

ANTIMICROBIAL USE RATE TABLE – DRUGS PREDOMINANTLY USED FOR EXTENSIVELY ANTIMICROBIAL RESISTANT BACTERIA

Description

Rate tables for the Antimicrobial Use (AU) Option display a facility’s calculated rate of antimicrobial use. Report options include rates of use for facility-wide (FACWIDEIN) or by location. Rates can be calculated by drug category and class, for specific drugs within separate classes (modified Selected Drugs option), for individual drugs (modified Selected Drugs option), or for select drugs predominantly used for extensively antibiotic resistant (AR) bacteria. The “Drugs predominantly used for extensively AR bacteria (2017 baseline)” rate table report generates rates for antibacterial agents predominantly used for extensively antibiotic resistant bacteria used in adult and pediatric standardized antimicrobial administration ratio (SAAR) intensive care units and wards, and adult step down units and oncology units. Eligible adult and pediatric SAAR location types are listed in Table 5 of the [NHSN AUR Module Protocol](#). For both adults and children the drugs predominantly used for extensively AR bacteria include: ceftazidime/avibactam, ceftolozane/tazobactam, colistimethate (IV administration only), polymyxin B (IV administration only), and tigecycline.

The AU “Rate Table – Drugs predominantly used for extensively AR bacteria” report uses the 2017 baseline and can be generated for January 2017 data forward. Two rate tables will be generated: one rate table for adult locations and one for pediatric locations.

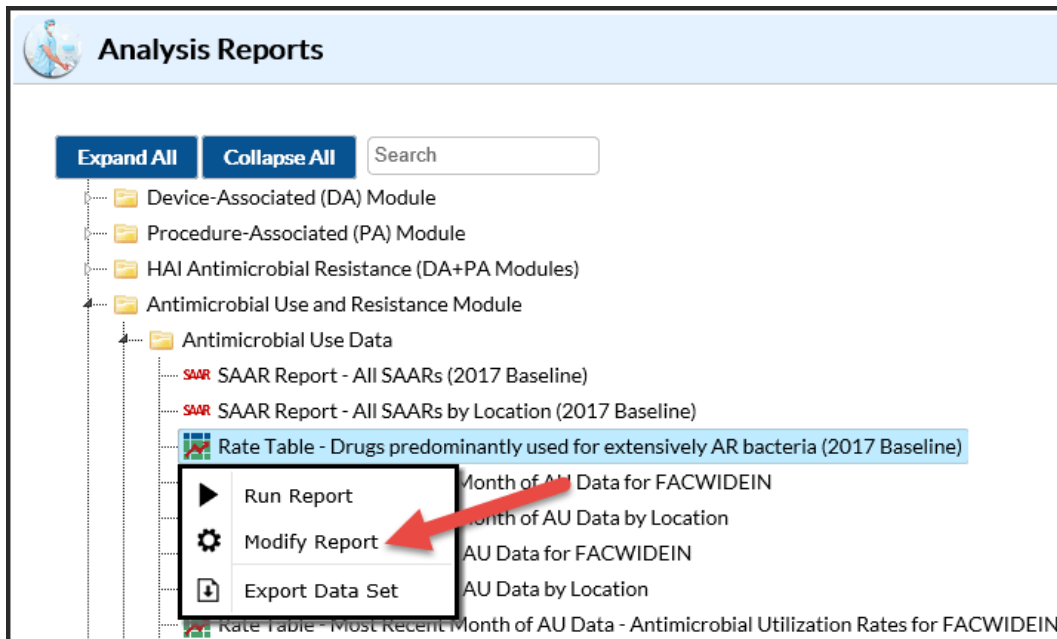
For a more general, step-by-step explanation of the NHSN modification screen, refer to this document:
<https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/howtomodifyreport.pdf>.

Example

You would like to create a rate table for drugs predominantly used for extensively AR bacteria in your facility’s Adult Surgical Critical Care Unit (ICU-C – SURGCC) and Pediatric Surgical Ward (PEDIATRIC SURG WARD – AU) during October through December of 2018. You would like to see separate rates for each month during that time period.

After generating datasets, to run a rate table report, click Analysis > Reports > Antimicrobial Use and Resistance Module > Antimicrobial Use Data. After selecting the rate table report you want, in this case, “Rate Table – Drugs predominantly used for extensively AR bacteria (2017 Baseline),” a pop-up box will appear that will allow you to “Run Report,” “Modify Report,” or “Export Data Set.” Select “Modify Report” to customize your report.

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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, choose the “Time Period” tab at the top of the page. In this example, we have limited the report to October through December 2018.

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 screenshot shows the 'Modify "Rate Table - Drugs predominantly used for extensively AR bacteria (2017 Baseline)"' window. At the top, there is a header bar with the report title. Below it, there are four tabs: 'Title/Format', 'Time Period' (active), 'Filters', and 'Display Options'. The 'Time Period' tab contains a 'Time Period:' section with a 'Date Variable' dropdown set to 'Summary Year/Month', a 'Beginning' date field set to '10/2018', and an 'Ending' date field set to '12/2018'. There is a 'Clear Time Period' button. Below the date fields, there is a checkbox labeled 'Enter Date variable/Time period at the time you click the Run button' which is currently unchecked. At the top right of the window, there is a 'Show descriptive variable names (Print List)' checkbox which is checked. To the right of this checkbox, it says 'Analysis Data Set: AU_SAARRates_2017 Type: Rate Table Data Set Generated On: 02/22/2019 21:04:00'. At the bottom right of the window, there are four buttons: 'Run', 'Save...', 'Export...', and 'Close'.

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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 show data for the Adult Surgical Critical Care Unit (ICU-C – SURGCC) and Pediatric Surgical Ward (PEDIURG – PEDIATRIC SURG WARD – AU). Select the variable “Location” from the drop-down menu, set the operator to “in” then select the values “ICU-C - SURGCC” (the Adult Surgical Critical Care Unit) and “PEDIURG – PEDIATRIC SURG WARD – AU” (the Pediatric Surgical Ward) from the two drop-down menus that appear.

Modify "Rate Table - Drugs predominantly used for extensively AR bacteria (2017 Baseline)"

Show descriptive variable names (Print List) Analysis Data Set: AU_SAARRates_2017 Type: Rate Table Data Set Generated On: 02/22/2019 21:04:00

Title/Format Time Period Filters Display Options

Additional Filters: Show Clear

AND OR Add group

AND OR Add rule

Location in ICU-C - SURGCC, PEDIURG - PEDIATRIC SURG WARD - AU Delete

Run Save... Export... Close

Tips: For including only one item in each filter, the “equal” operator can be used instead of the “in” operator. For including all locations of the same type, use the “CDC Location” variable instead of the facility-specific “Location” variable.

The “Display Options” tab allows you to view your rates by month, quarter, half-year, year, or cumulative for the entire time period selected. Summary Year/Month is used in this example to show monthly utilization rates for drugs predominantly used for extensively AR bacteria.

Modify "Rate Table - Drugs predominantly used for extensively AR bacteria (2017 Baseline)"

Show descriptive variable names (Print List) Analysis Data Set: AU_SAARRates_2017 Type: Rate Table Data Set Generated On: 02/22/2019 19:06:00

Title/Format Time Period Filters Display Options

Rate Table Options:

Group by: Summary Year/Month

Run Save... Export... Close



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Final Report

The example rate tables below are the result of the modifications shown in this document. This report aggregates data for all locations by age group (adult and pediatric) into two rate tables that use the days present counts for the denominator. The output below shows rate tables for drugs predominantly used for extensively AR bacteria for October through December of 2018, displayed by month for the adult location (ICU-C – SURGG) and pediatric location (PEDIURG – PEDIATRIC SURG WARD – AU). For each time period, the rate tables display the AU days of therapy for drugs predominantly used for extensively AR bacteria per 1,000 days present and confidence interval, as well as the pooled mean AU rate, p-value, and percentile distributions for the 25th, 50th, 75th, and 90th percentiles based on the 2017 baseline AU referent population. Of note, the rate tables will be aggregated for all locations in that age category (e.g., the first table will be aggregated for all adult locations selected).

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

National Healthcare Safety Network

Rate Table – Antibacterial agents predominantly used for extensively antibiotic resistant bacteria (2017 Baseline)

As of: March 6, 2019 at 7:21 PM

Date Range: AU_SAARRATES_2017 summaryYM 2018M10 to 2018M12

Antibacterial agents predominantly used for extensively antibiotic resistant bacteria used in adult SAAR ICUs, wards, step down units and oncology units

Facility Org ID	Summary Year/Month	SAAR Rate Type 2017 Baseline	Antimicrobial Days	Days Present	Rate per 1000 Days Present	RateDaysPresent95CI	Pooled Mean AU Rate	SAAR p-value	25th Percentile	50th Percentile	75th Percentile	90th Percentile
13860	2018M10	Adult_EARB_2017	42	348	120.69	88.103, 161.597	1.21	0.0000	0.00	0.39	1.12	2.22
13860	2018M11	Adult_EARB_2017	32	379	84.43	58.741, 117.768	1.21	0.0000	0.00	0.39	1.12	2.22
13860	2018M12	Adult_EARB_2017	50	409	122.25	91.710, 159.870	1.21	0.0000	0.00	0.39	1.12	2.22

Includes data for January 2017 and forward.

Data restricted to adult medical, medical-surgical, surgical, step down and general hematology-oncology locations.

Source of aggregate data: 2017 NHSN AU Data

Data contained in this report were last generated on February 22, 2019 at 9:04 PM.

1. In the Adult Surgical Critical Care Unit in November 2018, use of drugs predominantly used for extensively AR bacteria was lower than in October and December. The change in rate does not necessarily indicate antimicrobial misuse but may warrant further investigation for validation purposes.
2. The national pooled adult mean AU rate using the 2017 baseline adult SAAR referent population was 1.21 days of therapy per 1,000 days present. The p-value indicates that your hospital's AU rates were significantly different from the pooled adult AU rate of the referent population. National use of antimicrobials predominantly used for extensively AR bacteria is low and a p-value less than 0.05 does not necessarily indicate antimicrobial misuse but may warrant further investigation. You can also compare your adult AU rates to the pooled rate distribution from referent population, which ranged from 0.00 days of therapy per 1,000 days present (25th percentile) to 2.22 days of therapy per 1,000 days present (90th percentile).



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National Healthcare Safety Network

Rate Table - Antibacterial agents predominantly used for extensively antibiotic resistant bacteria (2017 Baseline)

As of: March 6, 2019 at 7:51 PM

Date Range: AU_SAARRATES_2017 summaryYM 2018M10 to 2018M12

Antibacterial agents predominantly used for extensively antibiotic resistant bacteria used in pediatric SAAR ICUs and wards

Facility Org ID	Summary Year/Month	SAAR Rate Type 2017 Baseline	Antimicrobial Days	Days Present	Rate per 1000 Days Present	RateDaysPresent95CI	4 Pooled Mean AU Rate	SAAR p-value	25th Percentile	50th Percentile	75th Percentile	90th Percentile
13860	2018M10	Ped_EARB_2017	16	401	39.90	23.619, 63.413	0.65	0.0000	0.00	0.00	0.00	0.29
13860	2018M11	Ped_EARB_2017	26	370	70.27	46.881, 101.492	0.65	0.0000	0.00	0.00	0.00	0.29
13860	2018M12	Ped_EARB_2017	30	379	79.16	54.384, 111.574	0.65	0.0000	0.00	0.00	0.00	0.29

Includes data for January 2017 and forward.

Data restricted to pediatric medical and medical-surgical ICU, medical, medical-surgical and surgical ward locations.

Source of aggregate data: 2017 NHSN AU Data

Data contained in this report were last generated on February 22, 2019 at 9:04 PM.

- In the Pediatric Surgical Ward in October 2018, use of drugs predominantly used for extensively AR bacteria was lower than in November and December.
- The national pooled pediatric mean AU rate using the 2017 baseline pediatric SAAR referent population was 0.65 days of therapy per 1,000 days present. The p-value indicates that your hospital's AU rates were significantly different from the pooled pediatric AU rate of the referent population. You can also compare your pediatric AU rates to the pooled rate distribution from referent population, which ranged from 0.00 days of therapy per 1,000 days present (25th percentile) to 0.29 days of therapy per 1,000 days present (90th percentile).

Additional Resources

NHSN AUR Module Protocol: <http://www.cdc.gov/nhsn/pdfs/pscmanual/11pscaurcurrent.pdf>

Introduction to NHSN Analysis: <https://www.cdc.gov/nhsn/pdfs/training/2018/intro-to-analysis-508.pdf>

How to Export Data from NHSN: <http://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/exportdata.pdf>

Surveillance for Antimicrobial Use Option: <https://www.cdc.gov/nhsn/acute-care-hospital/aur/>