



Unpacking Your HAI Pathogen and Antimicrobial Resistance Toolkit

Unusual Susceptibility Reports & Alerts, the HAI Pathogen Dashboard, and the Antimicrobial Resistance & Patient Safety Portal

Katie Brousseau, MPH

Ben O'Connell, MPH

NHSN Acute Care Analytics Team

March 2024

Objectives

At the end of the presentation, participants will be able to:

- Use a variety of tools to view and understand pathogen and antimicrobial resistance (AR) data reported to NHSN as part of healthcare-associated infection (HAI) reporting:
 - Unusual Susceptibility Reports Alerts and Reports
 - HAI Pathogen Dashboard
 - Antimicrobial Resistance & Patient Safety Portal (AR&PSP)
- Choose the tool(s) that contains the HAI pathogen and AR data pertinent to their goals or questions
- Identify and respond to antimicrobial-resistant pathogens reported by their facilities in real time
- Interpret HAI-AR data to aid future infection prevention efforts

Unusual Susceptibility Profile (USP) Alerts

Starting With a Poll

How familiar are you with unusual susceptibility profiles (USPs) in the NHSN application?

A) I regularly utilize and monitor USP alerts and/or reports

B) I have heard of USPs, but I don't routinely engage with them

C) I have never heard of USPs

What are USPs?

Unusual Susceptibility Profiles (USPs)

- A list of 12 antimicrobial resistance phenotypes identified and defined by CDC that are important to public health and infection control
 - Example: Vancomycin-resistant *Staphylococcus aureus* (VRSA)
 - Clinically relevant, highly drug resistant pathogens
 - Objective: to ensure NHSN facility user is aware that they have a patient with this highly drug-resistant pathogen
 - Applies to in-plan data only

All Unusual Susceptibility Profiles

- Roughly 2,000 HAI pathogens with a USP reported to NHSN each year⁺
 - About 2% of HAI events
 - Carbapenem-resistant *P. aeruginosa* is consistently the most common

- Each USP is only associated with select pathogen(s). This varies between USPs.
 - Complete list of pathogen species that fall under each profile is not included in this table

Unusual Susceptibility Profiles	Profile Code
Carbapenem-resistant Enterobacteriaceae	CRE
Highly Drug-Resistant Enterobacteriaceae	HDR_E
Colistin/Polymyxin B-resistant <i>Pseudomonas aeruginosa</i>	PR_PA
Carbapenem-intermediate or -resistant <i>P. aeruginosa</i>	CR_PA
Highly Drug-Resistant <i>P. aeruginosa</i>	HDR_PA
Colistin/Polymyxin B-resistant <i>Acinetobacter baumannii</i>	PR_ACBA
Carbapenem-intermediate or -resistant <i>A. baumannii</i>	CR_ACBA
Highly Drug-Resistant <i>A. baumannii</i>	HDR_ACBA
Daptomycin non-susceptible and Linezolid-resistant <i>Enterococcus</i> spp.	HDR_ENTSP
Vancomycin-resistant <i>Staphylococcus aureus</i> (VRSA)	VR_SA
Daptomycin non-susceptible and Linezolid-resistant and Vancomycin-intermediate <i>S. aureus</i>	HDR_SA
Vancomycin-resistant <i>Staphylococcus</i> , coagulase negative (VRSE)	VR_CSN

Triggering a USP Alert

- Meets criteria for Colistin/ Polymyxin B-resistant *Pseudomonas aeruginosa*
- Users are immediately notified when they save an HAI record with a pathogen meeting USP criteria

Pathogens

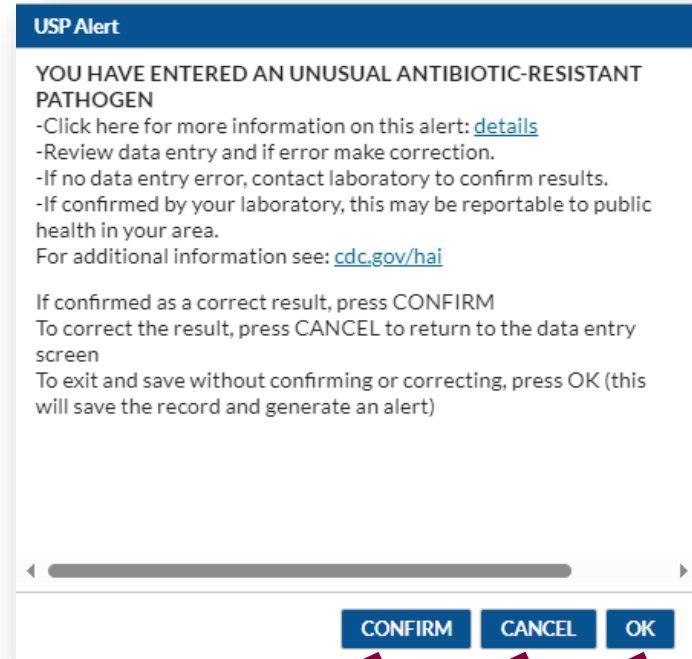
Pathogen 1: Pseudomonas aeruginosa - PA 12 drugs required

> <u>AMK</u> <input checked="" type="radio"/> S <input type="radio"/> R <input type="radio"/> I <input type="radio"/> N	> <u>AZI</u> <input checked="" type="radio"/> S <input type="radio"/> R <input type="radio"/> I <input type="radio"/> N	> <u>CEFEP</u> <input checked="" type="radio"/> S <input type="radio"/> R <input type="radio"/> I <input type="radio"/> N	> <u>CEFTAVI</u> <input checked="" type="radio"/> S <input type="radio"/> R <input type="radio"/> N	> <u>CEFTAZ</u> <input checked="" type="radio"/> S <input type="radio"/> R <input type="radio"/> I <input type="radio"/> N
> <u>CEFTOTAZ</u> <input checked="" type="radio"/> S <input type="radio"/> R <input type="radio"/> I <input type="radio"/> N	> <u>CIPRO</u> <input checked="" type="radio"/> S <input type="radio"/> R <input type="radio"/> I <input type="radio"/> N	<u>LEVO</u> <input type="radio"/> S <input type="radio"/> R <input type="radio"/> I <input type="radio"/> N	> <u>COL</u> <u>PB</u> <input type="radio"/> S <input checked="" type="radio"/> R <input type="radio"/> I <input type="radio"/> N	<input type="radio"/> S <input type="radio"/> R <input type="radio"/> I <input type="radio"/> N
> <u>DORI</u> <input checked="" type="radio"/> S <input type="radio"/> R <input type="radio"/> I <input type="radio"/> N	<u>IMI</u> <input type="radio"/> S <input type="radio"/> R <input type="radio"/> I <input type="radio"/> N	<u>MERO</u> <input type="radio"/> S <input type="radio"/> R <input type="radio"/> I <input type="radio"/> N	> <u>GENT</u> <input type="radio"/> S <input checked="" type="radio"/> R <input type="radio"/> I <input type="radio"/> N	> <u>PIPTAZ</u> <input checked="" type="radio"/> S <input type="radio"/> R <input type="radio"/> I <input type="radio"/> N
> <u>TOBRA</u> <input type="radio"/> S <input checked="" type="radio"/> R <input type="radio"/> I <input type="radio"/> N				

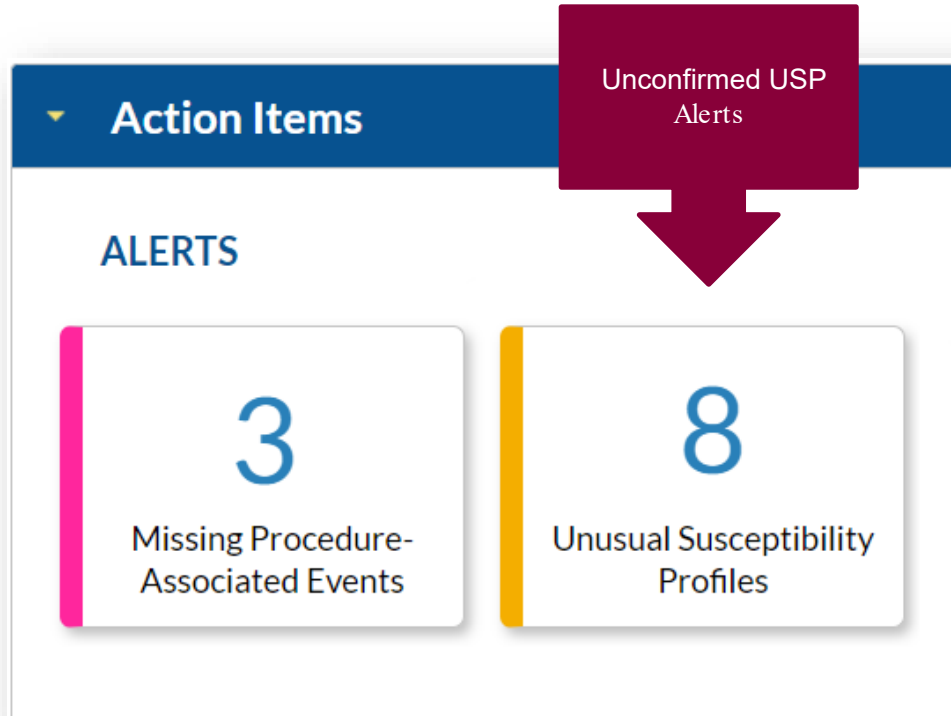
USP Alert Notice

Appears after saving an event

- Confirm
 - Completes data entry
- Cancel
 - Closes popup, continue editing
- OK
 - Acknowledges popup, creates alert



Facility View of an Unconfirmed USP Alert



Generating USP Reports

- Dataset generation is recommended before NHSN analytic work

Generate Data Sets (Patient Safety)

Reporting Data Sets

Include data for the following time period:

Beginning: 01/2019 | Ending: 12/2024 | Clear Time Period

Generate Reporting Data Sets

Last Generated: February 13, 2024 4:12 PM to include data beginning 01/2019 and ending 12/2024

NHSN Home

- Alerts
- Dashboard
- Reporting Plan
- Patient
- Event
- Procedure
- Summary Data
- COVID-19
- Import/Export
- Surveys
- Analysis**
- Users
- Facility
- Group
- Tools
- Logs
- Dynamic Forms
- Logout

NHSN Patient Safety Component Home

- TAP Strategy Dashboard
- TAS Dashboard
- HAI Pathogen Dashboard
- Hospital Bed Capacity and Occupancy Dash
- Action Items**

COMPLETE THESE ITEMS

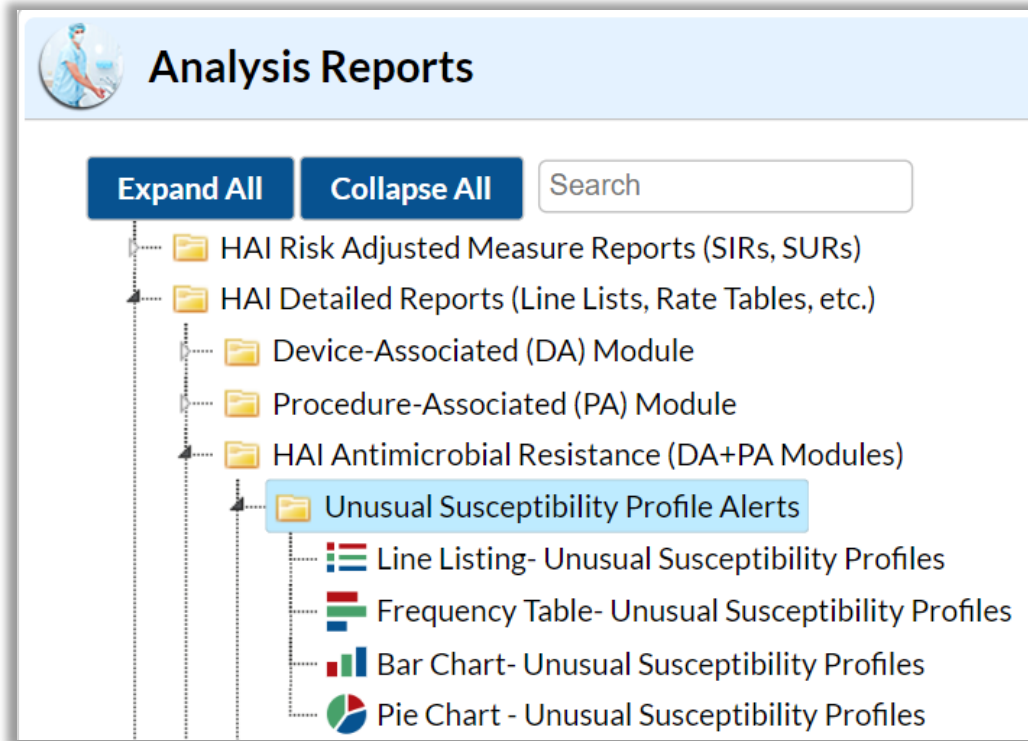
- Generate Data Sets
- Reports
- Statistics Calculator

Mini-IRF Survey Required 2023

ALERTS

- 8 Incomplete Events
- 133 Missing Events

Generating USP Reports



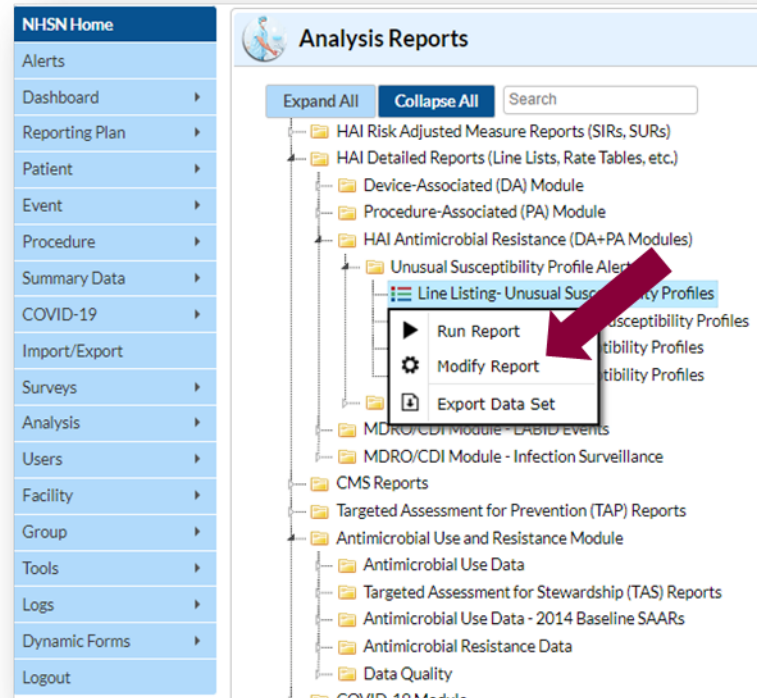
The screenshot displays the 'Analysis Reports' section of the NHSN interface. At the top left is a circular icon of a healthcare worker. The title 'Analysis Reports' is centered at the top. Below the title are two buttons: 'Expand All' and 'Collapse All', followed by a search input field. A tree view of report categories is shown below, with 'Unusual Susceptibility Profile Alerts' selected and highlighted in blue. The categories are:

- HAI Risk Adjusted Measure Reports (SIRs, SURs)
- HAI Detailed Reports (Line Lists, Rate Tables, etc.)
- Device-Associated (DA) Module
- Procedure-Associated (PA) Module
- HAI Antimicrobial Resistance (DA+PA Modules)
- Unusual Susceptibility Profile Alerts**
 - Line Listing- Unusual Susceptibility Profiles
 - Frequency Table- Unusual Susceptibility Profiles
 - Bar Chart- Unusual Susceptibility Profiles
 - Pie Chart - Unusual Susceptibility Profiles

- Found in the “Analysis” section of NHSN
- Requires dataset generation
- Can be run at facility or group level

(Optional) Report Modifications

- Right click a report to bring up the modify and export options



The screenshot displays the NHSN Home interface on the left and the Analysis Reports section on the right. The Analysis Reports section is expanded to show a tree view of reports. A right-click context menu is open over the 'Line Listing- Unusual Susceptibility Profiles' report, showing options: 'Run Report', 'Modify Report', and 'Export Data Set'. A red arrow points to the 'Modify Report' option.

NHSN Home

- Alerts
- Dashboard ▶
- Reporting Plan ▶
- Patient ▶
- Event ▶
- Procedure ▶
- Summary Data ▶
- COVID-19 ▶
- Import/Export
- Surveys ▶
- Analysis ▶
- Users ▶
- Facility ▶
- Group ▶
- Tools ▶
- Logs ▶
- Dynamic Forms ▶
- Logout

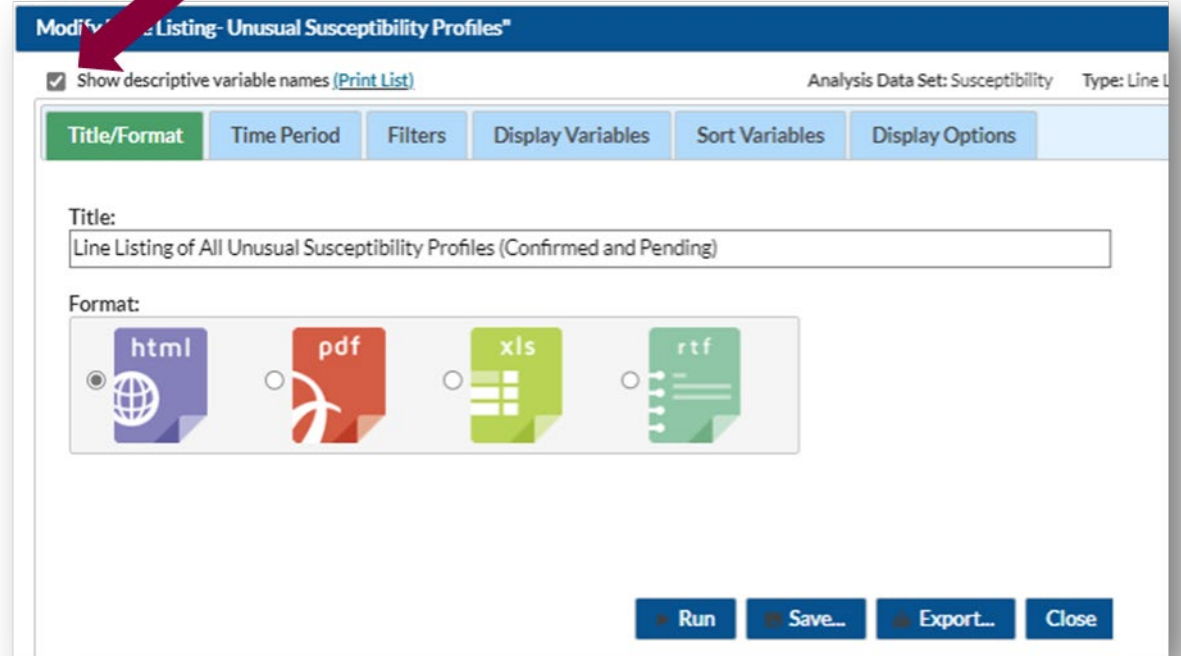
Analysis Reports

Expand All Collapse All Search

- HAI Risk Adjusted Measure Reports (SIRs, SURs)
- HAI Detailed Reports (Line Lists, Rate Tables, etc.)
 - Device-Associated (DA) Module
 - Procedure-Associated (PA) Module
 - HAI Antimicrobial Resistance (DA+PA Modules)
 - Unusual Susceptibility Profile Alerts
 - Line Listing- Unusual Susceptibility Profiles (Context Menu)
 - Run Report
 - Modify Report
 - Export Data Set
 - Unusual Susceptibility Profiles
 - Unusual Susceptibility Profiles
 - Unusual Susceptibility Profiles
 - MDRO/CDI Module - LABID Events
 - MDRO/CDI Module - Infection Surveillance
- CMS Reports
- Targeted Assessment for Prevention (TAP) Reports
- Antimicrobial Use and Resistance Module
 - Antimicrobial Use Data
 - Targeted Assessment for Stewardship (TAS) Reports
 - Antimicrobial Use Data - 2014 Baseline SAARs
 - Antimicrobial Resistance Data
 - Data Quality
 - COVID-19 Module

(Optional) Report Modifications

- Changes variables from their raw values to descriptive names
 - Ex. suscCode to Unusual Susceptibility Profile Code



Example of a USP Line List Report

- Data inclusion criteria can be adjusted based on a wide variety of factors
 - (Facility location, event date, pathogen, etc)
- Separate line lists for each USP Profile Code

National Healthcare Safety Network

Line Listing of All Unusual Susceptibility Profiles (Confirmed and Pending)

As of: February 27, 2024 at 10:12 PM
Date Range: All SUSCEPTIBILITY

Unusual Susceptibility Profile Code=CRE

Facility Org ID	Patient ID	Date of Birth	Fac Admission Date	Event Date	Event ID	Event Type	Location	Pathogen	Unusual Susceptibility Profile Code	Unusual Susceptibility Profile Confirmed	Unusual Susceptibility Profile Alert
10401	1234	12/12/2007	09/15/2019	10/01/2019	89485	BSI	2N	KLEOZ	CRE	Y	
10401	1234	12/12/2007	12/15/2019	01/01/2020	90658	BSI	MED	EA	CRE	Y	
10401	275920	01/01/1990	02/01/2020	02/04/2020	113498	BSI	3N	KO	CRE	Y	
10401	121325	04/11/1978	08/08/2020	08/20/2020	113237	BSI	3N	KP	CRE	Y	
10401	8882423	07/07/1977	09/04/2020	09/11/2020	96251	UTI	3N	EC	CRE	Y	
10401	7777	12/01/2000	09/23/2020	10/01/2020	99078	BSI	ICU	EC	CRE	Y	
10401	7777	12/01/2000	09/23/2020	10/01/2020	99078	BSI	ICU	EA	CRE	Y	
10401	5781	09/09/1945	08/10/2022	08/30/2022	113817	VAE	MED	EA	CRE	Y	

Sorted by eventDate

Data contained in this report were last generated on February 23, 2024 at 5:32 AM to include data beginning January 2019 through December 2024 .

National Healthcare Safety Network

Line Listing of All Unusual Susceptibility Profiles (Confirmed and Pending)

As of: February 27, 2024 at 10:12 PM
Date Range: All SUSCEPTIBILITY

Unusual Susceptibility Profile Code=CR_ACBA

Facility Org ID	Patient ID	Date of Birth	Fac Admission Date	Event Date	Event ID	Event Type	Location	Pathogen	Unusual Susceptibility Profile Code	Unusual Susceptibility Profile Confirmed	Unusual Susceptibility Profile Alert
10401	19743	01/01/1933	08/12/2022	08/22/2022	113822	BSI	MED	ACBA	CR_ACBA	Y	
10401	008	08/03/1978	02/04/2023	02/12/2023	113830	BSI	MED	ACBA	CR_ACBA	Y	
10401	008	08/03/1978	02/03/2023	02/15/2023	113829	BSI	MED	ACBA	CR_ACBA	Y	

Sorted by eventDate

Data contained in this report were last generated on February 23, 2024 at 5:32 AM to include data beginning January 2019 through December 2024 .

Example of a USP Frequency Table Report

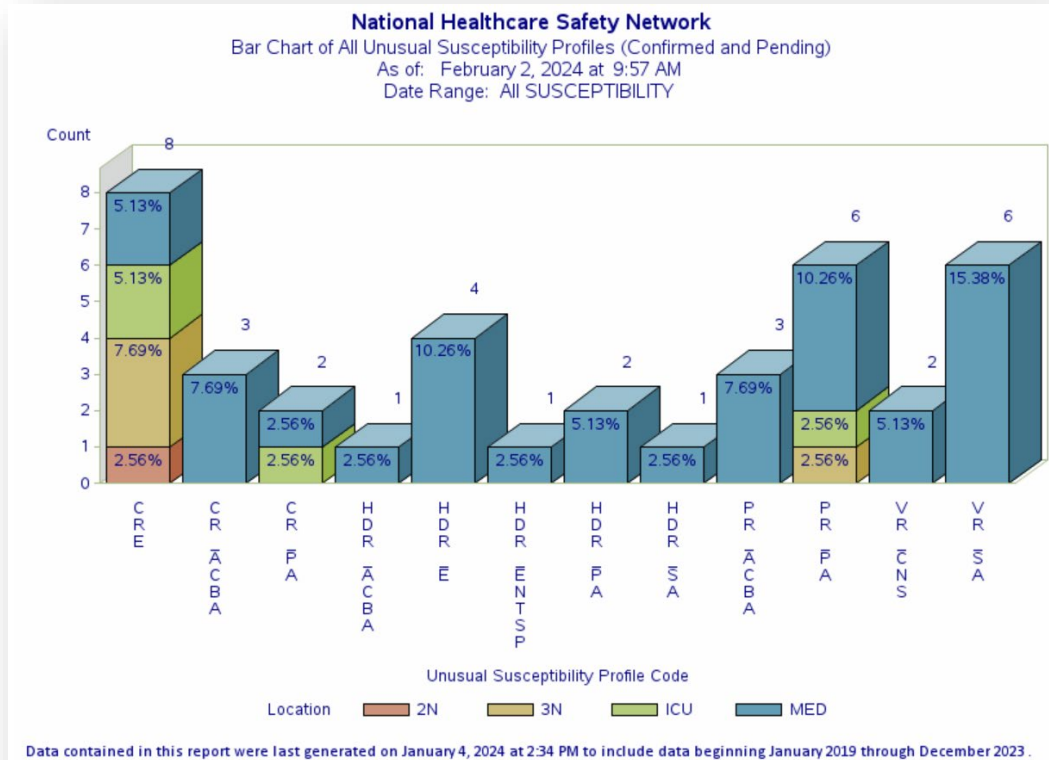
National Healthcare Safety Network
Frequency Table of All Unusual Susceptibility Profiles (Confirmed and Pending)
As of: February 2, 2024 at 9:54 AM
Date Range: All SUSCEPTIBILITY

Frequency Percent Row Pct Col Pct	Table of eventType by suscCode												
	eventType(Event Type)	suscCode(Unusual Susceptibility Profile Code)											
		CRE	CR_ACBA	CR_PA	HDR_ACBA	HDR_E	HDR_ENTSP	HDR_PA	HDR_SA	PR_ACBA	PR_PA	VR_CNS	VR_SA
BSI	6	3	2	1	2	1	1	1	3	3	1	6	30
	15.38	7.69	5.13	2.56	5.13	2.56	2.56	2.56	7.69	7.69	2.56	15.38	76.92
	20.00	10.00	6.67	3.33	6.67	3.33	3.33	3.33	10.00	10.00	3.33	20.00	
	75.00	100.00	100.00	100.00	50.00	100.00	50.00	100.00	100.00	50.00	50.00	100.00	
UTI	1	0	0	0	2	0	1	0	0	2	1	0	7
	2.56	0.00	0.00	0.00	5.13	0.00	2.56	0.00	0.00	5.13	2.56	0.00	17.95
	14.29	0.00	0.00	0.00	28.57	0.00	14.29	0.00	0.00	28.57	14.29	0.00	
	12.50	0.00	0.00	0.00	50.00	0.00	50.00	0.00	0.00	33.33	50.00	0.00	
VAE	1	0	0	0	0	0	0	0	0	1	0	0	2
	2.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.56	0.00	0.00	5.13
	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	50.00	0.00	0.00	
	12.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.67	0.00	0.00	
Total	8	3	2	1	4	1	2	1	3	6	2	6	39
	20.51	7.69	5.13	2.56	10.26	2.56	5.13	2.56	7.69	15.38	5.13	15.38	100.00

Data contained in this report were last generated on January 4, 2024 at 2:34 PM to include data beginning January 2019 through December 2023 .

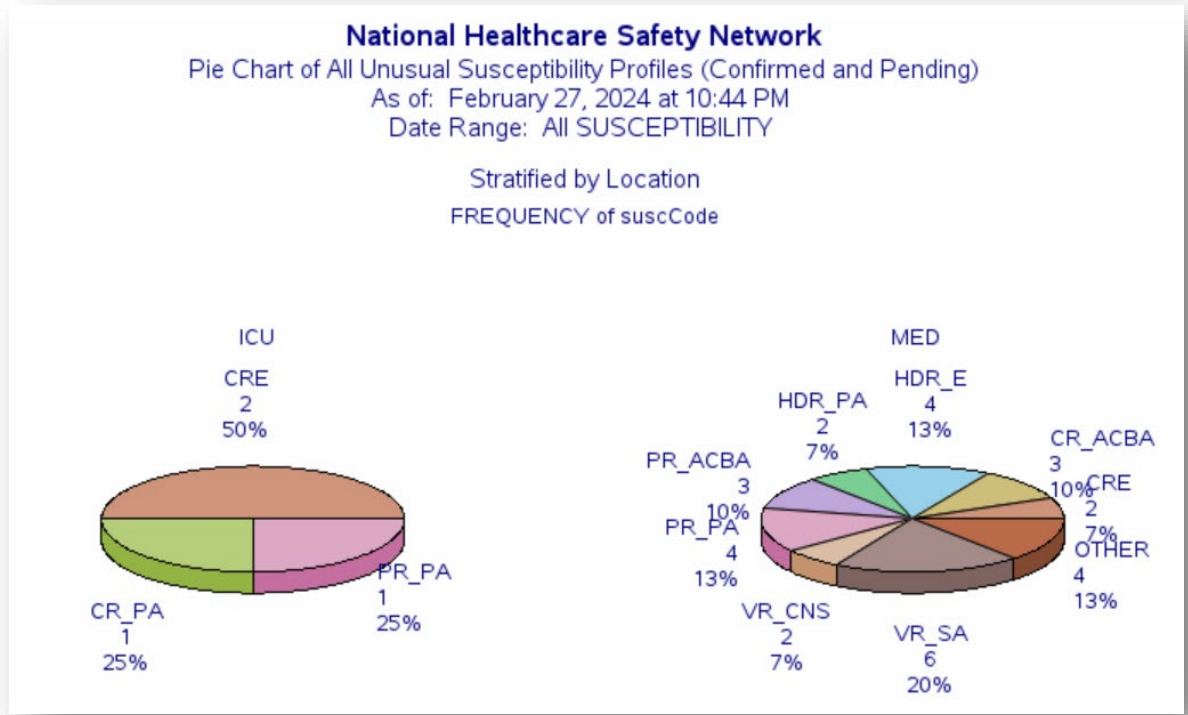
Example of a USP Bar Chart Report

- Each bar is broken down by location
- Percentage of total USPs



Example of a USP Pie Chart Report

- One pie chart per location in facility
- Percentage of USPs in that location



HAI Pathogen Dashboard

New! HAI Pathogen Dashboard

NHSN Home

- Alerts
- Dashboard
- Reporting Plan
- Patient
- Event
- Procedure
- Summary Data
- COVID-19
- Import/Export
- Surveys
- Analysis
- Users
- Facility
- Group
- Tools
- Logs
- Dynamic Forms
- Logout

NHSN Patient Safety Component Home Page

- TAP Strategy Dashboard
- TAS Dashboard
- HAI Pathogen Dashboard**

Generate New Last Generated: January 4, 2024 2:44 PM

Antimicrobial Resistant Pathogens | HAI Pathogen Frequency

Antimicrobial Resistant Pathogens
Pathogen Records with Select Antimicrobial Resistance Patterns

January 2023

4
Total Number of Pathogen Records Reported This Month

2
Number of Pathogen Records with a USP Reported This Month

The data shown in this tab include all applicable in- and off-plan reporting by your facility. The dashboard contains data from 2019 and forward. All HAI types, facility locations, and procedures are included.
[...See more](#)

Pathogens Reported with Select Drug Resistance Patterns (Phenotypes) [Show All](#) [Download](#)

Event ID	Pathogen	HAI Type	Phenotype
113499	Staphylococcus aureus	BSI	MRSA
113595	Staphylococcus aureus	BSI	MRSA

About the Dashboard

- Now available in NHSN Patient Safety Component (PSC)
- Introduced September 9, 2023
- Available data include:
 - HAI pathogen data from 2019 onward
 - All pathogen records reported to PSC from your facility:
 - All HAI types, facility locations, and procedures
 - Both in- and off-plan reporting
- Available to facility users only

Time for a Poll

Since its introduction to NHSN's PSC in September 2023, what has been your experience with the HAI Pathogen Dashboard?

- I frequently use the HAI Pathogen Dashboard
- I occasionally use the HAI Pathogen Dashboard
- I have heard of the HAI Pathogen Dashboard, but I haven't had the chance to use it yet
- I am learning about the HAI Pathogen Dashboard for the first time

Accessing the Dashboard

The screenshot shows the NHSN Patient Safety Component Home Page. The left sidebar contains a navigation menu with items like Alerts, Dashboard, Reporting Plan, Patient, Event, Procedure, Summary Data, COVID-19, Import/Export, Surveys, Analysis, Users, Facility, Group, Tools, Dynamic Forms, and Logout. The main content area is titled 'NHSN Patient Safety Component Home Page' and features three main dashboard sections: TAP Strategy Dashboard, TAS Dashboard, and HAI Pathogen Dashboard. The HAI Pathogen Dashboard is active and shows a 'Generate New List' button with a timestamp of 'Generated: February 7, 2024 3:43 PM'. Below this are two tabs: 'Antimicrobial Resistant Pathogens' (highlighted with a red box) and 'HAI Pathogen Frequency'. A red arrow points from the text 'Choose tab' to these tabs. The dashboard displays summary statistics for June 2022: 18 Total Number of Pathogen Records Reported This Month and 6 Number of Pathogen Records with a USP Reported This Month. Below the statistics is a table titled 'Pathogens Reported with Select Drug Resistance Patterns (Phenotypes)' with columns for Event ID, Pathogen, HAI Type, and Phenotype.

Event ID	Pathogen	HAI Type	Phenotype
113119	Klebsiella pneumoniae	PNEU	CRE
113364	Acinetobacter baumannii	BSI	MDR, CarbNS
113364	Escherichia coli	BSI	CRE, ESC
113364	Pseudomonas aeruginosa	BSI	MDR, CarbNS
113384	Escherichia coli	UTI	CRE, ESC
113614	Staphylococcus aureus	SSI	MRSA
113618	Escherichia coli	UTI	CRE
113619	Escherichia coli	UTI	ESC
113619	Pseudomonas aeruginosa	UTI	MDR, CarbNS
113621	Klebsiella pneumoniae	PNEU	ESC

- Available on the NHSN Patient Safety Component Home Page
- Two tabs:
 - Antimicrobial Resistant Pathogens
 - HAI Pathogen Frequency

Dataset Generation

NHSN Patient Safety Component Home Page

- TAP Strategy Dashboard
- TAS Dashboard
- ▾ HAI Pathogen Dashboard
 - Generate New Last Generated: February 7, 2024 3:43 PM

Antimicrobial Resistant Pathogens HAI Pathogen Frequency

Antimicrobial Resistant Pathogens
Pathogen Records with Select Antimicrobial Resistance Patterns

June 2022

18 Total Number of Pathogen Records Reported This Month

6 Number of Pathogen Records with a USP Reported This Month

The data shown in this tab include all applicable in- and off-plan reporting by your facility. The dashboard contains data from 2019 and forward. All HAI types, facility locations, and procedures are included. [...See more](#)

Pathogens Reported with Select Drug Resistance Patterns (Phenotypes)				Show All	Download
Event ID	Pathogen	HAI Type	Phenotype		
113119	Klebsiella pneumoniae	PNEU	CRE		
113364	Acinetobacter baumannii	BSI	MDR, CarbNS		
113364	Escherichia coli	BSI	CRE, ESC		
113364	Pseudomonas aeruginos	BSI	MDR, CarbNS		
113384	Escherichia coli	UTI	CRE, ESC		
113614	Staphylococcus aureus	SSI	MRSA		
113618	Escherichia coli	UTI	CRE		
113619	Escherichia coli	UTI	ESC		
113619	Pseudomonas aeruginos	UTI	MDR, CarbNS		
113621	Klebsiella pneumoniae	PNEU	ESC		

- Dataset generation (DSG) is required for this dashboard
 - Time/Date of last DSG shown at the top of each tab
 - Generate New button prompts DSG

Dashboard Text

NHSN Patient Safety Component Home Page

▸ TAP Strategy Dashboard

▸ TAS Dashboard

▾ HAI Pathogen Dashboard

Generate New Last Generated: February 7, 2024 3:43 PM

Antimicrobial Resistant Pathogens HAI Pathogen Frequency

Antimicrobial Resistant Pathogens
Pathogen Records with Select Antimicrobial Resistance Patterns

June 2022

18
Total Number of Pathogen Records Reported This Month

6
Number of Pathogen Records with a USP Reported This Month

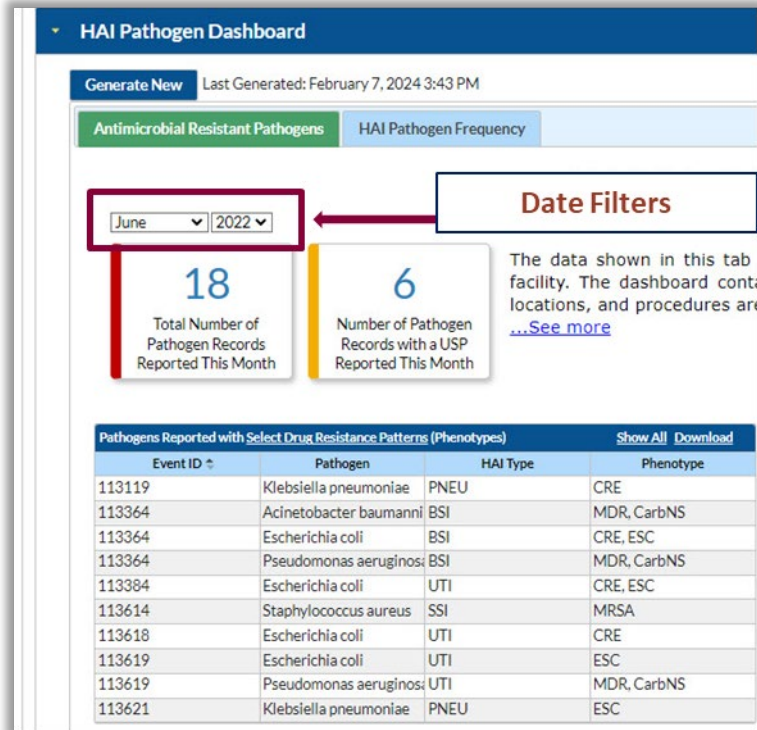
The data shown in this tab include all applicable in- and off-plan reporting by your facility. The dashboard contains data from 2019 and forward. All HAI types, facility locations, and procedures are included. [...See more](#)

↑
Helpful text

Pathogens Reported with Select Drug Resistance Patterns (Phenotypes)				Show All	Download
Event ID	Pathogen	HAI Type	Phenotype		
113119	Klebsiella pneumoniae	PNEU	CRE		
113364	Acinetobacter baumannii	BSI	MDR, CarbNS		
113364	Escherichia coli	BSI	CRE, ESC		
113364	Pseudomonas aeruginos	BSI	MDR, CarbNS		
113384	Escherichia coli	UTI	CRE, ESC		
113614	Staphylococcus aureus	SSI	MRSA		
113618	Escherichia coli	UTI	CRE		
113619	Escherichia coli	UTI	ESC		
113619	Pseudomonas aeruginos	UTI	MDR, CarbNS		
113621	Klebsiella pneumoniae	PNEU	ESC		

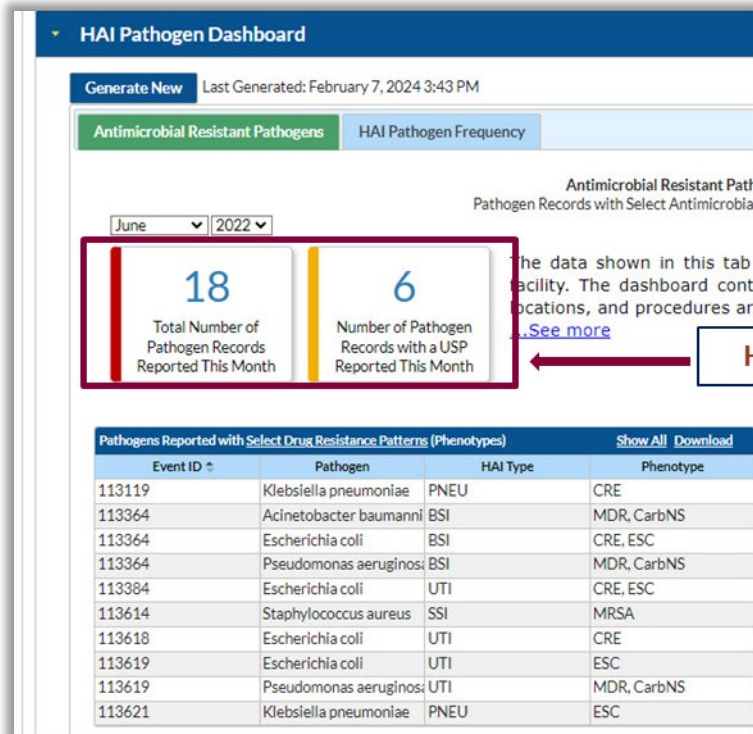
- Each tab contains text including:
 - Instructions for using the dashboard
 - Helpful links
 - USP alert information
 - AR phenotype definitions
- Click “See more” to view full text

Tab 1: Filters



- Dropdown menus:
 - Month
 - Year
- Most recently-completed reporting month is selected by default

Tab 1: Hero Boxes



- Two hero boxes report key metrics for selected month
 - Total number of pathogen records reported
 - Number of pathogen records with a USP reported
- Automatically updated after time filter selection

Tab 1: Data Table

Pathogens Reported with Select Drug Resistance Patterns (Phenotypes)			Show All Download
Event ID ↕	Pathogen	HAI Type	Phenotype
113119	Klebsiella pneumoniae	PNEU	CRE
113364	Acinetobacter baumannii	BSI	MDR, CarbNS
113364	Escherichia coli	BSI	CRE, ESC
113364	Pseudomonas aeruginosa	BSI	MDR, CarbNS
113384	Escherichia coli	UTI	CRE, ESC
113614	Staphylococcus aureus	SSI	MRSA
113618	Escherichia coli	UTI	CRE
113619	Escherichia coli	UTI	ESC
113619	Pseudomonas aeruginosa	UTI	MDR, CarbNS
113621	Klebsiella pneumoniae	PNEU	ESC

- Each row represents one pathogen record
- Four columns:
 - Event ID
 - Pathogen
 - HAI Type
 - Phenotype

Tab 1: Data Table

Pathogens Reported with Select Drug Resistance Patterns (Phenotypes)			
Event ID ↕	Pathogen	HAI Type	Phenotype
113119	Klebsiella pneumoniae	PNEU	CRE
113364	Acinetobacter baumannii	BSI	MDR, CarbNS
113364	Escherichia coli	BSI	CRE, ESC
113364	Pseudomonas aeruginosa	BSI	MDR, CarbNS
113384	Escherichia coli	UTI	CRE, ESC
113614	Staphylococcus aureus	SSI	MRSA
113618	Escherichia coli	UTI	CRE
113619	Escherichia coli	UTI	ESC
113619	Pseudomonas aeruginosa	UTI	MDR, CarbNS
113621	Klebsiella pneumoniae	PNEU	ESC

Show All Download

Expand data table

- 10 rows of data are shown by default
- Click “Show All” to view all applicable observations

Tab 1: Data Table

Pathogens Reported with <u>Select Drug Resistance Patterns</u> (Phenotypes) Show All			
Event ID ↕	Pathogen	HAI Type	Phenotype
113119	Klebsiella pneumoniae	PNEU	CRE
113364	Acinetobacter baumannii	BSI	MDR, CarbNS
113364	Escherichia coli	BSI	CRE, ESC
113364	Pseudomonas aeruginosa	BSI	MDR, CarbNS
113384	Escherichia coli		

Expand data table

Pathogens Reported with <u>Select Drug Resistance Patterns</u> (Phenotypes) Show Less			
Event ID ↕	Pathogen	HAI Type	Phenotype
113119	Klebsiella pneumoniae	PNEU	CRE
113364	Acinetobacter baumannii	BSI	MDR, CarbNS
113364	Escherichia coli	BSI	CRE, ESC
113364	Pseudomonas aeruginosa	BSI	MDR, CarbNS
113384	Escherichia coli	UTI	CRE, ESC
113614	Staphylococcus aureus	SSI	MRSA
113618	Escherichia coli	UTI	CRE
113619	Escherichia coli	UTI	ESC
113619	Pseudomonas aeruginosa	UTI	MDR, CarbNS
113621	Klebsiella pneumoniae	PNEU	ESC
113622	Acinetobacter baumannii	BSI	CarbNS

Condense data table

11th row

Data Table: Event ID and Pathogen

Pathogens Reported with Select Drug Resistance Patterns (Phenotypes)			Show All Download
Event ID ↕	Pathogen	HAI Type	Phenotype
113119	Klebsiella pneumoniae	PNEU	CRE
113364	Acinetobacter baumannii	BSI	MDR, CarbNS
113364	Escherichia coli	BSI	CRE, ESC
113364	Pseudomonas aeruginosa	BSI	MDR, CarbNS
113384	Escherichia coli	UTI	CRE, ESC
113614	Staphylococcus aureus	SSI	MRSA
113618	Escherichia coli	UTI	CRE
113619	Escherichia coli	UTI	ESC
113619	Pseudomonas aeruginosa	UTI	MDR, CarbNS
113621	Klebsiella pneumoniae	PNEU	ESC



■ Event ID

- Each HAI Event is assigned a unique Event ID
- Highlight and copy to search for HAI event

■ Pathogen

- Pathogen species for pathogen record
- Up to 3 pathogens per Event ID

Data Table: Event ID and Pathogen

Pathogens Reported with Select Drug Resistance Patterns (Phenotypes)			Show All Download
Event ID ↕	Pathogen	HAI Type	Phenotype
113119	Klebsiella pneumoniae	PNEU	CRE
113364	Acinetobacter baumannii	BSI	MDR, CarbNS
113364	Escherichia coli	BSI	CRE, ESC
113364	Pseudomonas aeruginosa	BSI	MDR, CarbNS
113384	Escherichia coli	UTI	CRE, ESC
113614	Staphylococcus aureus	SSI	MRSA
113618	Escherichia coli	UTI	CRE
113619	Escherichia coli	UTI	ESC
113619	Pseudomonas aeruginosa	UTI	MDR, CarbNS
113621	Klebsiella pneumoniae	PNEU	ESC

- An Event ID may appear in up to 3 rows. This depends on:
 - Number of pathogens entered for the event
 - Antimicrobial susceptibility information
- Pathogen record = a single pathogen

Pathogens Records ≠ HAI Events

Pathogens Reported with Select Drug Resistance Patterns (Phenotypes)		
Event ID	Pathogen	HAI Type
113119	Klebsiella pneumoniae	PNEU
113364	Acinetobacter baumannii	BSI
113364	Escherichia coli	BSI
113364	Pseudomonas aeruginosa	BSI
113384	Escherichia coli	UTI
113614	Staphylococcus aureus	SSI
113618	Escherichia coli	UTI
113619	Escherichia coli	UTI
113619	Pseudomonas aeruginosa	UTI
113621	Klebsiella pneumoniae	PNEU

Pathogens Identified: Y-Yes If Yes, specify below ->

Pathogens

Pathogen 1: Acinetobacter baumannii - ACBA 13 drugs required

S R I N
 S R I N
 S R I N
 S R I N
 S R I N
 S R I N
 S R I N

S R I N
 S R I N
 S R I N
 S R I N
 S R I N
 S R I N
 S R I N

Pathogen 2: Escherichia coli - EC 22 drugs required

S R I N
 S R I N
 S R I N
 S R I N
 S R I N
 S R I N
 S R I N

S R I N
 S R I N
 S R I N
 S R I N
 S R I N
 S R I N
 S R I N

Pathogen 3: Pseudomonas aeruginosa - PA 12 drugs required

S R I N
 S R I N
 S R I N
 S R I N
 S R I N
 S R I N
 S R I N

S R I N
 S R I N
 S R I N
 S R I N
 S R I N
 S R I N
 S R I N

In this example, 3 pathogens were entered for this event on the event entry screen (right). Therefore, 3 pathogen records were created for this event. This Event ID may be present in up to 3 rows of the dashboard data table (left), if susceptibility criteria are met.

Fictitious data used for illustrative purposes only.

Data Table: HAI Type

Pathogens Reported with Select Drug Resistance Patterns (Phenotypes) Show All Download			
Event ID ↕	Pathogen	HAI Type	Phenotype
113119	Klebsiella pneumoniae	PNEU	CRE
113364	Acinetobacter baumannii	BSI	MDR, CarbNS
113364	Escherichia coli	BSI	CRE, ESC
113364	Pseudomonas aeruginosa	BSI	MDR, CarbNS
113384	Escherichia coli	UTI	CRE, ESC
113614	Staphylococcus aureus	SSI	MRSA
113618	Escherichia coli	UTI	CRE
113619	Escherichia coli	UTI	ESC
113619	Pseudomonas aeruginosa	UTI	MDR, CarbNS
113621	Klebsiella pneumoniae	PNEU	ESC



HAI Type

- HAI type of event
- Included HAI types:
 - CLABSI
 - CAUTI
 - SSI
 - PNEU
 - VAE
 - pedVAE
 - VAP

Data Table: Phenotype

Pathogens Reported with Select Drug Resistance Patterns (Phenotypes)			Show All Download
Event ID ↕	Pathogen	HAI Type	Phenotype
113119	Klebsiella pneumoniae	PNEU	CRE
113364	Acinetobacter baumannii	BSI	MDR, CarbNS
113364	Escherichia coli	BSI	CRE, ESC
113364	Pseudomonas aeruginosa	BSI	MDR, CarbNS
113384	Escherichia coli	UTI	CRE, ESC
113614	Staphylococcus aureus	SSI	MRSA
113618	Escherichia coli	UTI	CRE
113619	Escherichia coli	UTI	ESC
113619	Pseudomonas aeruginosa	UTI	MDR, CarbNS
113621	Klebsiella pneumoniae	PNEU	ESC

■ Phenotype

- 13 [AR phenotypes](#) are included
- Multiple phenotypes are listed, when applicable
- Hover text displays fully spelled-out name

113619	Pseudomonas aeruginosa	UTI	MDR, CarbNS
113621	Klebsiella pneumoniae	PNEU	ESC

Extended-spectrum cephalosporin non-susceptible

Tab 1: Download PDF

Pathogens Reported with **Select Drug Resistance Patterns (Phenotypes)** Show All **Download**

Event ID	Pathogen	HAI Type	Phenotype
113119	Klebsiella pneumoniae	PNEU	CRE
113364	Acinetobacter baumannii	BSI	MDR, CarbNS
113364	Escherichia coli	BSI	CRE, ESC
113364	Pseudomonas aeruginosa	BSI	MDR, CarbNS
113384	Escherichia coli	UTI	CRE, ESC
113614	Staphylococcus aureus	SSI	MRSA
113618	Escherichia coli	UTI	CRE
113619	Escherichia coli	UTI	ESC
113619	Pseudomonas aeruginosa	UTI	MDR, CarbNS
113621	Klebsiella pneumoniae	PNEU	ESC
113621	Acinetobacter baumannii	BSI	CarbNS

NHSN
 NATIONAL HEALTHCARE SAFETY NETWORK
 Last Generated: February 13, 2024 4:12 PM
 Date exported: February 13, 2024

Antimicrobial Resistant Pathogens
 Pathogen Records with Select Antimicrobial Resistance Patterns
 June 2022

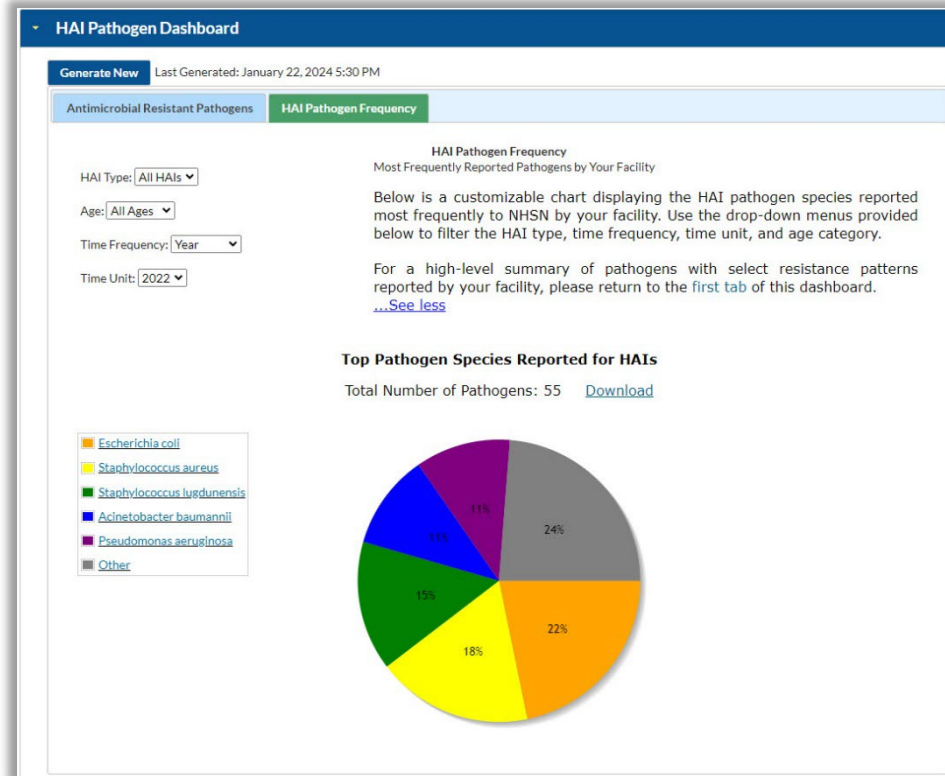
Event ID	Pathogen	HAI Type	Phenotype
113119	Klebsiella pneumoniae	PNEU	CRE
113364	Acinetobacter baumannii	BSI	MDR, CarbNS
113364	Escherichia coli	BSI	CRE, ESC
113364	Pseudomonas aeruginosa	BSI	MDR, CarbNS
113384	Escherichia coli	UTI	CRE, ESC
113614	Staphylococcus aureus	SSI	MRSA
113618	Escherichia coli	UTI	CRE
113619	Escherichia coli	UTI	ESC
113619	Pseudomonas aeruginosa	UTI	MDR, CarbNS
113621	Klebsiella pneumoniae	PNEU	ESC
113622	Acinetobacter baumannii	BSI	CarbNS

- Download button allows users to export a PDF file including:

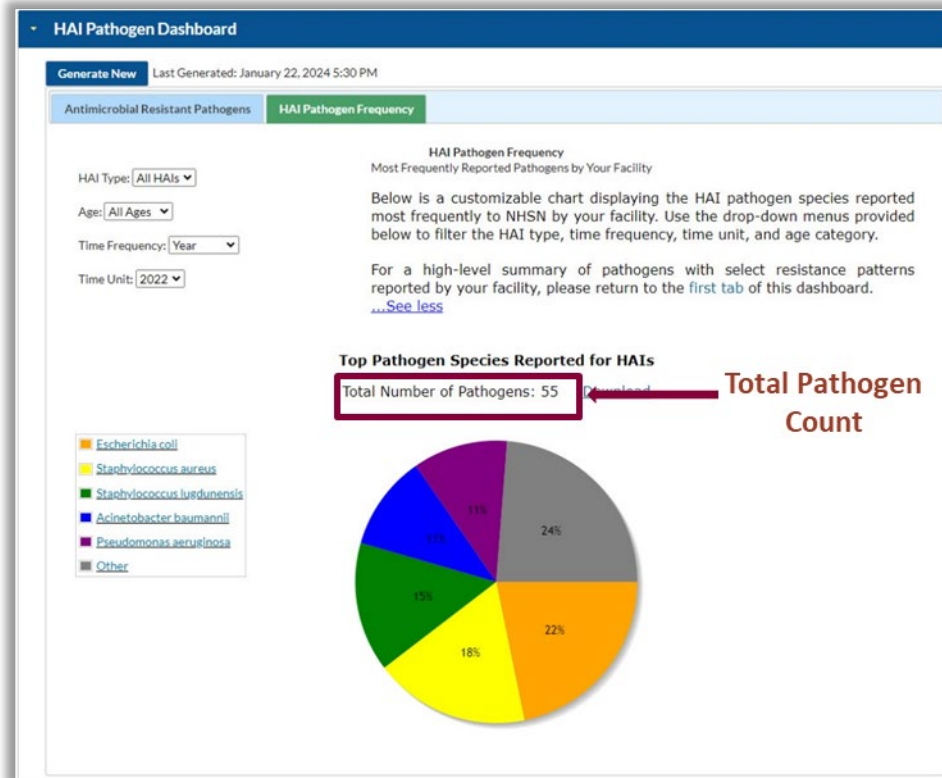
- NHSN logo
- Date of DSG
- Date of export
- Filter selections
- Table contents

- Hero boxes are excluded from export

Tab 2: HAI Pathogen Frequency

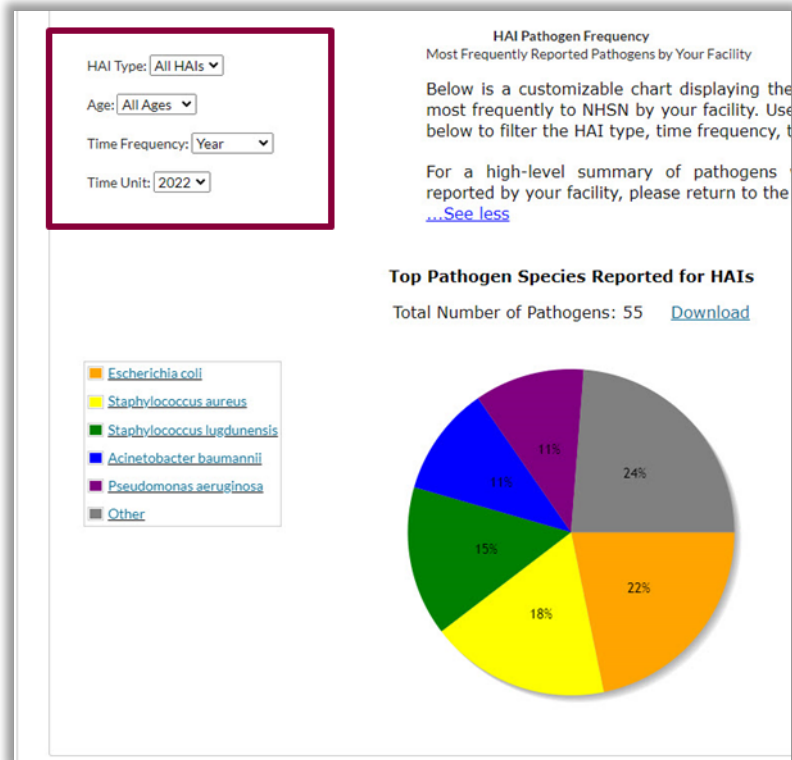


Tab 2: Pie Chart



- Displays 5 most frequently reported pathogen species reported for HAIs
- Up to 6 slices:
 - Top 5 pathogen species
 - All others
- Count of total pathogens reported is displayed above chart

Tab 2: Dynamic Filters



- **HAI Type:** All HAIs, CLABSI, CAUTI, SSI, VAE, VAP, pedVAE, PNEU
- **Age Category:** All ages, Adult, Pediatric
 - For SSI events, patient age at procedure is used to determine age category.
 - For all other event types, inpatient location is used.
- **Time Frequency:** Month, Quarter, Half-year, Year
- **Time Unit:** Dependent on Time Frequency selection

Tab 2: Dynamic Filters

HAI Pathogen Frequency
Most Frequently Reported Pathogens by Your Facility

Below is a customizable chart displaying the most frequently to NHSN by your facility. Use below to filter the HAI type, time frequency, t

For a high-level summary of pathogens reported by your facility, please return to the [...See less](#)

Top Pathogen Species Reported for HAIs
Total Number of Pathogens: 55 [Download](#)

- Escherichia coli
- Staphylococcus aureus
- Staphylococcus lugdunensis
- Acinetobacter baumannii
- Pseudomonas aeruginosa
- Other

Pathogen Species	Percentage
Escherichia coli	22%
Staphylococcus aureus	18%
Staphylococcus lugdunensis	15%
Acinetobacter baumannii	11%
Pseudomonas aeruginosa	11%
Other	24%

HAI Type: All HAIs

Age: All Ages

Time Frequency: Quarter

Time Unit:

- 2024Q1
- 2024Q2
- 2024Q3
- 2024Q4
- 2023Q1
- 2023Q2
- 2023Q3

HAI Type: All HAIs

Age: All Ages

Time Frequency: Month

Time Unit:

- 2023Feb
- 2023Mar
- 2023Apr
- 2023May
- 2023Jun
- 2023Jul

Tab 2: Download PDF

HAI Pathogen Frequency
Most Frequently Reported Pathogens by Your Facility

Below is a customizable chart displaying the HAI pathogen species reported most frequently to NHSN by your facility. Use the drop-down menus provided below to filter the HAI type, time frequency, time unit, and age category.

For a high-level summary of pathogens with select resistance patterns reported by your facility, please return to the first tab of this dashboard. [...See less](#)

Top Pathogen Species Reported for HAIs
Total Number of Pathogens: 5 [Download](#)

Download PDF

NHSN
NATIONAL HEALTHCARE SAFETY NETWORK
Last Generated: August 18, 2023 6:16 PM
Date exported: August 24, 2023

HAI Pathogen Frequency
Most Frequently Reported Pathogens by Your Facility
HAI Type: All HAIs
Age: All Ages
Time Frequency: Quarter
Time Unit:

Top Pathogen Species Reported for HAIs
Total Number of Pathogens: 55

- Escherichia coli
- Staphylococcus aureus
- Staphylococcus haemolyticus
- Acinetobacter baumannii
- Pseudomonas aeruginosa
- Other

- Download button exports a PDF file including:
 - NHSN logo
 - Date of DSG
 - Date of export
 - Filter selections
 - Total pathogen count
 - Pie chart and legend

Antimicrobial Resistance & Patient Safety Portal (AR&PSP)

Explore and Visualize Data on Antimicrobial Resistance and Patient Safety



ANTIMICROBIAL
RESISTANCE



ANTIBIOTIC USE AND
STEWARDSHIP



HEALTHCARE
PERSONNEL
VACCINATION



HEALTHCARE- AND
COMMUNITY-
ASSOCIATED
INFECTIONS



GEOGRAPHIC LOCATION

HAI Antimicrobial Resistance Data

- AR data from HAIs are updated annually
 - 2011-2021*
- 29 AR phenotypes
- Data are presented using the percent resistant (%R) metric:

$$\frac{\# \text{ resistant isolates}}{\# \text{ tested isolates}} \times 100$$

*At the time of this presentation. Data from additional years are added periodically.

HAI Antimicrobial Resistance Data

- Pathogen and resistance profiles included for:
 - CLABSIs
 - CAUTIs
 - SSIs
- Facility types:
 - Acute Care Hospitals (ACH)
 - Inpatient Rehabilitation Facilities (IRF)
 - Long-term Acute Care Hospitals (LTACH)
- Not limited to the locations or procedures required for CMS Quality Reporting Programs

AR Home Screen

- Expand list under each pathogen to choose phenotype
- Navigate to the Data Explorer from this screen

Antimicrobial Resistance

Antimicrobial Resistance Laboratory Network

Each year, more than 2.8 million antimicrobial-resistant infections occur in the United States, and more than 35,000 people die as a result. These data, from the [National Healthcare Safety Network \(NHSN\)](#), reflect inpatient antimicrobial resistance, where “inpatient” refers to an individual receiving care within a hospital. The antimicrobial resistance types that are featured on this page are often a result of extensive antibiotic use in hospitals.

Gram-Positive

- Enterococcus faecalis
- Daptomycin-resistant *E. faecalis*
- Vancomycin-resistant *E. faecalis*
- Enterococcus faecium
- CNS (Coagulase-negative staphylococci)
- MRSA (Methicillin resistant *Staphylococcus aureus*)

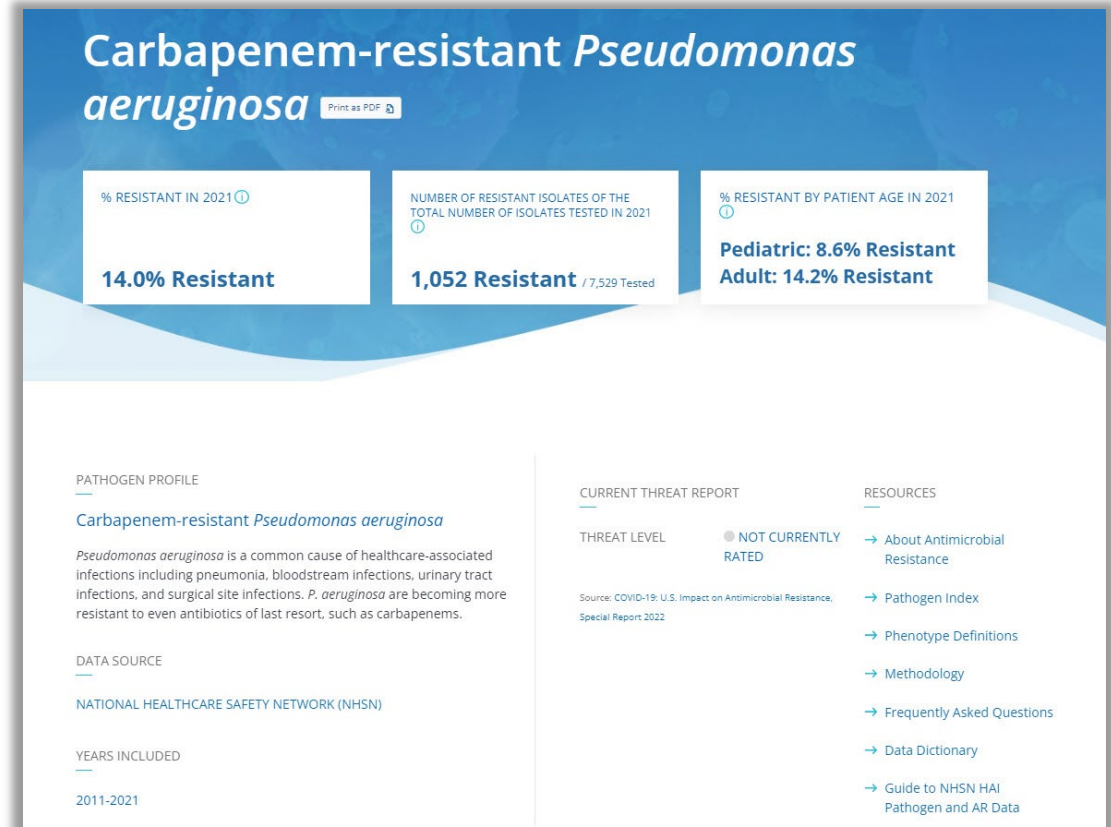
Gram-Negative

- Acinetobacter spp. (species)
- CRE (Carbapenem-resistant Enterobacterales)
- E. coli*
- Enterobacter spp.
- Klebsiella spp.
- Pseudomonas aeruginosa
- MDR (Multidrug-resistant)

Explore this data set further with the [Data Explorer](#).

Phenotype Profiles

- Each phenotype profile includes:
 - Key data points
 - Resource links
 - State map
 - State list
 - Changes over time
 - HAI type and facility type stratifications



Phenotype Profiles

CHANGES OVER TIME

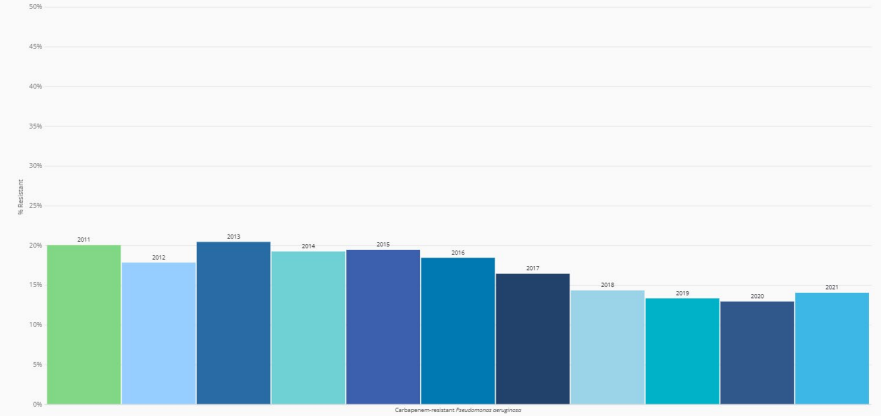
Antimicrobial resistance has been changing over time, driven by changes in healthcare practices and microorganisms.

CHANGES OVER TIME IN CARBAPENEM RESISTANCE AMONG PSEUDOMONAS AERUGINOSA

[VIEW DATA](#) [SAVE IMAGE](#) [SHARE](#)

HAI TYPE
all event types

This graph displays percent antimicrobial resistance from 2011 to 2021 for all event types. Blank areas of the chart represent 0% resistance, indicating that zero resistant pathogens were reported for the selected year, phenotype, and HAI type. "insufficient data" indicates that less than 20 pathogens were isolated and tested for resistance.



GEOGRAPHIC LOCATION

Antimicrobial resistance varies by location, driven by differences in infection control practices in individual healthcare facilities, population, and regional spread from nearby locations.

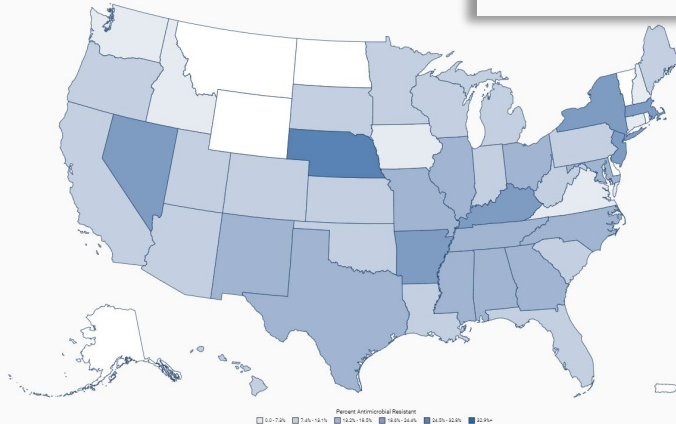
PERCENT CARBAPENEM RESISTANCE AMONG PSEUDOMONAS AERUGINOSA BY STATE MAP

[VIEW DATA](#) [SAVE IMAGE](#) [SHARE](#)

YEAR
2021

HAI TYPE
all event types

This map shows the variation in % carbapenem resistance among Pseudomonas aeruginosa causing all event types in 2021.



AR&PSP Data Explorer

Data Explorer

PHENOTYPE: Carbapenem-resistant Ps...

METRIC TO DISPLAY: Number of Isolates Tested, Number Resistant, Percent Resistant

YEAR: 2021

RESET TO DEFAULTS

Select filter options on the left side of the screen and under the map and bar chart to display custom visualizations. For more information about using the Data Explorer, review the [quick reference guide](#).

CARBAPENEM-RESISTANT *PSEUDOMONAS AERUGINOSA* - PERCENT RESISTANT IN 2021 FOR GEORGIA

View Event Data Save Image Share

Legend: Insufficient Data, 0.0% - 10.5%, 10.6% - 21.0%, 21.1% - 31.6%, 31.7% - 42.2%, 42.3%+

Hint: Percent Resistant: Calculated as the sum of pathogens that tested resistant ("number resistant"), divided by the sum of pathogens tested for susceptibility ("number tested"), multiplied by 100

Nation	Region	State
--------	--------	-------

HAI TYPE: Catheter-Associated Urinary Tract Infections

AGE: Adults

ENLARGE

CARBAPENEM-RESISTANT *PSEUDOMONAS AERUGINOSA* - PERCENT RESISTANT IN 2021 FOR GEORGIA

View Event Data Save Image Share

HAI Type	Percent Resistant
All HAI Type Data	18.2%
CAUTI	22.1%
CLABSI	23.5%
SSI	5.5%

Hint: select a state or region on the map to restrict this bar chart to a geographic area of interest.

CHART VARIABLE: HAI Type

AGES: All Ages Data

ENLARGE

Data Explorer

- 29 AR phenotypes
- Metrics:
 - Number of isolates tested
 - Number resistant
 - Percent resistant (%R)
- Data aggregated to the national, state, and regional levels
- Stratifications include:
 - Patient age
 - Facility type*
 - HAI type
 - Facility size*
 - Patient gender*
 - Hospital teaching status*

Phenotype definitions: https://arpsp.cdc.gov/resources/AR_PhenotypeDefinitions_2020.pdf

*Available at the national level only.

Data Explorer: Global Filters

PHENOTYPE: ⓘ

Carbapenem-resistant Ps... ▾

METRIC TO DISPLAY:

Number of Isolates Tested Number Resistant Percent Resistant

YEAR: 2021 ▾

RESET TO DEFAULTS

Select filter options on the left side of the screen and under the map and bar chart to display custom visualizations. For more information about using the Data Explorer, review the [quick reference guide](#).

CARBAPENEM-RESISTANT *PSEUDOMONAS AERUGINOSA* - PERCENT RESISTANT IN 2021 FOR GEORGIA

View Event Data Save Image Share

Insufficient Data 0.0% - 10.5% 10.6% - 21.0% 21.1% - 31.6% 31.7% - 42.2% 42.3%+

Hint: Percent Resistant: Calculated as the sum of pathogens that tested resistant ("number resistant"), divided by the sum of pathogens tested for susceptibility ("number tested"), multiplied by 100

Nation	Region	State
--------	--------	-------

HAI TYPE: ⓘ

Catheter-Associated Urinary Tract Infections

AGE: ⓘ

Adults

ENLARGE

CARBAPENEM-RESISTANT *PSEUDOMONAS AERUGINOSA* - PERCENT RESISTANT IN 2021 FOR GEORGIA

View Event Data Save Image Share

HAI Type	Percent Resistant
All HAI Type Data	18.2%
CAUTI	22.1%
CLABSI	23.5%
SSI	5.5%

Hint: select a state or region on the map to restrict this bar chart to a geographic area of interest.

CHART VARIABLE: HAI Type

AGES: ⓘ

All Ages Data

ENLARGE

Data Explorer: Map

PHENOTYPE: ⓘ

Carbapenem-resistant Ps... ▾

METRIC TO DISPLAY:

Number of Isolates Tested Number Resistant Percent Resistant

YEAR: 2021 ▾

RESET TO DEFAULTS

Select filter options on the left side of the screen and under the map and bar chart to display custom visualizations. For more information about using the Data Explorer, review the [quick reference guide](#).

CARBAPENEM-RESISTANT *PSEUDOMONAS AERUGINOSA* - PERCENT RESISTANT IN 2021 FOR GEORGIA

View Event Data Save Image Share

Insufficient Data 0.0% - 10.5% 10.6% - 21.0% 21.1% - 31.6% 31.7% - 42.2% 42.3%+

Hint: Percent Resistant: Calculated as the sum of pathogens that tested resistant ("number resistant"), divided by the sum of pathogens tested for susceptibility ("number tested"), multiplied by 100

Nation	Region	State
--------	--------	-------

HAI TYPE: ⓘ

Catheter-Associated Urinary Tract Infections

AGE: ⓘ

Adults

ENLARGE

CARBAPENEM-RESISTANT *PSEUDOMONAS AERUGINOSA* - PERCENT RESISTANT IN 2021 FOR GEORGIA

View Event Data Save Image Share

HAI Type	Percent Resistant
All HAI Type Data	18.2%
CAUTI	22.1%
CLABSI	23.5%
SSI	5.5%

Hint: select a state or region on the map to restrict this bar chart to a geographic area of interest.

CHART VARIABLE: HAI Type

AGES: ⓘ All Ages Data

ENLARGE

Data Explorer: Map



Hover over a geographic area to view its metric

Click on a geographic area to display its data in the bar chart

Geographic filter
Applies to map & bar chart

Chart-specific filters
Additional filters available at the national level

Data Explorer: Map Displays

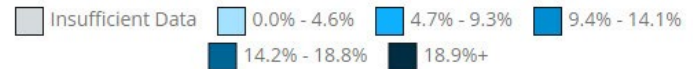
CARBAPENEM-RESISTANT *PSEUDOMONAS AERUGINOSA* - PERCENT RESISTANT IN 2021 FOR THE UNITED STATES

[View Event Data](#) [Save Image](#) [Share](#)



CARBAPENEM-RESISTANT *PSEUDOMONAS AERUGINOSA* - PERCENT RESISTANT IN 2021 FOR THE SOUTH ATLANTIC REGION

[View Event Data](#) [Save Image](#) [Share](#)



Data Explorer: Bar Chart

PHENOTYPE: 🔍
Carbapenem-resistant Ps... ▼

METRIC TO DISPLAY:
Number of Isolates Tested Number Resistant Percent Resistant

YEAR:
2021 ▼

[RESET TO DEFAULTS](#)

Select filter options on the left side of the screen and under the map and bar chart to display custom visualizations. For more information about using the Data Explorer, review the [quick reference guide](#).

CARBAPENEM-RESISTANT *PSEUDOMONAS AERUGINOSA* - PERCENT RESISTANT IN 2021 FOR GEORGIA

[View Event Data](#) [Save Image](#) [Share](#)

☐ Insufficient Data ☐ 0.0% - 10.5% ☐ 10.6% - 21.0% ☐ 21.1% - 31.6%
☐ 31.7% - 42.2% ☐ 42.3%+

Hint: Percent Resistant: Calculated as the sum of pathogens that tested resistant ("number resistant"), divided by the sum of pathogens tested for susceptibility ("number tested"), multiplied by 100

Nation	Region	State
--------	--------	-------

HAI TYPE: 🔍
Catheter-Associated Urinary Tract Infections

AGE: 🔍
Adults

[ENLARGE](#)

CARBAPENEM-RESISTANT *PSEUDOMONAS AERUGINOSA* - PERCENT RESISTANT IN 2021 FOR GEORGIA

[View Event Data](#) [Save Image](#) [Share](#)

HAI Type	Percent Resistant
All HAI Type Data	18.2%
CAUTI	22.1%
CLABSI	23.5%
SSI	5.5%

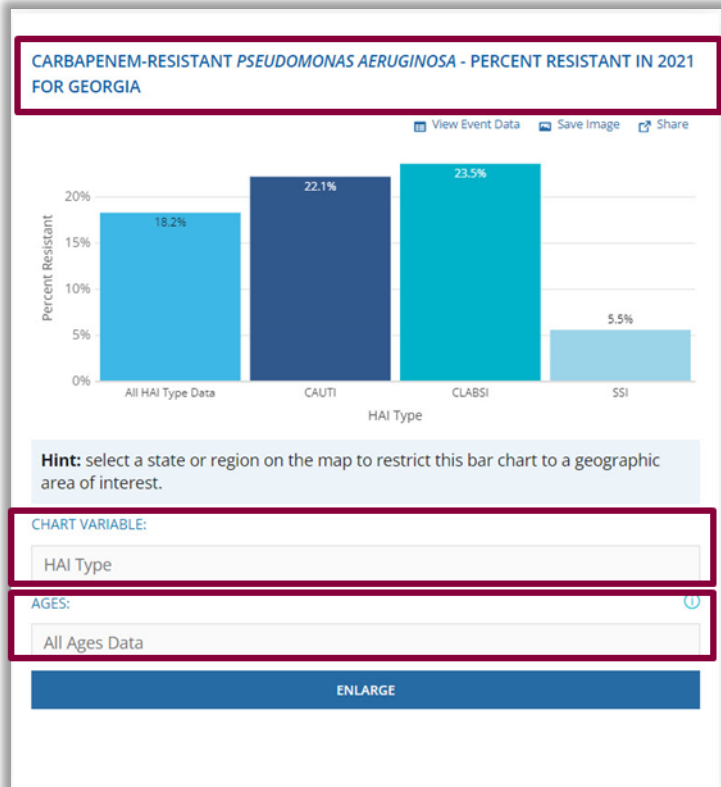
Hint: select a state or region on the map to restrict this bar chart to a geographic area of interest.

CHART VARIABLE:
HAI Type

AGES: 🔍
All Ages Data

[ENLARGE](#)

Data Explorer: Bar Chart



Dynamic title

Displays geographic area chosen

Chart variable

Determines X-axis of bar chart

Chart-specific filter

Additional filters available at the national level

Closing Thoughts

In Conclusion

- Pathogen and AR data that are reported to NHSN as part of HAI reporting are viewable in several forms. In this presentation, we covered:
 - USP Alerts and Reports
 - HAI Pathogen Dashboard
 - Antimicrobial Resistance & Patient Safety Portal
- Consider the scope and scale of your question when choosing a platform to view HAI pathogen and AR data collected by NHSN.
- Use these tools in conjunction with each other to inform infection prevention efforts.

Helpful Links

- Unusual Susceptibility Profiles (USP) Alert: www.cdc.gov/nhsn/pdfs/usp-alert-current.pdf
- AR Phenotypes (13) available in the NHSN application: https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/phenotype_definitions.pdf
- Antimicrobial Resistance & Patient Safety Portal (AR&PSP): <https://arpsp.cdc.gov/>
- AR&PSP Data Explorer: <https://arpsp.cdc.gov/explorer>
- AR Phenotypes (29) available in the AR&PSP: https://arpsp.cdc.gov/resources/AR_PhenotypeDefinitions_2020.pdf
- Data Explorer Quick Reference Guide: https://arpsp.cdc.gov/resources/Using_the_Data_Explorer.pdf

For any questions or concerns, contact the NHSN Helpdesk using

NHSN-ServiceNow to submit questions to the NHSN Help Desk.

The new portal can be accessed at <https://servicedesk.cdc.gov/nhsncsp>.

Users will be authenticated using CDC's Secure Access Management Services (SAMS) the same way you access NHSN. If you do not have a SAMS login, or are unable to access ServiceNow, you can still email the NHSN Help Desk at nhsn@cdc.gov.

For more information please contact Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30333

Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348

E-mail: cdcinfo@cdc.gov Web: www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

