Standardized Antimicrobial Administration Ratio (SAAR) Baseline Rate Tables

Description

NHSN provides two standardized antimicrobial administration ratio (SAAR) baseline rate tables: "Rate Table - Drugs Predominantly Used for Extensively AR Bacteria (2017 Baseline)" and "Rate Table - Select Antimicrobial Groupings for Neonatal Units (2018 Baseline)". These special rate tables display a facility's calculated rate of antimicrobial use using SAAR antimicrobial groupings and referent data.

The "Rate Table - 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 SAAR intensive care units and wards, and adult step-down units and general hematology/oncology units. This rate table report uses the 2017 SAAR baseline and facilities can generate it for January 2017 data forward. The report generates two tables: one rate table for adult locations and one for pediatric locations.

The "Rate Table - Select Antimicrobial Groupings for Neonatal Units (2018 Baseline)" rate table report generates rates for ampicillin, aminoglycosides, and fluconazole used in Level I and Level II neonatal units. This rate table report uses the 2018 neonatal SAAR baseline and facilities can generate it for January 2018 data forward. The report generates one rate table.

Table 5 of the National Healthcare Safety Network (NHSN) Antimicrobial Use and Resistance (AUR) Module Protocol (see Additional Resources) lists eligible adult, pediatric, and neonatal SAAR location types. Appendix E of the NHSN AUR Module Protocol lists the antimicrobial groupings for SAARs and rate tables.

For more general information on the NHSN AU Option Rate Tables, refer to their corresponding QRGs under Analysis Resources: https://www.cdc.gov/nhsn/acute-care-hospital/aur/.
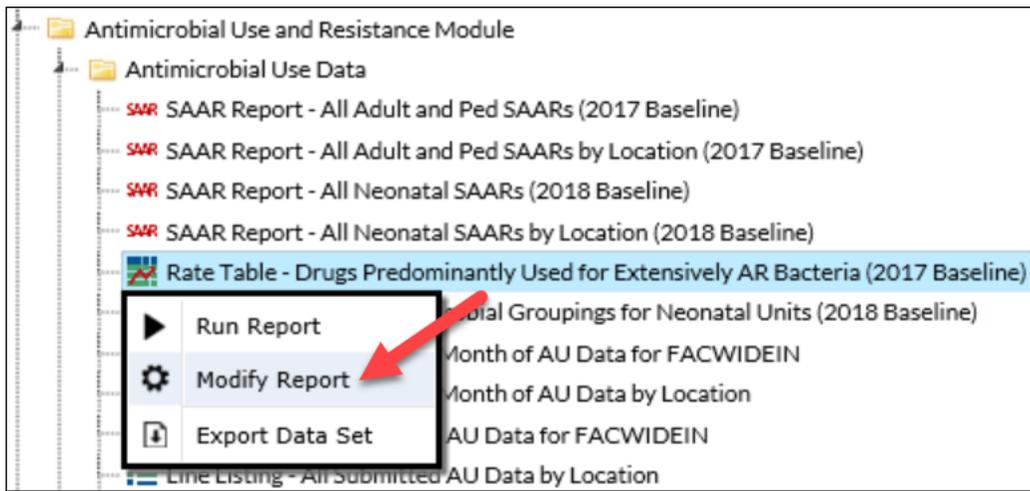
Example

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 (PEDSURG – 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 with the options "Run Report," "Modify Report," and "Export Data Set." Select "Modify Report" to customize your report.

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.

Modifying the Output

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 will limit 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 "Filters" tab allows you to further filter the data 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 (PEDSURG – PEDIATRIC SURG WARD – AU). Select the variable "Location" from the drop-down menu, set the operator to "in", and then select the values "ICU-C - SURGCC" (the Adult Surgical Critical Care Unit) and "PEDSURG – PEDIATRIC SURG WARD – AU" (the Pediatric Surgical Ward) from the two drop-down menus that appear.

Tips: For including only one item in each filter, use the "equal" operator 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. In this example, we will use Summary Year/Month to show monthly utilization rates for drugs predominantly used for extensively AR bacteria.

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 (PEDSURG – 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 aggregate data for all locations in that age category (for example, NHSN aggregates the first table for all adult locations selected).

The output for the "Rate Table - Select Antimicrobial Groupings for Neonatal Units (2018 Baseline)" rate table report will be similar, except that this report only outputs one rate table. Users can interpret the results from this report similarly to the example below.

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).

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	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.

3. In the Pediatric Surgical Ward in October 2018, use of drugs predominantly used for extensively AR bacteria was lower than in November and December.
4. 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

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

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

NHSN Analysis Training: https://www.cdc.gov/nhsn/training/analysis/index.html

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