

Wisconsin HAI Education Series

March 27, 2025



WISCONSIN DEPARTMENT
of HEALTH SERVICES



Public Health Antimicrobial Stewardship: Promoting a Culture of Antibiotic Safety in Wisconsin

Lindsay Taylor, MD, MS

Antibiotic Stewardship Coordinator
Healthcare-Associated Infections (HAI)
Prevention Program

03/27/2025

Agenda

- **Background**
 - Antibiotic resistance
 - Antimicrobial stewardship (AS) core elements
- **Wisconsin Department of Health Services (DHS) AS activities**
 - Long-term care (LTC)
 - Inpatient
 - Outpatient
 - Dental
- **Questions**

Background



The Threat of Antibiotic Resistance in the United States

Antibiotic resistance—when germs (bacteria, fungi) develop the ability to defeat the antibiotics designed to kill them—is one of the greatest global health challenges of modern time.

New National Estimate*

Each year, antibiotic-resistant bacteria and fungi cause at least an estimated:



2,868,700
infections



35,900 deaths



*Clostridioides difficile*** is related to antibiotic use and antibiotic resistance:



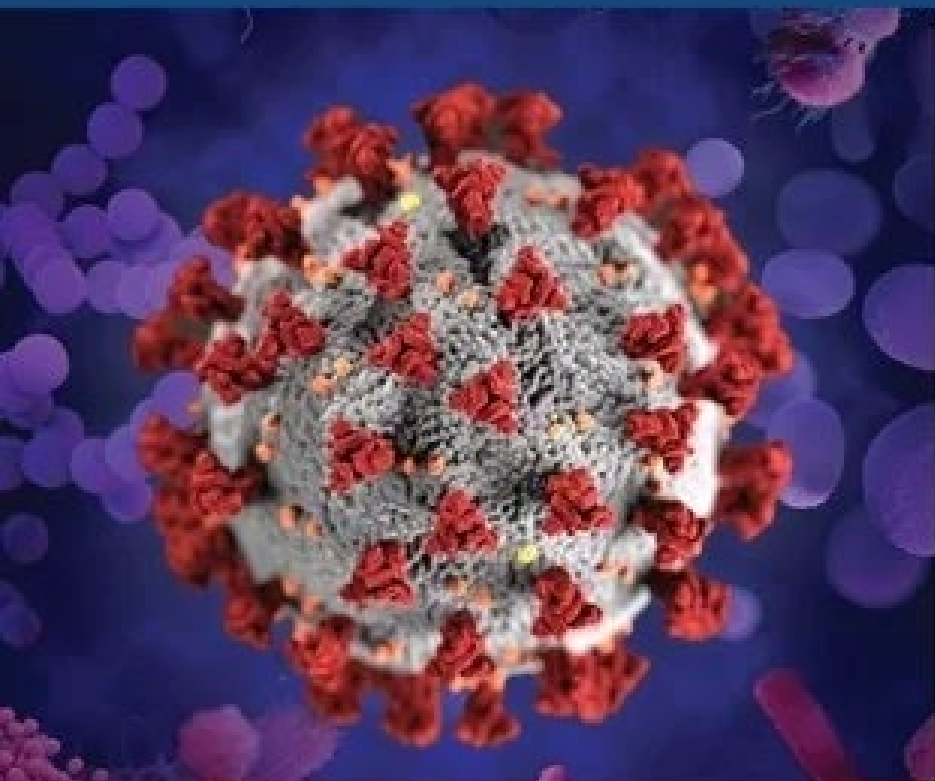
223,900
cases



12,800 deaths

COVID-19 CREATED A PERFECT STORM

The U.S. lost progress combating antimicrobial resistance in 2020



↑15%

Antimicrobial-resistant infections and deaths increased in hospitals in 2020.

~80%

Patients hospitalized with COVID-19 who received an antibiotic March-October 2020.

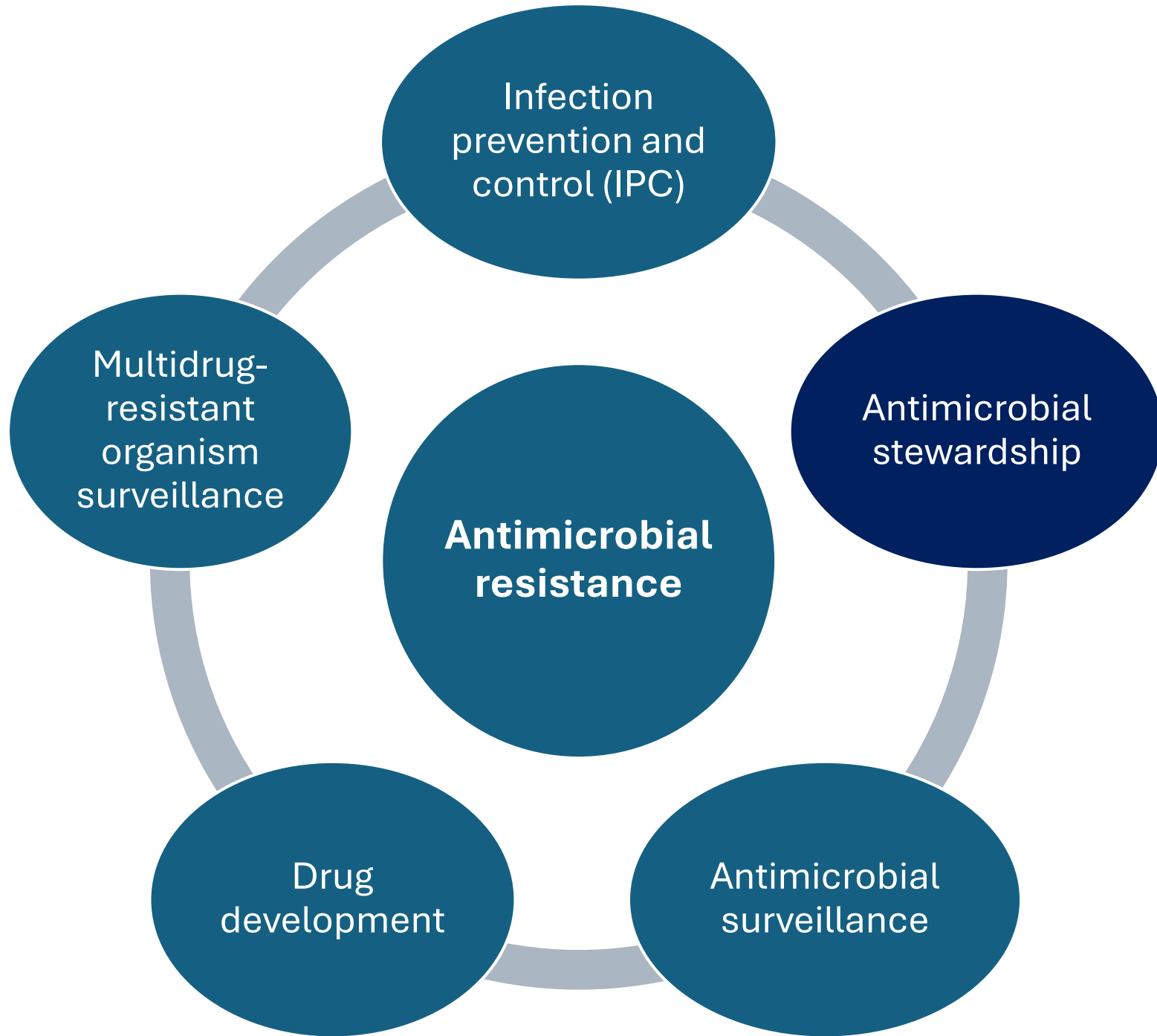


Delayed or unavailable data, leading to resistant infections spreading undetected and untreated.

**INVEST IN
PREVENTION.**

**Setbacks to fighting
antimicrobial resistance
can and must be temporary.**

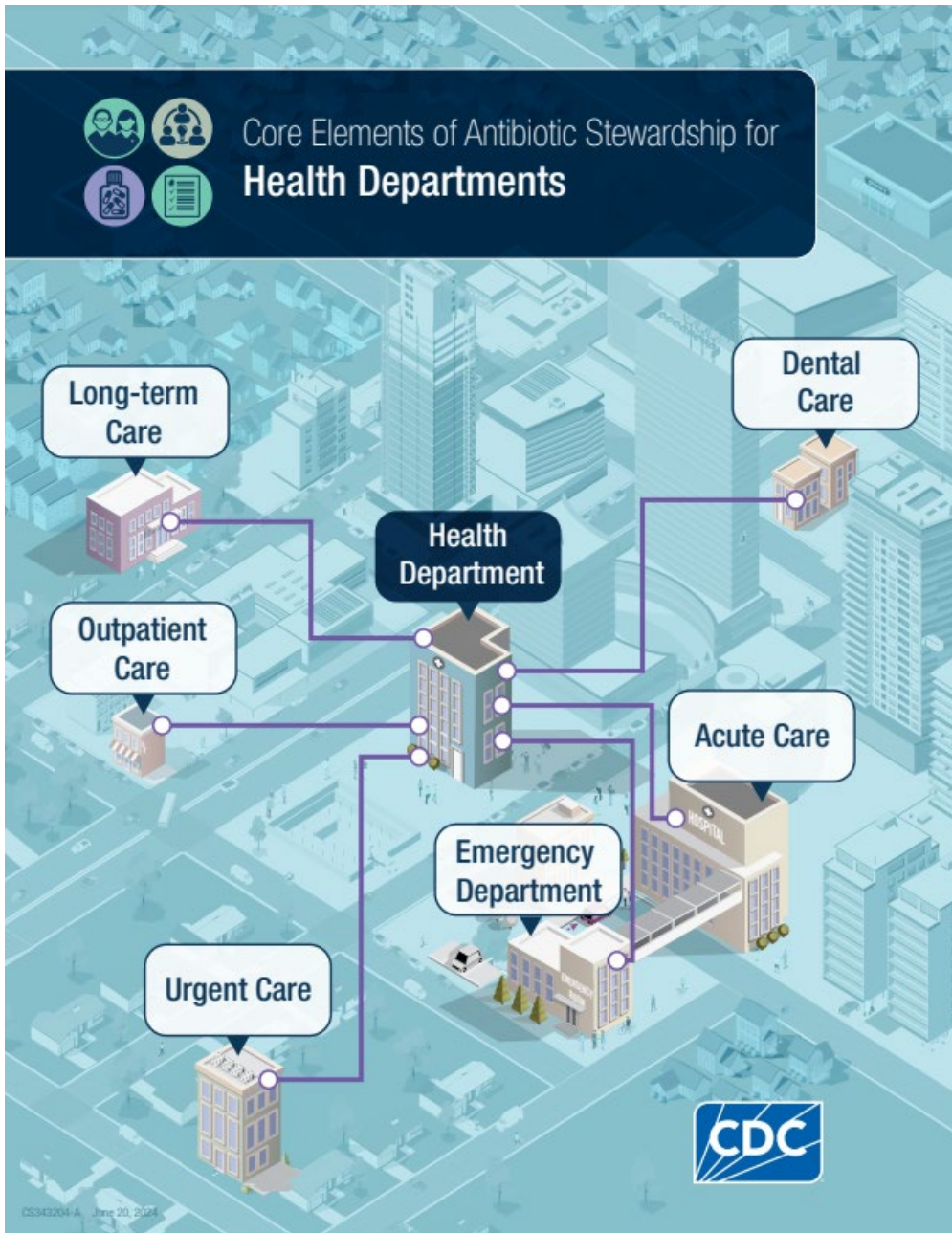
Source: [CDC COVID-19 & Antimicrobial Resistance](#)



Antimicrobial Stewardship



Effort to measure and improve how antibiotics are prescribed by clinicians and used by patients



Leadership commitment



Accountability



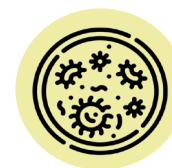
Drug expertise



Action



Tracking



Reporting

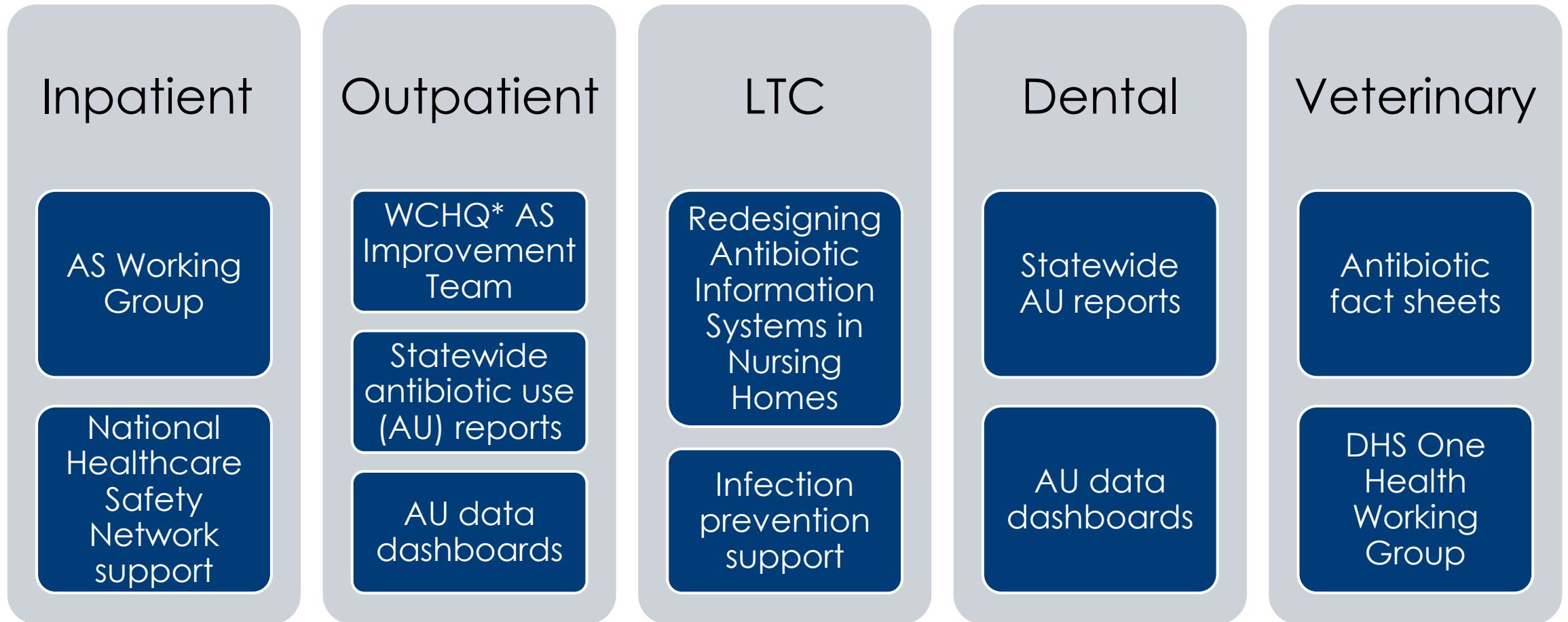


Education

DHS Antibiotic Stewardship Activities



Breadth of Activities: A Snapshot

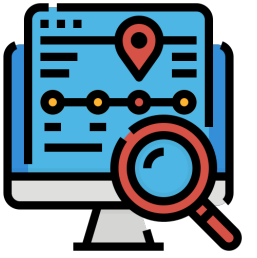


*WCHQ=Wisconsin Collaborative for Healthcare Quality

LTC Antimicrobial Stewardship Activities

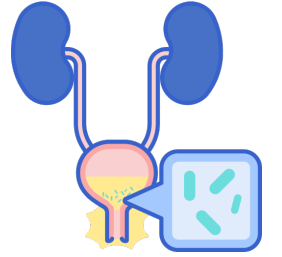
- Redesigning **A**ntibiotic Information **S**ystems in **N**ursing **H**omes (**RAISIN**)
- WI LTC Urinary Tract Infection (UTI) Toolkit

RAISIN Collaborative Accomplishments



- Creation of tailored antibiotic use tracking and reporting plans for nursing homes (NHs)
- Assessment of antibiotic tracking and reporting tools statewide
- Development of Antibiotic Surveillance Core Measures for NHs
- Testing of a Line List and Reporting Tool through a WI NH Quality Collaborative

WI LTC UTI Toolkit



The [WI LTC UTI Toolkit](#) includes five modules that covers the:

- Standardized assessment of and communication to NH residents.
- Use of active monitoring and delayed urine testing when UTI risk is low.
- Appropriate use of antibiotics in residents when UTI risk is high.

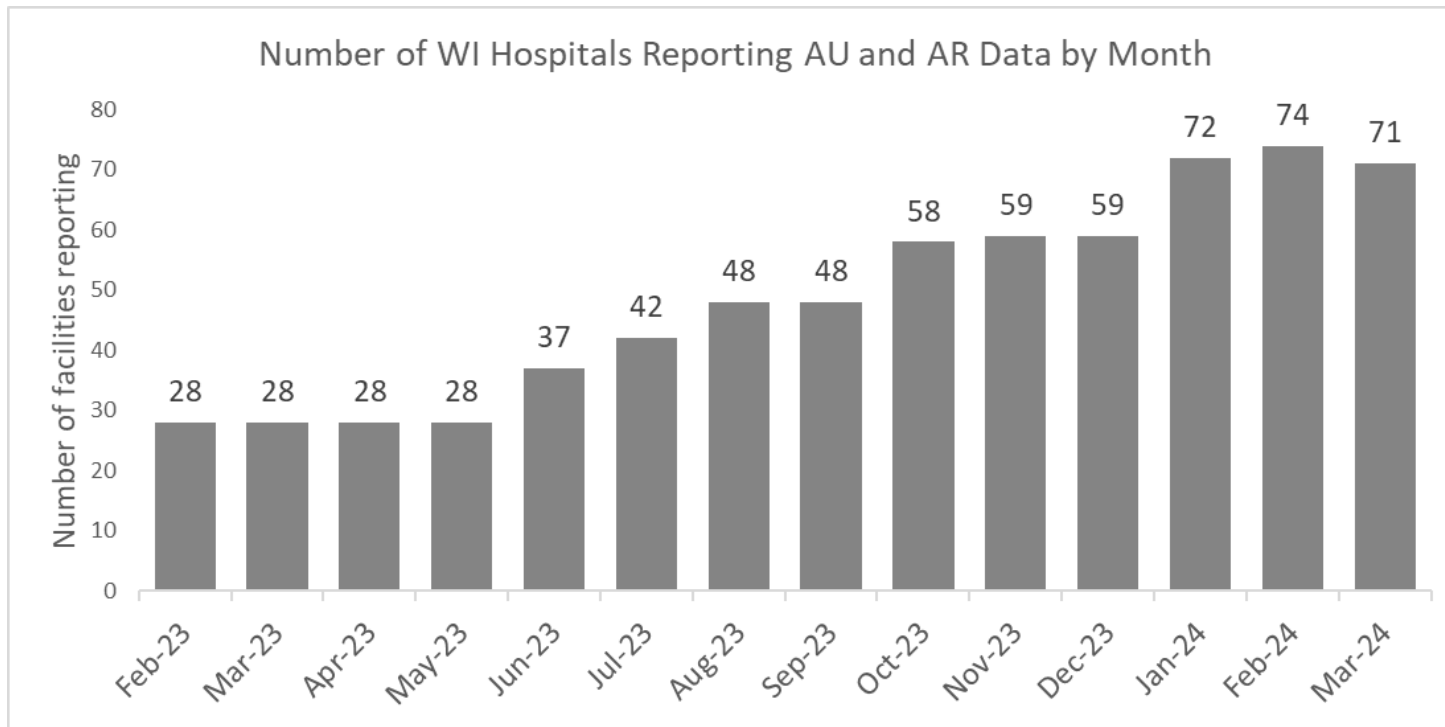
Inpatient Antimicrobial Stewardship Activities

- AS Working Group
- NHSN Support

Hospital Antimicrobial Stewardship Working Group

- **Purpose:** Support WI inpatient stewards through providing updates, education, and community
- **How:** Quarterly virtual meetings
- **Topics:**
 - NHSN antimicrobial use and resistance (AUR) reporting requirements
 - Stewardship at transitions of care
 - Implementation of MRSA PCR to de-escalate vancomycin

Supporting WI Hospitals with NHSN AUR Measure



AU reports

National and statewide comparisons

Antibiograms

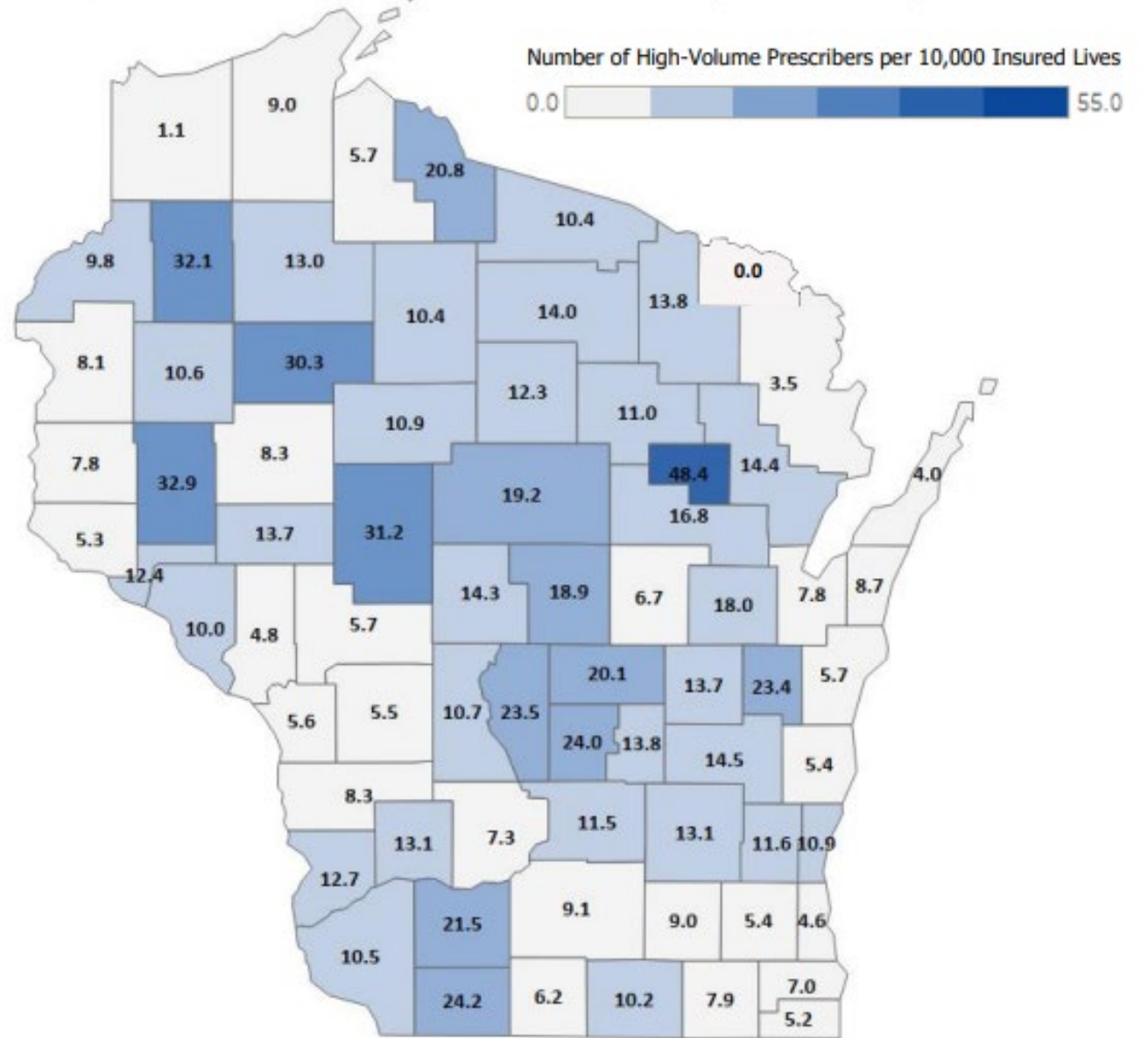
Facility-level and statewide antimicrobial resistance summaries

Outpatient Antimicrobial Stewardship Activities

- Statewide antibiotic use report
- Outpatient antibiotic use dashboards
- WCHQ Outpatient Antibiotic Stewardship Improvement Team
- Survey of WI outpatient AS programs

Ambulatory Prescribing in Wisconsin

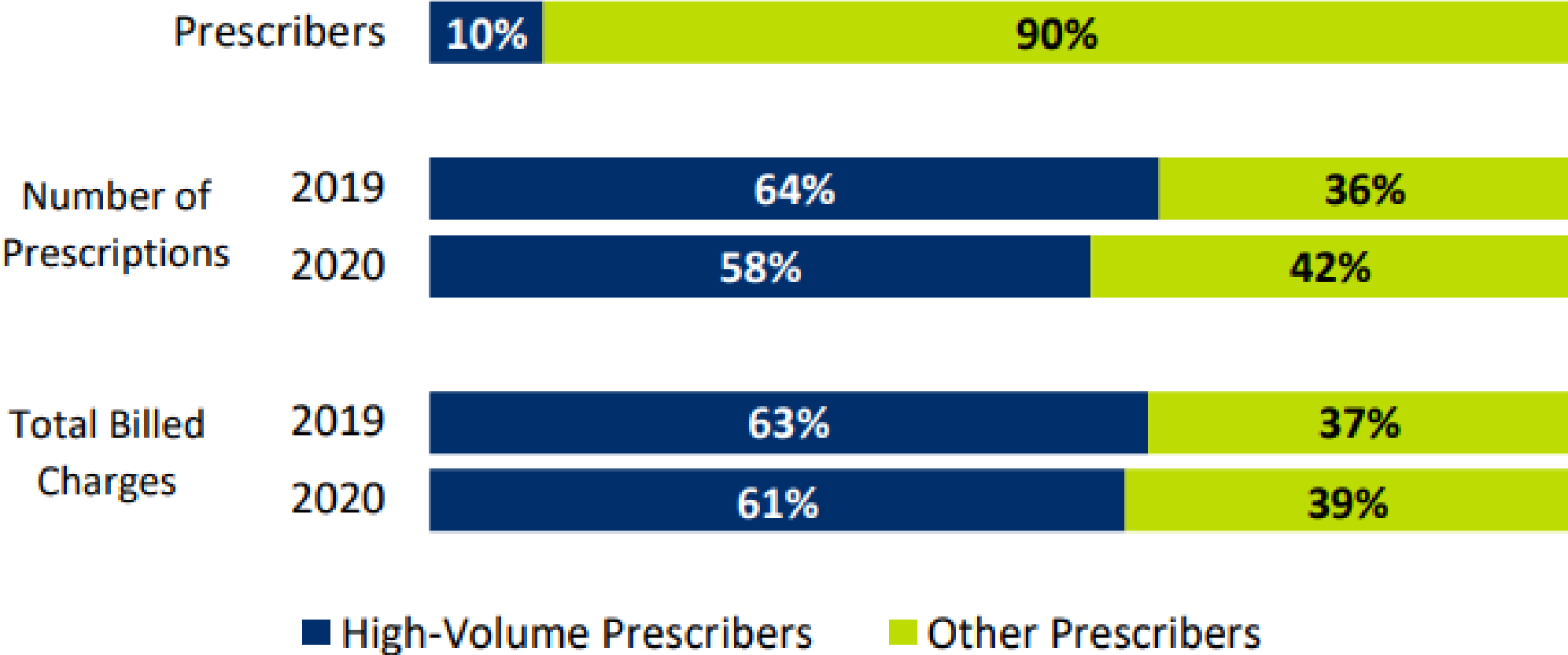
High-Volume Antibiotic Prescribers by WI County, 2019



Source: Wisconsin Health Information Organization (WHIO)

Ambulatory Prescribing in Wisconsin

WI High-Volume Antibiotic Prescribers



Source: Wisconsin Health Information Organization (WHIO)

Trends in Outpatient Antibiotic Prescribing in Wisconsin 2018–2021

Trends in Outpatient Antibiotic Prescribing in Wisconsin 2018–2021

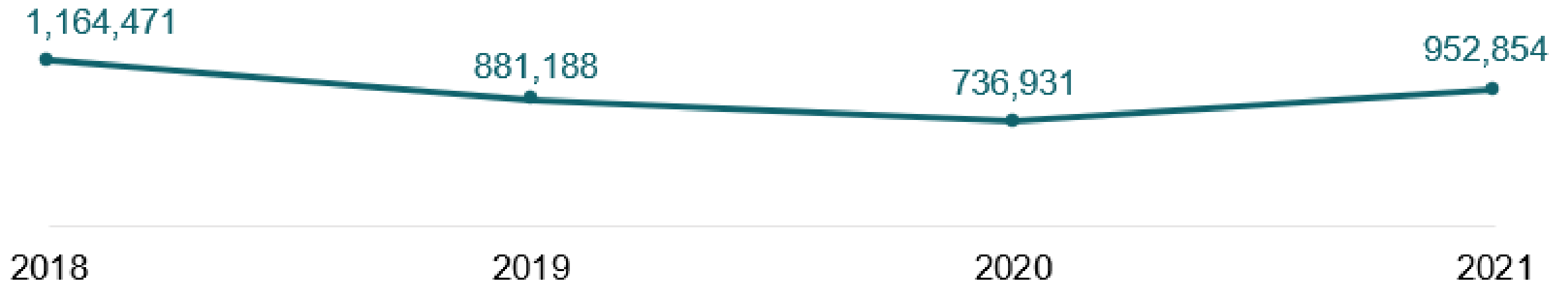
Wisconsin Department of Health Services
Healthcare-Associated Infections Prevention Program



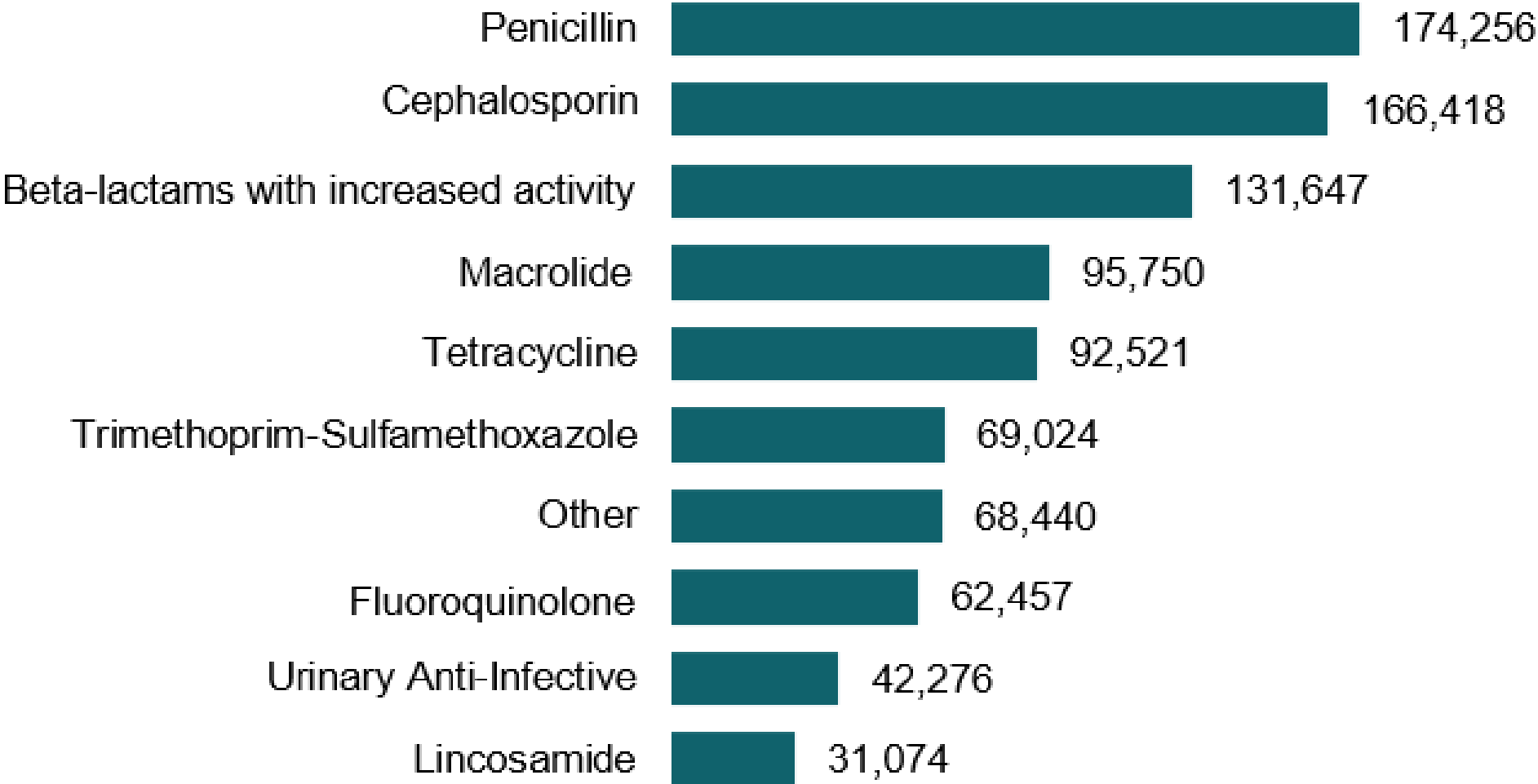
About the Report

- **Goal:** To better understand Wisconsin outpatient antibiotic use
- **Methods:**
 - WHIO database of insurance claims health care data
 - All outpatient visits from 2018–2021
 - Clinic, urgent care, or emergency room visits
 - Oral antibiotic prescriptions

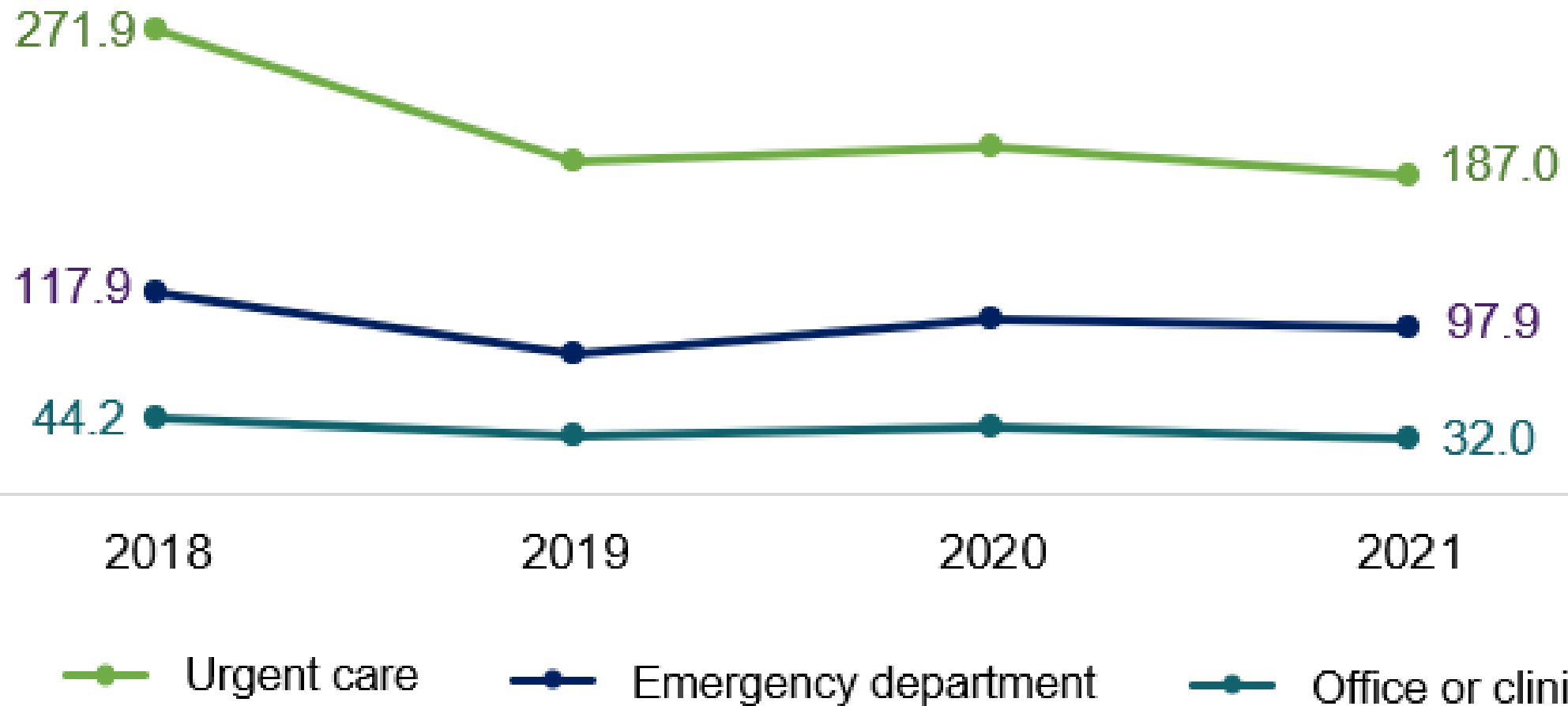
Total Number of Antibiotic Prescriptions by Year, 2018–2021



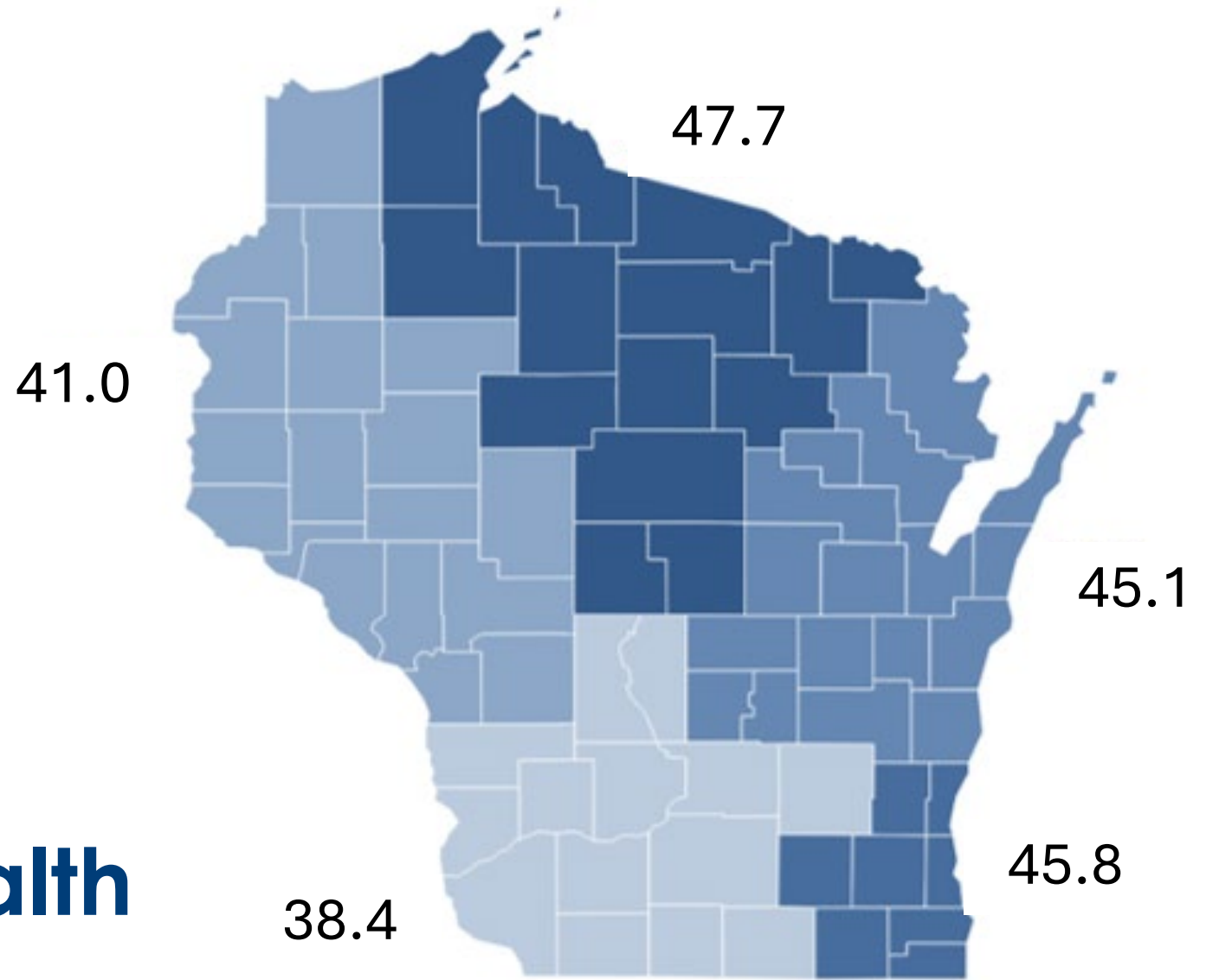
Average Number of Prescriptions per Year (2018–2021) by Drug Class



Antibiotic Visits by Site of Care, 2018–2021



Antibiotic visits per 1,000 visits by Wisconsin Public Health Region, 2018–2021



Top 10 Diagnoses Commonly Associated with Antibiotic Prescriptions in Wisconsin

1. Urinary tract infection
2. Streptococcal pharyngitis
3. Otitis media
4. Acute pharyngitis
5. Acute sinusitis
6. Dysuria
7. Acute maxillary sinusitis
8. Cough
9. Acute upper respiratory infection
10. Acute bronchitis

Examples of Conditions by Antibiotic Indication Tier

Tier 1

Antibiotics are almost always indicated

- Urinary tract infection
- Streptococcal pharyngitis
- Pneumonia
- Cellulitis
- Pyelonephritis

Tier 2

Antibiotics are sometimes indicated

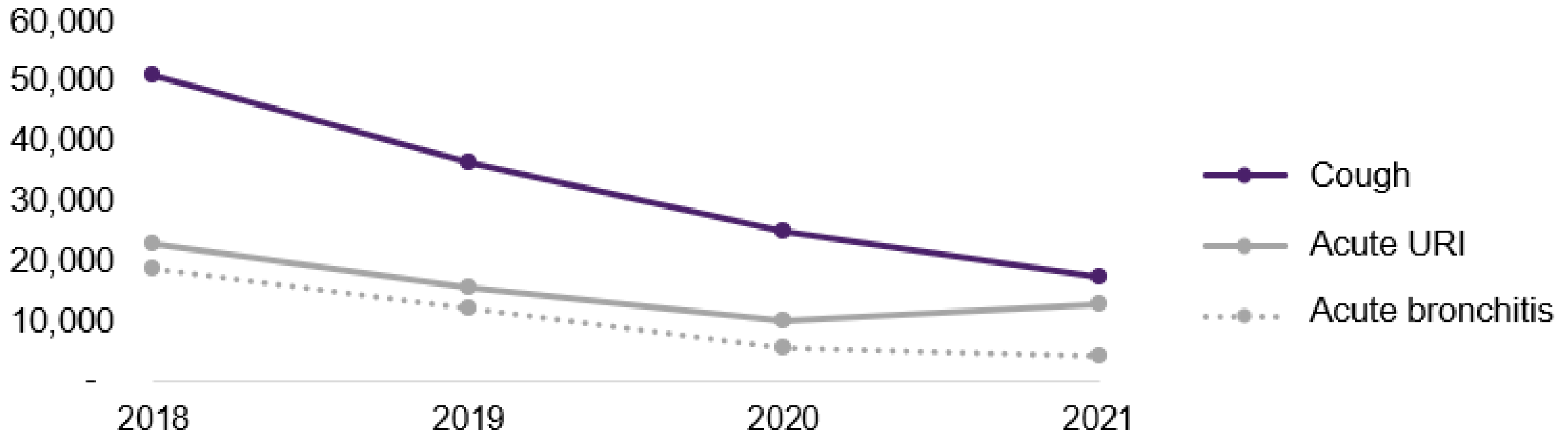
- Acute pharyngitis
- Acute sinusitis
- Dysuria
- Chronic sinusitis
- Otitis media
- Cutaneous abscess

Tier 3

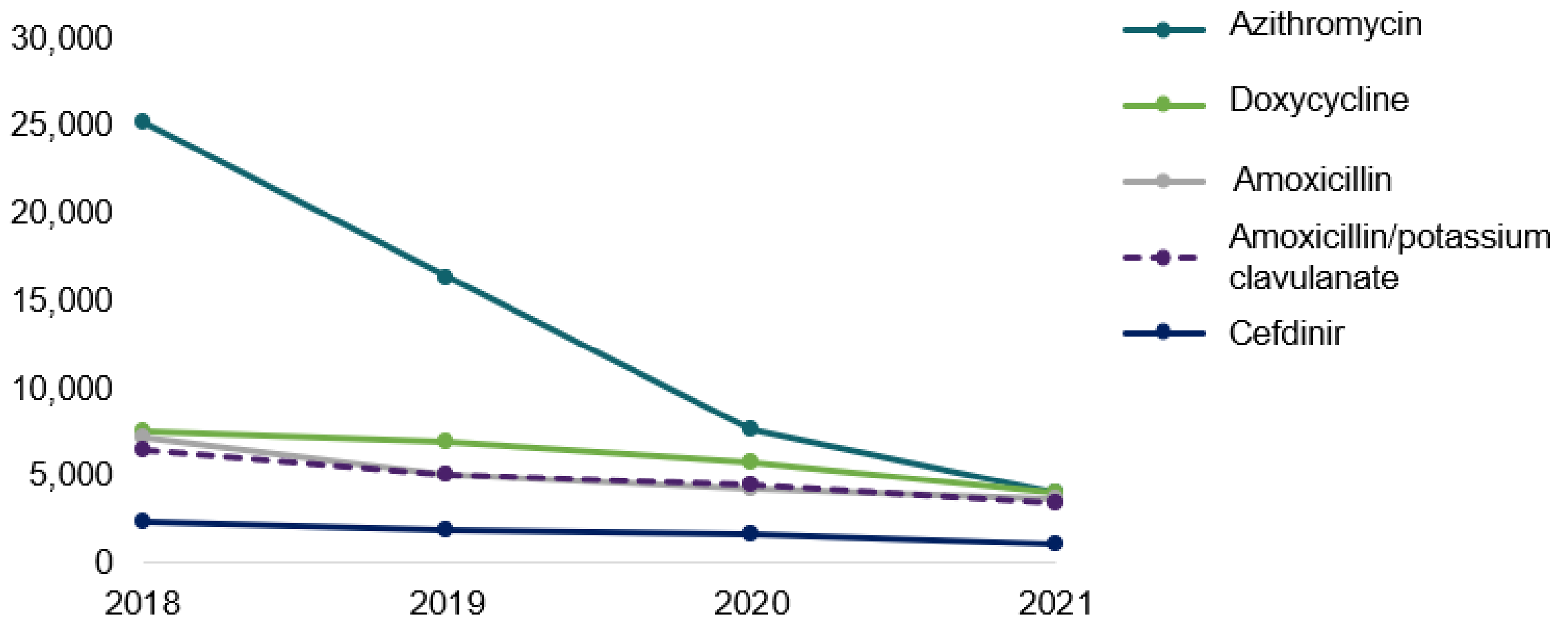
Antibiotics are never indicated

- Acute upper respiratory infection
- Cough
- Acute bronchitis

Antibiotic Prescriptions Associated with Tier 3 Diagnoses (antibiotics not indicated), 2018–2021



Prescriptions Associated with Cough, Acute URI, or Acute Bronchitis by Antibiotic Type, 2018–2021



Outpatient Antibiotic Use Dashboards



- Benchmarked antibiotic visit rates
- Stratified by:
 - Location type
 - All diagnoses, URI diagnoses
 - Provider type
- Individual prescriber rates

Data Summary (2) - All Diagnoses

Data from the 58 organizations in this report comprise the statewide totals used as benchmarks.



Service Dates

(All)

Diagnoses

All Diagnoses

2023 claims January - June only

Statewide Totals

	ABX Rate	ABX Visits	Total Visits	Clinicians
2018	87	868,720	9,975,307	15,078
2019	76	816,151	10,676,229	15,779
2020	68	557,672	8,194,137	16,084
2021	58	722,971	12,373,880	16,691
2022	64	763,455	11,934,243	17,010
2023	73	471,688	6,434,920	15,527
Total	70	4,200,657	59,588,716	20,666

Clinician Categories	ABX Rate	ABX Visits	Total Visits	Clinicians
General Practitioner	56	1,122,663	20,213,019	4,589
NP or PA	131	1,726,198	13,220,241	6,801
Pediatrics	82	360,088	4,365,534	839
Emergency Medicine	128	414,080	3,247,095	978
Specialty Medicine	15	144,233	9,516,613	3,661
Surgical Specialty	43	297,574	6,990,149	2,738
Trainee	67	135,821	2,036,065	1,060
Total	70	4,200,657	59,588,716	20,666

Place of Service	ABX Rate	ABX Visits	Total Visits	Clinicians
Emergency Department	146	807,809	5,522,662	15,615
Office/Clinic	59	3,132,729	52,982,212	20,635
Urgent Care	240	260,119	1,083,842	6,895
Total	70	4,200,657	59,588,716	20,666

Org ID: O1001

	ABX Rate	ABX Visits	Total Visits	Clinicians
2018	84	23,226	278,155	383
2019	73	17,914	246,496	394
2020	70	12,118	172,204	401
2021	59	17,209	293,791	421
2022	70	19,510	280,495	413
2023	82	11,894	145,067	369
Total	72	101,871	1,416,208	523

Clinician Categories	ABX Rate	ABX Visits	Total Visits	Clinicians
General Practitioner	63	20,405	324,796	106
NP or PA	144	44,852	311,792	161
Pediatrics	82	5,632	68,383	15
Emergency Medicine	112	12,063	107,349	29
Specialty Medicine	17	4,761	279,343	88
Surgical Specialty	42	8,578	202,030	86
Trainee	46	5,580	122,515	38
Total	72	101,871	1,416,208	523

Place of Service	ABX Rate	ABX Visits	Total Visits	Clinicians
Emergency Department	134	18,164	135,522	400
Office/Clinic	65	82,433	1,277,575	522
Urgent Care	410	1,274	3,111	69
Total	72	101,871	1,416,208	523

Dental Antimicrobial Stewardship Activities

- Statewide antibiotic use report
- Dental antibiotic use dashboards

Oral Health Antibiotic Toolkit



Oral Health Antibiotic Toolkit

Wisconsin Oral Health Antibiotic
Stewardship Program Members
June 2021

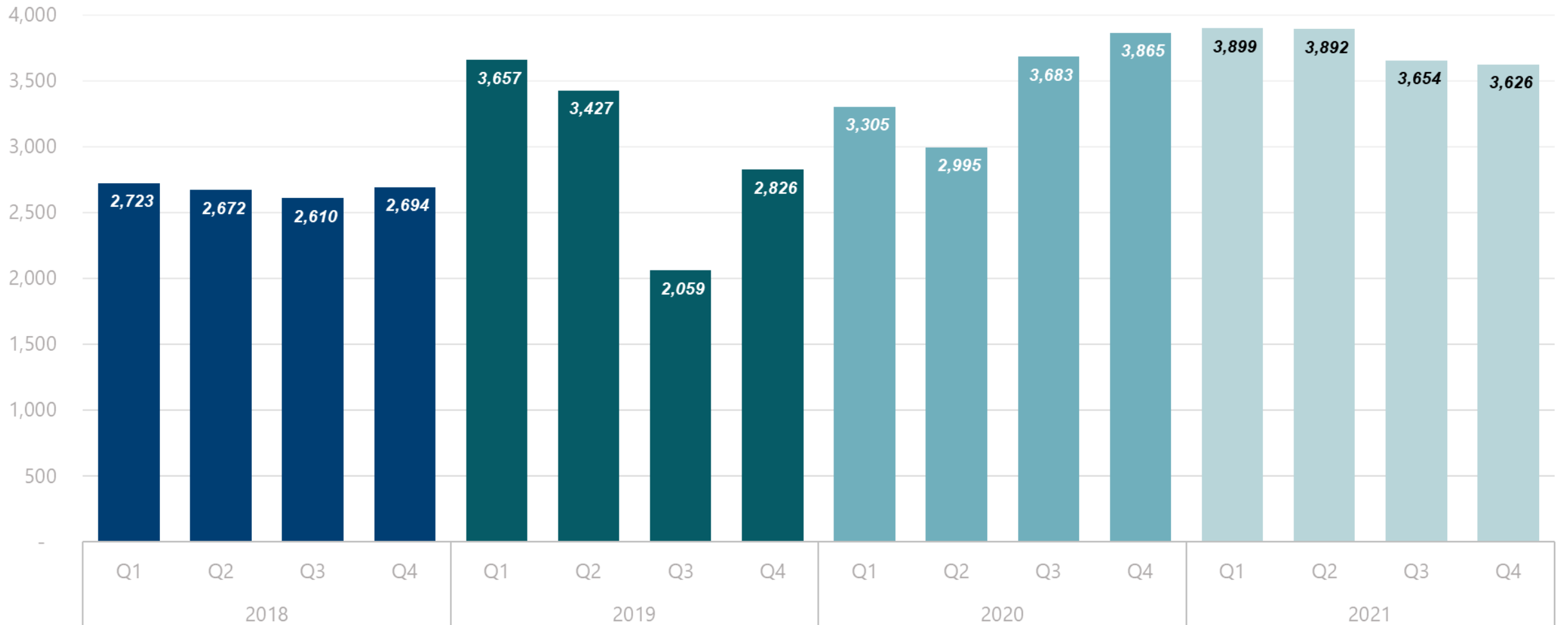
Trends in Dental Antibiotic Prescribing in Wisconsin 2018–2021

Trends in Dental Antibiotic Prescribing in Wisconsin 2018–2021

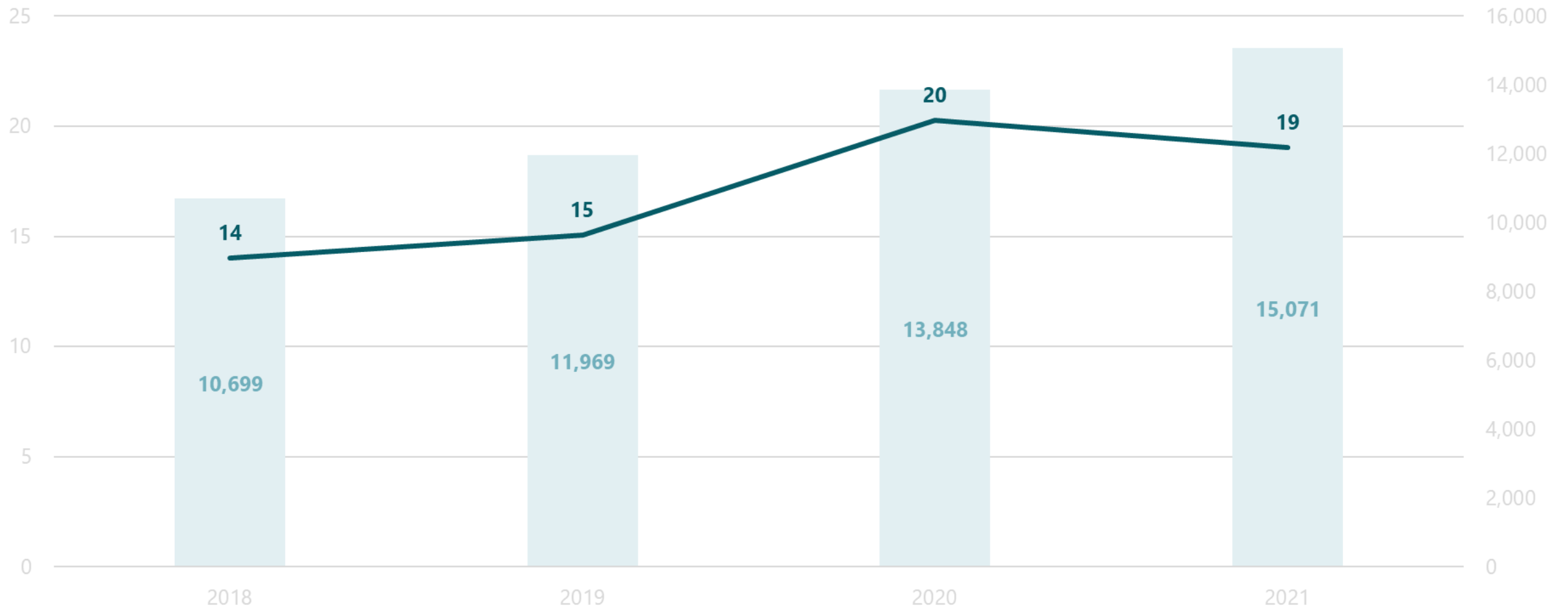
Wisconsin Department of Health Services
Healthcare-Associated Infections Prevention Program



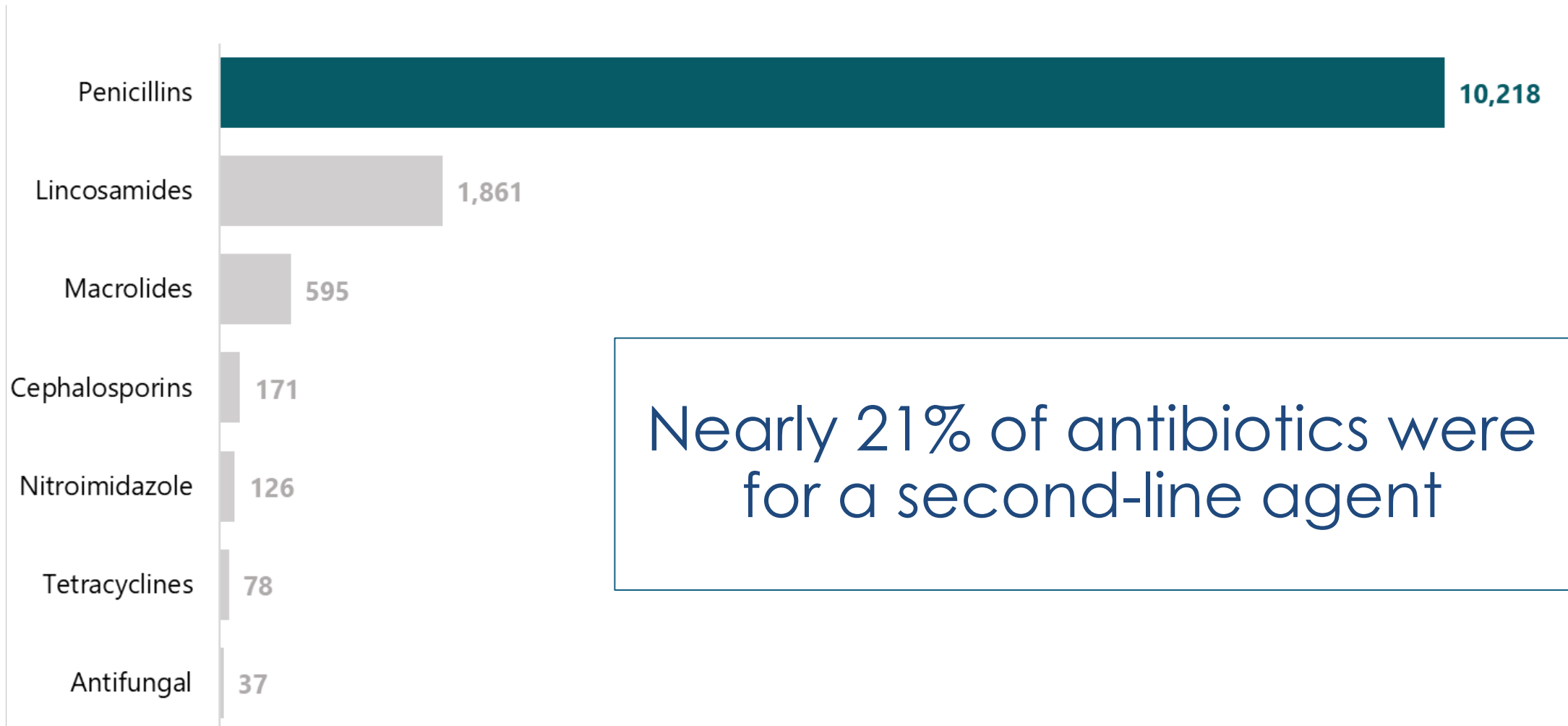
Total antibiotic prescribing by dentists increased from 2018 to 2021.



The number and rate of dental antibiotic visits increased from 2018 to 2021.



Penicillins were the most commonly prescribed antibiotic.



Developing Antibiotic Use Dashboard

- Benchmarking
 - Statewide median
 - Organization median
- Measures
 - Antibiotic visit rate, stratified by dental practice type and procedure
 - Antibiotic visit rate of too long of therapy
 - Non-first line antibiotic visit rate
- Implementation with pilot of 20 dental clinics starting 2025



Organization median rate
Statewide median rate

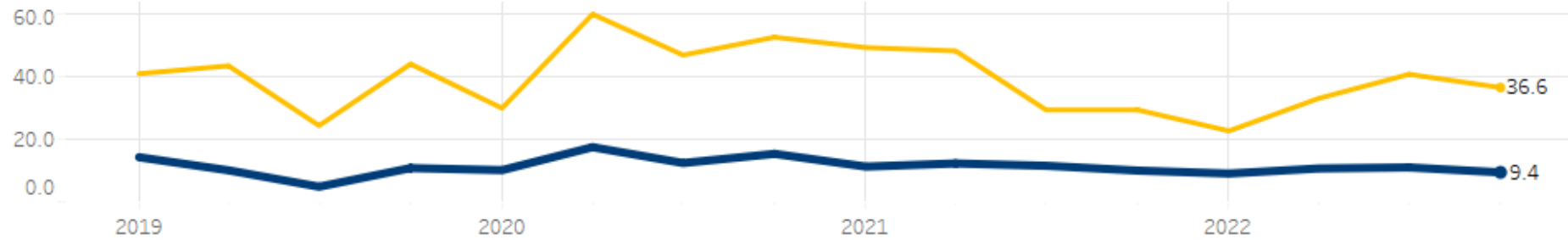


Specialty
All

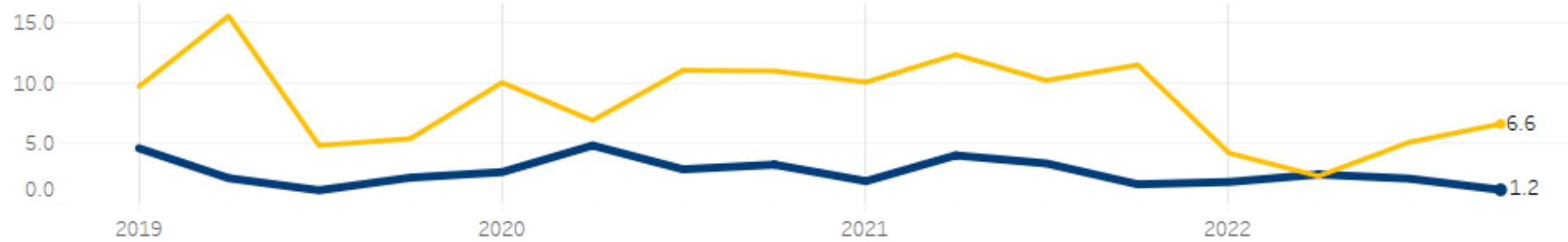
Procedure
All

Patient Age
All

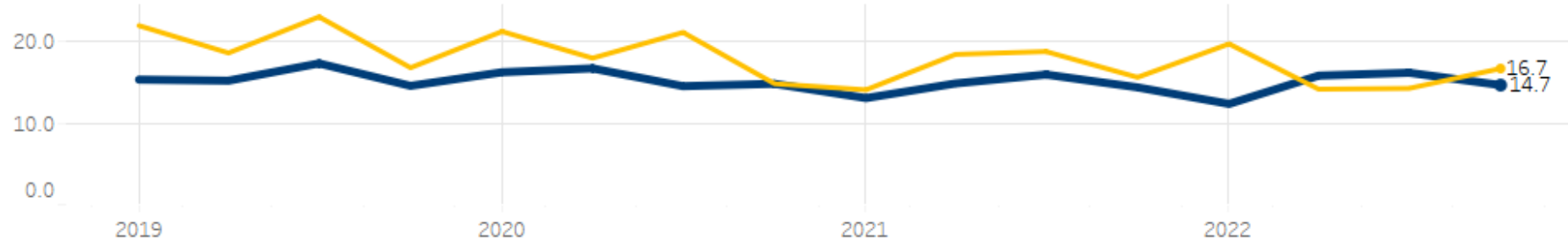
ABX rate: visits with an antibiotic prescribed per 1,000 total visits



8+ day rate: visits with an antibiotic prescribed with 8+ days supply per 1,000 visits



Non-PCN pct: percentage of ABX visits with with non-penicillin antibiotic prescribed



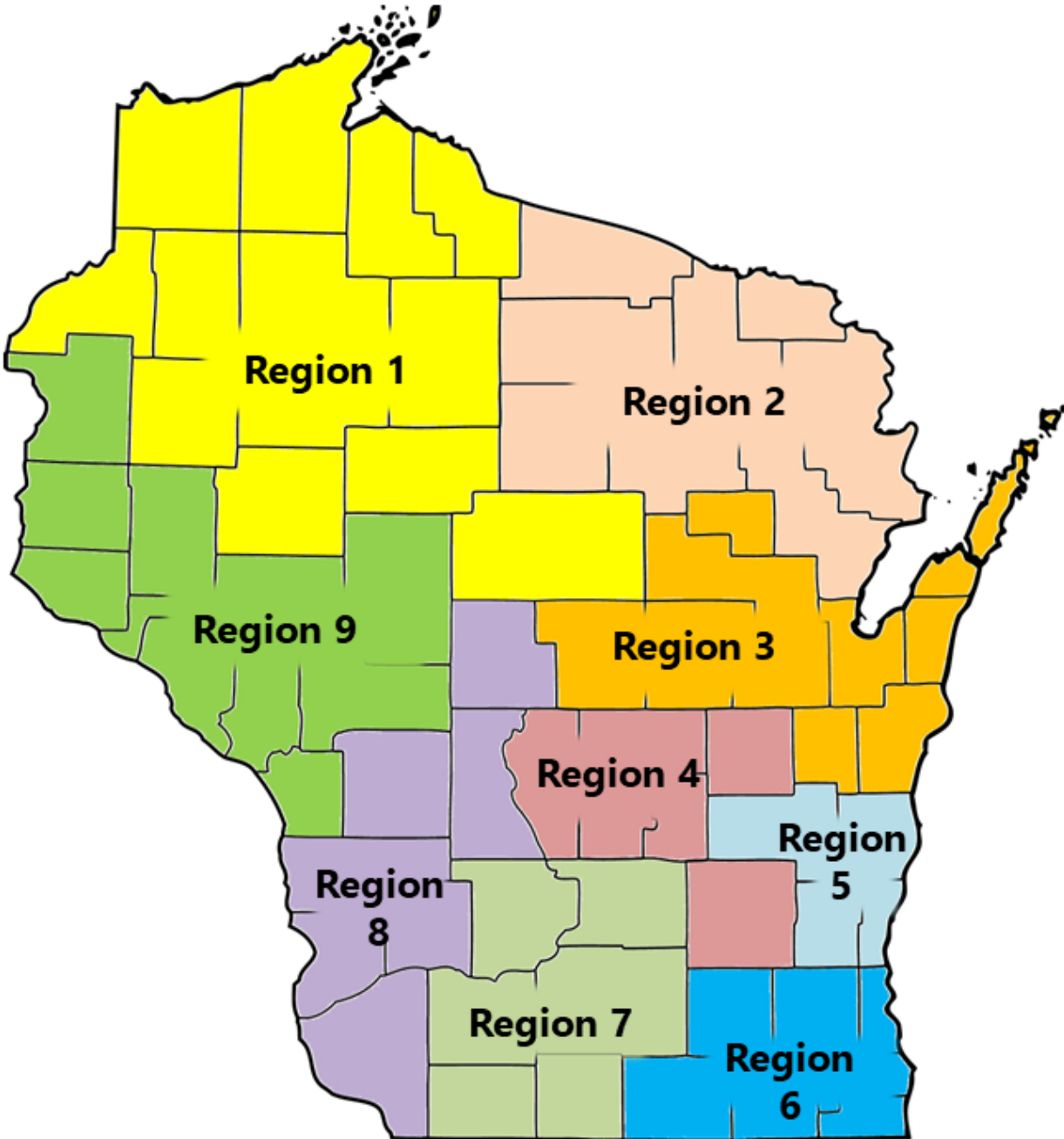
Questions?

Feel free to reach out!

Lindsay Taylor, MD, MS
Antibiotic Stewardship Coordinator
Healthcare-Associated Infections Prevention Program
Lindsay.Taylor@dhs.wisconsin.gov



New Coverage Map



HAI Prevention Program IPs

Region 1: Anna Marciniak; Phone: 608-590-2980

Region 2: Jennifer Kuhn; Phone: 608-772-4768

Region 3: Tess Hendricks; Phone: 608-338-9071

Region 4: Rebecca LeMay; Phone: 608-609-1918

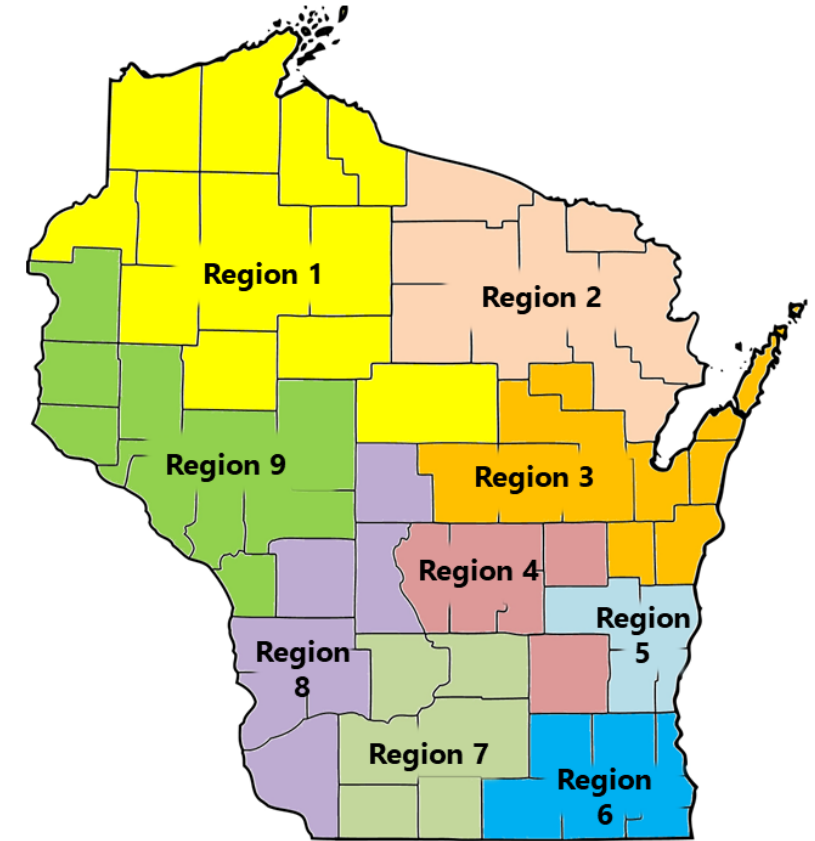
Region 5: Greta Michaelson; Phone: 608-867-4647

Region 6: Paula Pintar; Phone: 608-471-0499

Region 7: Beth Ellinger; Phone: 608-219-3483

Region 8: Ashley O'Keefe; Phone: 608-556-8608

Region 9: Nikki Mueller; Phone: 608-628-4464



HAI Prevention Program Contacts



Email: dhswhaipreventionprogram@dhs.wisconsin.gov



Phone: 608-267-7711



Website: www.dhs.wisconsin.gov/hai/contacts.htm

- HAI: Home
- For Health Professionals
- For Patients & Families
- Infection Prevention Education**
- Infection Preventionist Starter Kit
- Multidrug-Resistant Organisms
- Precautions
- HAI Data
- National Healthcare Safety Network
- Antimicrobial Stewardship



Get Handy Hygiene Tips

HAI Infection Prevention Education webpage

HAI Infection Prevention Education

The resources on this page are intended to connect health care facility infection preventionists (IP) with education materials to support their role in preventing, detecting, and responding to healthcare-associated infections (HAI).

IPs play an essential role in facility infection prevention policy development, surveillance, and risk assessment. IPs also serve as a resource to other staff and programs within their facilities.

In addition to the webinars, trainings, and online references below, there are a number of links to trusted education resources, including the CDC (Centers for Disease Prevention and Control), the CMS (Centers for Medicare and Medicaid Services), and the Association for Professionals in Infection Control and Epidemiology (APIC).

Monthly webinars for IPs

HAI Education Series

The HAI Education Series, previously known as the Long-Term Care Education Series, provides education presentations on topics that include infection prevention, HAIs, antibiotic stewardship, disease surveillance, and outbreak response for health care staff in all setting types, local and Tribal health departments, and other health care partners. Each session features a new, timely topic presented by the Department of Health Services (DHS) program staff, HAI infection preventionists, partner organizations, or other external subject matter experts.

The HAI Education Series is a monthly webinar series, typically held the fourth Thursday of each month. Register for the [HAI Education Series](#).

Session recordings



Upcoming HAI Education Session

Date: April 24, 2025

Topic: *Legionella* and Water Management Programs



WISCONSIN DEPARTMENT
of HEALTH SERVICES