

# AU Bar Chart – Select Drugs

## Description

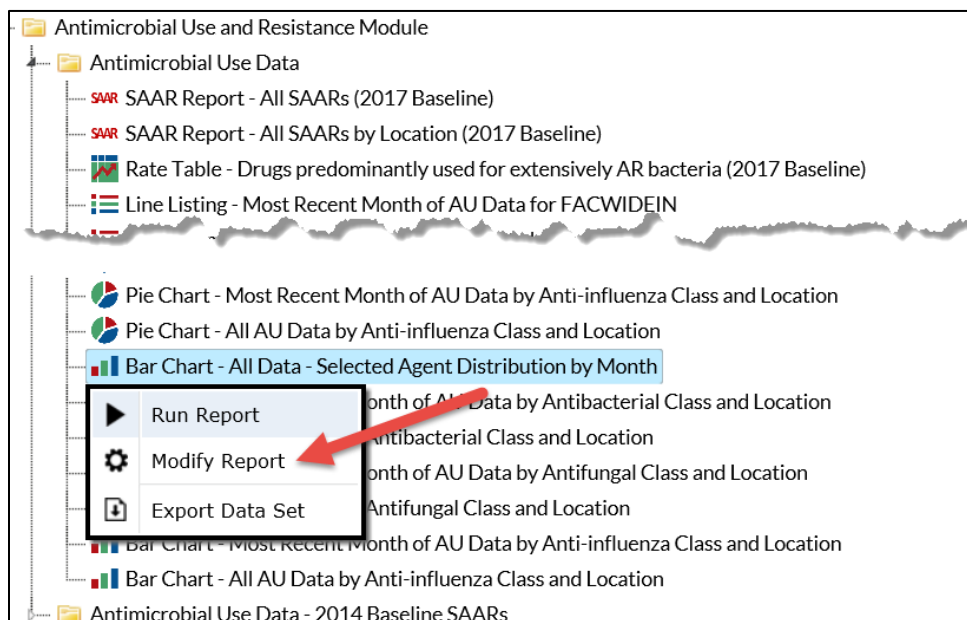
A bar chart is a graphical representation of data where the length or height of the bars represents counts of records meeting the criteria. Bar charts can only be produced as HTML output and therefore the results will appear in a pop-up window in your browser. This report includes a display of antimicrobial use data by month and selected agent distribution by location.

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

## Example (Using: Bar Chart – All Data - Selected Agent Distribution by Month)

You would like to create a bar chart to graphically display the four antifungals that are predominantly used for the invasive candidiasis Standardized Antimicrobial Administration Ratio (SAAR) to see their usage by location and month in a stacked vertical chart. You would like to see vertical bars representing each of the first six months in 2018 specifically for the medical ward location.

After generating datasets, to run a bar chart report, click Analysis > Reports > Antimicrobial Use and Resistance Module > Antimicrobial Use Data > Bar Chart – All Data – Selected Agent Distribution by Month. After selecting this bar chart, a pop-up box will appear that will allow you to “Run Report,” “Modify Report,” and “Export Data Set.” Select “Modify Report” to customize your report.

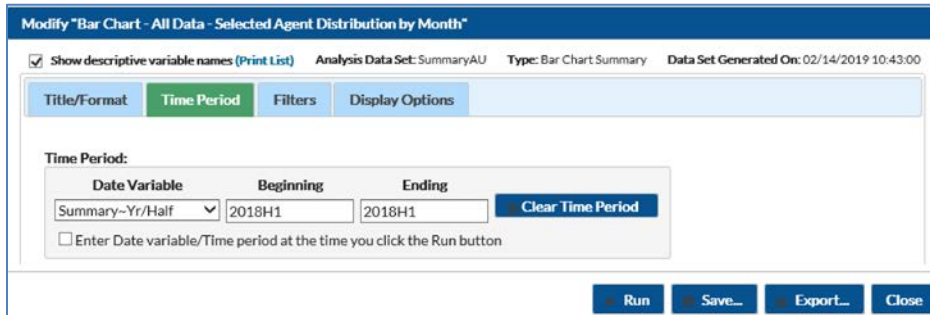


## Modifying the Report

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.

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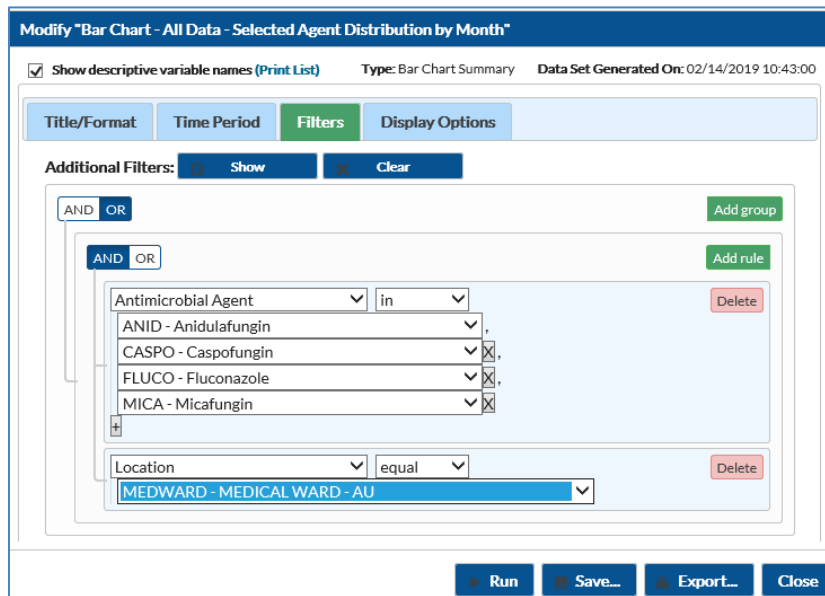
To filter the data by time period, choose the “Time Period” tab at the top of the page. In this example, we have limited the report to the first half of 2018 (Summary~Yr/Half).



**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 drugs in the antifungal agents predominantly used for invasive candidiasis SAAR category in a select location; here medical ward. By default, this bar chart automatically populates the filter for the drugs used in the broad-spectrum agents predominately used for hospital-onset/multi-drug resistant infections 2014 baseline SAAR.

We will remove the default drugs by selecting the “Delete” button to the right of the filter. Next, select “Add Rule” and then select the variable “Antimicrobial Agent” from the drop-down menu, set the operator to “in” and then select the values “ANIDULAFUNGIN”, “CASPOFUNGIN”, “FLUCONAZOLE”, and “MICA FUNGIN”. Next, select “Add Rule” and then select the variable “Location” from the drop-down menu, set the operator to “equal” then select the value “MEDWARD - MEDICAL WARD - AU”.



**Tip:** To limit antimicrobial agents to those used to calculate a specific SAAR, select them according to Appendix E – Antimicrobial groupings for SAAR & Rate Table calculations in the [AUR Module Protocol](#).

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The “Display Options” tab allows you to display the chart variable, stratification variable, the page-by variable, and the numeric variable to be charted for the entire time period selected. We will use the default selections.

- The “Chart Variable” is the variable being graphed on the bar chart (i.e., the x-axis); in this case, the variable is “Summary Year/Month”.
- Different colored bars will be stacked on each bar to represent the different values of the “Stratification Variable” if a stratification variable is chosen; here by “drugDescription”.
- Separate bar charts will be created for each value of the “Page by” variable; here by “NHSN Facility ID - Location”.
- The “Select Numeric Variable to Chart,” here “RateDaysPresent”, will determine the length or height of the bars.
- You can select 2D or 3D bars, placed either horizontally or vertically on the chart.
- You can also decide to place descriptive statistics (i.e., percent and value) either inside or outside the bars. We recommend placing the value or percent inside the bar chart for readability of the chart as a whole.

The screenshot shows the 'Modify Bar Chart - All Data - Selected Agent Distribution by Month' interface. The 'Display Options' tab is active. The 'Bar Chart Options' section includes the following settings:

Chart Variable	Stratification Variable	Page by	Select Numeric Variable to Chart
Summary Year/Month	drugDescription	NHSN Facility ID - Location	RateDaysPresent

Orientation of Bars: 2D Vertical

Placement of the Percent: None

Placement of the Value: Inside

Buttons: Run, Save..., Export..., Close

## Final Report

The example bar chart below is the result of the modifications shown in this document. This example displays antifungal drugs predominately used for invasive candidiasis by location and month for the first half of 2018.

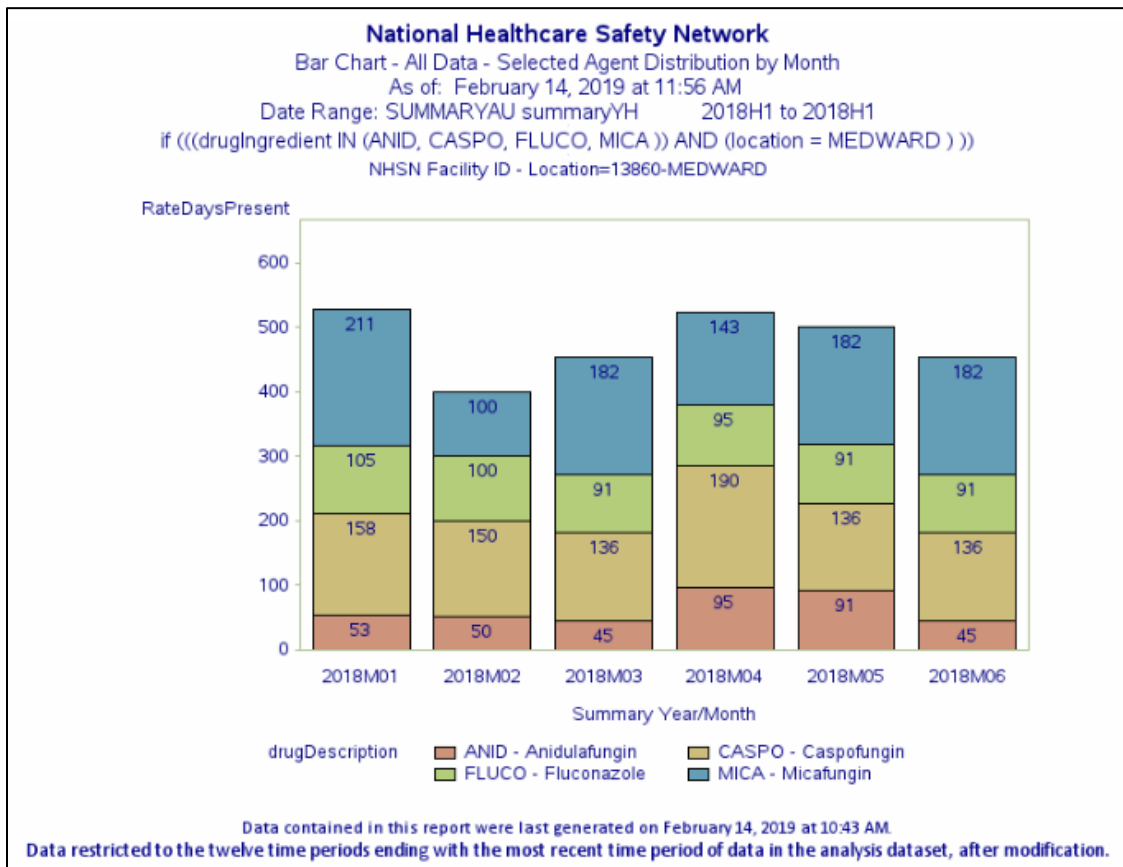
- The x-axis is Summary Year/Month. One bar is displayed for each month. The bar chart will not display months without AU data.
- The y-axis (RateDaysPresent) is the antimicrobial use rate for each drug and is represented by the height of the bars.
  - We choose to stack each bar by the antimicrobial use rate for each of the four Antifungal agents for easier comparison to the overall antimicrobial use rate within and across months.
- The taller the bar, the greater the antimicrobial use rate for the selected drug(s) in that month. In this example, in the MEDWARD, the overall use of the antifungal agents predominantly used for invasive candidiasis SAAR in February 2018 was less than the use in this location in January 2018.
  - Also, you can see specific drug use per month by color. The micafungin rate of 211 per 1000 days present for January 2018 is the highest when compared to the other three drugs that month.



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- This bar chart will not display drugs that were not used. It will only list drugs that were administered. If a drug is not in the drugDescription legend, it was not administered in that location and time period.

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



## Additional Resources

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>

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

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

