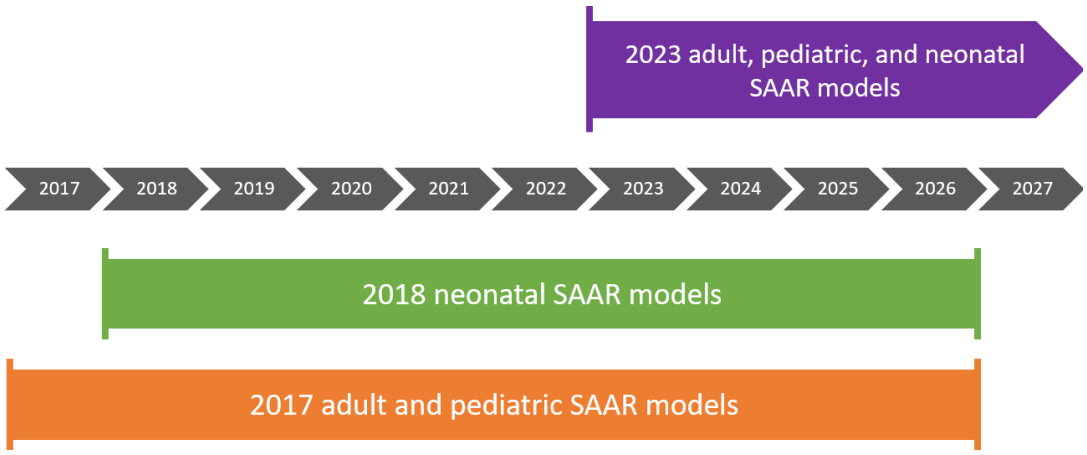
NATIONAL HEALTHCARE SAFETY NETWORK (NHSN)

Standardized Antimicrobial Administration Ratio (SAAR) Reports – All SAARs

Description

The Standardized Antimicrobial Administration Ratio (SAAR) provides a standardized metric of antimicrobial use (AU). The SAAR is a ratio comparing observed, or reported, AU to the AU predicted by a referent, or baseline, population. NHSN calculates the predicted antimicrobial days using predictive models developed by CDC and applied to nationally aggregated AU data reported to NHSN from the same group of patient care location types. CDC developed separate predictive models for each antimicrobial agent category. There are four SAAR baselines currently available in the National Healthcare Safety Network (NHSN), each applicable to a select set of patient care locations and time periods. The table and graphic below provide a high-level overview of each baseline.

SAAR Baseline	Locations	Dates
2014 baseline adult and pediatric SAARs	6 adult and pediatric intensive care units (ICUs) and wards	January 1, 2014 – December 31, 2018
2017 baseline adult and pediatric SAARs	13 adult and pediatric medical, surgical, medical-surgical ICUs, wards, step down units, and oncology units	January 1, 2017 – December 31, 2026
2018 baseline neonatal SAARs	4 neonatal units, including step-down nurseries and neonatal critical care units	January 1, 2018 – December 31, 2026
2023 baseline adult, pediatric, and neonatal SAARs	26 adult, 9 pediatric, and 4 neonatal units	January 1, 2023 – present



This document explains how to calculate and interpret the SAAR metric. For more information, please see the NHSN Antimicrobial Use and Resistance (AUR) Module Protocol.

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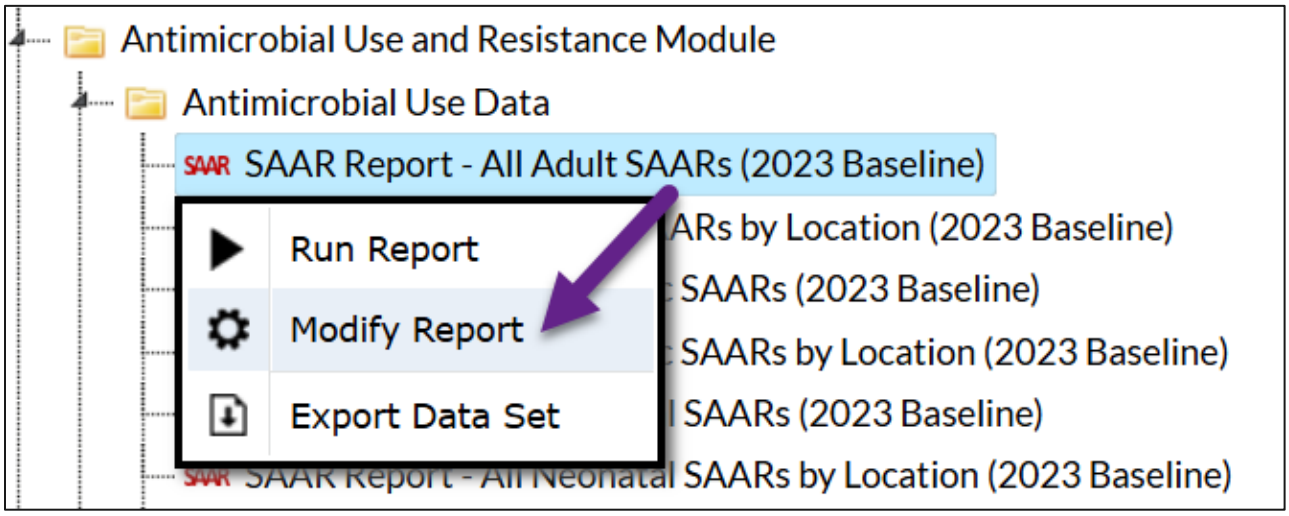
Example

In this example, you are interested in obtaining SAARs by quarter (3-month, calendar quarter-year) rather than the default monthly display. Additionally, you would like to limit the report to include only SAARs for antibacterial agents predominantly used for resistant gram-positive infections (e.g., MRSA) in adult SAAR orthopedic wards.

Tip: *Refer to Appendix D of the AUR Module Protocol or slides 32-34 of the Introduction to the NHSN 2023 Baseline SAAR Models and Analysis Reports presentation for a list of which individual locations are included in each location group.*

After generating data sets, click Analysis > Reports > Antimicrobial Use and Resistance Module > Antimicrobial Use Data. From the available report options, select **"SAAR Report - All Adult SAARs (2023 Baseline)."** A pop-up box will appear with options to **Run Report, Modify Report,** and **Export Data Set**. Select **Modify Report** to customize your report.

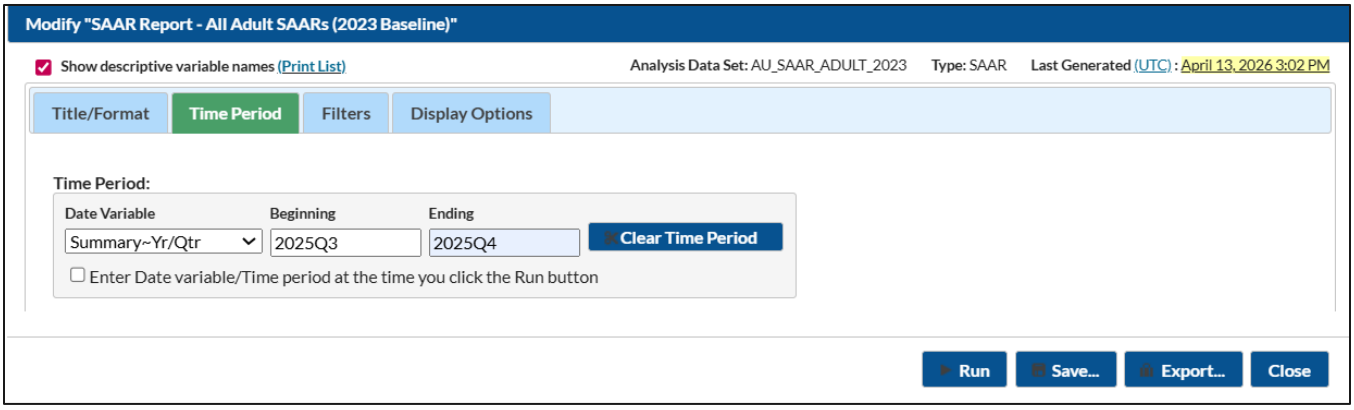
For a general, step-by-step explanation of the NHSN modification screen, please refer to this How to Modify a Report document.



Modifying the Report

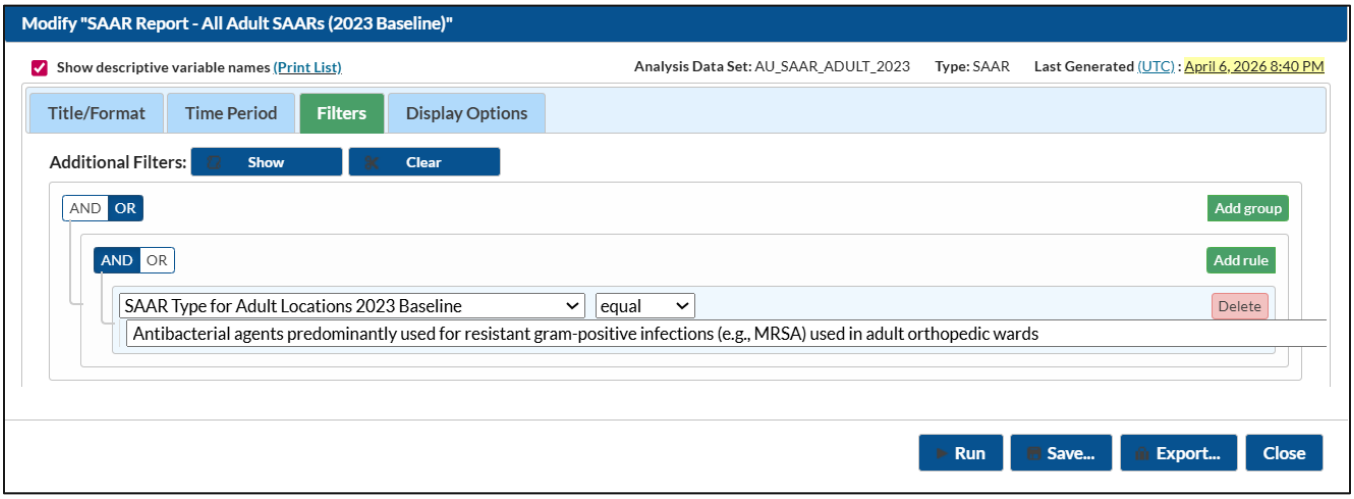
When you choose to modify the report, the modification screen appears showing multiple tabs containing available modifications for the given report. The "Title/Format" tab allows you to update the report title and select the format in which you want the report displayed, such as HTML or PDF. To filter the data by time period, select the "Time Period" tab at the top of the page. In this example, we have limited the report to only include data for the third and fourth quarters of 2025 (Summary~Yr/Qtr Beginning = 2025Q3 and Ending = 2025Q4).

Tip: *For more descriptive variable labels on your report, check the box "Show descriptive variable names" that appears near the top of the modification window (recommended).*



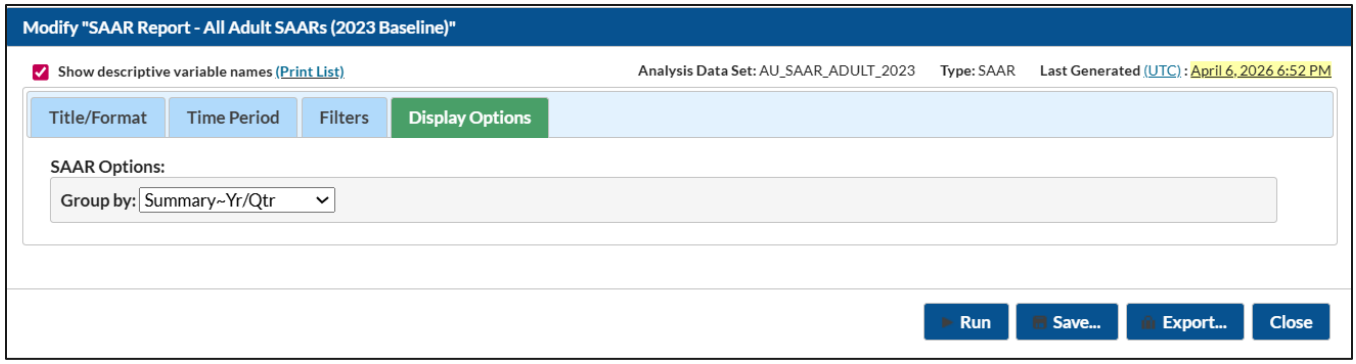
The “Filters” tab allows you to further filter the data that will be displayed in the report. For our example, we want to filter the report to only show data for the antibacterial agents predominantly used for resistant gram-positive infections (e.g., MRSA) used in adult orthopedic wards SAAR type. After clicking **Add rule**, select “SAAR Type for Adult Locations 2023 Baseline” from the dropdown menu, then select “Antibacterial agents predominantly used for resistant gram-positive infections (e.g., MRSA) used in adult orthopedic wards.” Ensure the “equal” operator appears in the dropdown between “SAAR Type for Adult Locations 2023 Baseline” and “Antibacterial agents predominantly used for resistant gram-positive infections (e.g., MRSA) used in adult orthopedic wards.”

Tip: *For including more than one item in each filter such as multiple SAAR types, the “in” operator can be used instead of the “equal” operator.*



The “Display Options” tab allows you to view your rates by month, quarter, half-year, year, or cumulative time periods for the entire time period selected. Summary~Yr/Qtr is used in this example to show quarterly SAARs.

Tip: *Not sure of the meaning of the variables in the list? Click “Print List” in the upper left corner of the modification window.*



Final Report

The default report will contain one table for each SAAR type aggregated for the locations included in the grouping. In this example, because we specified a single SAAR type of interest, we will see only one table. For each time period, the SAAR tables display the observed antimicrobial days, predicted antimicrobial days, total days present, SAAR value, p-value, and 95% confidence interval. NHSN calculates the predicted days of antimicrobial use ("Predicted Antimicrobial Days") using predictive models developed by CDC and applied to nationally aggregated AU data reported to NHSN from the same group of patient care location types. CDC developed separate predictive models for each antimicrobial agent category.

Note: *This example uses fictitious data for illustrative purposes only.*

National Healthcare Safety Network

SAARs Table - All Adult Standardized Antimicrobial Administration Ratios (SAARs) High-Level Indicators and High-Value Targets (2023 Baseline)

As of: April 6, 2026 at 8:47 PM UTC
Date Range: AU_SAAR_ADULT_2023 summaryYQ 2025Q1 to 2025Q4
if (((SAARTypeAdult2023 = "Adult_GramPos_ORTHO_2023")))

Antibacterial agents predominantly used for resistant gram-positive infections (e.g., MRSA) used in adult orthopedic wards

Facility Org ID	Summary Yr/Qtr	SAAR Type for Adult Locations 2023 Baseline	Antimicrobial Days	Predicted Antimicrobial Days	Days Present	SAAR	SAAR p-value	95% Confidence Interval
13860	2025Q3	Adult_GramPos_ORTHO_2023	632	1381.840	17940	0.457	0.0000	0.423, 0.494
13860	2025Q4	Adult_GramPos_ORTHO_2023	546	1240.532	16350	0.440	0.0000	0.404, 0.478

Any reported use of Colistin will be combined with and reported as Colistimethate. Any reported use of Amikacin Liposomal will be combined with and reported as Amikacin.
Includes data for January 2023 and forward.
The SAAR is only calculated if the number of predicted antimicrobial days (numAUDaysPredicted) is >=1.
If antimicrobial days exceed days present for any SAAR categories except the All Antibacterial SAAR, a SAAR will not be calculated and data should be validated for accuracy.
Data restricted to specific location types. See NHSN AUR Module Protocol or SAAR Guide for details.
Source of aggregate data: 2023 NHSN AU Data
Data contained in this report were last generated on April 6, 2026 at 8:35 PM UTC to include all data .

1. This example shows the SAAR table for **"Antibacterial agents predominantly used for resistant Gram-positive infections (e.g., MRSA) [GramPos] used in adult orthopedic wards (2023 Baseline)."** The report reflects the applied modifications in the line above the table title (e.g., filtering for *Adult_GramPos_ORTHO_2023* SAAR type).
    a. This SAAR table includes the observed and predicted antimicrobial days for antibacterial agents predominantly used for resistant gram-positive infections (e.g., MRSA). For a complete list of antimicrobials in each SAAR Type, please see the AUR Module Protocol.
2. As shown in the first row of the table (red box), there were 632 antimicrobial days reported for this group of agents in 2025Q3 for this facility's adult orthopedic wards. This represents the observed

antimicrobial days. The SAAR is calculated as the number of observed antimicrobial days (numerator) divided by the number of predicted antimicrobial days (denominator). In this example, the 2025Q3 SAAR is: 632 / 1381.840 = 0.457.

3. The SAAR p-value is a statistical measure that tells you if observed antimicrobial usage is significantly different from predicted usage. A p-value less than 0.05 (an arbitrary and conveniently used cut point) indicates that the number of observed antimicrobial days is statistically significantly different (higher or lower) than the number of antimicrobial days predicted. Due to the large number of days present recorded and included in the predictive models, most SAAR p-values are less than 0.05 and users should interpret them with caution, as statistical significance does not necessarily translate into clinical significance.

4. The 95% Confidence Interval (CI) is a range of values in which we have a high degree of confidence that the true SAAR lies; however, the SAAR reported under the SAAR column is the most likely value. If the confidence interval includes the value of 1.000, then the SAAR is not statistically significant (the observed usage is not statistically significantly different from predicted usage, using the same convenient cut point). In this example, the 2025Q3 SAAR 95% CI (0.423, 0.494) did not contain 1.000, indicating that the SAAR was statistically significantly different from 1.000.

Additional Resources

- How to Export Data from NHSN
- AUR Module Protocol
- Surveillance for AU and AR Options
- NHSN 2023 AU SAAR Rebaseline
- AUR Training
- NHSN Analysis Quick Reference Guides