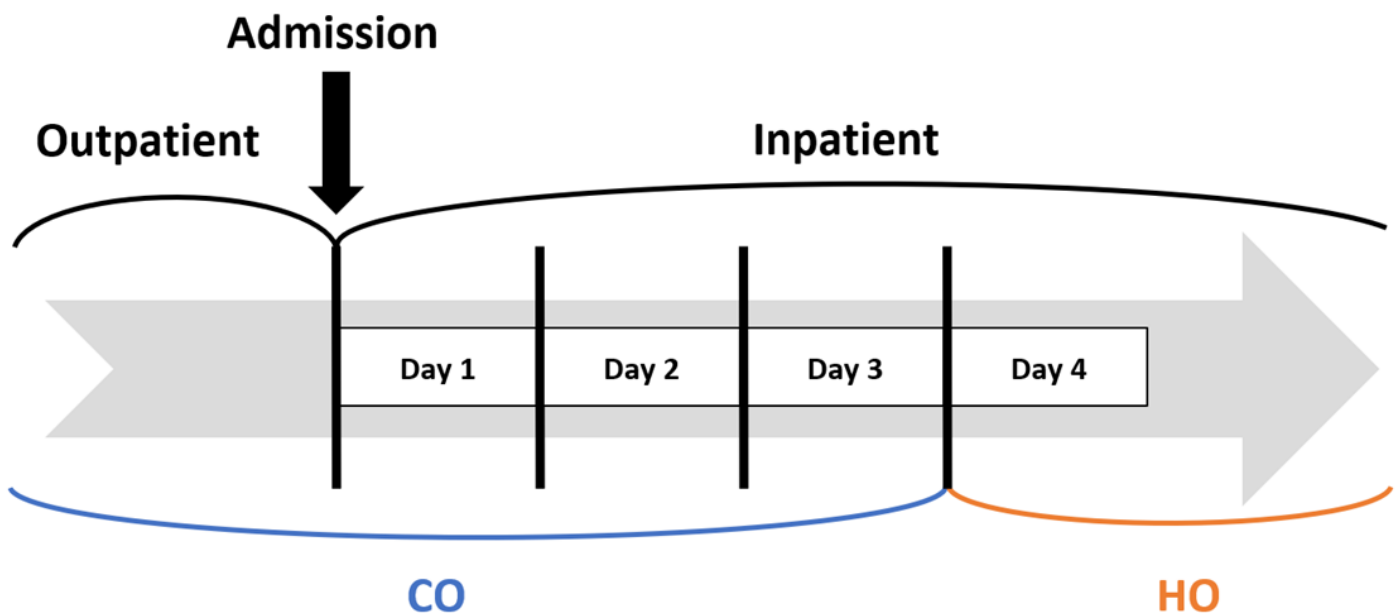


Hospital-onset Positive Culture Incidence by Organism Rate Table

Description

The Hospital-onset Positive Culture Incidence 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 incidence rates for hospital-onset AR Events reported from all inpatient 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 incidence rate per 10,000 patient days for each organism or organism group using the following formula:

$$\text{Incidence rate} = \frac{\# \text{ Hospital-onset AR Events}}{\# \text{ Patient Days}} \times 10,000$$

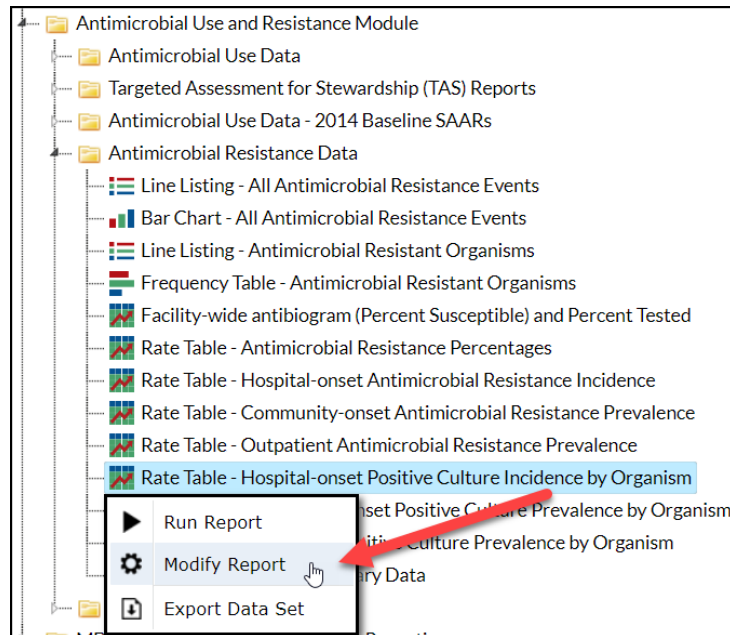
The default settings for the Hospital-onset Positive Culture Incidence by Organism Rate Table produce a report by quarter, but users can make modifications to display the data by half-year, year, or cumulative time periods. Users do not have the option to run the report by month. Additionally, NHSN includes 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 incidence rates for hospital-onset *Acinetobacter* spp. for 2021-2022 by quarter for your facility.

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 – Hospital-onset Positive Culture Incidence 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 2021-2022, select Summary~Yr with a beginning date of 2021 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 - Hospital-onset Positive Culture Incidence by Organism"

Show descriptive variable names ([Print List](#)) Analysis Data Set: AntibigramRates_HO_ORG Type: Rate Table Last Generated: [May 17, 2023 9:50 AM](#)

[Title/Format](#) **[Time Period](#)** [Filters](#) [Display Options](#)

Time Period:

Date Variable	Beginning	Ending
Summary~Yr	2021	2022

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

[Clear Time Period](#)

[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 quarter, which is the default option. Make sure Summary~Yr/Qtr is selected as the Group by value.

Modify "Rate Table - Hospital-onset Positive Culture Incidence by Organism"

Show descriptive variable names ([Print List](#)) Analysis Data Set: AntibigramRates_HO_ORG Type: Rate Table Last Generated: [May 17, 2023 9:50 AM](#)

[Title/Format](#) [Time Period](#) [Filters](#) **[Display Options](#)**

Rate Table Options:

Group by: Summary~Yr/Qtr

[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 *Acinetobacter* table.

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

National Healthcare Safety Network

Rate Table for Incidence of Hospital-onset Organism-specific Events (per 10,000 patient days) ¹

As of: May 31, 2023 at 8:45 PM

Date Range: ANTIBIOGRAMRATES_HO_ORG summaryYr 2021 to 2022

² Facility Org ID=10009 pathogenGroup=Acinetobacter

Pathogen	Summary Yr/Qtr ³	Patient Days ⁴	Blood Count	Blood Incidence Rate	CSF Count	CSF Incidence Rate	LRS Count	LRS Incidence Rate	Urine Count	Urine Incidence Rate	All Specimen Type Count ⁵	All Specimen Type Incidence Rate ⁶
Acinetobacter	2021Q1	13535	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Acinetobacter	2021Q2	5035	0	0.00	0	0.00	0	0.00	1	1.99	1	1.99
Acinetobacter	2021Q3	7750	0	0.00	0	0.00	0	0.00	1	1.29	1	1.29
Acinetobacter	2021Q4	8951	2	2.23	0	0.00	1	1.12	1	1.12	4	4.47
Acinetobacter	2022Q1	2750	0	0.00	0	0.00	1	3.64	0	0.00	1	3.64
Acinetobacter	2022Q2	8211	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Acinetobacter	2022Q3	5589	8	14.31	1	1.79	8	14.31	0	0.00	17	30.42
Acinetobacter	2022Q4	6750	4	5.93	3	4.44	17	25.19	4	5.93	28	41.48

⁷ 1. Incidence: number of hospital-onset AR Events / patient days * 10,000.

2. Includes all *Acinetobacter* species reported to the NHSN AR Option.

- The title of the report specifies which rates are being displayed. Here, we are looking at the incidence of hospital-onset organism-specific events (per 10,000 patient days).
- 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 hospital-onset *Acinetobacter* spp. 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 2021 and 2022, and we specified the report to group the data by quarter. Each row in the table represents one quarter starting with 2021Q1 and ending with 2022Q4.
- The third column in the table specifies the denominator of the rates. For the AR incidence rates, the denominator is patient days. In this example as shown in the purple box, patients contributed 6,750 patient days for all facility inpatient locations in 2022Q4.
- Each table will include the number of hospital-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 2022Q4, there were 4 *Acinetobacter* spp. isolated from blood, 3 from CSF, 17 from LRS, and 4 from urine for a total of 28 *Acinetobacter* spp. 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. In 2022Q4, the rate of hospital-onset *Acinetobacter* spp. isolated from blood was 5.93 events per 10,000 patient days. The rate for CSF was 4.44 events per 10,000 patient days. The rate for lower respiratory was 25.19 events per 10,000 patient days. The rate for urine was 5.93 events per 10,000 patient days. The overall incidence rate of hospital-onset *Acinetobacter* spp. from all specimen sources in 2022Q4 was 41.48 events per 10,000 patient days.
- In the footnotes, you will find the formula for calculating incidence as well as which organisms are included in the group if there are more than one species. This example includes all *Acinetobacter* spp. reported to the NHSN AR Option. Incidence = number of hospital-onset AR Events / patient days 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>