



TDH Bi-Monthly Antibiotic Steward Call

April 8, 2025



Welcome



Announcements

9th Annual Middle TN AS Symposium

9th Annual Middle Tennessee Antimicrobial Stewardship Symposium

Friday, May 16, 2025
8am-3:30 pm (Central Time)

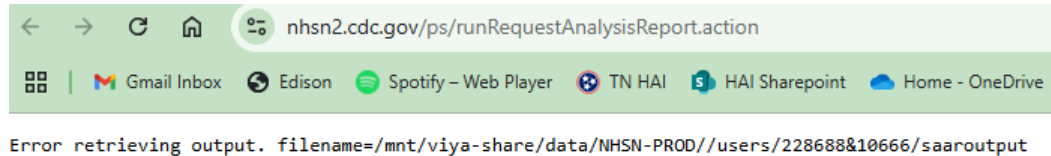
Registration deadline is approaching!

Live, In-Person CE
Jointly Provided by Tennessee Medical Association
and Belmont University College of Pharmacy & Health
Sciences

- **Registration Deadline – May 5**
 - **https://www.eeds.com/portal_live_events.aspx?ConferenceID=871063**

NHSN SAAR Report Issue

- Investigating error that may be affecting SAAR, AU linelists, and TAS Reporting



- Have not heard official report from NHSN
- May affect our ability to deliver Q1 reports



NHSN AU and SAAR Report



Tennessee Analysis of NHSN AU Rate and SAAR

Glodi Mutamba, MD, MPH; Callyn Wren, PharmD, BCIDP; Dipen Patel MBBS,
MPH, MPM; Melpine Harriott, PhD, D (ABMM), MLS (ASCP)SM^{CM1};
Christopher Evans, PharmD

April 8, 2025

AU and AR Option Reporting Requirements

CMS Promoting Interoperability Program

- **AU Surveillance and AR Surveillance**
 - Split into 2 measures, 2025
- **Eligible hospitals must be in active engagement with NHSN for AU and/or AR data during the self-selected 180-day HER reporting period AND**
 - **Received report from NHSN indicating successful submission OR**
- **Claim applicable exclusion for one or both measures separately**

AU and AR Option Reporting Requirements

TDH HAI/AR Antimicrobial Stewardship

- **ALL facilities required to report AU Option data only into NHSN**
- **Facilities not meeting the requirement will be listed as non-compliant on the TDH website**
- **AR data reporting is voluntary**
 - **TDH has published a statewide antibiogram with the available data**

Questions about Reporting?

Operational Guidance: [CMS Operational Guidance for Acute Care Hospitals to Report AUR Data](#)

Guidance for Facilities: [NHSN AUR Promoting Interoperability Guidance](#)

FAQs for AUR reporting and the Medicare Promoting Interoperability Program:
[FAQs: AUR Reporting for the CMS Promoting Interoperability Program | NHSN | CDC](#)

Please direct questions about NHSN AUR Reporting to the NHSN Helpdesk. If you have SAMS credentials you can submit a ticket to the NHSN Helpdesk using this link: <https://servicedesk.cdc.gov/epp>. If you do not have SAMS credentials you can email us at NHSN@cdc.gov.

TN Specific Questions: Christopher.Evans@tn.gov or Callyn.Wren@tn.gov



Tennessee Analysis of NHSN AU Rate and SAAR

Background

- **To describe SAAR trends utilizing the NHSN AU option and antimicrobial use in TN from 2017 – 2023**
- **Required submission to AU Option using phased-based approach based on facility size**
- **97 unique facilities in TN submitted at least 1 month of data (Jan 2017 – Dec 2023)**
 - **42 small/critical access hospitals, 30 medium-sized hospitals and 23 large hospitals**

Methods

- Access to hospital AU Option data through an NHSN User Group.

$$\text{AU Rates} = \frac{\text{Antimicrobial days of therapy (DOT)}}{\text{Days Present (DP)} * 1000}$$

- Antimicrobial days (DOT): aggregated by antimicrobial agent for each facility and unit location.
- Statewide SAAR was computed as the ratio of the total aggregated DOT to the predicted total antimicrobial use.

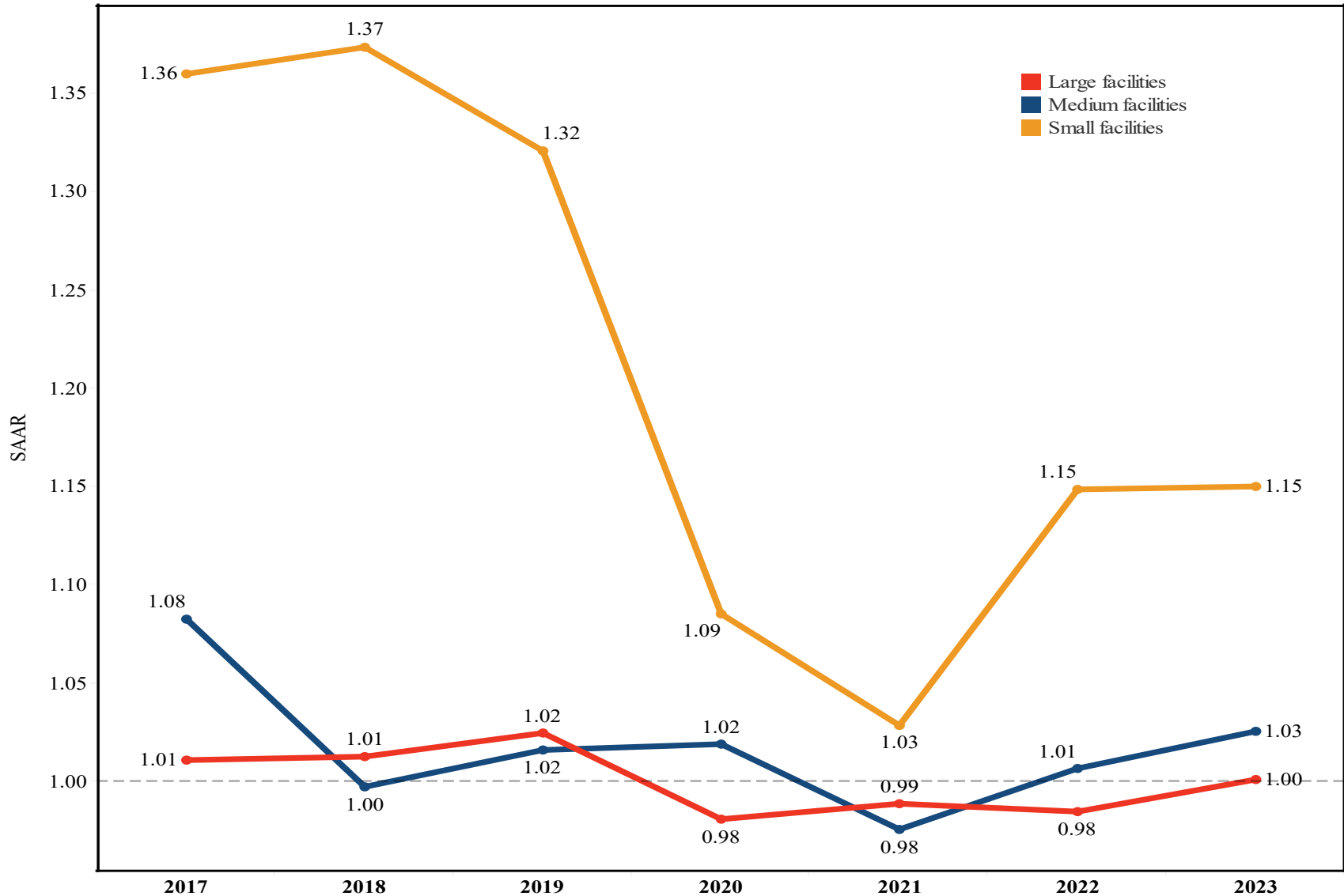
$$\text{SAAR} = \frac{\text{Observed Antimicrobial Administration}}{\text{Predicted Antimicrobial Administration}}$$

- AU rates and SAAR: aggregated by geographic regions and facility bed sizes.
- Facility: categorized as small (<100 beds), medium (100–250 licensed beds), and large (>250 beds licensed beds) hospital groups.
- Four Patient-care units: adult critical care units (ICU), medical/surgical units (WARD), step-down (STEP), and hematology-oncology units (ONC).
- SAS Version 9.4 & Tableau.

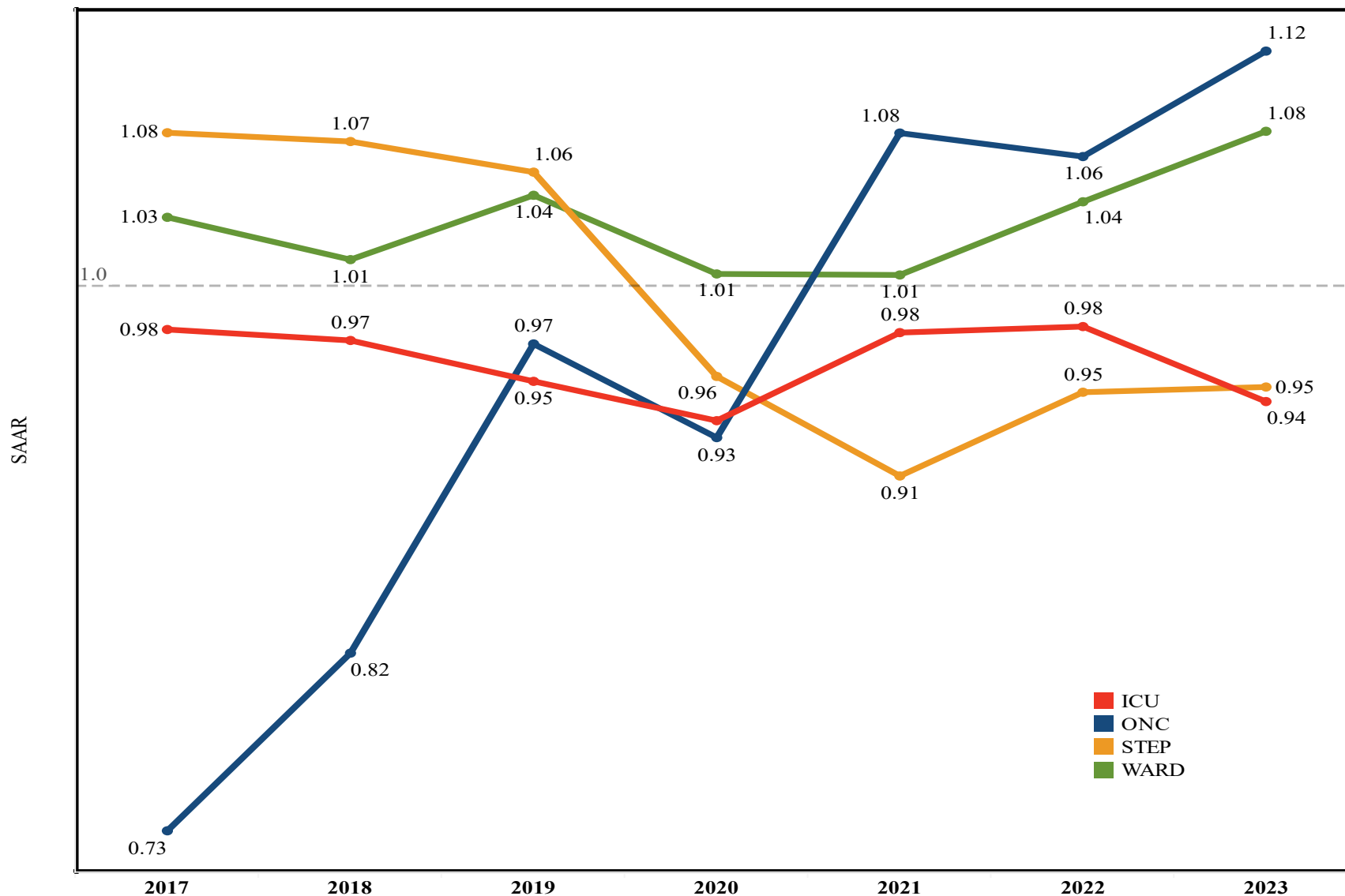
Results: Overall AU Rate and SAAR Values, 2017–2023

Year	# of reporting facilities	AU RATE (DOT/1000 DP)	Adult SAAR Antimicrobial Agent Categories						
			All-Antibacterial	BSHO	BSCA	GramPos	CDI	Anti-fungal	NSBL
2017	25	593	1.03	1.07	1.02	1.12	1.09	0.87	0.87
2018	29	584	1.02	1.10	1.00	1.10	1.09	0.82	0.82
2019	33	595	1.03	1.14	0.98	1.10	1.13	0.83	0.87
2020	50	610	1.00	1.07	0.98	1.00	1.12	0.79	0.85
2021	61	619	0.99	1.09	0.97	1.04	1.11	0.88	0.79
2022	74	606	1.00	1.11	1.02	1.05	1.12	0.89	0.82
2023	95	621	1.02	1.13	1.04	1.05	1.15	0.91	0.82

Results: SAAR Trends by Facility Bed-Size for All-Antibacterial Agents, 2017–2023



Results: SAAR Trends by Patient Location, 2017–2023



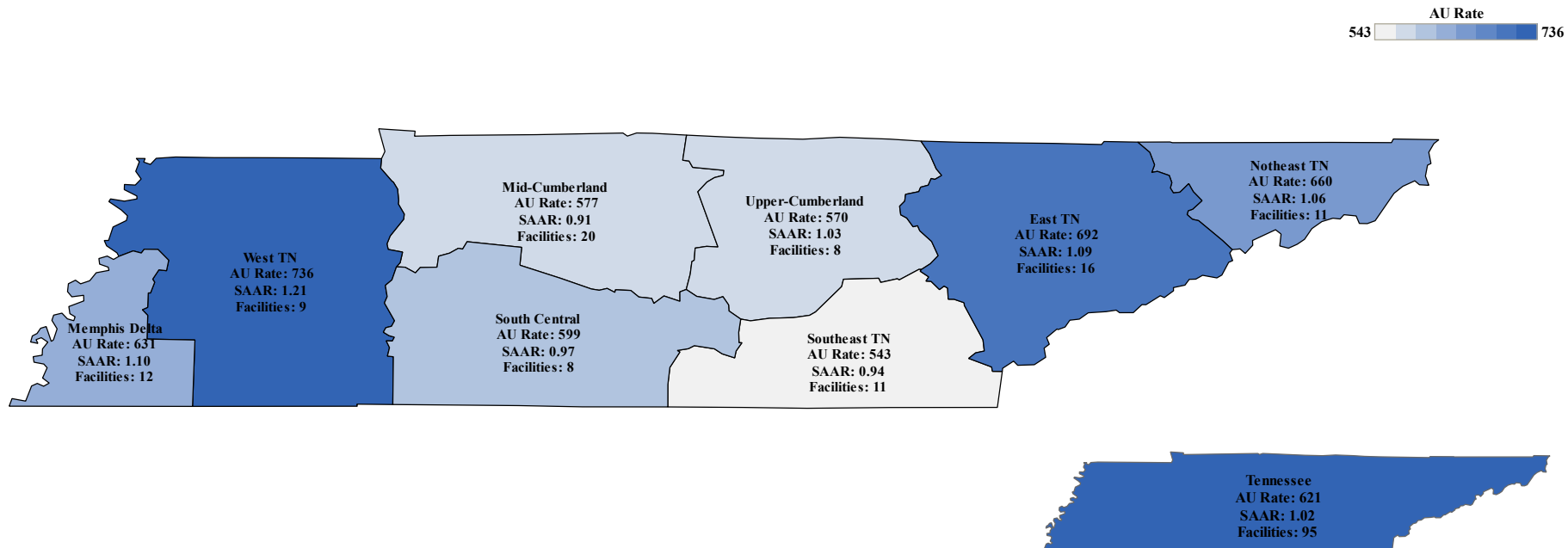
Results: ICU SAAR Values by Antimicrobial Category, 2017–2023

SAAR Category	2017	2018	2019	2020	2021	2022	2023
All Antibacterial	0.98	0.97	0.95	0.93	0.98	0.98	0.94
BSHO	1.01	1.03	1.02	0.98	1.03	1.02	0.99
BSCA	0.99	0.93	0.89	0.96	0.88	0.94	0.96
GramPos	1.03	1.05	1.00	0.93	1.03	1.01	0.93
CDI	1.10	1.10	1.13	1.20	1.19	1.15	1.15
Antifungal	0.71	0.71	0.66	0.69	0.91	0.87	0.81
NSBL	0.89	0.84	0.90	0.85	0.85	0.92	0.85

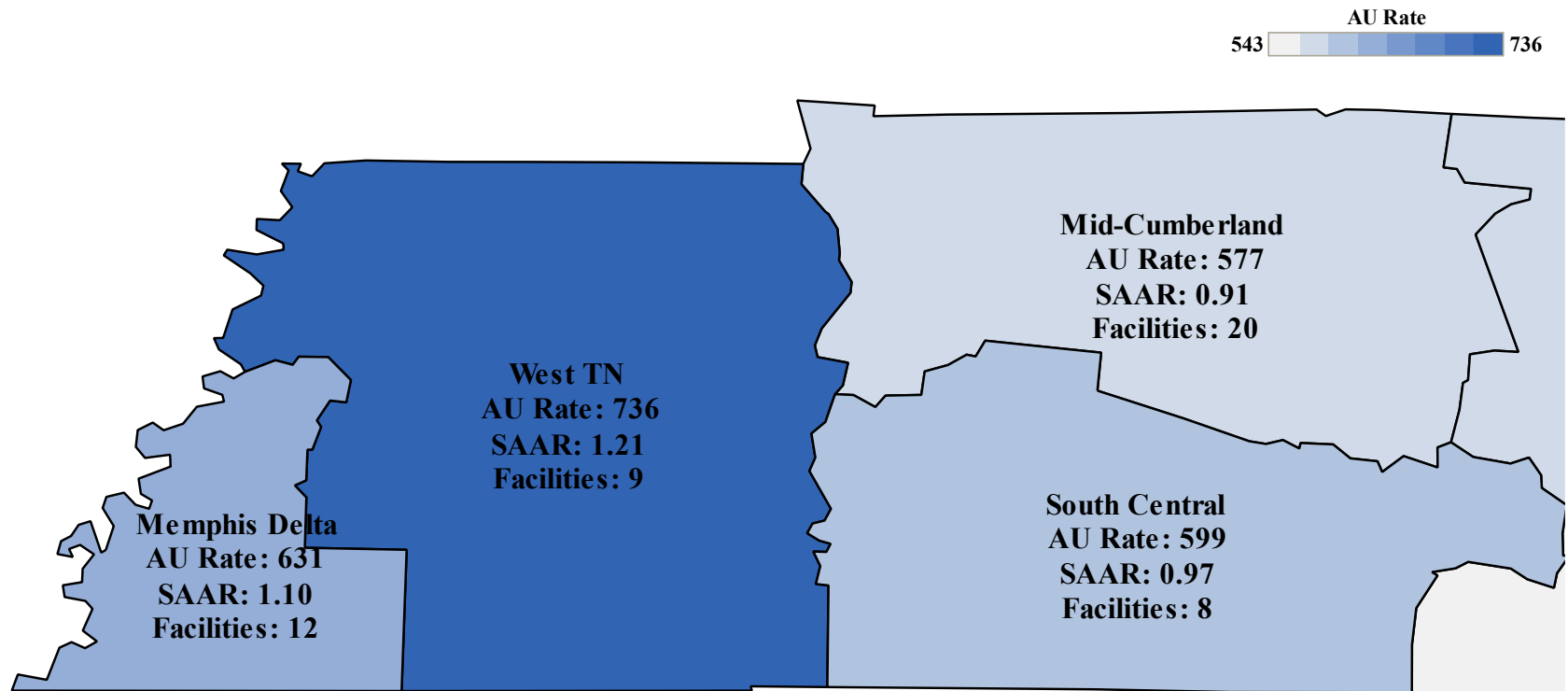
ICU SAAR values for antimicrobial categories. The highlighted sections indicate a SAAR value greater than the predicted value (> 1.00)

AU Rate & SAAR across the TN in 2023

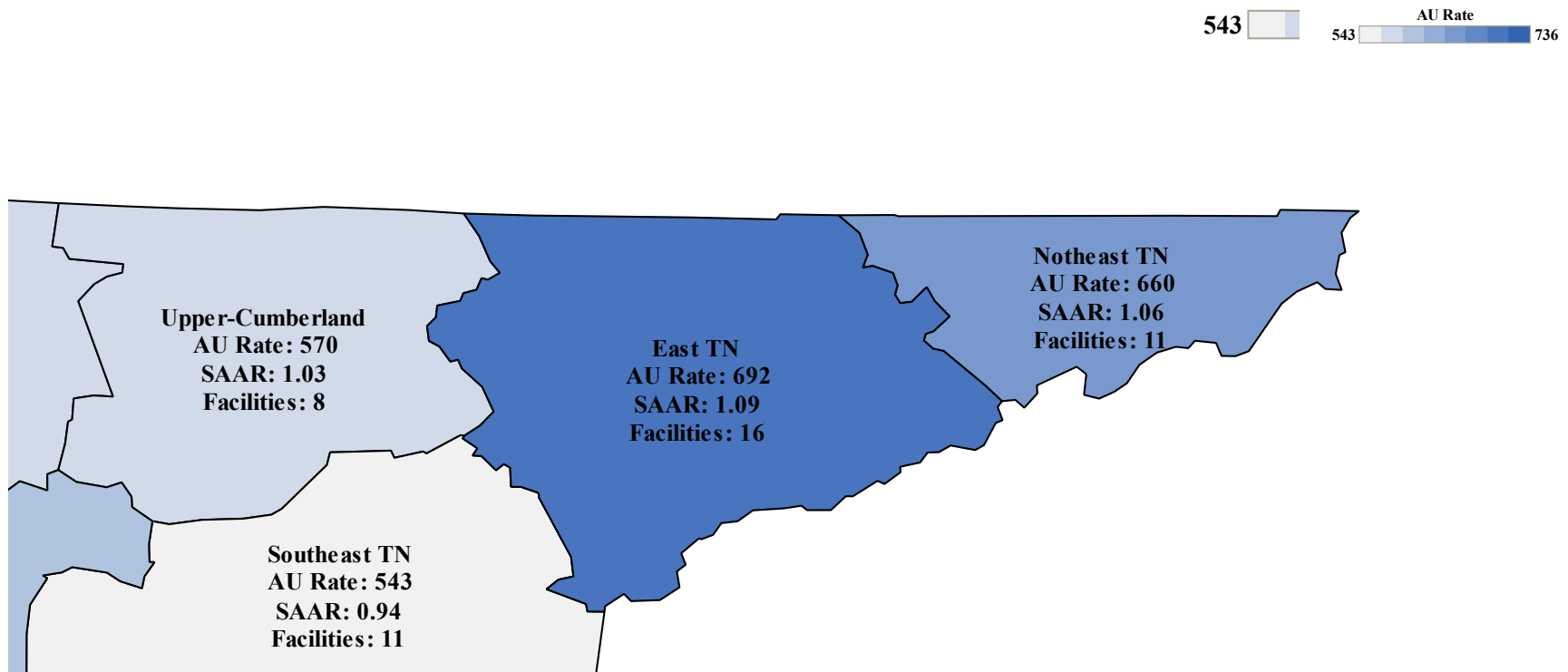
- TN is divided into eight Emergency Medical Regions (EMS)
- Average AU Rate = 621 DOT/1000 DP present & SAAR for all antimicrobials = 1.02



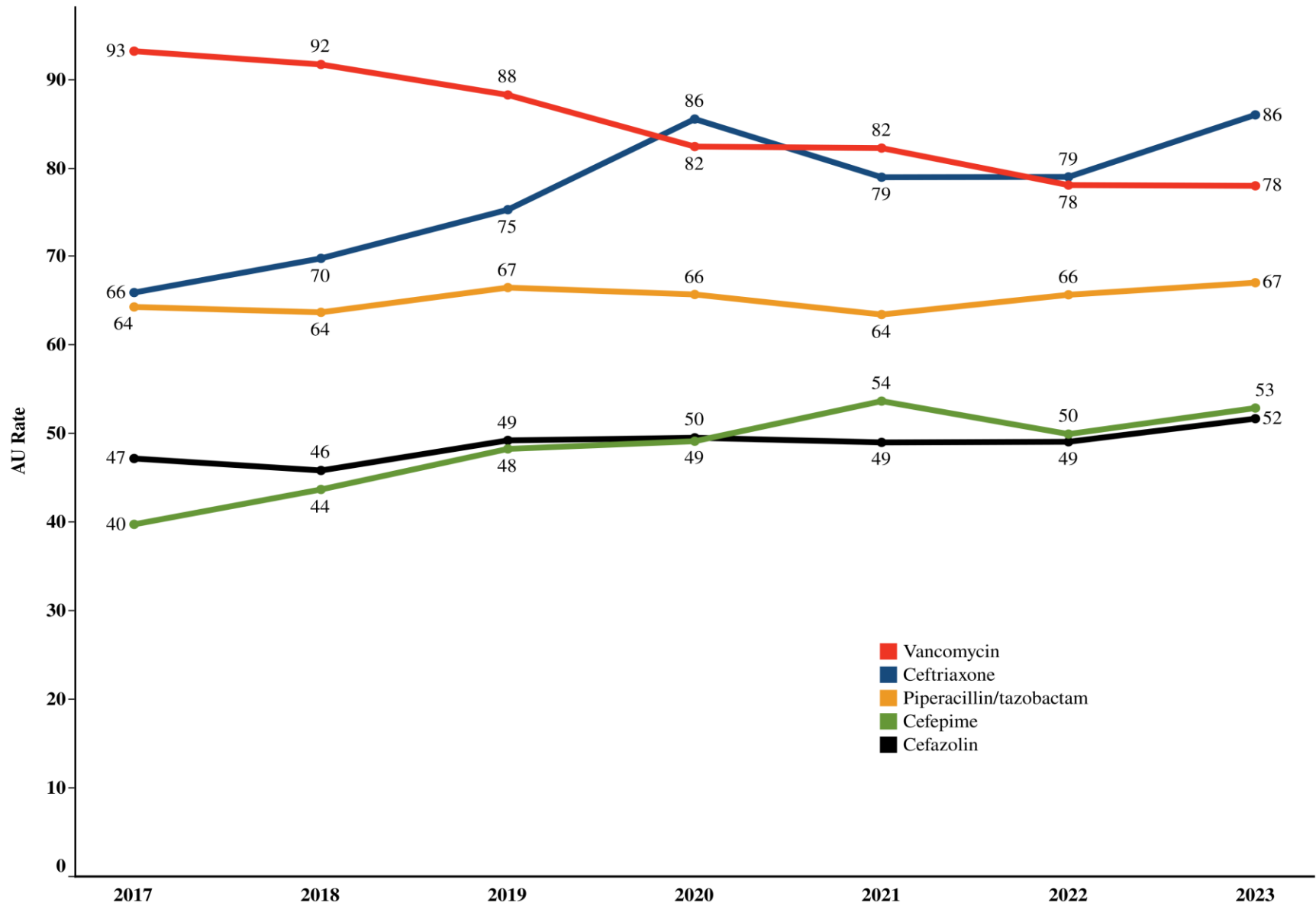
Results: Emergency Medical Service (EMS) Regions of TN



Results: Emergency Medical Service (EMS) Regions of TN



Results: AU Rates for the Top 5 Most Utilized Antimicrobial Agents



Discussion

- **First comprehensive assessment and analysis of statewide AU Rate and SAAR data through NHSN**
- **Increase in number of reporting facilities provides clear understanding of antimicrobial use**
- **Agents for BSHO utilized greater than predicted**
 - **Greater burden of HO infections or overuse of broad-spectrum agents?**

COVID-19 and Antibiotic Use

- **Approx. half of hospitalized patients received ceftriaxone during the pandemic nationally (15)**
- **A SC study reported a 16.4% increase in BSHO agents during the first 3 months of the pandemic**

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TN
observed a
decrease in
BSHO SAAR
from 2019 –
2020

Discussion

- **Small facilities tend to have SAAR values >1.0 while medium and large facilities generally have antibiotic use as predicted**
- **Oncology units saw the most significant change in All-Antibacterial SAAR**
 - **Limited number of facilities reporting**
- **Critical care units used antibacterial agents less than predicted while medical/surgical wards were at or above predicted use**
- **Step-down units saw the most pronounced changes where antibiotics were used more than expected until 2020 when they fell below expected levels**

Discussion

Strengths

- High percentage of TN facilities reporting data to NHSN
- Large dataset
- Time frame pre- and post-COVID-19 pandemic

Limitations

- Aggregate data, not patient-level
- Inpatient only data
- List of included antibiotics changed throughout study period
- SAAR is a US only metric

What's Next?

- **Future analysis of NHSN data should include the Antimicrobial Resistance Option**
- **Capturing patient-level data in NHSN could allow for additional analysis**
- **Updated SAAR baselines coming soon per NHSN**

References

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15. Centers for Disease Control and Prevention. COVID-19: U.S. Impact on Antimicrobial Resistance, Special Report 2022. Atlanta, GA: U.S. Department of Health and Human Services, CDC; 2022.



Questions?

Next Steps

- **Next Call**
 - June 10 at 2pm Eastern/1pm Central Time
 - Topic: TBD
- **Feedback always appreciated**
 - Christopher.evans@tn.gov