNZ(15); ORITAV(14);

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### Footnotes

1. Abbreviations: ALL - All antibacterial agents; BSHO - Broad spectrum antibacterial agents predominantly used for hospital-onset infections; BSCA - Broad spectrum antibacterial agents predominantly used for community-acquired infections; GRAMPOS - Antibacterial agents predominantly used for resistant Gram-positive infections (e.g., MRSA); NSBL - Narrow spectrum beta-lactam agents; CDI - Antibacterial agents posing the highest risk for CDI; ANTIFGL - Antifungal agents predominantly used for invasive candidiasis.
2. As a reminder, AU-CAD values only appear if you've entered a SAAR target and have uploaded AU data for locations that can generate SAARs.
3. AU-CAD = Observed Antimicrobial Days - (Predicted Antimicrobial Days \* Facility Identified SAAR Target)
4. If SAAR Type-level AU-CADs are the same in a given facility, their ranks are tied.
5. A negative AU-CAD value means the SAAR Target was greater than the current SAAR value for that category. To increase your SAAR value, the negative AU-CAD value represents the number of antimicrobial days to add per time period to reach your SAAR Target.
6. The drug code and full drug name can be found here: <http://www.cdc.gov/nhsn/xls/aur/aur-eligible-antimicrobial-agents.xlsx>

*Note: Data are fictitious and for demonstration purposes only.*

1. **Back button:** Clicking the Back button returns to the high-level TAS Dashboard.
2. **TAS Dashboard drilldown title:** The title indicates what data are displayed in the chart and table below it, and for what SAAR type.
3. **TAS Dashboard drilldown y-axis:** The y-axis displays the "Your Code" value for each location NHSN calculated an AU-CAD for. In this example, because we selected the adult population, the y-axis displays our facility's adult locations with an AU-CAD value for the GRAMPOS SAAR type in 2021Q2.
4. **TAS Dashboard drilldown x-axis:** The x-axis displays the numeric AU-CAD value. This axis automatically adjusts to accommodate the range of AU-CAD values for the locations included and displays AU-CAD values above and below zero.
5. **TAS Dashboard drilldown display:** The Facility TAS Dashboard drilldown displays a graphical interpretation of the AU-CADs for each eligible location for the selected SAAR type and quarter, ordered by location rank.
6. **SAAR Type and Summary Year/Quarter columns:** These columns indicate the SAAR type and quarter you selected from the high-level TAS Dashboard. In this example, we selected the GRAMPOS SAAR type for 2021Q2.
7. **Location Rank column:** This column lists the rank order of locations by AU-CAD value, from largest to smallest. If AU-CADs are the same for two or more locations within the same SAAR type, their ranks are tied. Locations where NHSN cannot calculate an AU-CAD are not assigned ranks.
8. **Location and Location Code columns:** These columns indicate the "Your Code" and "CDC Code" value, respectively, for each location included in the table.

9. **AU Days Predicted and Observed Antimicrobial Days columns:** These columns indicate the predicted antimicrobial days and observed (or reported) antimicrobial days, respectively, for antimicrobials included in the selected SAAR antimicrobial category for the selected quarter for each location included in the table. These values are used to calculate the AU-CAD for each location.
10. **Location AU-CAD column:** This column indicates the SAAR type- and quarter-specific AU-CAD for each location, calculated using the AU-CAD formula
11. **Three highest use drugs within SAAR Type column:** This column displays the top three antimicrobials that contributed to the selected SAAR antimicrobial category for the selected quarter for each location included in the table and, in parenthesis, the percent of observed antimicrobial days each antimicrobial contributed rounded to the nearest whole number. Drugs with a percent of (0) contribute greater than 0% but less than 0.5% of observed antimicrobial days. Drugs with zero antimicrobial days do not appear among the three highest use drugs. If two or more antimicrobials contributed the same number of observed antimicrobial days, they are listed in alphabetical order by drug code. Full drug names can be found in the AU tab here: [AUR Module Eligible Antimicrobial Agents](#).
12. **TAS Dashboard Drilldown Footnotes:** The TAS Dashboard displays footnotes relevant to the selected population. Footnote #1, which lists the SAAR type abbreviations for the population displayed, changes depending on which population is selected. Footnotes #2-6 stay the same regardless of which population, SAAR type, or quarter is selected.

Let's interpret the AU-CAD and data in the table for our medical-surgical ward (MEDSURG64), as shown by the arrows on the chart and table. The medical-surgical ward was ranked #1, which means it had the highest AU-CAD value among the locations that contributed to our facility's 2021Q2 adult GRAMPOS SAAR. The medical-surgical ward reported 245 antimicrobial days in the adult GRAMPOS SAAR antimicrobial category in 2021Q2. NHSN predicted this location would report approximately 325.114 antimicrobial days based on the adult GRAMPOS SAAR model. We can plug these values along with our SAAR target of 0.40 into the AU-CAD formula to see what our AU-CAD value should be.

$$\text{AU-CAD} = \text{Observed antimicrobial days} - (\text{Predicted antimicrobial days} \times \text{SAAR target}) = 245 - (325.114 \times 0.40) \approx 115$$

As expected, based on our calculation, the AU-CAD value for adult antibacterial agents predominantly used for resistant Gram-positive infections administered in our medical-surgical ward in 2021Q2 was 115, as shown by the arrow on the chart. To reduce our medical-surgical ward's 2021Q2 adult GRAMPOS SAAR to our SAAR target of 0.40, we would need to reduce use of adult antibacterial agents predominantly used for resistant Gram-positive infections in our medical-surgical ward by approximately 115 antimicrobial days in a quarter. Ceftaroline (CEFTAR), dalbavancin (DALBA), and oritavancin (ORITAV) were tied as the most frequently administered antimicrobials in the adult GRAMPOS antimicrobial category for our medical-surgical ward in 2021Q2 so they are listed in alphabetical order by drug code. Ceftaroline, dalbavancin, and oritavancin each contributed 14% of the observed 245 antimicrobial days. If we would like to reduce our adult GRAMPOS SAARs, we can evaluate if reducing use of ceftaroline, dalbavancin, or oritavancin in our adult locations would be appropriate.

## Additional Resources

Antimicrobial Use and Resistance (AUR) Module Eligible Antimicrobial Agents: <http://www.cdc.gov/nhsn/xls/aur/aur-eligible-antimicrobial-agents.xlsx>

AUR Module website: <https://www.cdc.gov/nhsn/psc/aur/index.html>

National Healthcare Safety Network (NHSN) AUR Module Protocol: <http://www.cdc.gov/nhsn/pdfs/pscmanual/11pscaurcurrent.pdf>

NHSN AUR Module Training: <https://www.cdc.gov/nhsn/training/patient-safety-component/aur.html>

TAS Guide: <https://www.cdc.gov/nhsn/ps-analysis-resources/tas/tas-guide-508.pdf>

TAS Report – Facility Quick Reference Guide: <https://www.cdc.gov/nhsn/ps-analysis-resources/tas/facility-level-508.pdf>

TAS Report – Location Groups Quick Reference Guide: <https://www.cdc.gov/nhsn/ps-analysis-resources/tas/location-group-level-508.pdf>

TAS Report – Locations Quick Reference Guide: <https://www.cdc.gov/nhsn/ps-analysis-resources/tas/location-level-508.pdf>

TAS Report – Group and Facility Quick Reference Guide: <https://www.cdc.gov/nhsn/ps-analysis-resources/tas/group-level-508.pdf>

Group TAS Dashboard Quick Reference Guide: <https://www.cdc.gov/nhsn/ps-analysis-resources/tas/group-508.pdf>