

## Snapshot on NHSN AU Data Quality

By: *Kranthi Swaroop Koonisetty, PharmD, MS*

The Pennsylvania Department of Health (PA DOH) is working on a state-wide Antimicrobial Stewardship report focused on facilities reporting AU data to NHSN.

We focus on two of the six potential data quality concerns in this quarter's edition of *The Steward*.

[Go deeper \(3 min. read\) on page 2](#)



# U.S. ANTIBIOTIC AWARENESS WEEK

## November 18–24, 2023

[www.cdc.gov/antibiotic-use](http://www.cdc.gov/antibiotic-use)

## U.S. Antibiotic Awareness Week

U.S. Antibiotic Awareness (USAAW) week is an annual observance that raises awareness of the threat of antibiotic resistance and the importance of appropriate antibiotic use.

[Learn more \(1 min read\) on page 5](#)



## SAVE THE DATE:

**VIRTUAL  
CONFERENCE**



PENNSYLVANIA  
**HAI  
SUMMIT**

HEALTHCARE-ASSOCIATED  
INFECTIONS AND  
ANTIMICROBIAL  
STEWARDSHIP

October 19-20, 2023

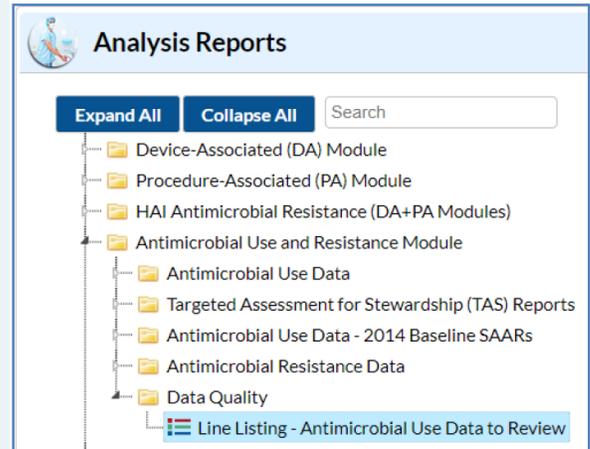


[Full agenda begins on page 6](#)

## Snapshot on NHSN AU Data Quality

In hospitals throughout the United States, there is a growing concern regarding the rising rates of antimicrobial resistance. Research has indicated that offering prompt feedback on prescribing patterns can enhance the appropriateness of antimicrobial use (AU) (Davey et al., 2017). Therefore, it is crucial for healthcare facilities to regularly evaluate the quality of their AU data submitted to the National Healthcare Safety Network (NHSN) (CDC, 2023).

Data quality checks can be performed by reviewing the six potential issues within the Data Quality line listing in the antimicrobial use and resistance (AUR) module in NHSN (Figure 1) (CDC, 2023). It is recommended that facilities run this line listing at regular intervals and collaborate with their vendor to address any potential



**Figure 1:**  
***Line Listing - Antimicrobial Use Data to Review***

data quality issues. Once the problematic data is identified and rectified, facilities should regenerate the data sets and re-run the line listing to verify that the data quality concern has been resolved (CDC, 2023).

**As a part of this effort, PA DOH has reached out to facilities with potential data quality concerns in the most recent NHSN AU data (January 2022 – June 2022).**

**There are six potential data quality concerns with regard to AU data in NHSN:**

1. Zero or missing antimicrobial days
2. Antimicrobial days reported when patients were not present
3. Antimicrobial days greater than or equal to number of days present
4. Sum of routes less than total antimicrobial days
5. Facility-wide inpatient (FacWideIN) antimicrobial days greater than sum of antimicrobial days for all inpatient locations
6. FacWideIN days present greater than sum of days present for all inpatient locations

Based on NHSN AU data from January 2022 to June 2022, it was found that 21 facilities in Pennsylvania experienced data quality concern 1, while 2 facilities reported data quality concern 2. The PA DOH has reached out to these facilities via e-mail to get their data corrected in NHSN.

## Snapshot on NHSN AU Data Quality (continued from page 2)

In this edition, data quality concerns 1 and 2 are discussed in detail:

### 1. Zero or missing Antimicrobial Days

The first table in the report contains any months for which the facility recorded zero or missing antimicrobial days for every drug (Figure 2). If a facility unit was closed to patients, reporting zero antimicrobial days would be accurate (CDC, 2023). However, if patients were present in that location, the facilities need to review the AU data to confirm that no antimicrobials were administered in that location during that specific month (CDC, 2023).

### 2. Antimicrobial Days Reported When Patients Were Not Present:

The second table within the report displays the months when the facility recorded antimicrobial days for a specific drug but reported zero days present, meaning that no patients were in that location during the month (Figure 3). Facilities should assess why the vendor system is incorrectly assigning either antimicrobial days or days present (CDC, 2023).

#### 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

Table 1

As of: December 4, 2019 at 4:12 PM

Date Range: AU\_DATAQUALITY summaryYM After and Including 2019M01

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.

Facility Org ID = 00001

Facility Org ID	Summary Year/Month	Location
00001	EX.1111J0	SAMPLE

### Figure 2

demonstrates an example of the *Zero or missing antimicrobial days* data quality concern.

#### 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

Table 2

As of: August 19, 2020 at 11:26 AM

Date Range: All AU\_DATAQUALITY

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.

Facility Org ID = 00001

Facility Org ID	Summary Year/Month	Location	Antimicrobial Agent Description	Antimicrobial Days	Days Present
00001	EX.1111J01	PPP IV	PEG -SAMPLE	1	0

### Figure 3

demonstrates an example of the *Antimicrobial days reported when patients were not present* data quality concern.

## Antimicrobial Resistant Organisms Reported in Pennsylvania

Carbapenemase	Quarter 2 - 2023 (04/01/2023 – 06/30/2023)				
	CRE	CRAB	CRPA	Unknown	Total by Mechanism
KPC	23	0	0	2	25
NDM	3	0	0	1	4
IMP	2	0	0	0	2
OXA-like	2	7	0	8	17
VIM	0	0	0	0	0
Carbapenemase detected by phenotype, no geno-	1	0	0	0	1
Total by Organism	29	7	0	10	46*
		Clinical	Colonized	Total	
<i>Candida auris</i>		5	3	8	

### Abbreviations:

CRE=Carbapenem-resistant *Enterobacterales*

CRAB=Carbapenem-resistant *Acinetobacter baumannii*

CRPA=Carbapenem-resistant *Pseudomonas aeruginosa*.

Learn more about carbapenemases and CRE at:

[CDC CRE Technical Information](#)

\*Data include all counties in PA except for Philadelphia. The counts were captured through voluntary reporting by health care facilities and laboratories, including the PA Bureau of Laboratories. Philadelphia's surveillance data, is available at <https://hip.phila.gov/data-reports-statistics/healthcare-associated->

## 2019 HAI Report Available Online

The 2019 HAI Report from the Division of Healthcare Associated Infection Prevention and Antimicrobial Stewardship is now available to view online [here](#).

This report contains summary measures for several CDC defined healthcare-associated infections from a variety of hospitals.

## References

Davey, P., Marwick, C. A., Scott, C. L., Charani, E., McNeil, K., Brown, E., Gould, I. M., Ramsay, C. R., & Michie, S. (2017). Interventions to improve antibiotic prescribing practices for hospital inpatients. *The Cochrane database of systematic reviews*, 2(2), CD003543. <https://doi.org/10.1002/14651858.CD003543.pub4>

AU Option Data Quality Line List CDC. (2023). Retrieved July 18, 2023, from <https://www.cdc.gov/nhsn/psc/aur/index.html>

Centers for Disease Control and Prevention. "Antibiotic Resistance Threats in the United States, 2019." *ANTIBIOTIC RESISTANCE THREATS in the UNITED STATES*, Nov. 2019, doi: <https://doi.org/10.15620/cdc:82532>

Centers for Medicare & Medicaid Services Data. (n.d.). Data.cms.gov. Retrieved January 24, 2023, from <https://data.cms.gov/provider-summary-by-type-of-service/medicare-part-d-prescribers/medicare-part-d-prescribers-by-geography-and-drug>

### Bureau of Epidemiology

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## National Health Observances 2023:

### September 18–22, 2023 National Fungal Diseases Awareness Week (FDAW)

Each year, the Centers for Disease Control and Prevention (CDC) and its partners promote activities and outreach that encourage everyone to *Think Fungus*. Several events in 2023 showed the growing challenges, complexities, and devastating impact of fungal diseases. **Visit:** [Fungal Disease Awareness Week 2023](#)

### October 15, 2023 Global Handwashing Day

Each year on October 15, the CDC works with global partners and colleagues to highlight [Global Handwashing Day](#) and raise awareness about the importance of handwashing with soap and water. Global Handwashing Day is a yearly reminder that handwashing with soap and water is one of the best steps we can take to avoid getting sick and spreading germs to others. The theme of, "Clean Hands Are Within Reach," calls for coordinated action as we actively work toward universal hand hygiene access and practice.

### November 18-24, 2023 U.S. Antibiotic Awareness Week

U.S. Antibiotic Awareness Week (USAAW) is a yearly event to increase awareness of antibiotic resistant threats and reinforce the importance of antibiotic stewardship. You can participate in USAAW by sharing antibiotic stewardship messages on social media, displaying educational posters within your facility, and distributing antibiotic stewardship handouts to patients and healthcare providers. These resources have been developed by the CDC and are available [here](#). You can support antibiotic stewardship year-round by participating in [Be Antibiotics Aware](#), an educational program to promote appropriate antibiotic prescribing by the Centers for Disease Control and Prevention (CDC).



## Educational Opportunities:

### Spark the Conversation: Fireside Chats on Infection Control with PA Project First-line Infection Preventionists

- Fireside Chats are available to ALL Frontline Healthcare Workers on the 1st Tuesday of each month at noon.
- Starting this Fall, the Fireside Chats virtual discussion will focus on CDC micro-learns.

### First Line Defense: Long-Term Care Infection Control Learning for Frontline Healthcare Workers

- A new training series for frontline healthcare workers in the long-term care setting. Become part of the solution to preventing the spread of germs!
- **Training topics include:** Personal Protective Equipment (PPE), Risk Recognition, Hand Hygiene, Infection Safety, and more!



**Register Today!**

[Click Here](#)

or use the QR Code



## News You Can Use: NARMS-related Report in Food Microbiology Recently Published

[Prevalence of ciprofloxacin resistance and associated genetic determinants differed among \*Campylobacter\* isolated from human and poultry meat sources in Pennsylvania](#)

### Highlights:

- Investigated *Campylobacter* sample was highly diverse.
- The prevalence of ciprofloxacin resistance was significantly higher among *Campylobacter* isolates from humans compared to poultry meat.
- There was a high concordance between antimicrobial resistance genotypes and phenotypes for all tested antimicrobials.

## Association for the Health Care Environment (AHE) National Award Winners!

### 2023 EVS Department of the Year:

Geisinger Medical Center, Danville, PA

### 2023 Certificate of Merit Recipient:

Geisinger Bloomsburg Hospital, Bloomsburg, PA

[Environmental Services Department of the Year](#)



**PENNSYLVANIA HEALTHCARE-ASSOCIATED  
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HAI SUMMIT**  
October 19-20, 2023



**REGISTER NOW** for [Day 1 Plenaries](#) and [Day 2 Plenaries](#)!



**Tips:**

1. Register for each day. Daily calendar invites will include one link to join both plenary sessions that day.
2. No need to register for breakout sessions, except for the APHL-hosted session. To join breakout sessions, click on the presentation titles and enter the meeting ID and passcode provided, if prompted.
3. Instructions for obtaining CE credits and accessing recordings will be emailed to registered participants following the event.

**FINAL AGENDA: THURSDAY, OCTOBER 19, 2023**

Session Time	Session Title and Presenters	CEs Offered	Meeting ID and Passcode
<b>Plenary Session</b>			
<b>12:00 PM– 1:15 PM</b>	Welcome and Opening Remarks Debra Bogen, MD, FAAP (Acting Secretary of Health)	Nursing NHA CHES	Information sent with “Day 1 Plenaries” registration
	<i>Candida auris Update: Current Epidemiology of Candida auris and Practical Considerations for Prevention</i> Meghan Lyman, MD (CDC) and Belinda Ostrowsky MD, MPH (CDC)		
<b>Breakout Sessions (choose one)</b>			
<b>1:15 PM – 2:15 PM</b>	<a href="#"><u>Enhanced Barrier Precautions: Considerations for Implementation</u></a> Linda Behan, BSN, RN (LTC Consultant), Cara Bicking Kinsey, PhD, MPH, RN (PADOH), Catherine O’Gorman, RN (Meadowood Senior Living), Tiina Peritz, MS, BSN, RN (PDPH), Rebecca Meyer, RN (Masonic Villages)	Nursing NHA	Meeting ID: 239 607 775 815 Passcode: DgpiHM
	<i>APHL-Hosted: Molecular Syndromic Panels for the Diagnosis of Infectious Diseases—Antibiotic and Diagnostic Stewardship</i> Joseph Lutgring, MD (CDC)		
<b>10 Minute Break</b>			
<b>Breakout Sessions (choose one)</b>			
<b>2:25 PM – 3:25 PM</b>	<a href="#"><u>Antibiotic Stewardship in Post-Acute and Long-Term Care Settings: Tools for Implementation</u></a> Robin Jump, MD, PhD (VA Medical Center) and David A. Nace, MD, MPH (UPMC)	Nursing NHA ACPE	Meeting ID: 283 610 868 945 Passcode: iVoTzB
	<a href="#"><u>What’s In Your Endoscope? Ameliorations for Patient Safety</u></a> Mohamed Yassin, MD, PhD (UPMC)		
<b>5 Minute Break</b>			
<b>Plenary Session</b>			
<b>3:30 PM – 4:30 PM</b>	<i>Respiratory Viral Infections of Public Health Interest in the Healthcare Settings</i> Sameh Boktor, MD, MPH (PADOH)	Nursing NHA CHES	Information sent with “Day 1 Plenaries” registration



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**FINAL AGENDA: FRIDAY, OCTOBER 20, 2023**

Session Time	Session Title and Presenters	CEs Offered	Meeting ID and Passcode
<b>Plenary Session</b>			
9:00 AM – 10:00 AM	Welcome  <i>An Overview of the SHEA/ISDA/APIC 2022 Updates to Strategies to Prevent Healthcare-Associated Infections Through Hand Hygiene</i> Janet Glowicz, PhD, RN (CDC)	Nursing NHA CHES	Information sent with “Day 2 Plenaries” registration
<b>10 Minute Break</b>			
<b>Breakout Sessions (choose one)</b>			
10:10 AM – 11:10 AM	<a href="#"><u>Invasive Group A Streptococcal Disease: More Than Just Strep Throat</u></a> Allison Longenberger, PhD, MPT (PADOH)	Nursing NHA	Meeting ID: 259 082 065 291 Passcode: ukQGEZ
	<a href="#"><u>National Healthcare Safety Network (NHSN): Antimicrobial Use and Resistance Data</u></a> Teah Snyder, PhD, MPH (PADOH)	Nursing ACPE	Meeting ID: 238 042 192 746 Passcode: Rvyxok
<b>5 Minute Break</b>			
<b>Plenary Session</b>			
11:15 AM – 12:45 PM	<i>Water Management Program: Reducing Risk from Water in Healthcare</i> Matthew J. Arduino, DrPH, MS (CDC)	Nursing NHA CHES	Information sent with “Day 2 Plenaries” registration
	Closing Remarks & What’s Next Carrie Hanley, PhD, MPH (PADOH) and Jane Gould, MD (PDPH)		

**TECHNICAL REQUIREMENTS**  
 Desktop: Microsoft Teams App, Google Chrome or Microsoft Edge  
 Mobile: Microsoft Teams App  
[Check your system requirements](#)



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