NHSN Antimicrobial Use and Resistance Module – Group Function

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1

Objectives

- Identify differences between NHSN Group Function and Data Use Agreement (DUA)

- Define steps to create an NHSN group

- Set up Confer Rights Template for AUR

- Run group-specific analysis reports

- Run SAAR report at the group level and aggregate SAARs across multiple facilities

- Run facility-wide antibiogram report at the group level

- Monitor the quality of AUR data at the group level

NHSN Groups

3

Sharing NHSN Data

- Groups allow NHSN facilities to share some or all their data at a single (Group) level for a mutual purpose

- Facilities can share NHSN data with other entities via Groups but only users at the Group level can see facility-level data – Group members cannot see each other's data

- Facilities can join as many Groups as they want

- Two vehicles to create a Group: NHSN Group Function and Data Use Agreement (DUA)

Group Function vs. Data Use Agreement (DUA)

Group Function

- Anyone can create a Group and invite facilities

- Facilities join voluntarily and manually accept the Confer Rights Template

- Group administrators cannot access data for facilities that don't confer rights

DUA

- State, local, and territorial health departments can gain access to data from facilities in their jurisdiction solely for the purposes of surveillance and prevention

- Facilities in jurisdiction automatically added to group and do not have to accept Confer Rights Template

- No state, local, or territorial reporting mandate required

Group Set Up via DUA

Steps to Creating a DUA

1. Health department submits DUA inquiry to NHSNDUA@cdc.gov and arranges initial call with CDC's Division of Healthcare Quality Promotion (DHQP)
2. DHQP and heath department work together to develop DUA
3. Health department and DHQP sign DUA once they agree on the terms
4. Final copy of DUA posted to the CDC State-Based Healthcare Associated Infection Prevention Activities website: http://www.cdc.gov/hai/state-based/index.html
5. DHQP works with the health department to host a webinar to inform all local and state associations about DUA and 90-day opt-out period

Group Set Up via Group Function

Steps to Creating a Group

1. Identify a Group Administrator
2. Group Administrator asks NHSN facility for nomination
3. Group Administrator completes Secure Access management services (SAMS) user registration (if needed)
4. Group Administrator adds additional users to the Group and assigns rights
5. Group Administrator sets joining password
6. Group Administrator creates Confer Rights Template
7. Group Administrator invites potential members
8. Member facilities join Group and accept Confer Rights Template

1. Identify a Group Administrator

- First step is identifying a Group Administrator
  - Can be anyone!
  - Should read Group Administrator Guide and manuals: https://www.cdc.gov/nhsn/pdfs/groups-startup/GroupAdminStartupGuideCurrent.pdf
  - Only one person can be the Group Administrator, but other Group users can be given administrative rights and role can be reassigned as needed
    - Only current Group Administrator can reassign
    - Group > Edit Group Info to reassign

2. Ask a Facility to Nominate the Group

- A facility currently participating in NHSN must nominate the Group
  - Group Administrator provides facility with the Group name, type, Group Administrator's contact information, and whether Group Administrator is new or existing NHSN user
  - Email address must match email address used for Group Administrator's SAMS account

2. Ask a Facility to Nominate the Group (cont.)

- Facility navigates to Group > Nominate to access the Nominate Group screen
  - Only one facility should nominate the Group
  - Facility that nominates the Group does not automatically become a Group member

2. Ask a Facility to Nominate the Group – screenshot

13

3. Complete SAMS user registration (if needed)

- After the nomination, Group Administrator will receive an email containing the Group's 5-digit NHSN ID and link to register with SAMS
  - SAMS is a federal information technology system that gives authorized personnel secure access to non-public CDC applications like NHSN
  - If Group Administrator is not existing NHSN user, must complete SAMS user registration – existing NHSN users do not need to register again

4. Add Group Users and assign rights

- Group Administrator should now have access to Group in NHSN
- Group Administrator can add Group users and assign rights like Facility Administrator at facility
  - Users > Add
  - Recommended user rights for AUR: https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/nhsn-au-user-rights.pdf

4. Add Group Users and assign rights – screenshot

5. Set Joining Password (cont.)

- NHSN Groups protected with a joining password, which Group Administrator shares with member facilities
    - Group Administrator sets the joining password by selecting Group > Joining Password
    - Enter joining password, then click Set Password to complete Group setup
    - Group Administrator can change or reset the password at any time

5. Set Joining Password – screenshot

Note: Data are fictitious and for demonstration purposes only.

6. Confer Rights Template

- Group Administrator creates template of data elements (Confer Rights Template) that member facilities will share with the Group
  - Group > Define Rights
- For Group Function, Group users will be unable to view data of member facilities that have not accepted Confer Rights Template
- For DUA, facilities in jurisdiction automatically added to group and do not have to accept Confer Rights Template

6. Confer Rights Template – screenshot

Defining Rights for AUR – General & Surveys Sections

- General section
  - Select monthly reporting plan, data analysis and facility information
  - Patient information required for AR Option
- Surveys section
  - Required for SAARs

Defining Rights for AUR – AUR Section

- Antimicrobial Use and Resistance section
  - Select Location Type = (ALL), Location = (ALL)
    - Includes all individual inpatient and outpatient locations

Defining Rights for AUR – AUR Section (cont.)

– Select Location Type = FACWIDE, Location = FacWIDEIn

- Includes FacWideIN
- Must be included to receive FacWideIN data from facilities

7. Invite Member Facilities

- Group Administrator invites facilities to join Group
  - Invitation must include Group's NHSN ID and Joining Password
  - May want to include Group's purpose, summary and reasoning for data elements in confer rights template, and information regarding data use and security

8. Member Facilities Join Group

- Any administrative-level user in the invited facility can join Group
  - Group > Join
  - Enter Group ID and Joining Password
- After member facility joins Group, they will be taken directly to confer rights template

8. Member Facilities Join Group – screenshot

Note: Data are fictitious and for demonstration purposes only.

Accepting the Confer Rights Template for AUR

- Facilities can elect not to share some or all AUR data requested in the Confer Rights Template by checking "N/A" box

Antimicrobial Use and Resistance									
Plan	Month	Year	Month	Year	Location Type	Location	Other Location Requirements	Your Locations	N/A
(All) ☑ Antimicrobial Use ☑ Antimicrobial Resistance			To		(ALL)	(ALL)		Select options ⚠	☐
(All) ☑ Antimicrobial Use ☑ Antimicrobial Resistance			To		FACWIDE	FacWIDEIn			☐

- Facilities can view and edit rights conferred on Action Items/Alerts screen or by navigating to Group > Confer Rights

Congratulations – you created a Group!

Can now receive data from member facilities and access special group features in NHSN

Group View and Reports

NHSN Group Users' View

Rights Acceptance Report

- Track Group membership

- Shows which member facilities accepted Confer Rights Template and when

Note: Data are fictitious and for demonstration purposes only.

Group Analysis Reports

- Group view has same reports as available for facilities plus additional options for analysis
  - Advanced > Group-level Data folder exclusive to Group users
- Facilities do not have to generate datasets for Group users to analyze data

Note: Data are fictitious and for demonstration purposes only.

Line Listing – Membership Rights

Advanced
- Patient-level Data
- Event-level Data
- Procedure-level Data
- Summary-level Data
- Plan Data
- Pathogen-level Data
- Facility-level Data
- Group-level Data
  - Line Listing - Membership Rights ←
  - Create Export File for CUSP - CLAB Rates for ICU/Other
  - Export File for CUSP - SUTI Rates for ICU/Other-SCA
- Vendor Information
- Data Quality
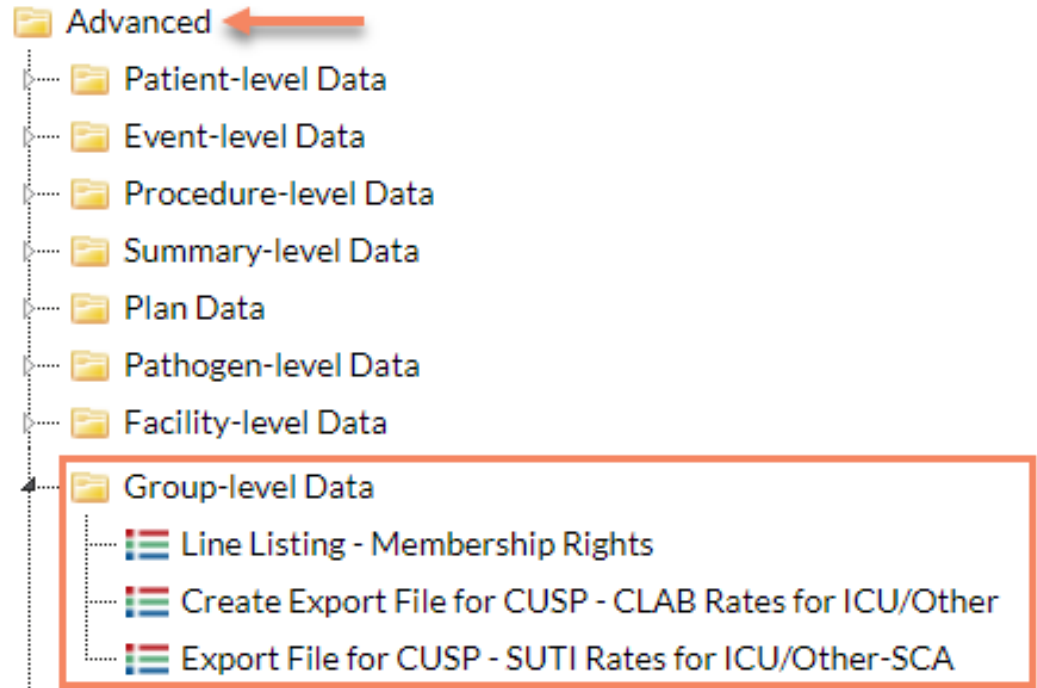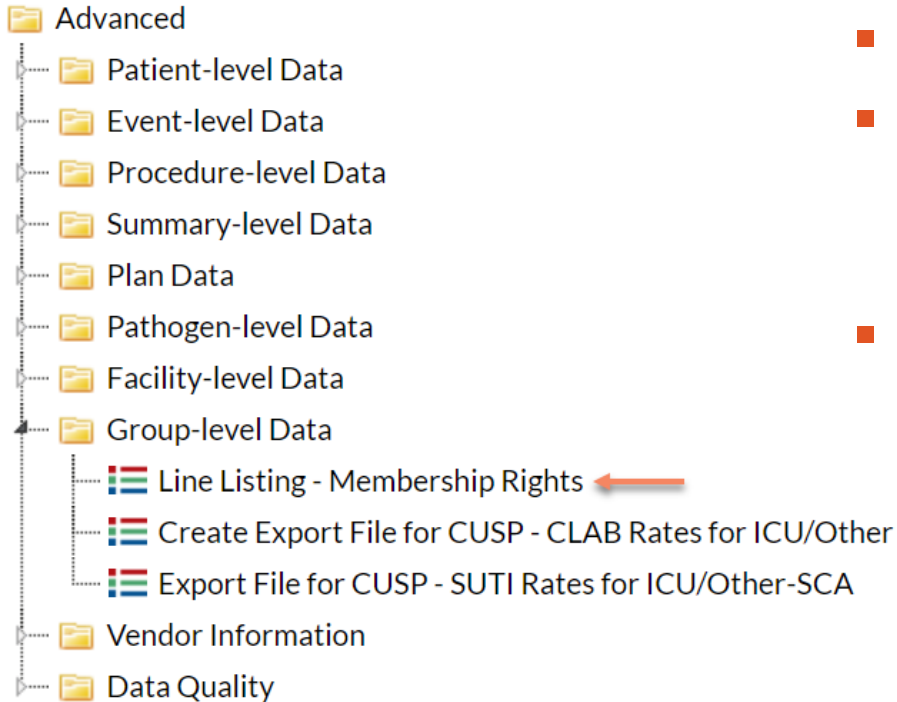
- Exclusive to Group users

- More detailed membership report that describes the rights each facility has conferred

- Line Listing – Membership Rights Quick Reference Guide: https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/membership-rights-508.pdf

Line Listing – Registered Vendor Information for AUR Data

Advanced
- Patient-level Data
- Event-level Data
- Procedure-level Data
- Summary-level Data
- Plan Data
- Pathogen-level Data
- Facility-level Data
- Group-level Data
- Vendor Information
  - Line Listing - Registered Vendor Information for AUR Data ←
- Data Quality

- Available to facilities and Group users
- Provides information about vendor(s) and software each member facility uses to submit AUR data
- Vendors must have passed Synthetic Data Set (SDS) validation
  - Required for AU; AR requirement forthcoming
  - More information about vendors and SDS: https://www.cdc.gov/nhsn/cdaportal/au-sds/index.html

Group-level AUR Data

- Group view has same reports as available for facilities, but Groups will see all facilities in single output by facility orgID

- Facilities do not have to generate datasets for Group users to analyze data

- All AUR reports can be run at the facility or group level, including SAAR reports and facility-wide antibiogram

Examples

Let's imagine ourselves as Group Administrator for a group of hospitals (a main hospital and two satellite campuses) that report to NHSN separately

Analyzing Group-level AU Data

Example: SAAR Report

National Healthcare Safety Network
SAARs Table - All Adult and Pediatric Standardized Antimicrobial Administration Ratios (SAARs)
High-Level Indicators and High-Value Targets (2017 Baseline)
As of: February 10, 2022 at 5:22 PM
Date Range: AU_SAAR_2017 summaryYM 2021M08 to 2021M08

All Antibacterial Agents used in adult SAAR ICUs, wards, step down units and oncology units

orgID	summaryYM	SAARType_2017	antimicrobialDays	numAUDaysPredicted	numDaysPresent	SAAR	SAAR_pval	SAAR95CI
10000	2021M08	Adult_All-Antibacterial_2017	2279	3439.626	4368	0.663	0.0000	0.636, 0.690
10036	2021M08	Adult_All-Antibacterial_2017	2301	3494.261	4299	0.659	0.0000	0.632, 0.686
33617	2021M08	Adult_All-Antibacterial_2017	4502	6215.340	8609	0.724	0.0000	0.703, 0.746

Note: Data are fictitious and for demonstration purposes only.

SAAR Aggregation Across Group Members

- NHSN does not have a built-in option to generate one SAAR for multiple facilities

- Can export and manually pool data to calculate SAARs at different levels of aggregation

- More information in the SAAR Guide under "Scalability of the SAAR – how to aggregate SAAR data" starting on page 18: https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/aur/au-saar-guide-508.pdf

Example: SAAR Aggregation

Our healthcare system's C-Suite asked for an aggregate Adult All Antibacterial SAAR for our main hospital and satellite campuses for August 2021

National Healthcare Safety Network
SAARs Table - All Adult and Pediatric Standardized Antimicrobial Administration Ratios (SAARs)
High-Level Indicators and High-Value Targets (2017 Baseline)
As of: February 10, 2022 at 5:22 PM
Date Range: AU_SAAR_2017 summaryYM 2021M08 to 2021M08

All Antibacterial Agents used in adult SAAR ICUs, wards, step down units and oncology units

orgID	summaryYM	SAARType_2017	antimicrobialDays	numAUDaysPredicted	numDaysPresent	SAAR	SAAR_pval	SAAR95CI
10000	2021M08	Adult_All-Antibacterial_2017	2279	3439.626	4368	0.663	0.0000	0.636, 0.690
10036	2021M08	Adult_All-Antibacterial_2017	2301	3494.261	4299	0.659	0.0000	0.632, 0.686
33617	2021M08	Adult_All-Antibacterial_2017	4502	6215.340	8609	0.724	0.0000	0.703, 0.746

Note: Data are fictitious and for demonstration purposes only.

Example: SAAR Aggregation – Pooling Data

- Calculate pooled SAAR for aggregation levels not available in NHSN:
  - Sum observed antimicrobial days across desired levels of aggregation
  - Sum predicted antimicrobial days across same levels
  - Divide pooled observed antimicrobial days by pooled predicted antimicrobial days

orgID	summaryYM	SAARType_2017	antimicrobialDays	numAUDaysPredicted	numDaysPresent	SAAR	SAAR_pval	SAAR95CI
10000	2021M08	Adult_All-Antibacterial_2017	2279	3439.626	4368	0.663	0.0000	0.636, 0.690
10036	2021M08	Adult_All-Antibacterial_2017	2301	3494.261	4299	0.659	0.0000	0.632, 0.686
33617	2021M08	Adult_All-Antibacterial_2017	4502	6215.340	8609	0.724	0.0000	0.703, 0.746

Note: Data are fictitious and for demonstration purposes only.

Example: SAAR Aggregation – Calculation

orgID	summaryYM	SAARType_2017	antimicrobialDays	numAUDaysPredicted	numDaysPresent	SAAR	SAAR_pval	SAAR95CI
10000	2021M08	Adult_All-Antibacterial_2017	2279	3439.626	4368	0.663	0.0000	0.636, 0.690
10036	2021M08	Adult_All-Antibacterial_2017	2301	3494.261	4299	0.659	0.0000	0.632, 0.686
33617	2021M08	Adult_All-Antibacterial_2017	4502	6215.340	8609	0.724	0.0000	0.703, 0.746

Note: Data are fictitious and for demonstration purposes only.

$$ SAAR = \frac{2279 + 2301 + 4502}{3439.626 + 3494.261 + 6215.340} = \frac{9082}{13149.227} = 0.691 $$

We can tell C-Suite that the aggregate Adult All Antibacterial SAAR for our main hospital and satellite campuses for August 2021 was **0.691**

42

Summary Statistics for Aggregate SAARs

- NHSN Statistics Calculator, a tool within the NHSN application, conducts statistical tests and determines statistical differences

- Can be used to compare SAARs to nominal value or compare two SAAR values to each other

  - NHSN does not recommend comparing aggregate SAARs over time

- More information in the SAAR Guide under "Comparing two SAAR values" starting on page 17: https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/aur/au-saar-guide-508.pdf

Example: Statistics Calculator – Navigation

Example: Statistics Calculator – Compare to 1

Statistics Calculator

- Compare Two Proportions

- Compare Two Incidence Density Rates

- Compare Single Proportion to a Benchmark

The options below can be applied to the following standardized ratios: standardized infection ratios (SIRs), standardized utilization ratios (SURs), and standardized antimicrobial administration ratios (SAARs).

- Compare Single Standardized Ratio (for example, SIR) to Nominal Value

- Compare Single Standardized Ratio (for example, SIR) to 1

- Compare Two Standardized Ratios (for example, SIRs)

Example: Statistics Calculator – SAAR

Compare Single Standardized Ratio (for example, SIR) to 1

When comparing a standardized ratio to 1, the hypothesis is that the ratio is not different from 1 (specifically, the number observed is not different than the number predicted). To perform a hypothesis test and calculate a p-value and 95% confidence interval, first select the type of ratio you wish to analyze. Then, enter the values for the appropriate number observed and number predicted. The standardized ratio will be displayed automatically. Click Calculate.

Type of ratio: [SAAR - standardized antimicrobial administration ratio ⌄]

Data Source #1

Number Observed Antimicrobial Days of Therapy: [   ]

Number Predicted Antimicrobial Days of Therapy: [   ]

Standardized Antimicrobial Administration Ratio:

Title: [   ]

[Calculate] [Back]

Example: Statistics Calculator – Enter Data

Compare Single Standardized Ratio (for example, SIR) to 1

When comparing a standardized ratio to 1, the hypothesis is that the number observed is not different than the number predicted). To perform and 95% confidence interval, first select the type of ratio you wish to appropriate number observed and number predicted. The standardize Calculate.

$$SAAR = \frac{9082}{13149.227} = 0.691$$

Type of ratio: SAAR - standardized antimicrobial administration ratio ∨

Data Source #1

Number Observed Antimicrobial Days of Therapy: 9082

Number Predicted Antimicrobial Days of Therapy: 13149.227

Standardized Antimicrobial Administration Ratio: 0.691

Title:

Calculate   Back

47

Example: Statistics Calculator – Title

Compare Single Standardized Ratio (for example, SIR) to 1

When comparing a standardized ratio to 1, the hypothesis is that the ratio is not different from 1 (specifically, the number observed is not different than the number predicted). To perform a hypothesis test and calculate a p-value and 95% confidence interval, first select the type of ratio you wish to analyze. Then, enter the values for the appropriate number observed and number predicted. The standardized ratio will be displayed automatically. Click Calculate.

Type of ratio: SAAR - standardized antimicrobial administration ratio ∨

Data Source #1

Number Observed Antimicrobial Days of Therapy: 9082

Number Predicted Antimicrobial Days of Therapy: 13149.227

Standardized Antimicrobial Administration Ratio: 0.691

Title: Compare Aggregate SAAR to 1

Calculate   Back

Example: Statistics Calculator - Results

National Healthcare Safety Network
Compare Aggregate SAAR to 1
As of: March 2, 2022 at 9:08 PM

Number Observed Antimicrobial Days of Therapy	Number Predicted Antimicrobial Days of Therapy	SAAR	SAAR p-value	SAAR 95% CI
9082	13149.227	0.691	0.0000	0.677, 0.705

- *p*-value is 0.000, which is < 0.05

- True SAAR likely lies between 0.677 and 0.705 (0.691 is most likely value)

- We can tell C-Suite that our aggregate SAAR value of 0.691 is significantly different from 1

49

Analyzing Group-level AR Data

Facility-wide Antibiogram Report

- Facility-wide antibiogram displays calculated percent susceptible (%S) for each pathogen-antimicrobial combination reported to the AR Option

$$\%S = \frac{Number\ of\ isolates\ that\ tested\ susceptible}{Number\ of\ isolates\ tested}$$

- %S only calculated if at least 30 isolates tested for specific antimicrobial
- AR Option Facility-Wide Antibiogram Quick Reference Guide: https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/aur/ar-qrg-antibiogram-508.pdf

AR Facility-wide Antibiogram – Default Settings

- Tables by month
- Isolates from:
  - All specimen types (blood, cerebrospinal fluid, urine, and lower respiratory)
  - All patient ages
  - All locations
- All isolates regardless of organism category (gram negative, gram positive, and fungal)
- Both healthcare facility and community onset

Example: Group Antibiogram

Our local health department is concerned about *Acinetobacter* and asked us what percent of *Acinetobacter* isolates tested at our hospital and satellite campuses are susceptible to cephalosporins
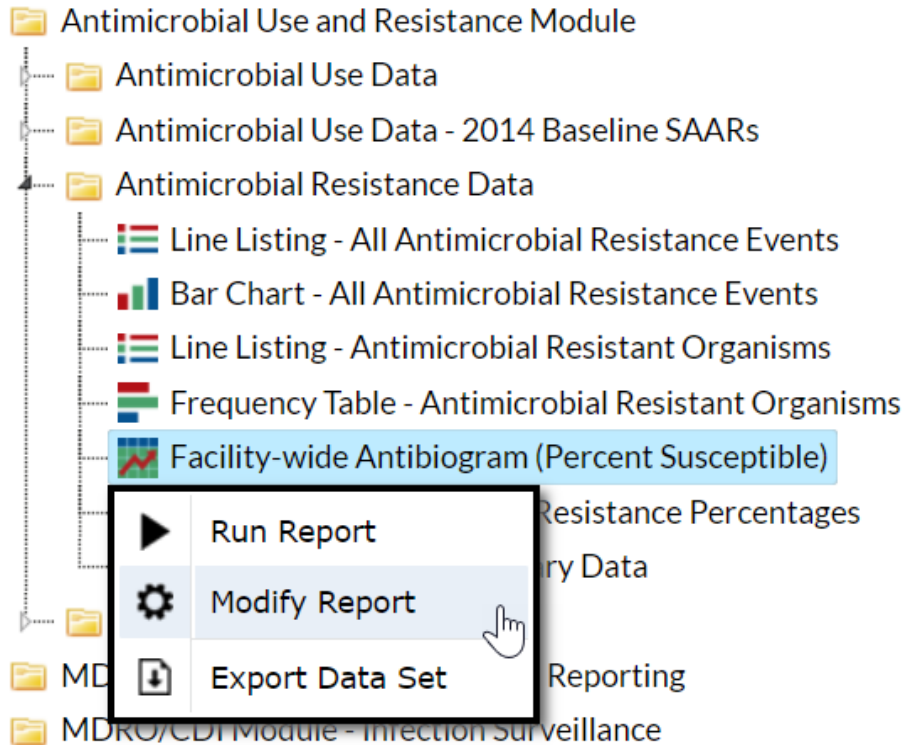
Example: Group Antibiogram – Modify Screen

Example: Group Antibiogram – Table Details

- At group level, first table displays combined antibiogram for all member facilities that report AR data and subsequent tables display antibiograms by orgID

Note: Data are fictitious and for demonstration purposes only.

National Healthcare Safety Network
Facility-wide Antibiogram (Percent Susceptible)
Rate per 100 Isolates
As of: March 5, 2022 at 9:03 PM
Date Range: All AUR_SUMMARY
if (((Pathogen = "ACS")))

		Pathogen
		Gram-Negative
Drug Class	Drug	Acinetobacter - ACS
Aminoglycosides	AMK	51.0
	GENTA	86.0
	TOBRA	94.0
B-lactam/ B-lactamase inhibitor combination	AMPIWS	29.0
	PIPERWT	91.0
	TICARWC	.
Carbapenems	DORI	.
	IMIPWC	46.0
	MERO	89.0
Cephalosporins	CEFEP	37.0
	CEFID	.
	CEFOT	89.0
	CEFTAZ	91.0
	CEFTRX	94.0
Fluoroquinolones	CIPRO	83.0

Example: Group Antibiogram – Organism Category

- Organisms are grouped by category:
  - Gram-negative
  - Gram-positive
  - Fungal

Note: Data are fictitious and for demonstration purposes only.

National Healthcare Safety Network
Facility-wide Antibiogram (Percent Susceptible)
Rate per 100 Isolates
As of: March 5, 2022 at 9:03 PM
Date Range: All AUR_SUMMARY
if (((Pathogen = "ACS")))

Drug Class	Drug	Pathogen — Gram-Negative — Acinetobacter - ACS
Aminoglycosides	AMK	51.0
	GENTA	86.0
	TOBRA	94.0
B-lactam/ B-lactamase inhibitor combination	AMPIWS	29.0
	PIPERWT	91.0
	TICARWC	.
Carbapenems	DORI	.
	IMIPWC	46.0
	MERO	89.0
Cephalosporins	CEFEP	37.0
	CEFID	.
	CEFOT	89.0
	CEFTAZ	91.0
	CEFTRX	94.0
Fluoroquinolones	CIPRO	83.0

Example: Group Antibiogram – Drug Class & Drug

■ Drugs are sorted into drug classes organized alphabetically

■ Full drug names can be found in Eligible Antimicrobial Agents document: https://www.cdc.gov/nhsn/xls/aur/aur-eligible-antimicrobial-agents.xlsx

Note: Data are fictitious and for demonstration purposes only.

National Healthcare Safety Network
Facility-wide Antibiogram (Percent Susceptible)
Rate per 100 Isolates
As of: March 5, 2022 at 9:03 PM
Date Range: All AUR_SUMMARY
if (((Pathogen = "ACS")))

| | | Pathogen |
| | | Gram-Negative |
Drug Class	Drug	Acinetobacter - ACS
Aminoglycosides	AMK	51.0
	GENTA	86.0
	TOBRA	94.0
B-lactam/ B-lactamase inhibitor combination	AMPIWS	29.0
	PIPERWT	91.0
	TICARWC	.
Carbapenems	DORI	.
	IMIPWC	46.0
	MERO	89.0
Cephalosporins	CEFEP	37.0
	CEFID	
	CEFOT	89.0
	CEFTAZ	91.0
	CEFTRX	94.0
Fluoroquinolones	CIPRO	83.0

Example: Group Antibiogram – Invalid Combinations

- Though not present in our example, cells shaded in grey represent invalid pathogen/drug combinations

- Susceptibility tests for those drugs are not reported for those pathogens

- Refer to the AUR Module protocol for all valid pathogen/drug combinations: https://www.cdc.gov/nhsn/pdfs/pscmanual/11pscaurcurrent.pdf

Note: Data are fictitious and for demonstration purposes only.

58

National Healthcare Safety Network
Facility-wide Antibiogram (Percent Susceptible)
Rate per 100 Isolates
As of: March 5, 2022 at 9:40 PM
Date Range: All AUR_SUMMARY

Drug Class	Drug	Acinetobacter - ACS	Acinetobacter baumannii - ACBA	Acinetob calcoace - ACIC
Aminoglycosides	AMK	51.0		
	GENTA	86.0	.	
	STREP			
	TOBRA	94.0	.	
Azoles	FLUCO			
	ITRA			
	POSAC			
	VORI			
B-lactam/ B-lactamase inhibitor combination	AMOXWC			
	AMPIWS	29.0		

Example: Group Antibiogram – Interpretation

- We can show the health department our group-level antibiogram, specifically the cephalosporins

  - Only 36% of *Acinetobacter* isolates tested were susceptible to cefepime (CEFEP)

  - Tested less than 30 *Acinetobacter* isolates for cefiderocol (CEFID) susceptibility

  - Remaining cephalosporins had fairly high susceptibility

Note: Data are fictitious and for demonstration purposes only.

National Healthcare Safety Network
Facility-wide Antibiogram (Percent Susceptible)
Rate per 100 Isolates
As of: March 5, 2022 at 9:03 PM
Date Range: All AUR_SUMMARY
if (((Pathogen = "ACS")))

Drug Class	Drug	Pathogen Gram-Negative Acinetobacter - ACS
Aminoglycosides	AMK	51.0
	GENTA	86.0
	TOBRA	94.0
B-lactam/ B-lactamase inhibitor combination	AMPIWS	29.0
	PIPERWT	91.0
	TICARWC	.
Carbapenems	DORI	.
	IMIPWC	46.0
	MERO	89.0
Cephalosporins	CEFEP	37.0
	CEFID	.
	CEFOT	89.0
	CEFTAZ	91.0
	CEFTRX	94.0
Fluoroquinolones	CIPRO	83.0

Monitoring AUR Data Quality at the Group Level

Participation Alerts

Note: Data are fictitious and for demonstration purposes only.

Line Listing – Participation Alerts

- Groups do not have access to facilities' Alert screens

- Groups can access alerts created for each facility through the Line Listing – Participation Alerts and frequency table

- Line Listing – Participation Alerts Quick Reference Guide: https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/group-alerts.pdf

📁 Facility-level Data

├── Line Listing - Participation Alerts   **Last Generated: February 10, 2022 5:29 PM** ⬅
├── Frequency Table - Participation Alerts   **Last Generated: February 10, 2022 5:29 PM** ⬅
├── Line Listing - Custom Field Variable Names
├── Line Listing - Facility Users

Note: Data are fictitious and for demonstration purposes only.

Generating Participation Alerts

Note: Data are fictitious and for demonstration purposes only.

63

Example: Participation Alerts Line List – Modification Screen

View participation alerts for the AUR Module by modifying the Line Listing – Participation Alerts and filtering by module

Example: Participation Alerts Line List – Output

National Healthcare Safety Network
Line Listing - Participation Alerts
As of: February 11, 2022 at 1:35 PM
Date Range: PARTICIPATIONALERT planYM 2021M08 to 2021M08
if (((module = "AUR")))

alertType=Missing Summary Data

orgID	CCN	module	planYM	location	locCDC	eventTypePath	summaryDataType	procCode	setting	surveyYr	surveyType	groupID	alertMessage	alertType
10000	31C0001043	AUR	2021M08	FACWIDEIN	FACWIDEIN	AU Summary	AU			.		.	Missing Summary Data	Missing Summary Data
10000	31C0001043	AUR	2021M08	MED ICU	IN:ACUTE:CC:M	AU Summary	AU			.		.	Missing Summary Data	Missing Summary Data
10036	999999	AUR	2021M08	24HROBS	OUT:ACUTE:WARD	AR Event	AR			.		.	Missing Summary Data	Missing Summary Data
10036	999999	AUR	2021M08	24HROBS	OUT:ACUTE:WARD	AU Summary	AU			.		.	Missing Summary Data	Missing Summary Data
10036	999999	AUR	2021M08	FACWIDEIN	FACWIDEIN	AU Summary	AU			.		.	Missing Summary Data	Missing Summary Data
10036	999999	AUR	2021M08	ICU-B	IN:ACUTE:CC:S	AU Summary	AU			.		.	Missing Summary Data	Missing Summary Data
33617	N/A	AUR	2021M08	1020-7	IN:NONACUTE:CLINIC:SLEEP	AU Summary	AU			.		.	Missing Summary Data	Missing Summary Data
33617	N/A	AUR	2021M08	EMER	OUT:ACUTE:ED	AR Event	AR			.		.	Missing Summary Data	Missing Summary Data
33617	N/A	AUR	2021M08	EMER	OUT:ACUTE:ED	AU Summary	AU			.		.	Missing Summary Data	Missing Summary Data
33617	N/A	AUR	2021M08	FACWIDEIN	FACWIDEIN	AR Event	AR			.		.	Missing Summary Data	Missing Summary Data
33617	N/A	AUR	2021M08	ICU-C	IN:ACUTE:CC:S	AU Summary	AU			.		.	Missing Summary Data	Missing Summary Data

Sorted by orgID module planYM location locCDC eventTypePath summaryDataType procCode setting surveyYr surveyType groupID
Data contained in this report were last generated on February 10, 2022 at 5:29 PM: for the following alerts beginning January 2021: All Alerts
If you are a group user or a facility user with limited rights, alerts may indicate limited rights as opposed to missing data.

Note: Data are fictitious and for demonstration purposes only.

AU Option Data Quality Line List

- Line Listing – Antimicrobial Use Data to Review provides opportunity to review data containing four potential data quality issues

- Group users can monitor AU data quality at group level and conduct outreach to member facilities with potential data quality issues

- AU Option Data Quality Line List Quick Reference Guide: https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/aur/au-dataquality-linelist-508.pdf

📁 Antimicrobial Use and Resistance Module
- 📁 Antimicrobial Use Data
- 📁 Antimicrobial Use Data - 2014 Baseline SAARs
- 📁 Antimicrobial Resistance Data
- 📁 Data Quality
  - 🗒 Line Listing - Antimicrobial Use Data to Review ⬅
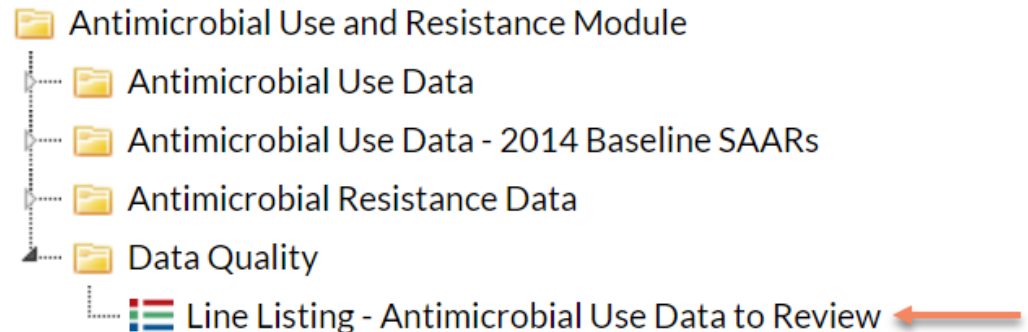
AU Option Data Quality Line List: Table 1

- Facility reported antimicrobial days for every drug as zero or missing (".")
- Not always an error but unlikely to have zero antimicrobial administrations if patients were present during a calendar month

National Healthcare Safety Network
Line Listing for Antimicrobial Use Data to Review
Zero and/or "." antimicrobial days for all drugs in a specific location or FacWideIN
As of: February 24, 2022 at 3:54 PM
Date Range: AU_DATAQUALITY summaryYM 2020M01 to 2020M12

Locations appearing in this table have reported zero or N/A antimicrobial days for all antimicrobials in the given month. Please review these records to ensure data accuracy.
In the event that no patients were present in this unit during this month, these data are accurate.

orgID	summaryYM	location
10000	2020M05	5 WESTT

Any reported use of Colistin will be combined with and reported as Colistimethate. Any reported use of Amikacin Liposomal will be combined with and reported as Amikacin.
Data contained in this report were last generated on February 15, 2022 at 12:44 PM to include data beginning January 2017 .

Note: Data are fictitious and for demonstration purposes only.

AU Option Data Quality Line List: Table 2

- Facility reported antimicrobial days for any drug, but also reported zero days present

- Zero days present indicates no patients present in that location for the entire calendar month so no antimicrobials should be administered

National Healthcare Safety Network

Line Listing for Antimicrobial Use Data to Review

Antimicrobial days reported for any drug when days present are zero for any location or FacWideIN

As of: February 24, 2022 at 3:54 PM

Date Range: AU_DATAQUALITY summaryYM 2020M01 to 2020M12

Carefully review this list which includes locations for which zero days are present, meaning zero patients, were reported in the location during the given month; however, antimicrobial days were reported for one or more drugs. If no patients were present in the location, no antimicrobial days should be reported. This is a data quality error that should be addressed.

orgID	summaryYM	location	drugIngredientDesc	antimicrobialDays	numDaysPresent
33617	2020M05	NICU IV	PENG - Penicillin G	1	0

Any reported use of Colistin will be combined with and reported as Colistimethate. Any reported use of Amikacin Liposomal will be combined with and reported as Amikacin.

Data contained in this report were last generated on February 15, 2022 at 12:44 PM to include data beginning January 2017 .

Note: Data are fictitious and for demonstration purposes only.

AU Option Data Quality Line List: Table 3

- Total antimicrobial days reported for individual drug were greater than days present

- Patient can only attribute one antimicrobial day per drug per day

National Healthcare Safety Network

Line Listing for Antimicrobial Use Data to Review

Antimicrobial days for a single drug greater than or equal to days present for given location or FacWideIN

As of: February 24, 2022 at 4:00 PM

Date Range: AU_DATAQUALITY summaryYM 2020M01 to 2020M12

Carefully review this list which includes individual drugs for which the total number of antimicrobial days are greater than or equal to the number of days present in the given location and month.

Since a patient can contribute only one antimicrobial day per drug per location, the total antimicrobial days should never be greater than or equal to days present. This is a data quality error that should be addressed.

orgID	summaryYM	location	drugIngredientDesc	antimicrobialDays	numDaysPresent
33617	2020M01	24HROBS	AMAN - Amantadine	63	6
33617	2020M01	24HROBS	AMK - Amikacin	12	6
33617	2020M01	24HROBS	AMOX - Amoxicillin	6	6

Note: Data are fictitious and for demonstration purposes only.

69

AU Option Data Quality Line List: Table 4

- Sum of routes of administration < total antimicrobial day count for an individual drug; sum of routes should always be ≥ total antimicrobial days

National Healthcare Safety Network

Line Listing for Antimicrobial Use Data to Review

Sum of routes (IM_Count, IV_Count, Digestive_Count, Respiratory_Count) less than total antimicrobial days for a single drug in any location or FacWideIN

As of: February 24, 2022 at 4:00 PM
Date Range: AU_DATAQUALITY summaryYM 2020M01 to 2020M12

Carefully review this list which includes drugs for which the sum of the routes of administration are less than the total number of antimicrobial days for a given drug. The total antimicrobial

day count should only include IV, IM, digestive, and respiratory administrations as outlined in the AU Option protocol. Therefore, the total antimicrobial days should always be less than or equal

to the sum of the routes. This is a data quality error that should be addressed.

orgID	summaryYM	location	drugIngredientDesc	antimicrobialDays	sumRoutesAdmin
33617	2020M01	24HROBS	AMAN - Amantadine	63	12
33617	2020M01	24HROBS	PENG - Penicillin G	630	12
33617	2020M01	AD_STP_DN	AMAN - Amantadine	33	12

Note: Data are fictitious and for demonstration purposes only.

Example: Data Quality Outreach

OrgID 33617 had quite a few potential data quality issues – healthcare system wants us to ask them to validate their AU data.

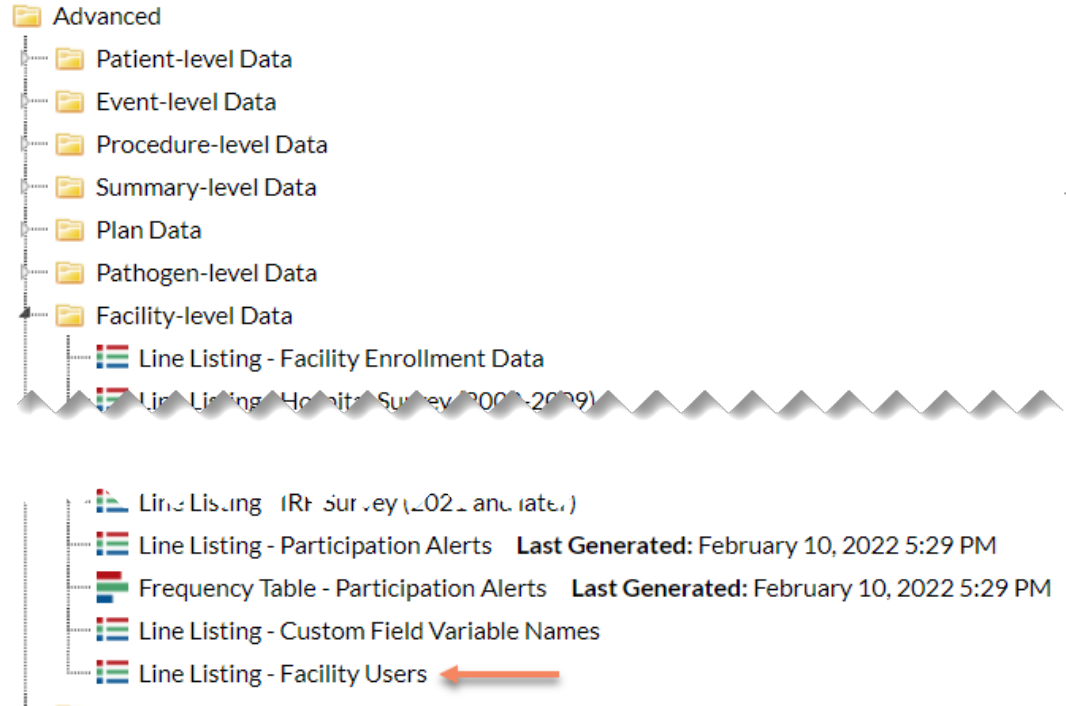# Example: Data Quality Outreach – Email All Users

- Group > Send Email

- This option emails **ALL** users at the selected facilities

- Preferable to send outreach only to relevant users

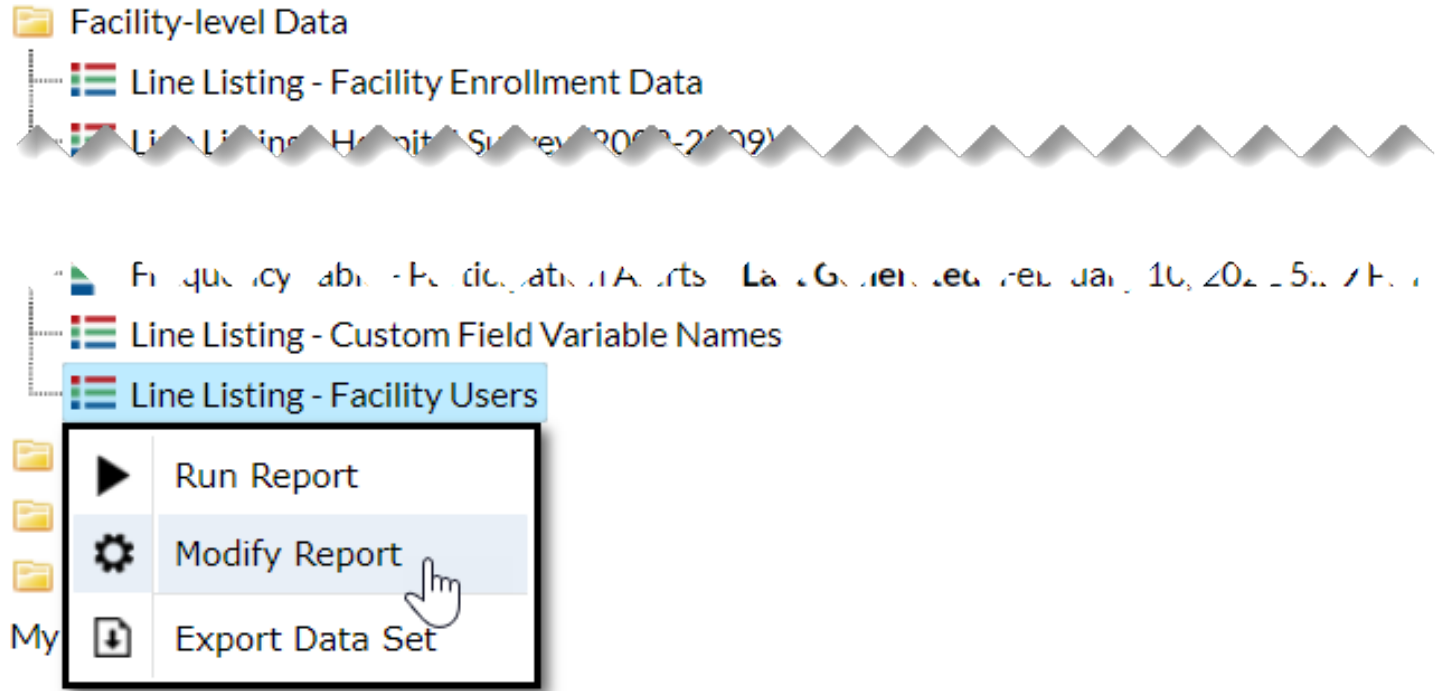**Note:** Data are fictitious and for demonstration purposes only.

Line Listing – Facility Users

- Exclusive to Group users
- Provides name, date last logged in, and contact info for users at every member facility
- Identifies special contacts such as Facility Administrator and Patient Safety Primary Contact

Example: Data Quality Outreach – Modifications

Example: Data Quality Outreach – Filters

Example: Data Quality Outreach – Display Variables

Modify "Line Listing - Facility Users"

☑ Show descriptive variable names (Print List)   **Analysis Data Set:** PSFacility_Users   **Type:** Line Listing   **Last Generated:** February 15, 2022 12:49 PM

| Title/Format | Time Period | Filters | **Display Variables** | Sort Variables | Display Options |

Display Variables:

Available Variables:
- Address 1
- Address 2
- Address 3
- City
- CMS Certification Number
- county
- County Name
- Fax
- Last Modified
- lastLoggedInBV
- lastLoggedInDIAL
- lastLoggedInHPS
- lastLoggedInLTCF
- lastLoggedInPS
- lastLoggedInSAMS

All >>
Selected >
< Selected
<< All

Selected Variables:
- Facility Org ID
- Facility Name
- Salutation
- First Name
- Middle Name
- Last Name
- Title
- contactType
- userType
- Active?
- email

Up
Down
Undo

Run **Save...** **Export...** **Close**

Example: Data Quality Outreach – Output

National Healthcare Safety Network
Line Listing - Facility Users

As of: March 2, 2022 at 9:51 PM
Date Range: All PSFACILITY_USERS
if (((orgID = "33617") AND (contactType = "FADMIN")))

Facility Org ID	Facility Name	Salutation	First Name	Middle Name	Last Name	Title	contactType	userType	Active?	email
33617	_CDA-XYZ TEST FACILITY (PROD)		AMY		WEBB		FADMIN		Y	

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We can email Amy and ask her to validate her facility's AU data using data validation resources on the AUR Module webpage: https://www.cdc.gov/nhsn/psc/aur/index.html

Resources

Group Resources

- NHSN Group Users: https://www.cdc.gov/nhsn/group-users/index.html
- NHSN DUA Announcement: https://www.cdc.gov/hai/state-based/dua-announcment.html
- NHSN DUA FAQ: https://www.cdc.gov/hai/state-based/dua-faq.html
- User Rights in NHSN – AUR Module: https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/nhsn-au-user-rights.pdf

Thank you!

Q&A Session: 11:15-11:30am ET on March 24, 2022
NHSN Help Desk: NHSN@cdc.gov

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348   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.