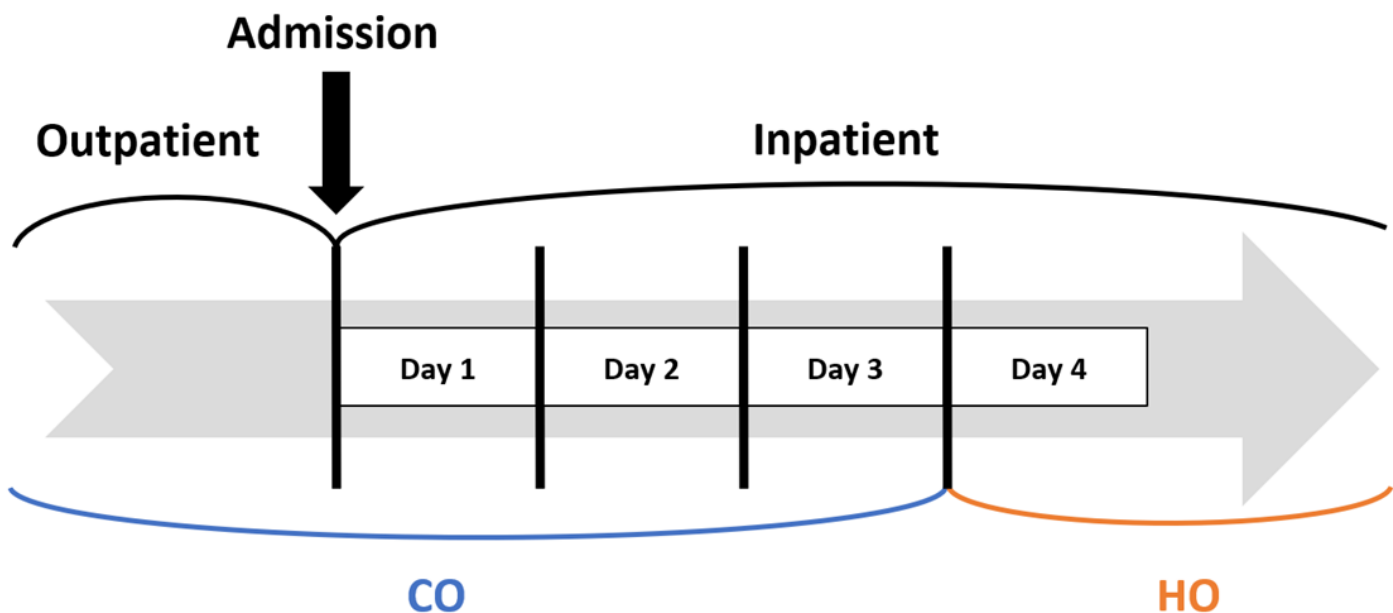


Outpatient Positive Culture Prevalence by Organism Rate Table

Description

The Outpatient Positive Culture Prevalence by Organism Rate Table is one of six incidence and prevalence reports for the Antimicrobial Resistance (AR) Option. This report includes a set of tables that display the calculated prevalence rates for community-onset AR Events reported from all outpatient locations by organism or organism group (also called pathogen or pathogen group), regardless of susceptibility results. NHSN classifies AR Events as hospital-onset (HO) or community-onset (CO) based on the specimen collection date and date of admission (see screenshot below). Facility admission date is considered Day 1. If the specimen was collected in an outpatient location or in an inpatient location on Days 1, 2, or 3, the AR Event is classified as CO. If the specimen was collected in an inpatient location on Day 4 or after, the AR Event is classified as HO. The list of organisms that are eligible for reporting to the AR Option can be found in Appendix F of the AUR Module Protocol: <https://www.cdc.gov/nhsn/pdfs/pscmanual/11pscaurcurrent.pdf>.



NHSN calculates the prevalence rate per 10,000 encounters for each organism or organism group using the following formula:

$$\text{Outpatient Prevalence rate} = \frac{\# \text{ Community-onset AR Events from outpatient locations only}}{\# \text{ Encounters}} \times 10,000$$

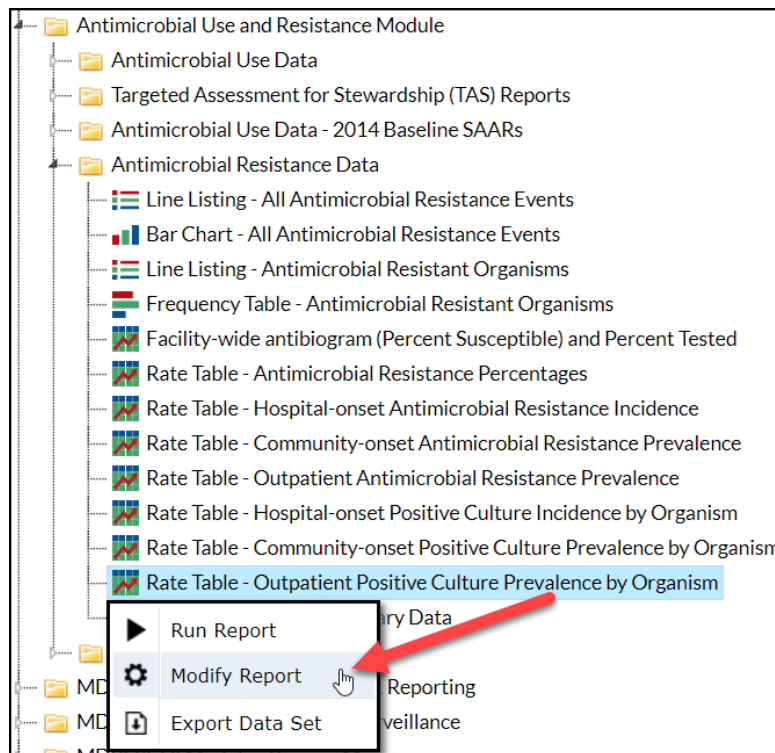
The default settings for the Outpatient Positive Culture Prevalence by Organism Rate Table produce a report by quarter, but users can make modifications to display the data by half-year, year, or cumulative time periods. Users do not have the option to run the report by month. Additionally, NHSN includes rates by individual specimen source (blood, cerebrospinal fluid [CSF], lower respiratory specimen [LRS], and urine) and a combined rate for all specimen sources in the report by default, for a total of five rates per table. The default option will include 10 rate tables, one for each organism or organism group.



Example

Suppose you want to review the prevalence rates for community-onset Enterobacteriales for 2020-2022 by year for your facility's outpatient locations.

After generating data sets, to run the report, click Analysis > Reports > Antimicrobial Use and Resistance Module > Antimicrobial Resistance Data. After selecting the report, "Rate Table – Outpatient Positive Culture Prevalence by Organism" in this case, 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.



Modifying the Report

For a general, step-by-step explanation of the NHSN modification screen, please refer to this document:

<https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/howtomodifyreport.pdf>.

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. To display data for 2020-2022, select Summary~Yr with a beginning date of 2020 and an ending date of 2022.

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).

Modify "Rate Table - Outpatient Positive Culture Prevalence by Organism"

Show descriptive variable names ([Print List](#)) Analysis Data Set: AntibigramRates_OP_ORG Type: Rate Table Last Generated: [June 6, 2023 3:50 PM](#)

Title/Format **Time Period** Filters Display Options

Time Period:

Date Variable	Beginning	Ending
Summary~Yr	2020	2022

Enter Date variable/Time period at the time you click the Run button

▶ Run 📁 Save... 📄 Export... Close

The "Display Options" tab allows you to pick how you'd like the tables displayed in your final report. For this example, we'd like the tables to display by year, so select Summary~Yr as the Group by value.

Modify "Rate Table - Outpatient Positive Culture Prevalence by Organism"

Show descriptive variable names ([Print List](#)) Analysis Data Set: AntibigramRates_OP_ORG Type: Rate Table Last Generated: [June 6, 2023 3:50 PM](#)

Title/Format Time Period Filters **Display Options**

Rate Table Options:

Group by: Summary~Yr

▶ Run 📁 Save... 📄 Export... Close

Final Report

The example rate table shown below is the result of the modifications shown in this document. The report will display 10 rate tables; scroll down to the Enterobacterales_expanded table.

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

National Healthcare Safety Network

Rate Table for Prevalence of Outpatient Organism-specific Events (per 10,000 encounters) 1

As of: June 7, 2023 at 5:54 PM

Date Range: ANTILOGRAMRATES_OP_ORG summaryYr 2020 to 2022

2 Facility Org ID=13860 pathogenGroup=Enterobacterales_expanded

Pathogen	3 Summary Yr	4 Encounters	Blood Count	Blood Prevalence Rate	CSF Count	CSF Prevalence Rate	LRS Count	LRS Prevalence Rate	Urine Count	Urine Prevalence Rate	5 All Specimen Type Count	6 All Specimen Type Prevalence Rate
Enterobacterales_expanded	2020	.	2	.	2	.	0	.	1	.	5	.
Enterobacterales_expanded	2021	1679	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Enterobacterales_expanded	2022	4055	2	4.93	0	0.00	0	0.00	2	4.93	4	9.86

7 1. Prevalence: number of community-onset AR Events (events from outpatient locations only) / encounters * 10,000.

2. Includes *Citrobacter amalonaticus*, *Citrobacter freundii*, *Citrobacter koseri*, *Enterobacter spp.*, *E. coli*, *Klebsiella aerogenes*, *Klebsiella oxytoca*, *Klebsiella pneumoniae*, *Morganella morganii*, *Proteus mirabilis*, *Proteus penneri*, *Proteus vulgaris*, and *Serratia marcescens*.

- The title of the report specifies which rates are being displayed. Here, we are looking at the prevalence of outpatient organism-specific events (per 10,000 encounters).
- NHSN prints out the Facility Organization ID and the organism or organism group being displayed in each table. In this example, we are looking at the rates for community-onset Enterobacterales (expanded). The first column in the table (Pathogen) also displays the organism or organism group.
- The second column in the table specifies the time period. In the modifications screen, we filtered the time period to only include data from 2020 through 2022, and we specified the report to group the data by year. Each row in the table represents one year starting with 2020 and ending with 2022.
- The third column in the table specifies the denominator of the rates. For the AR outpatient prevalence rates, the denominator is encounters. In this example, no encounters were reported for any outpatient location in 2020, so there is a '.' that indicates encounters were missing for the year. There were 1,679 encounters to the facility's outpatient locations in 2021 and 4,055 encounters in 2022.
- Each table will include the number of community-onset AR Events isolated from each of the four specimen sources (blood, CSF, LRS, and urine) as well as a combined count for all specimen sources. In 2020, there were 2 Enterobacterales isolated from blood, 2 from CSF, 0 from LRS, and 1 from urine for a total of 5 Enterobacterales reported to the AR Option. There were no Enterobacterales reported in 2021. In 2022, there were 2 Enterobacterales isolated from blood, 0 from CSF, 0 from LRS, and 2 from urine for a total of 4 Enterobacterales reported to the AR Option.
- Each table will include rates for each of the four specimen sources (blood, CSF, LRS, and urine) as well as a combined rate for all specimen sources. All of the rates for 2020 are suppressed because no denominator data (encounters) were reported for the year. All of the rates for 2021 were 0.00 because encounters were reported for the year, but no Enterobacterales events were reported. In 2022, the rate of community-onset Enterobacterales isolated from blood was 4.93 events per 10,000 encounters. The rate for CSF and lower respiratory were both 0.00 since no events were isolated from CSF or lower respiratory. The rate for urine was 4.93 events per 10,000 encounters. The overall prevalence rate of community-onset Enterobacterales from all specimen sources in 2022 was 9.86 events per 10,000 encounters.
- In the footnotes, you will find the formula for calculating prevalence as well as which organisms are included in the group if there are more than one species. This example includes all *Citrobacter amalonaticus*, *Citrobacter freundii*, *Citrobacter koseri*, *Enterobacter spp.*, *E. coli*, *Klebsiella aerogenes*, *Klebsiella oxytoca*, *Klebsiella pneumoniae*, *Morganella morganii*, *Proteus mirabilis*, *Proteus penneri*, *Proteus vulgaris*, and *Serratia marcescens* reported to the NHSN AR Option. Prevalence = number of community-onset AR Events from outpatient locations only / encounters x 10,000.

Note: If denominator data (*i.e.*, patient days, admissions, encounters) are not reported for a month, but AR Events were reported for that month, then the AR Events for that month will be excluded from the counts and rates for the rollup (*e.g.*, quarter, half-year, year, cumulative). If denominator data (*i.e.*, patient days, admissions, encounters) are not reported for all three months in a quarter, all six months in a half-year, all 12 months in a year, or at all (cumulative), but AR Events were reported for that time period, then the AR Events will be included in the counts, but both the denominator and rates will be suppressed/appear missing ('.').

Additional Resources

AR Option Incidence and Prevalence Reports Session from the 2023 NHSN Annual Training:

Video recording: <https://www.youtube.com/watch?v=1seKabgmCIA>

Slides: <https://www.cdc.gov/nhsn/pdfs/training/2023/AR-Option-Incidence-Prevalence.pdf>

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

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

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

NHSN Analysis Quick Reference Guides: <http://www.cdc.gov/nhsn/PS-Analysis-resources/reference-guides.html>