

# Implementation of a Dynamic, Statewide Outpatient Pediatric Antimicrobial Stewardship Dashboard in West Virginia

Annual Infectious Disease & Immunization Summit  
June 2024



MARSHALL UNIVERSITY®  
Joan C. Edwards School of Medicine



# Presenters

## Jacob T. Kilgore, MD, MPH, FAAP

Assistant Professor, Dept. of Pediatrics, Division of Pediatric Infectious Diseases

Medical School: Marshall University JCESOM (M.D)

Residency: Marshall University JCESOM (Med-Peds)

Fellowship: Duke University SOM (Peds ID)

MPH: University of North Carolina (Epidemiology)



## Mariana M. Lanata, MD, FAAP

Associate Professor, Dept. of Pediatrics, Division of Pediatric Infectious Diseases

Director of Pediatric Antimicrobial Stewardship & Infection Control

Medical School: Universidad Peruana Cayetano Heredia (M.D.)

Residency: Miami (Nicklaus) Children's (Peds)

Fellowship: Nationwide Children's Hospital (Peds ID)





Jacob Kilgore, MD, MPH, FAAP



Mariana Lanata, MD, FAAP



Joseph E. Evans, MD, FAAP



Michael J. Smith, MD, MSCE, FAAP



Borden Samples, PharmD, BCPS



Bethany Wattles, PharmD, MHA



Jennifer Sparks, PharmD



Brandi Holthaus, MD



Jonathan Willis, MS

## Top row

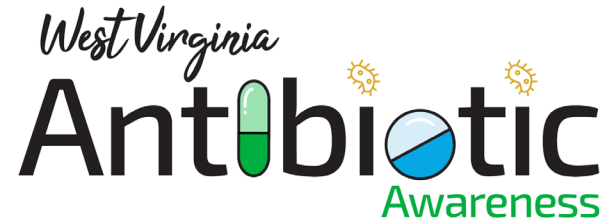
Jacob T. Kilgore  
Mariana Lanata  
Joseph E. Evans

## Middle row

Michael J. Smith  
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## Bottom row

Jennifer Sparks  
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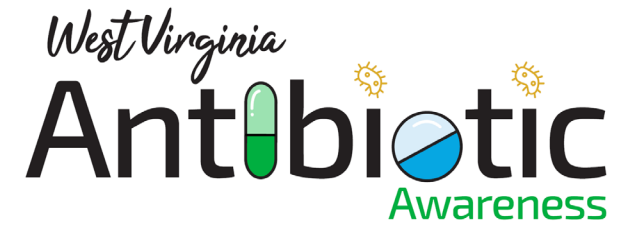
**Mike McCarthy, MA**

Chief Information Officer (CIO)  
JCESOM & Marshall Health



**James Becker, MD**

Professor, Dept. of FM  
Vice Dean Gov. Affairs & HC Policy



**Samantha Mullins, RN, MSN, FNP-C**

Antimicrobial Stewardship. Coordination  
WV Bureau for Public Health, Division of Infectious Diseases

# DISCLOSURES

- West Virginia Department of Health and Human Resources (WV DHHR) OEPS COVID SHARP grant, G221069, JT Kilgore & MM Lanata co-PIs. Project: “Creation and implementation of a statewide antimicrobial stewardship initiative.” (February 2022 – July 2024)
- Pew Charitable Trusts grant, ID36391, JT Kilgore & MM Lanata co-PIs. Project: “Development and validation of a statewide Medicaid provider feedback dashboard for outpatient antibiotic prescribing in children.” (October 2022 – December 2024)

# OBJECTIVES

- Define the epidemiologic context of antimicrobial stewardship
- Explore current research efforts to improve outpatient antimicrobial use in West Virginia
- Discuss strategies for ongoing outreach & antimicrobial stewardship partnerships across the state

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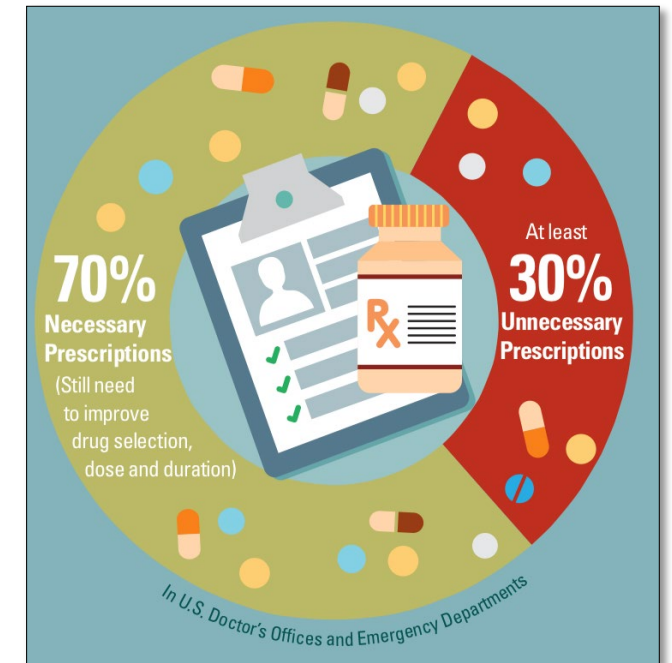


# EPIDEMIOLOGY OF STEWARDSHIP

- Antibiotic stewardship is the effort to measure and improve how antibiotics are prescribed by clinicians and used by patients.
- Improving antibiotic prescribing and use is critical to effectively treat infections, protect patients from harms caused by unnecessary antibiotic use, and combat antibiotic resistance.

# EPIDEMIOLOGY OF STEWARDSHIP

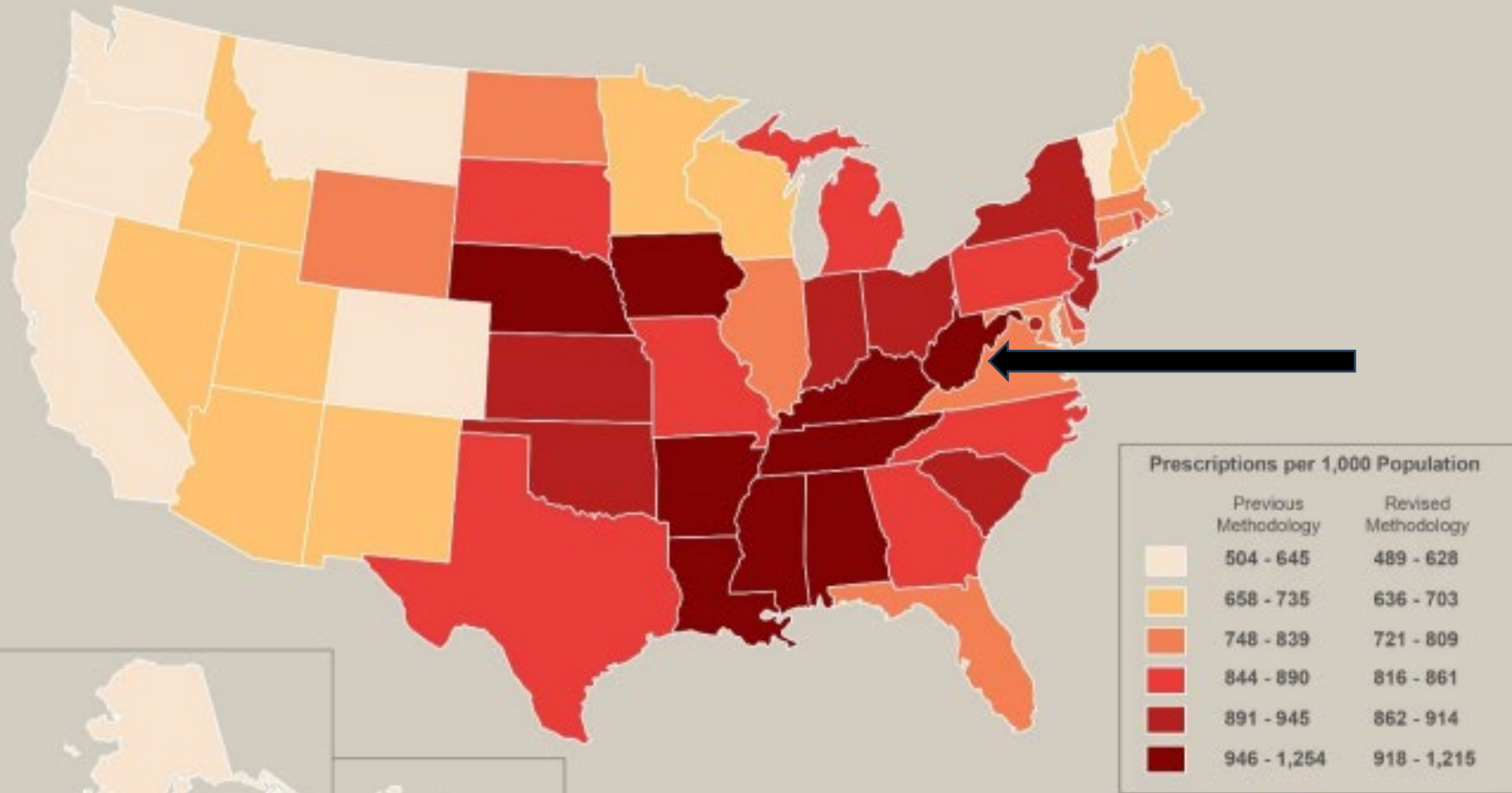
- An estimated 80-90% of antibiotic use occurs in the outpatient setting<sup>1-2</sup>
- At least 30% of antibiotics prescribed in the outpatient setting are unnecessary<sup>1</sup>
- A recent study by the CDC found only 50% of outpatient antibiotic prescribing was for the recommended first-line antibiotic<sup>1</sup>



<sup>1</sup> CDC Antibiotic Use in the United States, 2017: Progress and Opportunities, 2017.

<sup>2</sup> CDC Core Elements of Outpatient Stewardship, 2016.

# Community Antibiotic Prescriptions per 1,000 Population by State - 2017



2017

**West Virginia: 1<sup>st</sup>**

1,215 prescriptions  
per 1,000 population

~1.2 rxs/person/yr



# EPIDEMIOLOGY OF STEWARDSHIP

2018

**West Virginia: 1<sup>st</sup>**  
1,185 prescriptions  
per 1,000 pop.  
~1.2 rxs/person/yr

2019

**West Virginia: 1<sup>st</sup>**  
1,193 prescriptions  
per 1,000 pop.  
~1.2 rxs/person/yr

2020

**West Virginia: 1<sup>st</sup>**  
974 prescriptions  
per 1,000 pop.  
~1 rx/person/yr

2021

**West Virginia: 2<sup>nd</sup>**  
1,022 prescriptions  
per 1,000 pop.  
~1 rx/person/yr

2022

**West Virginia: 1<sup>st</sup>**  
1,184 prescriptions  
per 1,000 pop.  
~1 rx/person/yr

# WHY WEST VIRGINIA?

- Clear need to address over-prescribing in WV
- Limited resources & unique obstacles
- Opportunity to serve & make a sustainable difference
- Long-term commitment with ongoing research opportunities including state & privately-supported partnerships

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- Clear need to address over-prescribing in WV
- Limited resources & unique obstacles
- Opportunity to serve & make a sustainable difference
- Long-term commitment with ongoing research opportunities including state & privately-supported partnerships
- **Why Medicaid?**
  - 53% of all children in West Virginia are covered by Medicaid, including 56% of children with special health care needs<sup>3</sup>
  - Established DUA for ongoing opioid analysis

<sup>3</sup> <https://www.kff.org/medicaid/fact-sheet/>

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- Discuss strategies for ongoing outreach & antimicrobial stewardship partnerships across the state

# RESEARCH TEAM TRAJECTORY





# RESEARCH TEAM TRAJECTORY



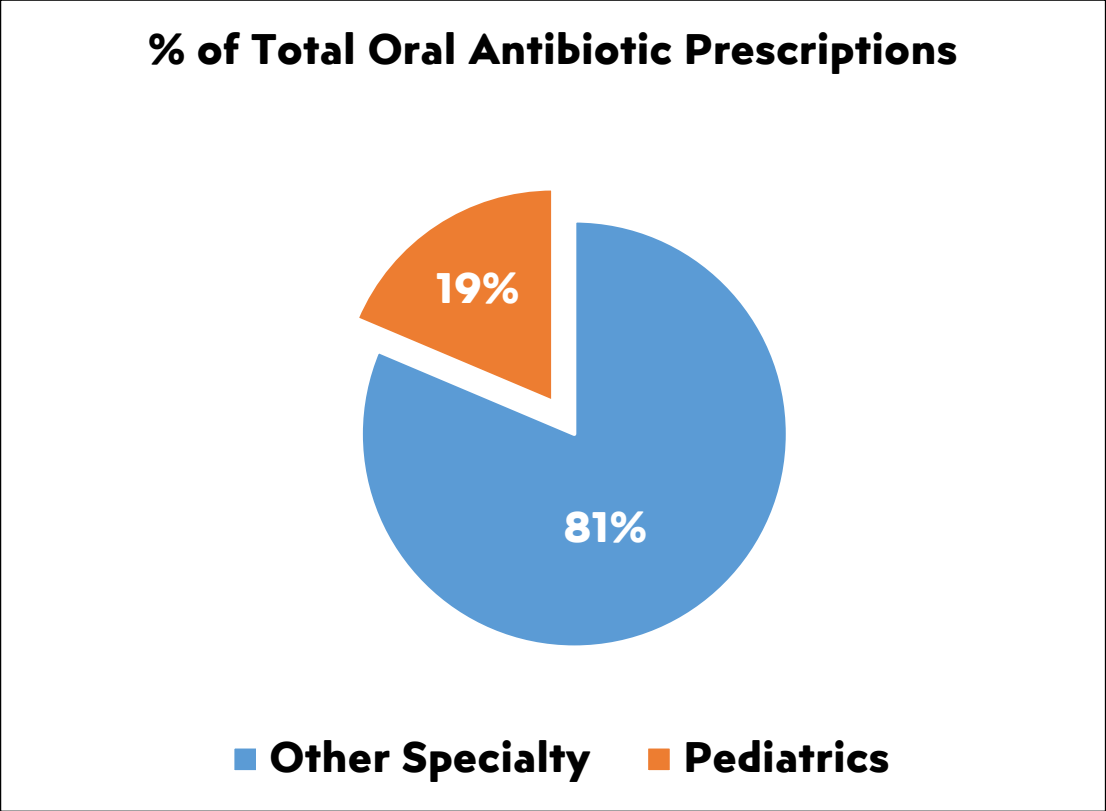
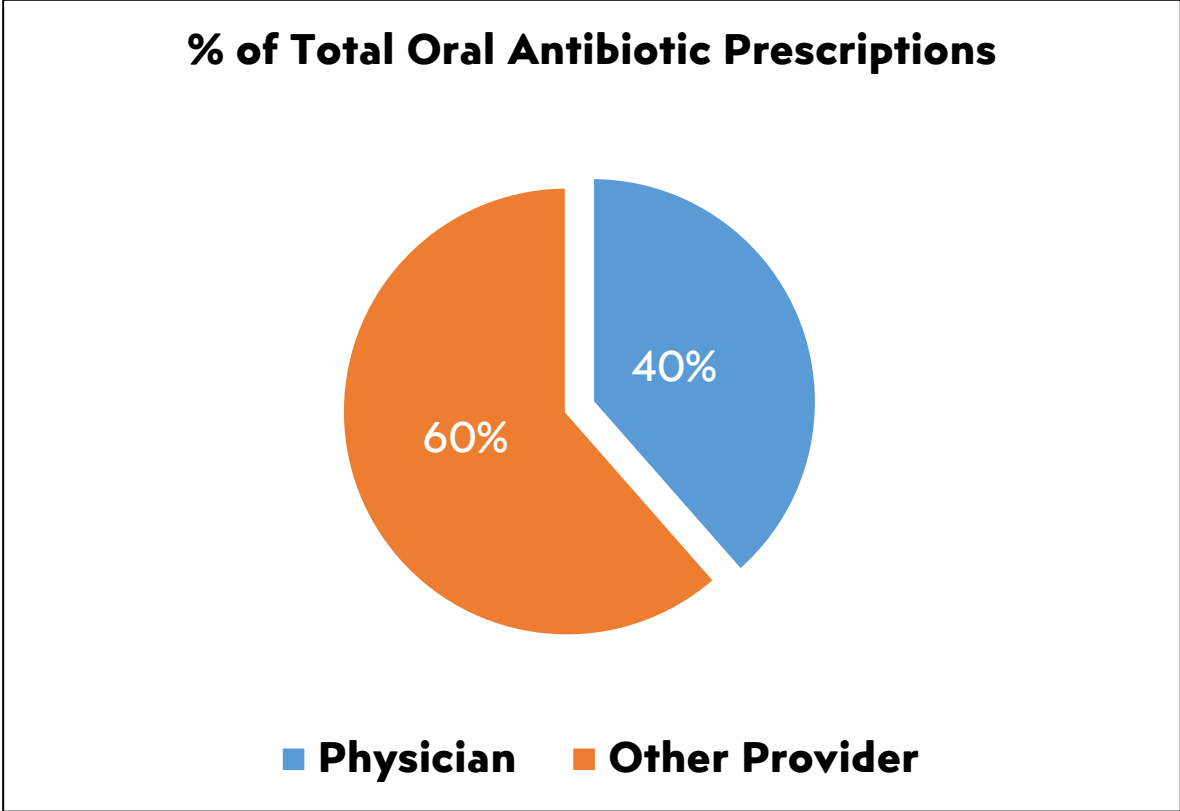
# EXPLORATORY ANALYSIS

- Reviewed WV medical & pharmacy pediatric Medicaid claims data to establish baseline demographic and clinical descriptive statistics to guide ASP interventions.
- Included: patients aged 0 months to 19 years who received an oral antibiotic prescription between January 1, 2018 & December 31, 2019
- Excluded: non-medical claims (e.g. dental, ophthalmologic), non-enteral therapies (e.g. IV, topical, ophthalmologic)

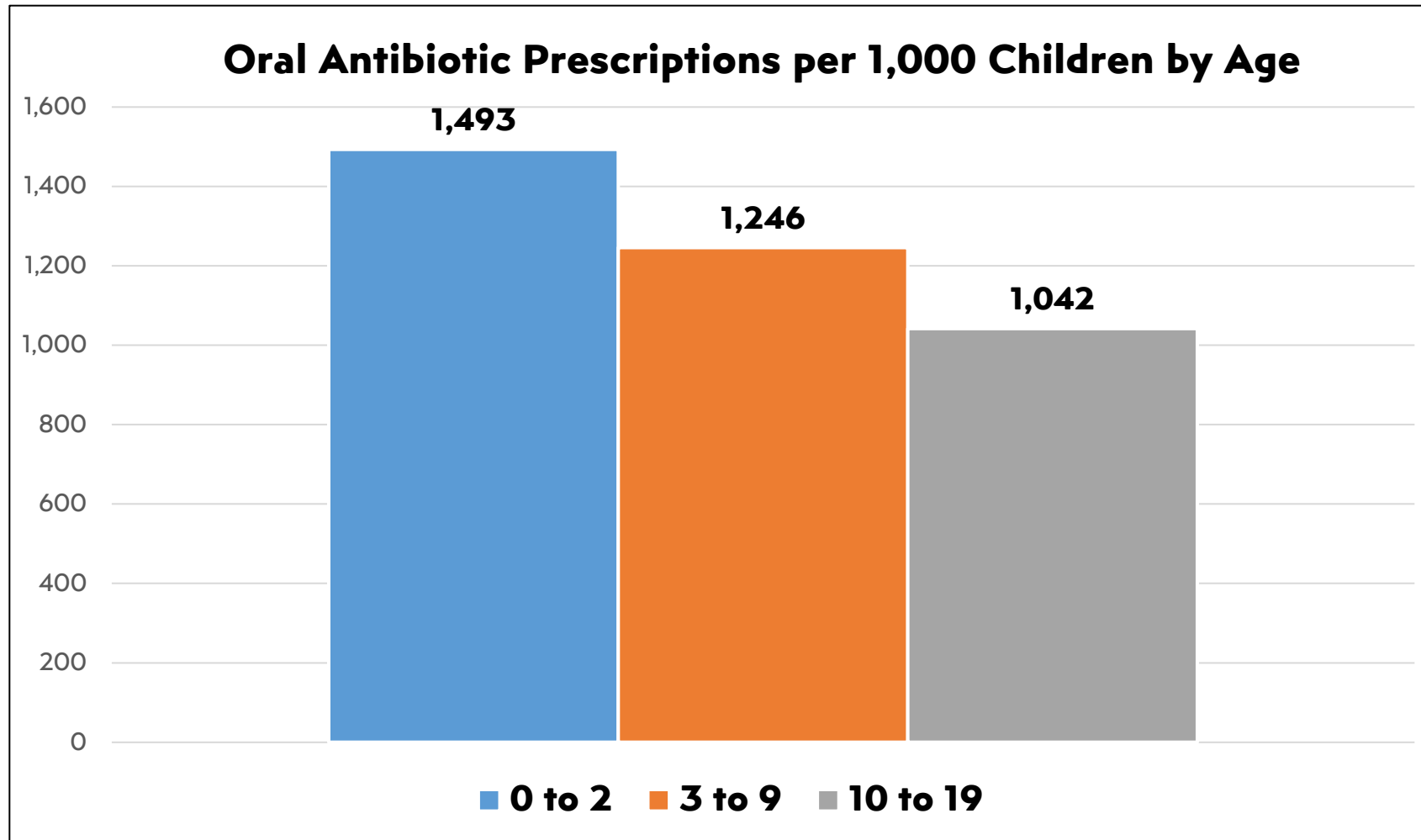
**Table 1. WV pediatric Medicaid patient population demographic summary by CY**

<b>Total (all WV Medicaid Claims)</b>	<b>CY 2018</b>			<b>CY 2019</b>		
	<b>Patients</b>	<b>Rxs</b>	<b>Rate/1,000</b>	<b>Patients</b>	<b>Rxs</b>	<b>Rate/1,000</b>
	204,606	234,482	1,146	201,925	224,847	1,114

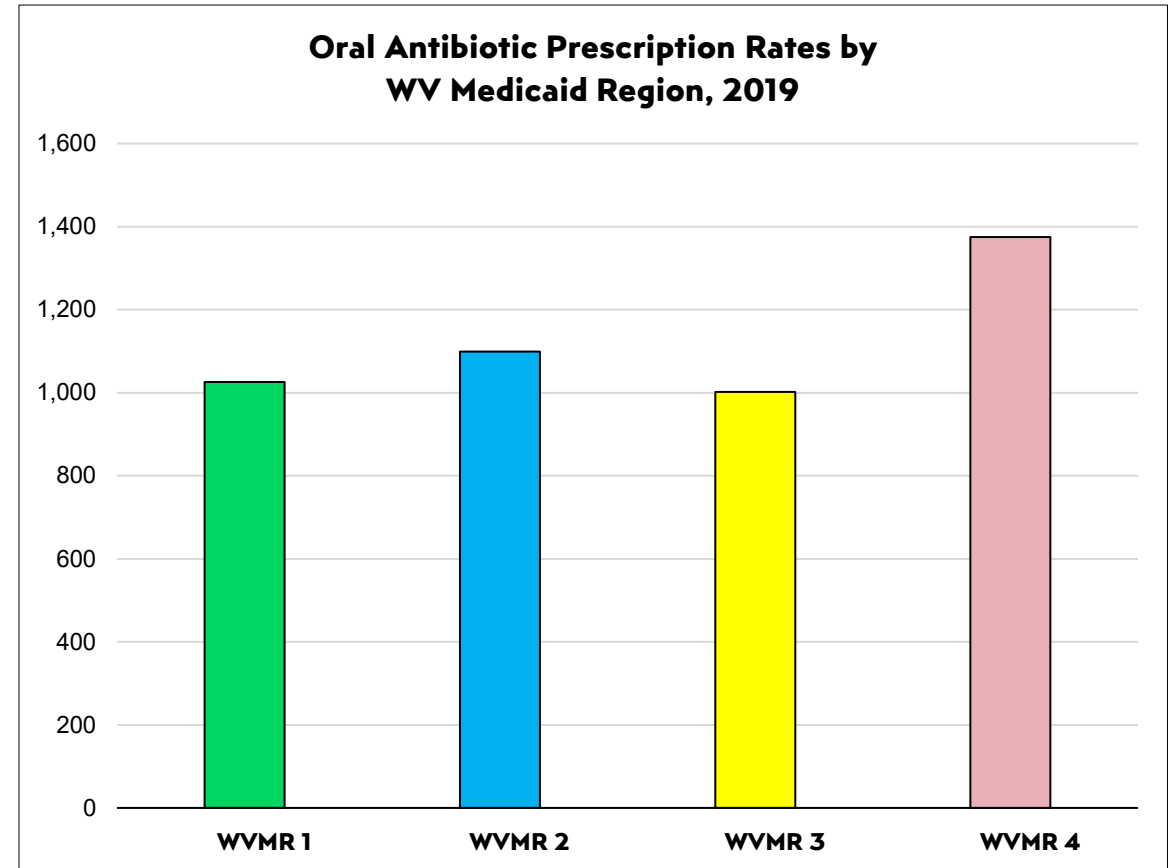
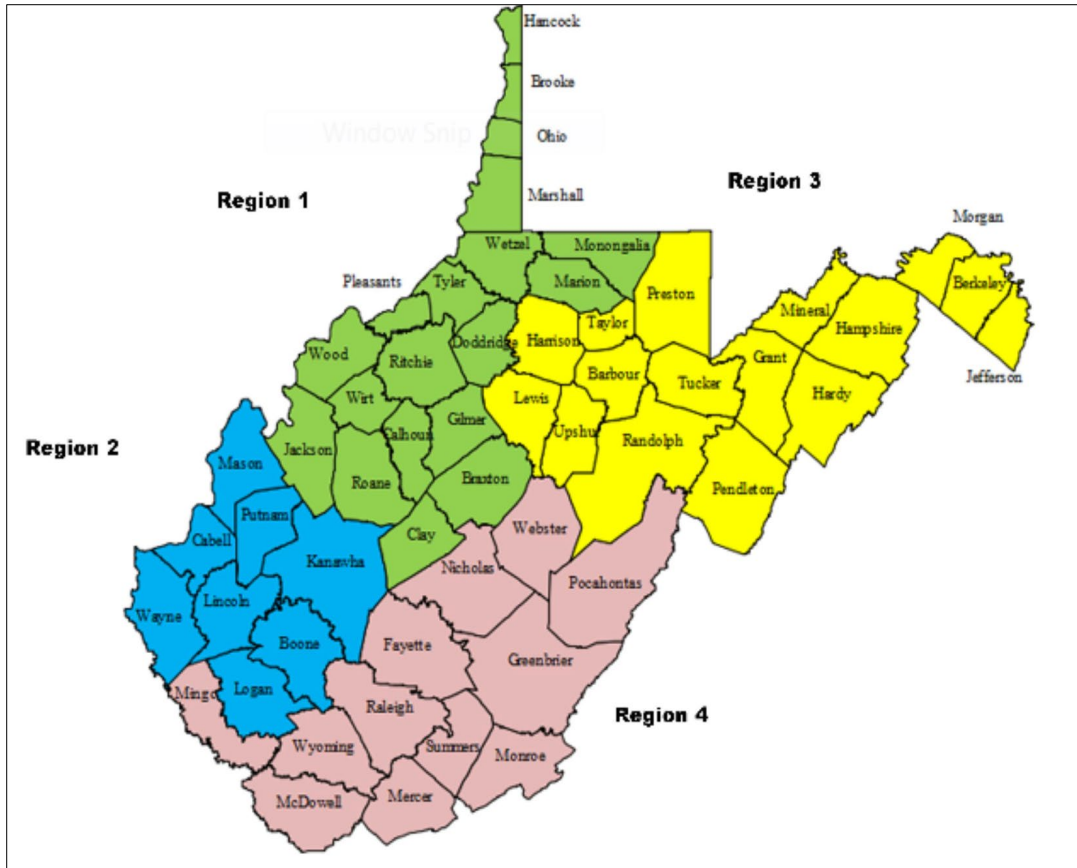
# Figure 1. Antibiotic prescribing in WV children, 2019



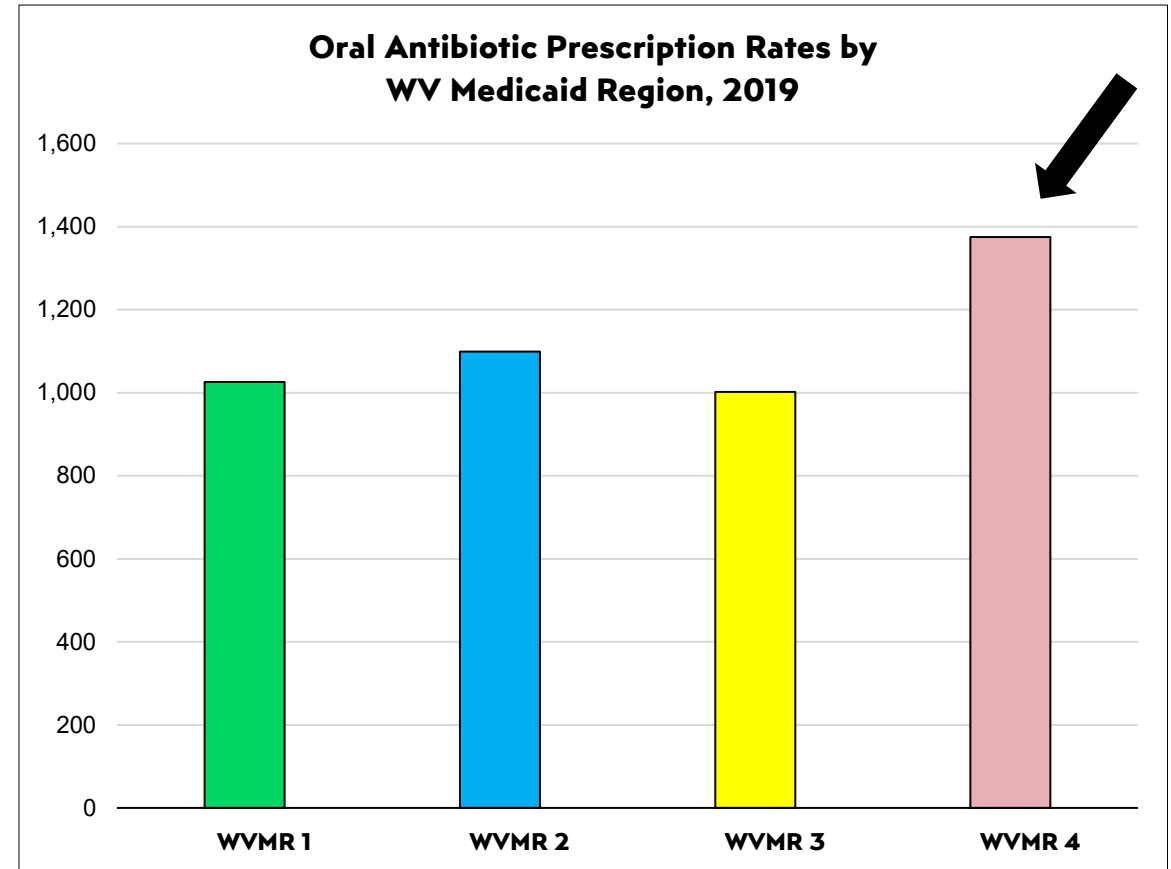
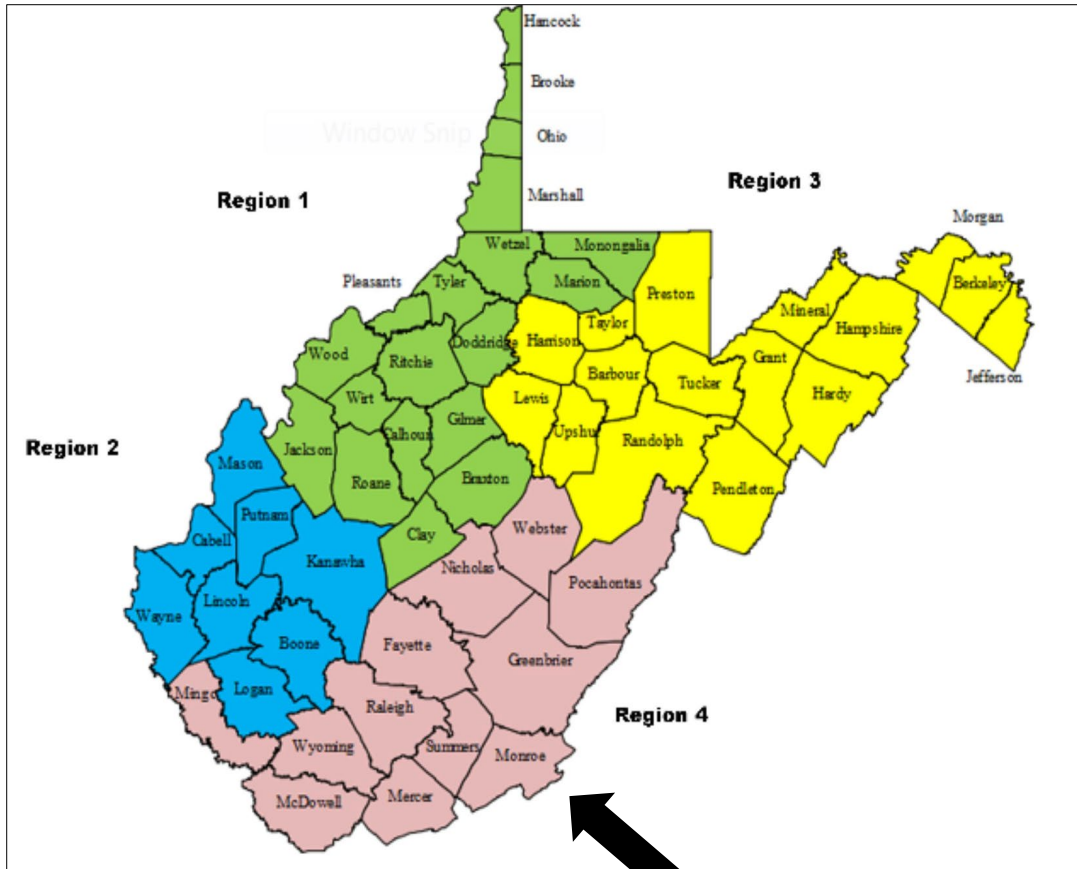
**Figure 2.** Antibiotic prescribing in WV children, 2019



# Figure 3. Antibiotic prescribing in WV children, 2019



# Figure 3. Antibiotic prescribing in WV children, 2019



**Table 2.** Total WV Medicaid spending (USD \$) by CY

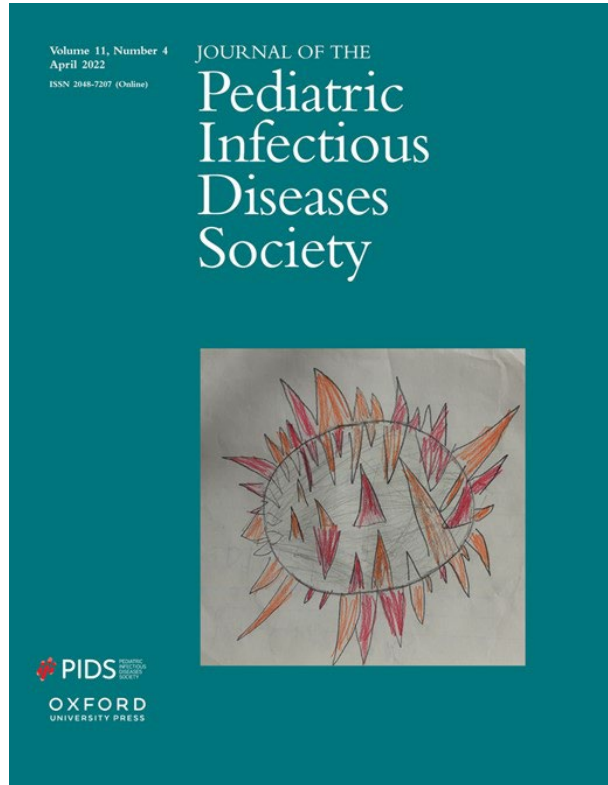
<b>Oral Antibiotic Prescriptions, Age 0-19</b> <b>(n = 204,606 children, 2018; n = 201,925 children, 2019)</b>					
<b>CY</b>	<b>Total Prescriptions</b>	<b>Prescriptions per 1,000 children</b>	<b>Total Spending, oral (USD \$)</b>	<b>Total Spending, all (USD \$)</b>	<b>Average spending per prescription, oral (USD \$)</b>
2018	234,482	1,146	\$4,366,091	\$7,796,701	\$18.62
2019	224,847	1,114	\$4,041,687	\$7,731,375	\$17.98



**Table 3.** Review of top 10 most prescribed oral antibiotics, CYs 2018 & 2019

Top 10 most prescribed oral antibiotics	Prescription frequency (% annual total)		Total spending (USD \$), (% annual total)	
	CY 2018	CY 2019	CY 2018	CY 2019
Amoxicillin	83,286 (35.5)	81,632 (36.3)	\$1,017,390 (23.3)	\$1,025,222 (25.4)
Cefdinir	39,167 (16.7)	39,096 (17.4)	\$906,407 (20.8)	\$758,034 (18.8)
Azithromycin	33,821 (14.4)	29,950 (13.3)	\$528,174 (12.1)	\$450,242 (11.1)
Amoxicillin clavulanate	28,789 (12.3)	27,579 (12.3)	\$680,053 (15.6)	\$599,090 (14.8)
Trimethoprim-sulfamethoxazole (TMP-SMX)	14,689 (6.3)	13,170 (5.9)	\$327,323 (7.5)	\$267,202 (6.6)
Cephalexin	12,798 (5.5)	12,849 (5.7)	\$250,034 (5.7)	\$245,155 (6.1)
Doxycycline	4,812 (2.1)	5,212 (2.3)	\$96,117 (2.2)	\$82,583 (2.0)
Minocycline	3,774 (1.6)	3,465 (1.5)	\$77,592 (1.8)	\$69,744 (1.7)
Nitrofurantoin	3,393 (1.4)	3,054 (1.4)	\$166,435 (3.8)	\$315,968 (7.8)
Clindamycin	3,188 (1.4)	2,963 (1.3)	\$110,366 (2.5)	\$102,666 (2.5)
	<b>CY 2018</b>	<b>CY 2019</b>	<b>CY 2018</b>	<b>CY 2019</b>
Total 10 most prescribed oral antibiotics, total (%)	227,717 (97.1)	218,970 (97.4)	\$4,159,891 (95.3)	\$3,915,906 (96.9)
All oral antibiotics, total (100%)	234,465	224,828	\$4,365,719	\$4,041,143

# EXPLORATORY ANALYSIS PUBLICATION



This work has been published in the Journal of Pediatric Infectious Diseases Society (JPIDS) under the following reference:

Kilgore JT, Lanata MM, Willis JM, McCarthy MJ, Becker JB, Evans JE, Smith MJ. Utilization of West Virginia Pediatric Medicaid Claims Data to Guide Outpatient Antimicrobial Stewardship Interventions. JPIDS, 2021;piab125, PMID: 34939655. DOI: 10.1093/jpids/piab125

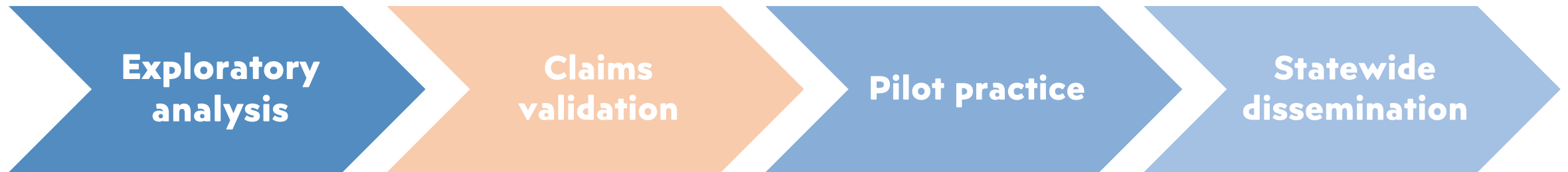




**Accurate?**

**Applicable?**

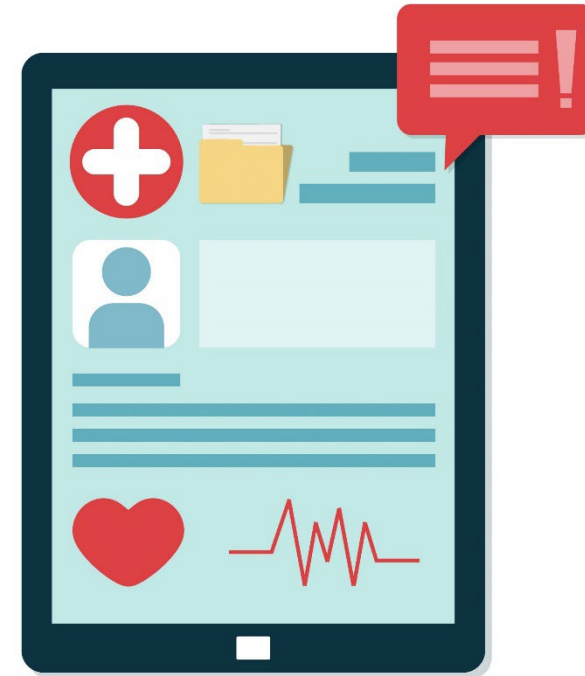
# RESEARCH TEAM TRAJECTORY



# CLAIMS VALIDATION: METHODS

CLAIMS  
DATA

=



ELECTRONIC MEDICAL RECORDS

# CLAIMS VALIDATION: METHODS

- Randomized sample of Medicaid claims for children receiving care under Marshall Health system during calendar year (CY) 2022
- Must match in all following criteria:
  - Medicaid member ID
  - Date of service
  - Provider NPI number
- Blinded, independent EMR review vs. claims coding algorithm

# CLAIMS VALIDATION: METHODS

## Outcomes

- **Appropriateness:** appropriate, potentially appropriate & inappropriate prescribing based on billed diagnosis
  - Always appropriate: UTI, streptococcal pharyngitis, bacterial pneumonia
  - Sometimes appropriate: sinusitis, acute otitis media
  - Never appropriate: acute upper respiratory tract infection, acute bronchitis

# CLAIMS VALIDATION: METHODS

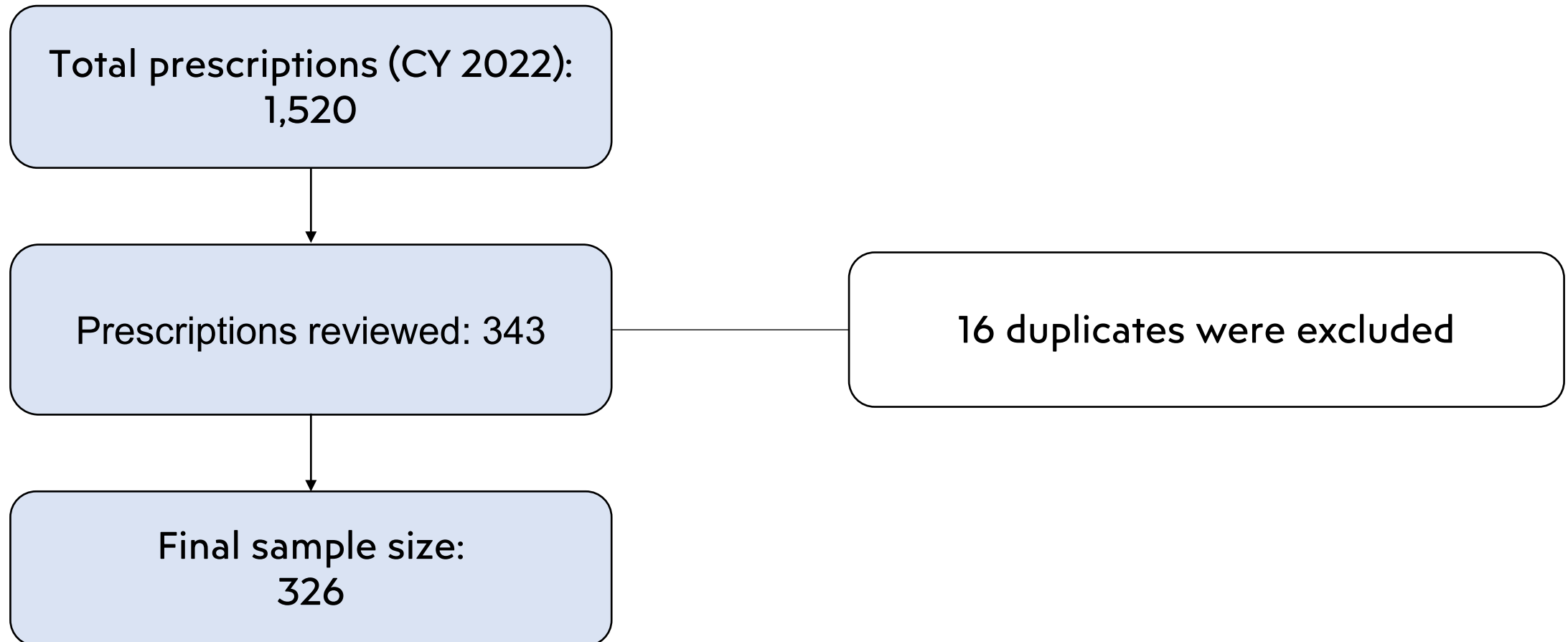
## Outcomes

- **Guideline-concordance:** first-line therapy for common infections
  - This addresses the antibiotic choice itself
  - Common outpatient infectious diagnoses: acute otitis media (AOM), acute sinusitis (AS), acute pharyngitis (AP), community-acquired pneumonia (CAP) and urinary tract infection (UTI)



# CLAIMS VALIDATION: RESULTS

**Figure 1.** Flowchart for the selection of sample size for EMR review



# CLAIMS VALIDATION: RESULTS

**Table 1. Data comparison between adjudicated Medicaid claims and EMR data**

Variable	Data Source		Percent Agreement
	Medicaid Claims	EMR	
Antibiotic	341	335	93.6%
Date of Birth	326	326	97.5%
Date of Service	326	326	98.2%
Diagnosis	326	326	88.7%
Duration	326	326	83.4%
Gender	326	326	98.5%
Race <sup>1</sup>	326	326	72.1%
State	326	326	97.5%

<sup>1</sup>Race recorded different in each source. Data in EMR does not conform to T-MSIS and best efforts were made to convert Cerner to T-MSIS, which is standard for reporting in the State.

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# CLAIMS VALIDATION: RESULTS

**Table 2.** Outcomes classification comparison between Medicaid claims and EMR data

Variable	Medicaid Claims	EMR	Percent Agreement
Diagnosis			
Appropriateness Guideline	326	326	88.7%
Concordance <sup>1</sup>	291	291	88.0%

<sup>1</sup> For those diagnoses with guidelines being assessed.

# CLAIMS VALIDATION: RESULTS

**Table 3.** Comparison of diagnosis-based classification of appropriateness between Medical claims and EMR data (n = 326)

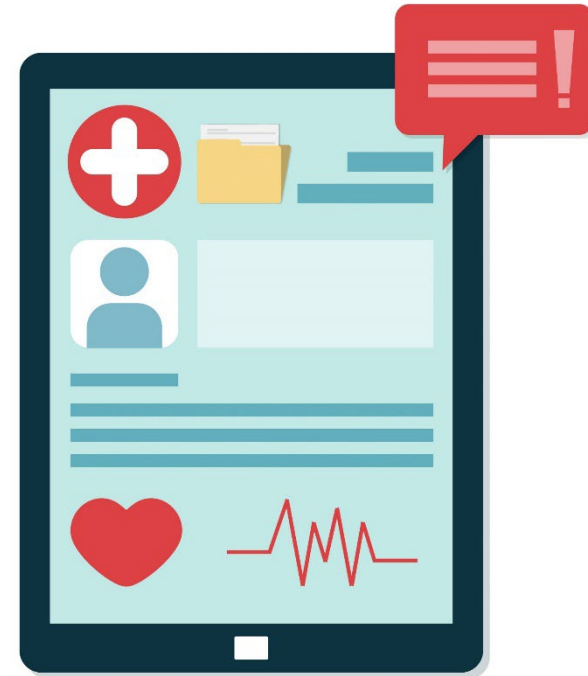
Source	Appropriate	Potentially appropriate	Inappropriate	Other
EMR	30 9%	248 76%	41 13%	7 2%
Medicaid	24 7%	256 79%	46 14%	0 0%

<sup>1</sup> Other indicates results blank, indeterminate, or labeled "Other" in results.

# CLAIMS VALIDATION: METHODS

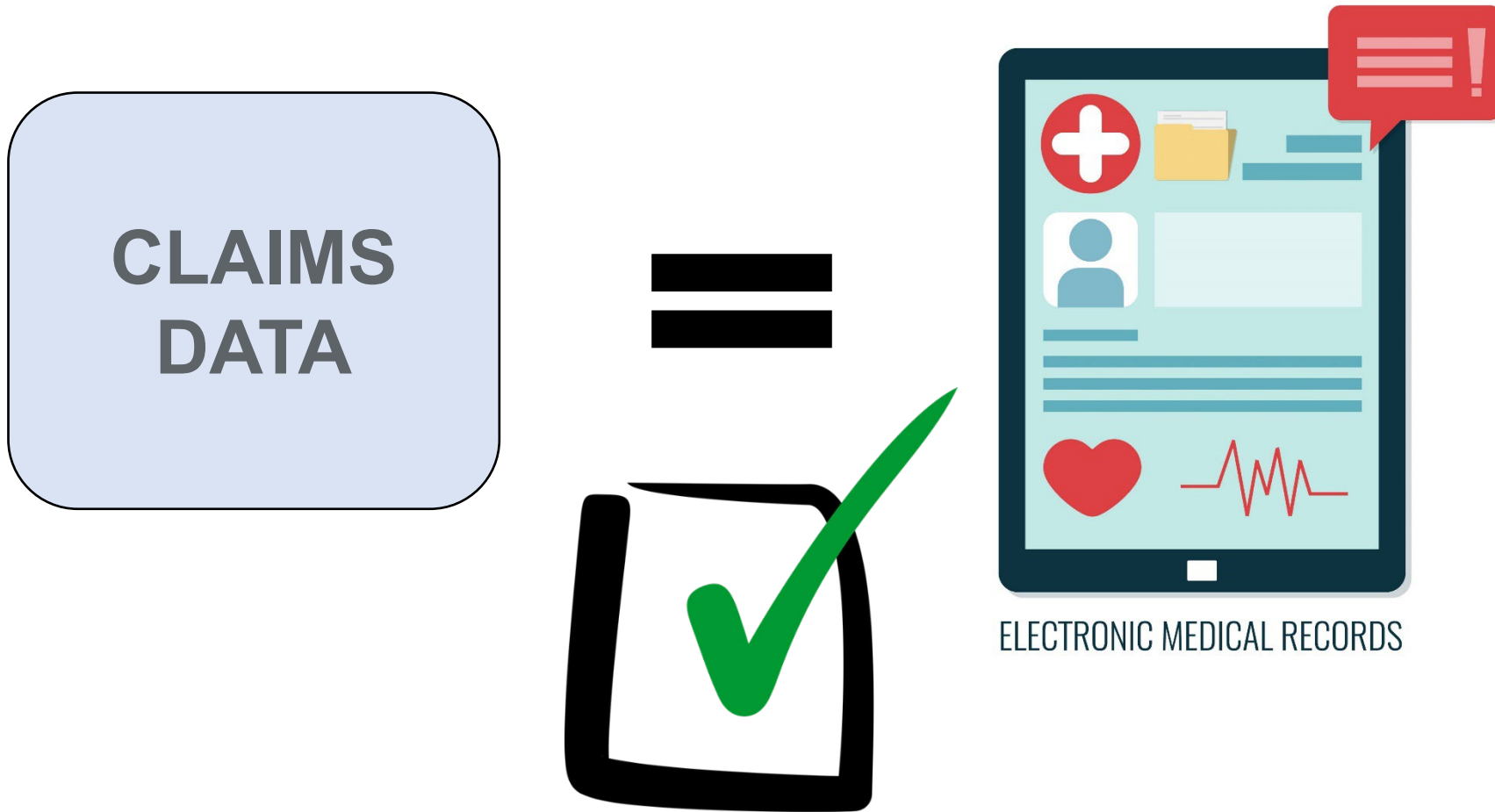
CLAIMS  
DATA

=

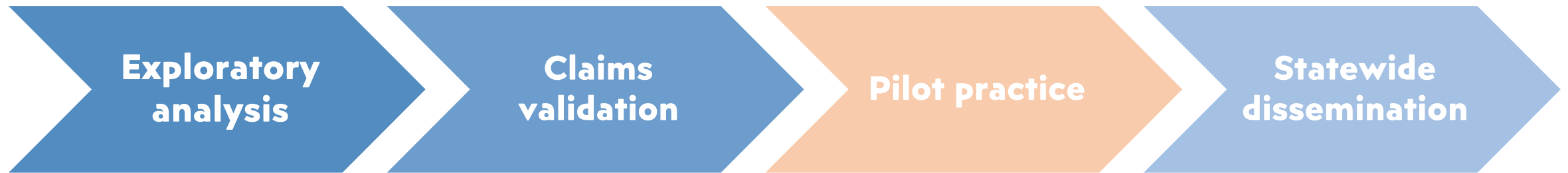


ELECTRONIC MEDICAL RECORDS

# CLAIMS VALIDATION: METHODS



# RESEARCH TEAM TRAJECTORY





# PILOT PRACTICE



[https://logos.fandom.com/wiki/You%27ve\\_Got\\_Mail](https://logos.fandom.com/wiki/You%27ve_Got_Mail)

# Provider Emails

*Note: The following message is being sent to the email address on file for provider records. If you received this email by error, disregard or **please forward to the correct provider, according to the NPI listed below.***

Dear Prescriber,

Antimicrobial resistance is a growing public health threat placing the achievements of modern medicine in jeopardy. Did you know that West Virginia has one of the highest rates of antibiotic prescribing in the nation? According to statistics, most antibiotic prescribing occurs in the outpatient setting. Unless antibiotic prescribing improvements are made, the population will remain at risk.

The CDC developed the [Core Elements](#) of Outpatient Antibiotic Stewardship to provide guidance in the battle against resistance. Tracking and reporting of antibiotic use is one of the recommended elements. We understand that individual providers and practices might not have the resources to do this on their own, so we would like to assist you in this important stewardship movement. A collaboration among antibiotic stewardship clinicians, Department for Medicaid Services, and the Department for Public Health has been established to assist West Virginia's fight against this threat.

WV Antibiotic Awareness is a campaign to reduce the impact and spread of antibiotic resistance by providing educational resources to healthcare professionals and their patients throughout the state.

A report of your outpatient antibiotic prescribing for children insured by Medicaid data has been attached. This report represents 6 months of your prescription activity for the year 2022; future reports will represent your previous month prescription habits. The data in the report are provided for your educational benefit and will not be shared publicly or used for reimbursement purposes.

Reporting metrics include inappropriate diagnosis, guideline concordance, and cefdinir prescription rates. Inappropriate diagnosis describes patient encounters where antibiotics are not warranted but were still prescribed. Examples of these are diagnoses such as acute upper respiratory tract infection or acute bronchitis, which have viral etiologies. Guideline concordance addresses the antibiotic choice itself to see if it aligns with current guidelines for common outpatient pediatric diagnoses and management. Concordance calculated for acute otitis media, bacterial sinusitis, community acquired pneumonia, streptococcal pharyngitis and urinary tract infections. We are also sharing cefdinir prescription rates as we have identified cefdinir as a frequently prescribed antibiotic in our region, yet it is not considered first line therapy for most common outpatient infections/management scenarios.

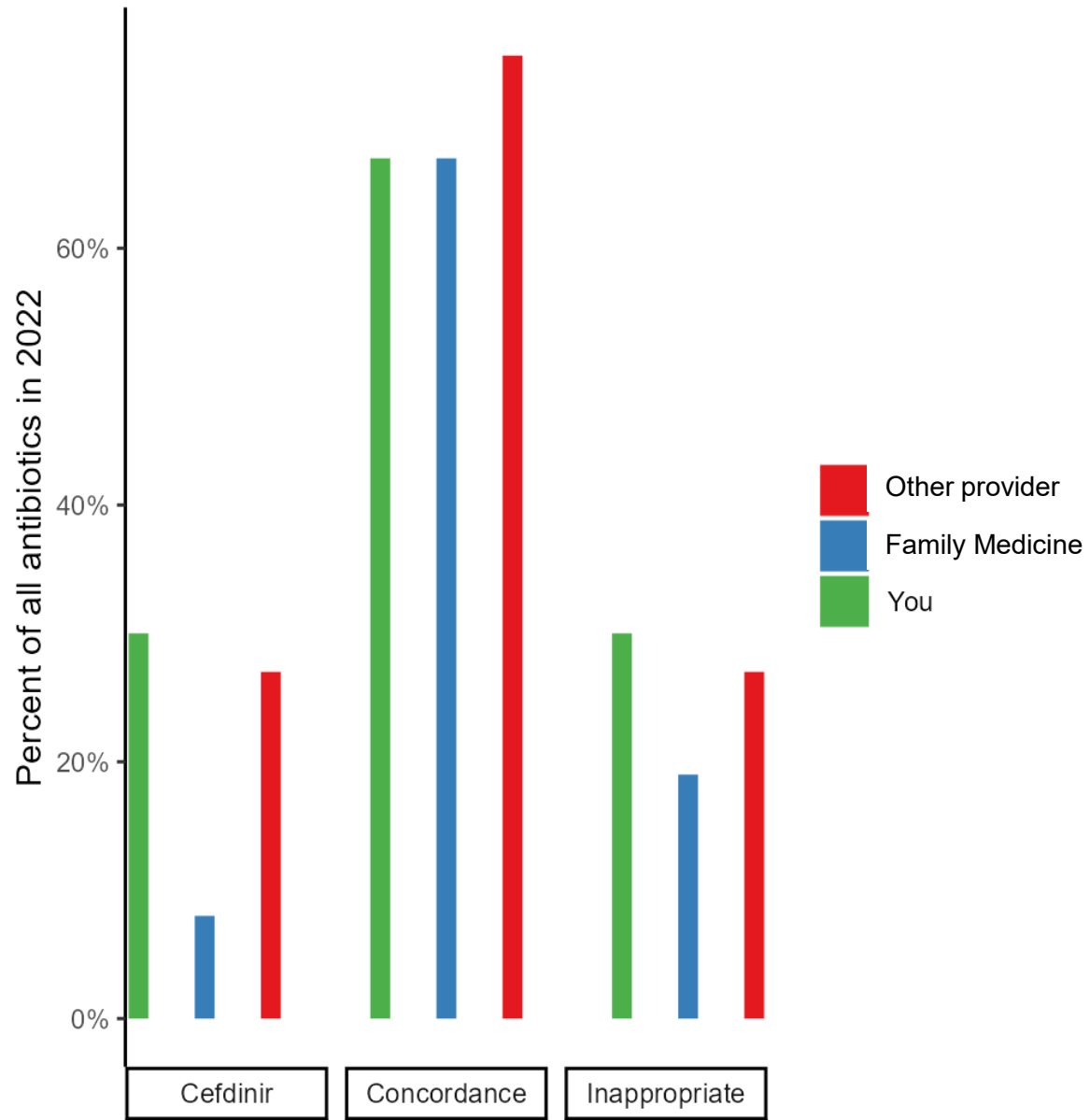
We encourage you to utilize the data to evaluate current practices and potentially impact your future antibiotic prescribing over the next calendar year. For more information on how these metrics were calculated, please visit our website.

Visit the [WV Antimicrobial Awareness website](#) to access the following resources: Implementation Workbook, Facebook and Twitter, customizable commitment posters, patient education materials, CE opportunities, and more.

For questions or assistance, email [wvabxawareness@gmail.com](mailto:wvabxawareness@gmail.com).

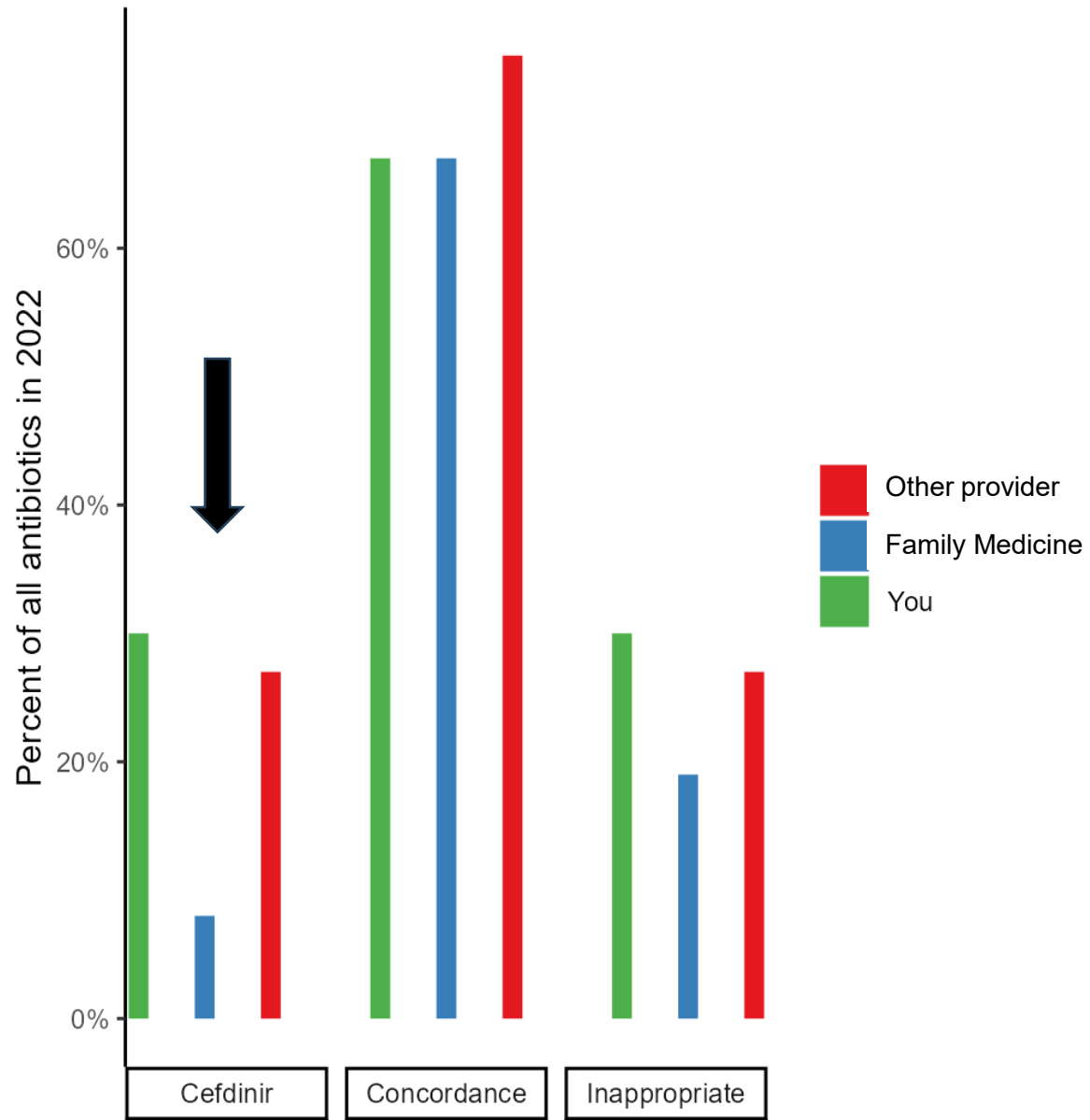
Thank you for your work and effort to improve antibiotic prescribing in West Virginia.

# Provider Emails



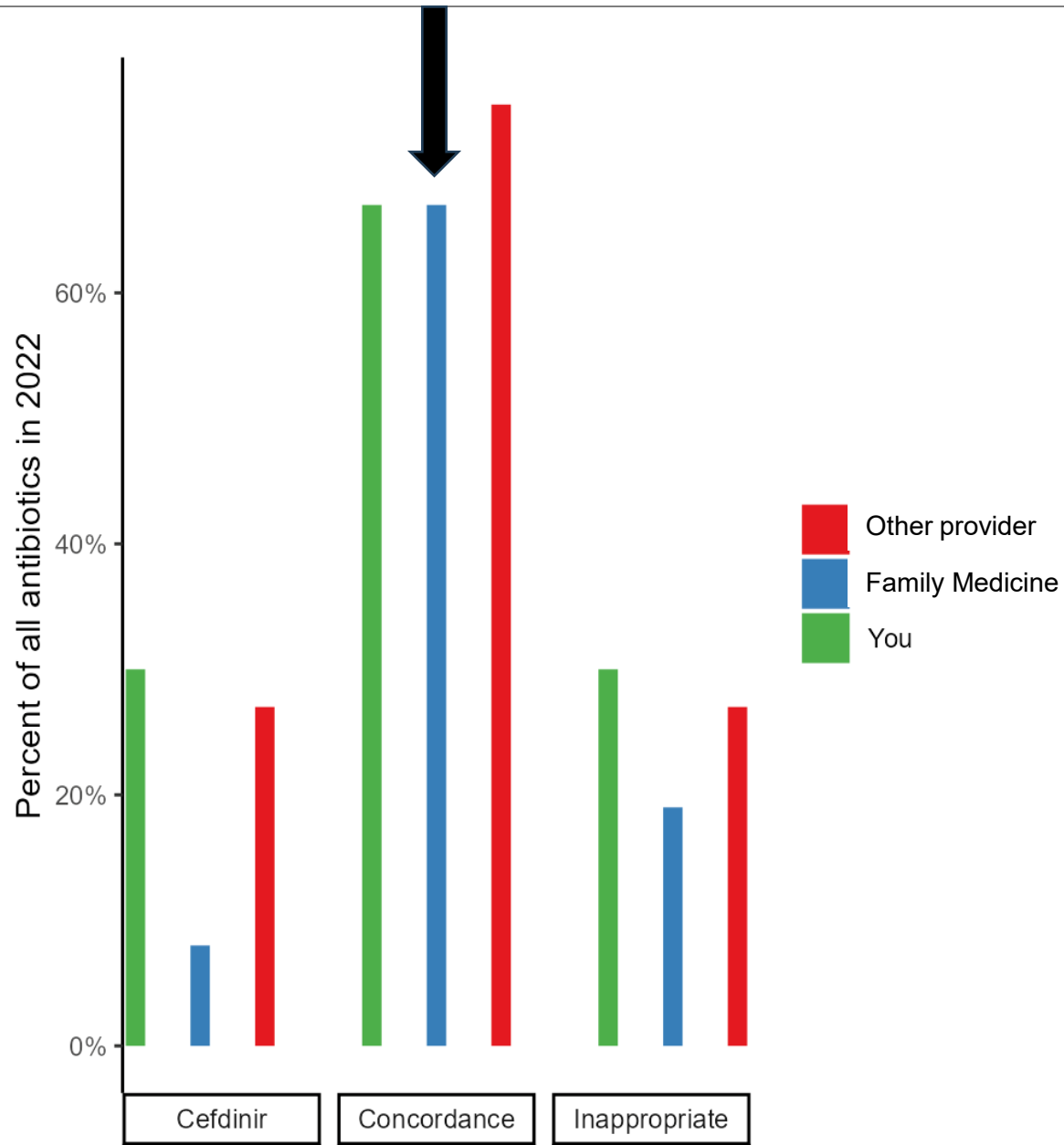
This report represents 10 total antibiotic prescriptions for **NPI 111111111**

# Provider Emails



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# Provider Emails



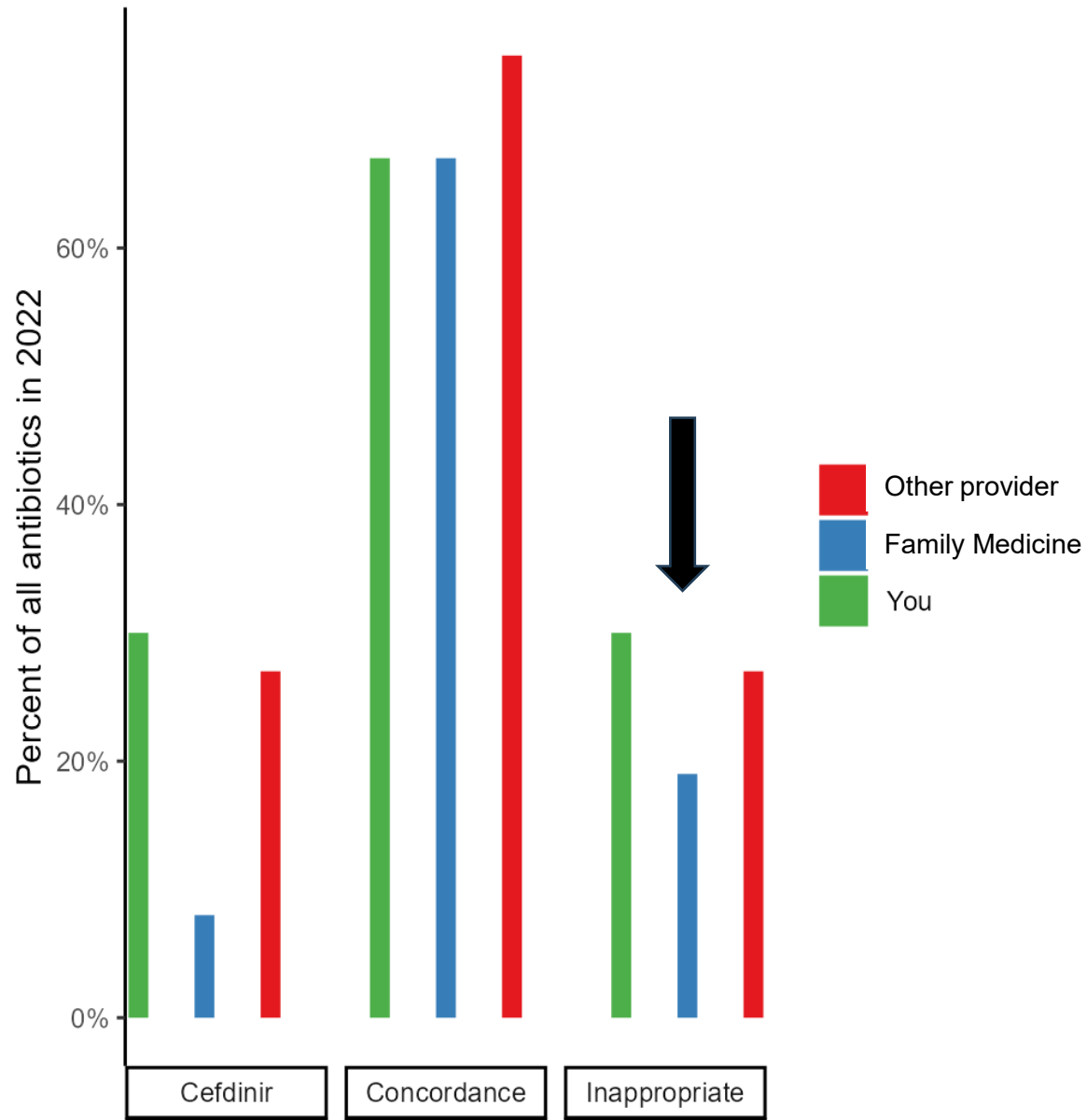
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# Provider Survey

West Virginia  
**Antibiotic**  
Awareness

AAA  
+ -

## WV Antimicrobial Stewardship Provider Focus Group Survey

Please complete the survey below.

Thank you!

The emails and accompanying data have or will impact my practice  Yes  No [reset](#)

Choose One

**Please detail the importance of each component of the emails**

	Very Important	Important	Mildly important	Not Important	
Personal prescribing data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<a href="#">reset</a>
Comparison to peers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<a href="#">reset</a>
WV Antimicrobial Awareness resources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<a href="#">reset</a>
Routine reminder of antibiotic stewardship	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<a href="#">reset</a>

What barriers to potentially changing your prescribing practices are you encountering?

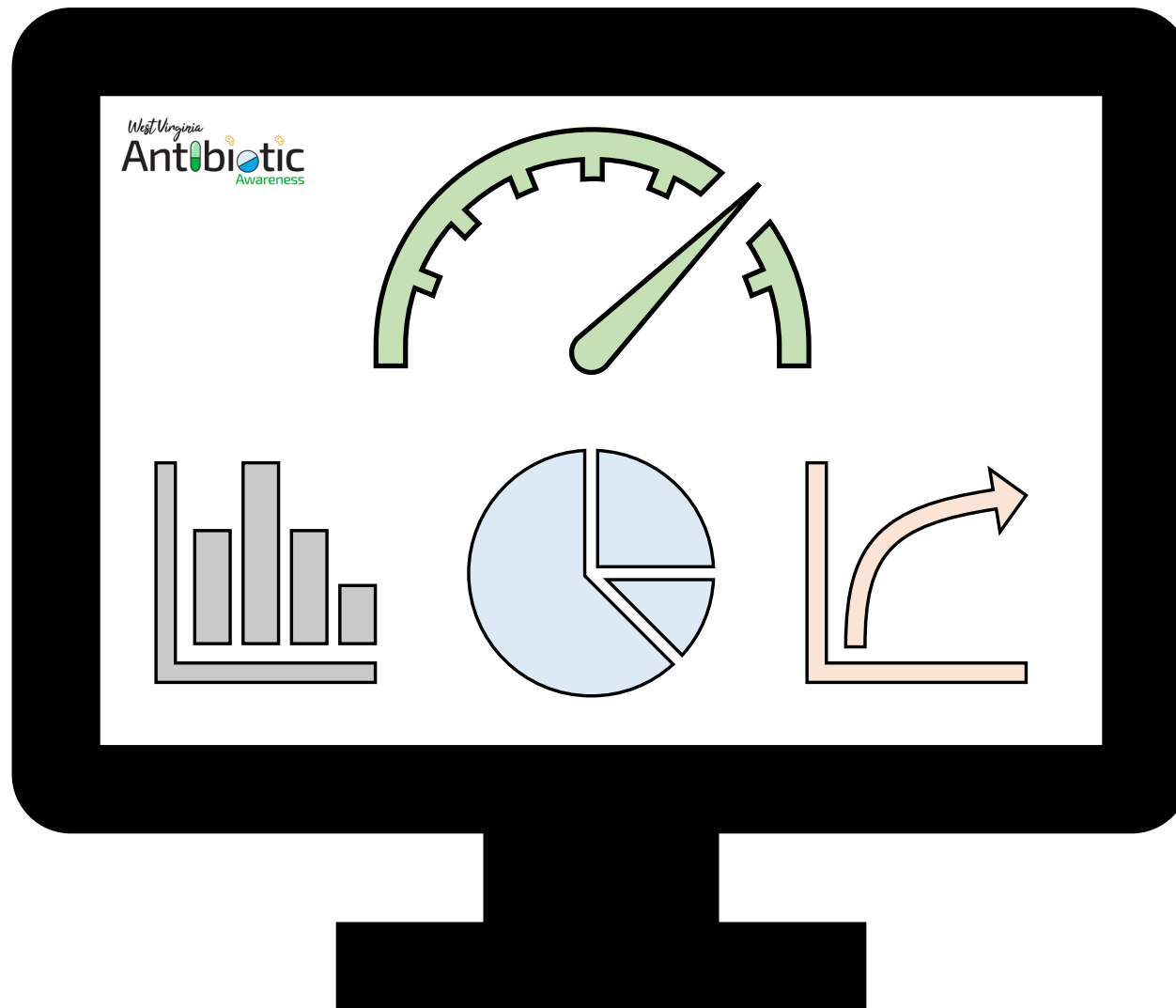
- Personal time constraints
- Visit time constraints
- Diagnostic uncertainty
- Patient/Family expectations
- Other



# RESEARCH TEAM TRAJECTORY



# STATEWIDE DISSEMINATION



# STEWARDSHIP IN ACTION

**COMING SOON**

# WV Antibiotic Awareness Antibiotic Stewardship Dashboard



- Home
- Demographics
- Prescription by Antibiotic
- Prescriptions by Diagnosis
- Appropriateness
- Guideline Concordance

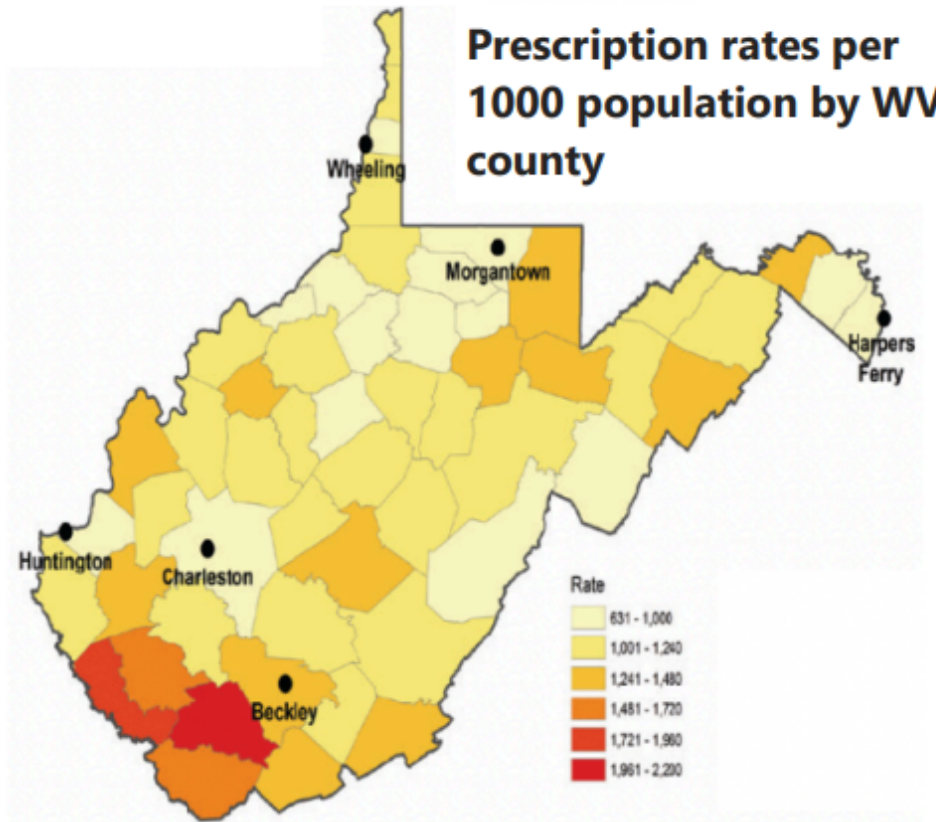
**1st**  
for Antibiotic  
Prescription Rates

Top Medicaid Region for  
Antibiotic Prescriptions

**4**

Most Commonly Prescribed Oral Antibiotics

**Amoxicillin**  
**Cefdinir**



Website:

Twitter:

# Demographics

Home

Demographics

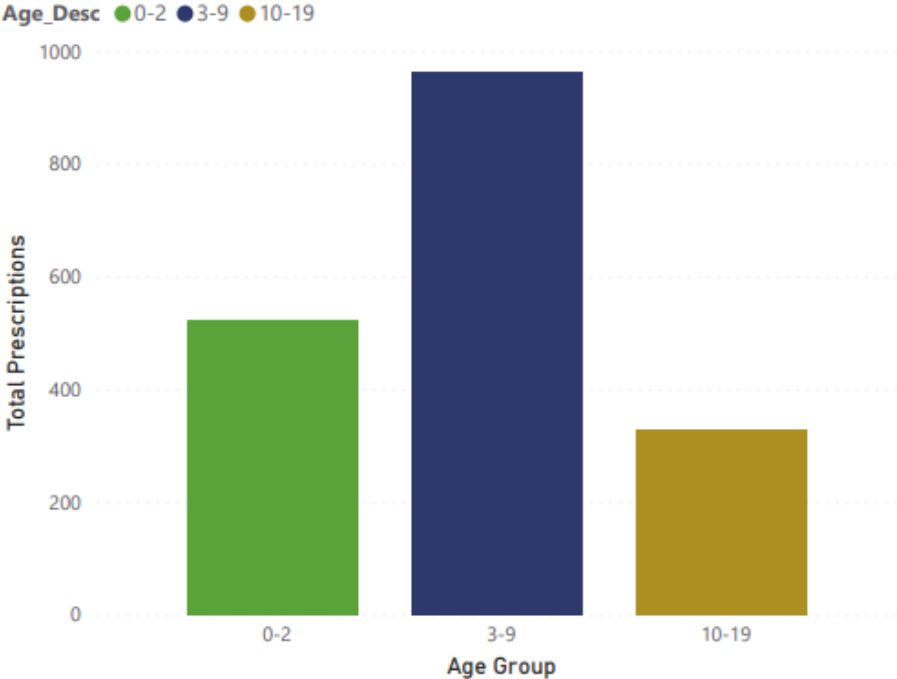
Prescription by Antibiotic

Prescriptions by Diagnosis

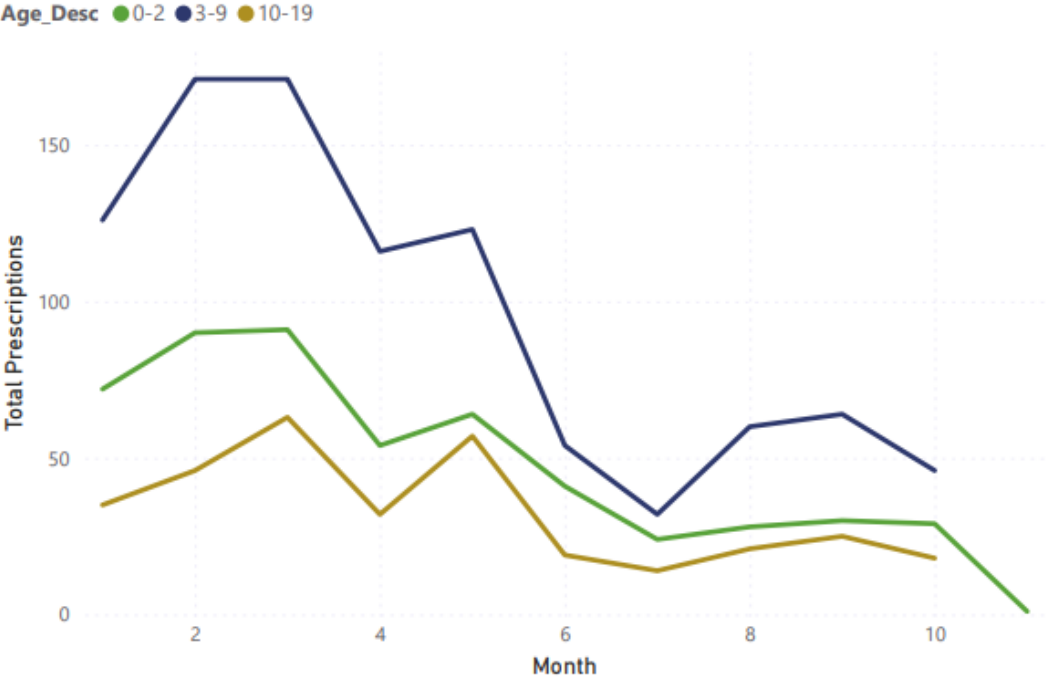
Appropriateness

Guideline Concordance

### Antibiotic Prescriptions by Age Group



### Monthly Antibiotic Prescriptions in 2023, by Age Group



Age

Sex

Race

Provider Type

Medicaid Region

Population Density

# Prescription by Antibiotic

Home

Demographics

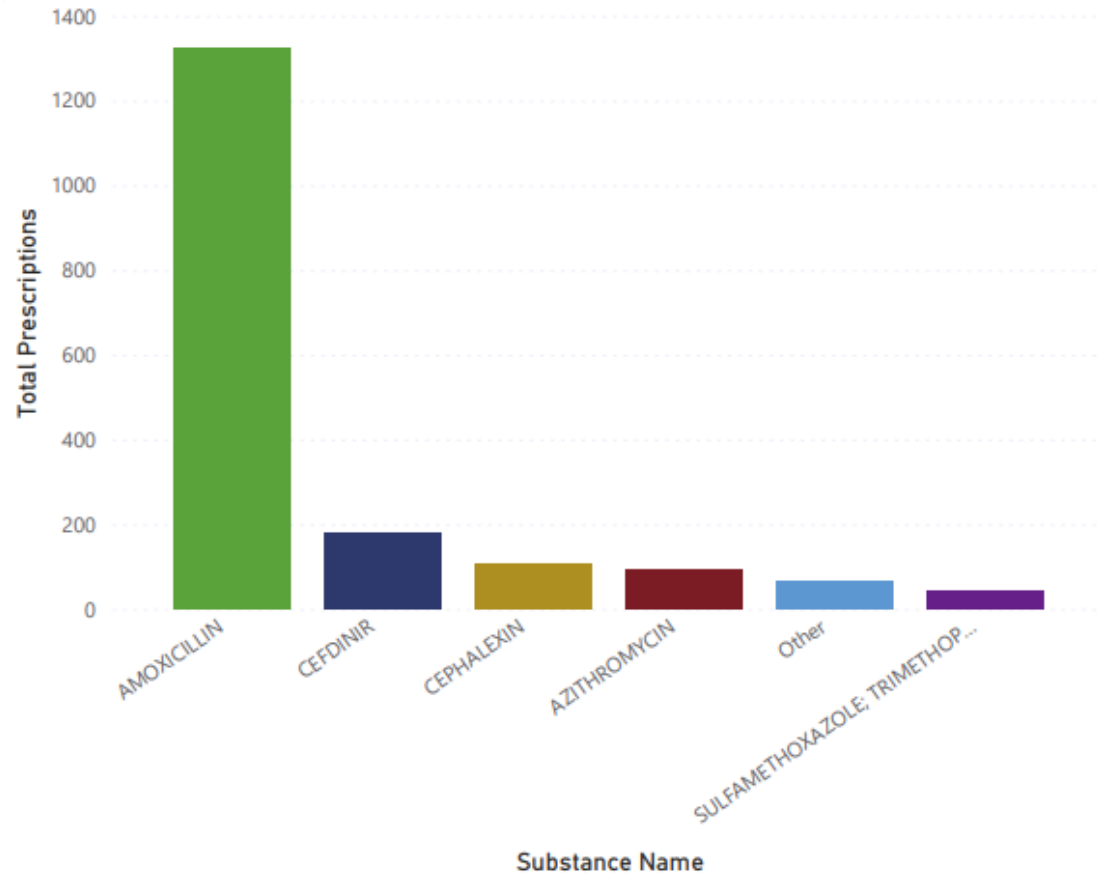
Prescription by Antibiotic

Prescriptions by Diagnosis

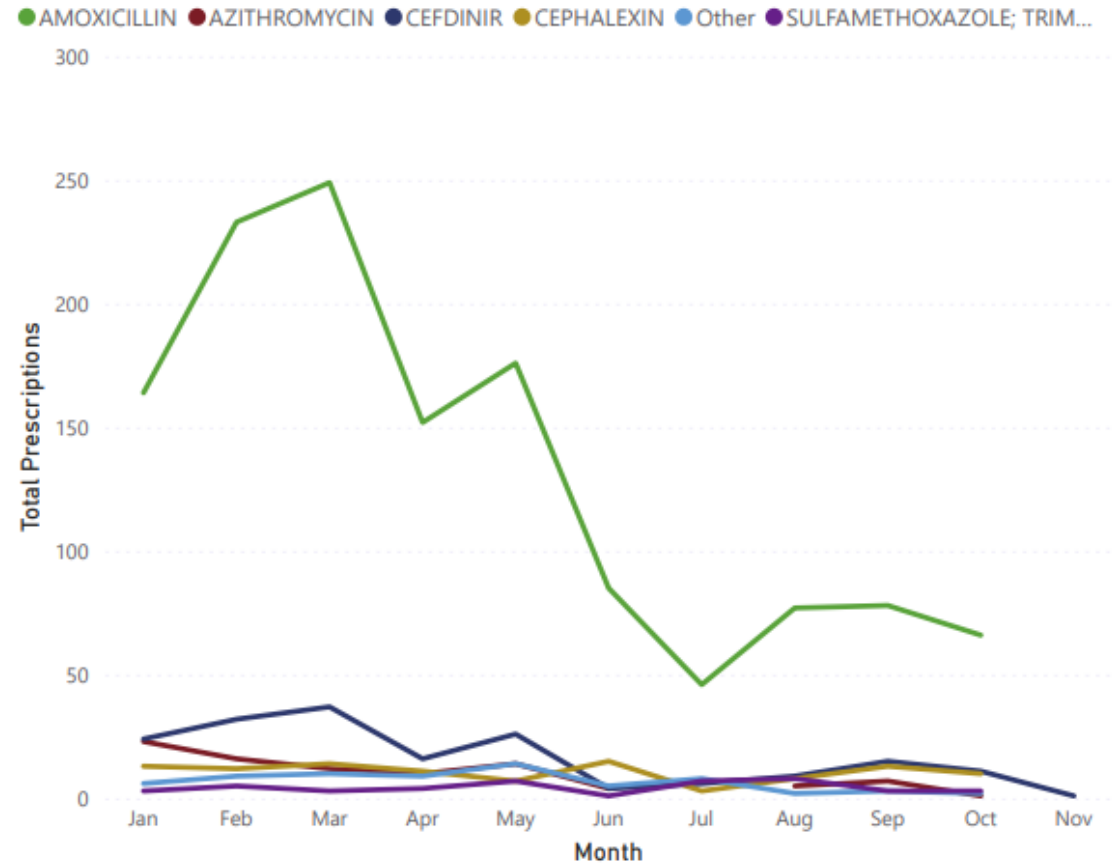
Appropriateness

Guideline Concordance

Sum of Prescriptions by Antibiotic



Total Monthly Prescriptions, by Substance, in 2023



Top 5 antibiotic groups are shown for clarity and conciseness, others are grouped in "Other" category which includes the following in decreasing order: Clindamycin, Doxycycline, Nitrofurantoin, Cirpofloxacin Hydrochloride, Minocycline Hydrochloride, Penicillin V Potassium, Cefuroxime Axetil, Metronidazole.

# Prescriptions by Diagnosis

Home

Demographics

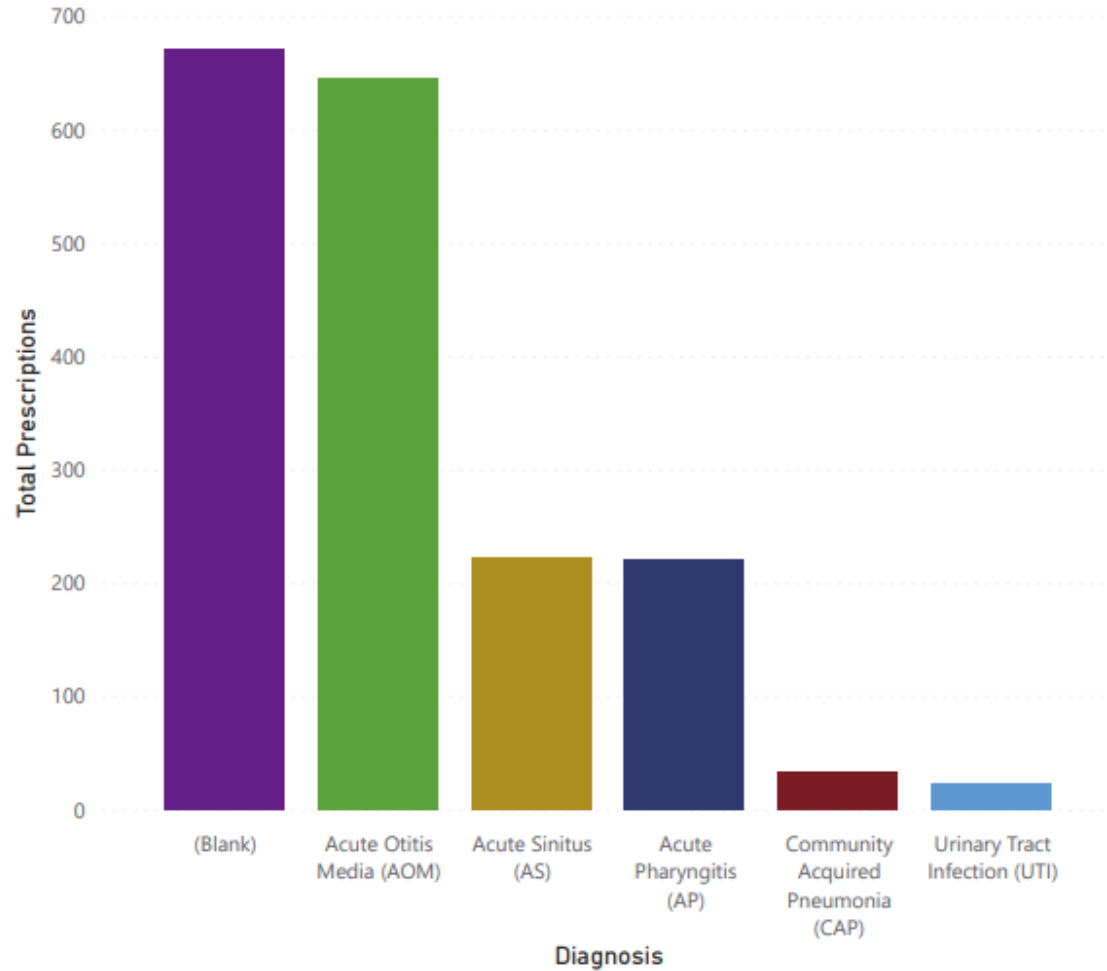
Prescription by Antibiotic

**Prescriptions by Diagnosis**

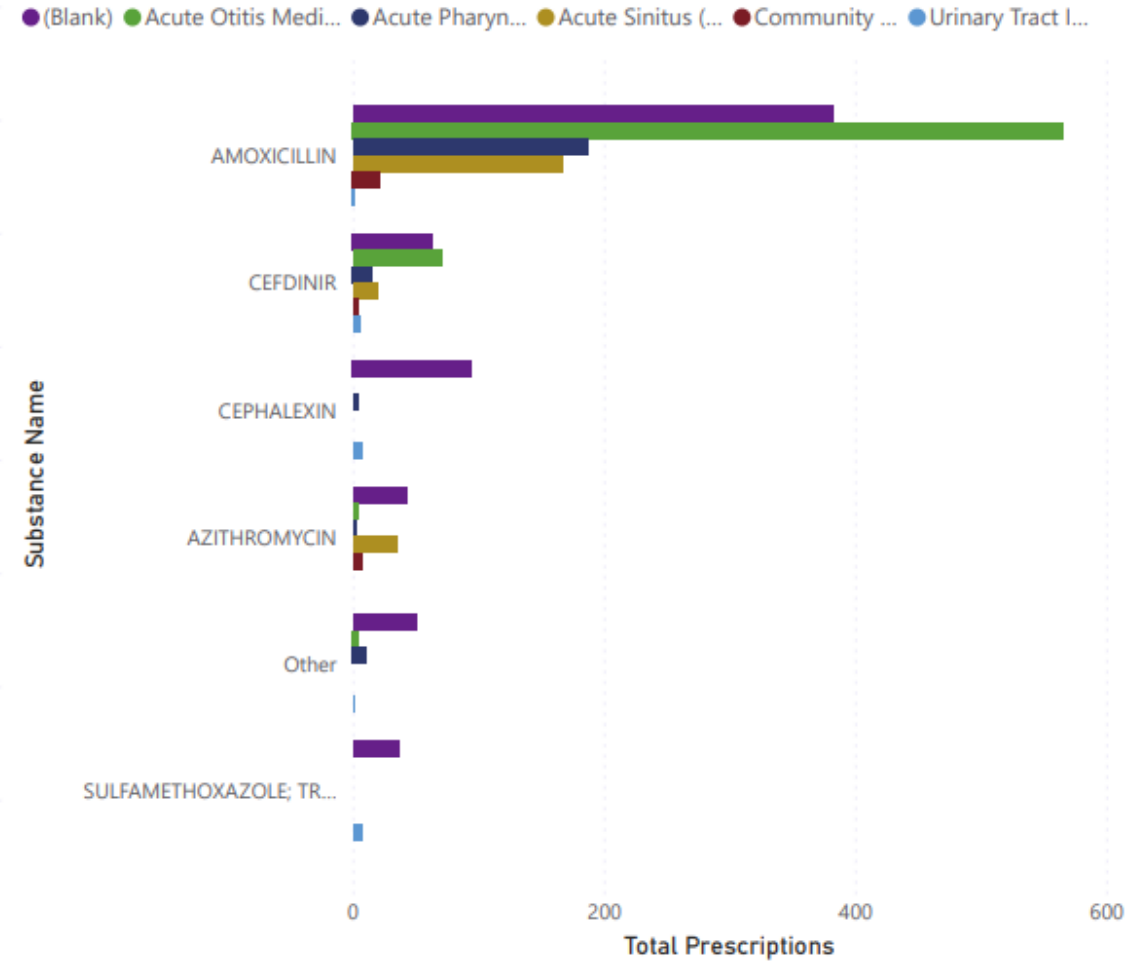
Appropriateness

Guideline Concordance

## Total Prescriptions in 2023 by Diagnosis



## Total Prescriptions of Antibiotics in 2023, by Diagnosis





# Appropriateness

Home

Demographics

Prescription by Antibiotic

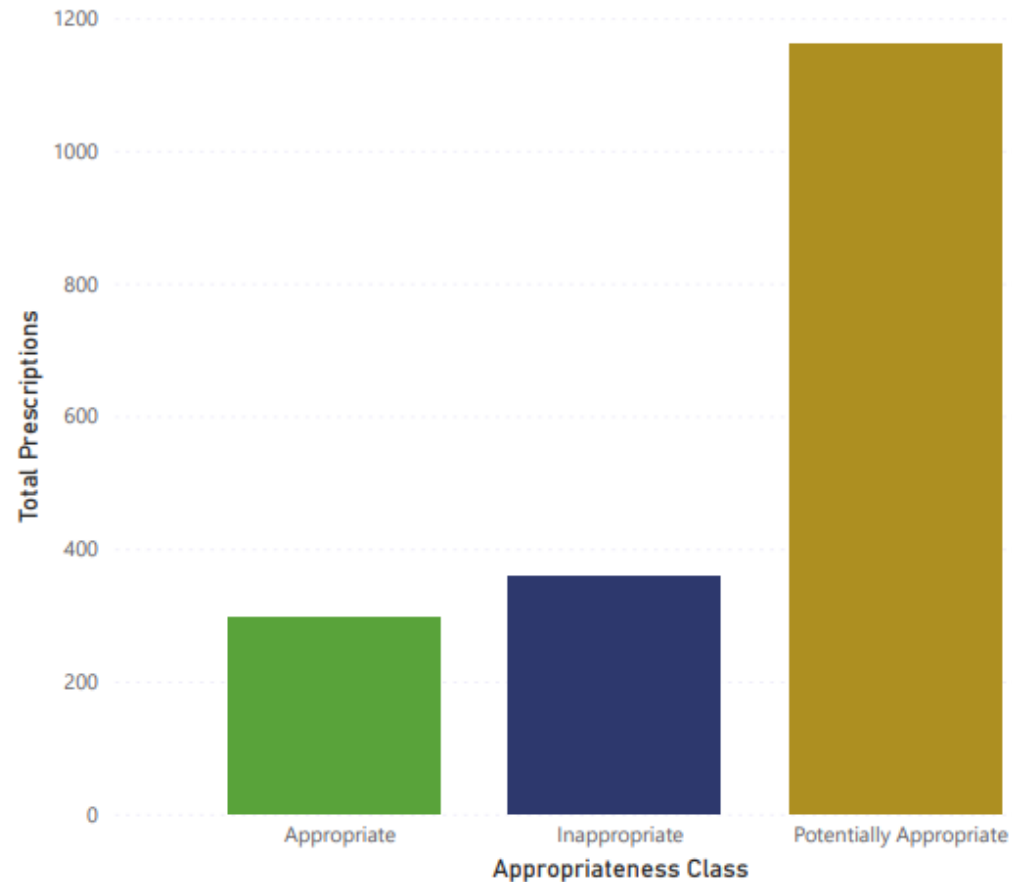
Prescriptions by Diagnosis

Appropriateness

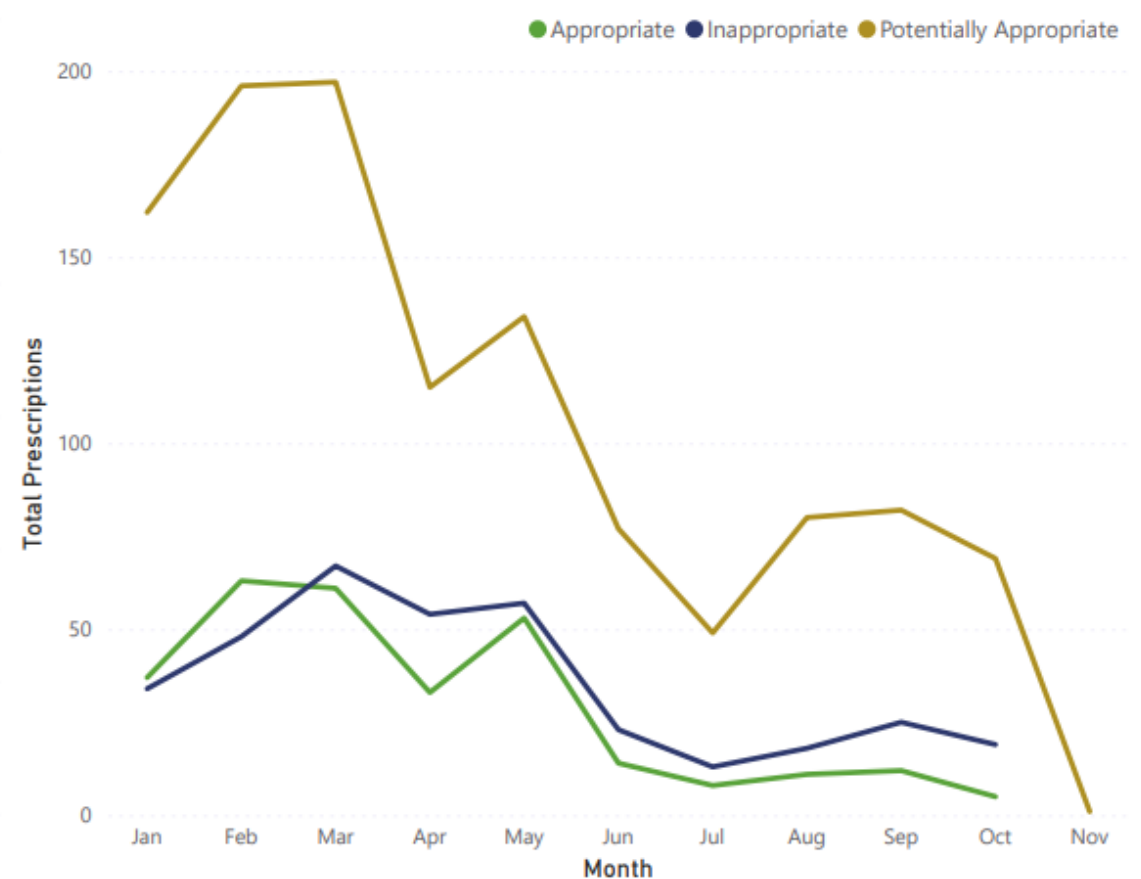
Guideline Concordance

Below categories are based upon previously published, validated, and a mutually exclusive scheme. These data reflect if the diagnosis itself is considered to warrant an antibiotic prescription.

Total Prescriptions in 2023, by Appropriateness



Total Prescriptions by Appropriateness, Over Time



# Guideline Concordance

Home

Demographics

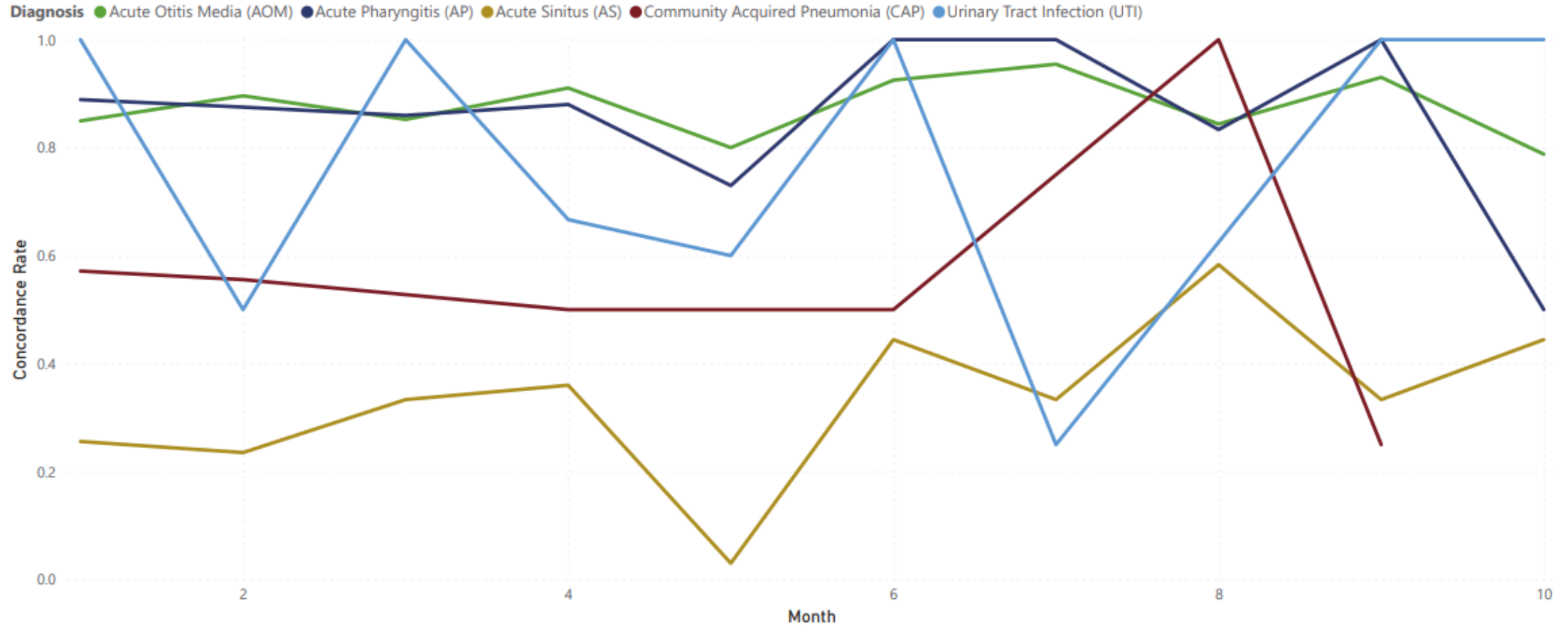
Prescription by Antibiotic

Prescriptions by Diagnosis

Appropriateness

Guideline Concordance

## Monthly Concordance Rates for Diagnoses in 2023



**These data represent if the prescribed antibiotic was considered first-line therapy for the respective diagnoses as per AAP and IDSA guidelines.**

# OBJECTIVES

- Define the epidemiologic context of antimicrobial stewardship
- Explore current research efforts to improve outpatient antimicrobial use in West Virginia
- Discuss strategies for ongoing outreach & antimicrobial stewardship partnerships across the state

# STEWARDSHIP IN ACTION

The screenshot shows the Marshall University website. At the top left is the Marshall University logo, a green 'M' with 'MARSHALL UNIVERSITY' and 'Joan C. Edwards School of Medicine' to its right. A navigation bar below the logo contains links: Home (with a house icon), About, Prospective Students, Residents/Fellows, Research, Departments (highlighted in green), Alumni/Giving, and Patient Care. Below the navigation bar is a green header with the text 'WV Antimicrobial Awareness'. Underneath this header is a breadcrumb trail: Home | Departments & Divisions | Pediatrics | WV Antimicrobial Awareness. On the left side, there is a 'WV ANTIMICROBIAL AWARENESS MENU' with 'Home' highlighted in green. Other menu items include 'Our Work', 'Meet Our Team', 'For Healthcare Professionals', 'For Patients, Patient Families & Community Members', 'Connect With Us', and 'Resources'. The main content area features a large image of a West Virginia landscape at sunset. Overlaid on the image is the text 'West Virginia Antibiotic Awareness' and the slogan 'Keeping West Virginia Wild, Wonderful & Well'. The 'Antibiotic' word is stylized with a pill icon for the letter 'i'.

<https://jcesom.marshall.edu/departments-divisions/pediatrics/wv-antimicrobial-awareness/>



# STEWARDSHIP IN ACTION

WV ANTIMICROBIAL AWARENESS  
MENU

Home

Our Work

Meet Our Team

For Healthcare Professionals

For Patients, Patient Families &  
Community Members

Helpful References

Connect With Us

## Our Goal: "Right Drug, Right Dose, Right Duration."

Helpful management summaries for common outpatient antibiotic uses

### Pediatric Treatment Cards



### Adult Treatment Cards



West Virginia  
**Antibiotic**  
Awareness

Below are links from trusted sources on the management of common conditions based on age.

# STEWARDSHIP IN ACTION

	Diagnosis	Treatment	Typical Duration
Acute Sinusitis	<p>Non-specific viral/bacterial findings: halitosis, fatigue, headache, decreased appetite</p> <p>Bacterial diagnosis: (one of the following)</p> <ul style="list-style-type: none"> <li>• Persistent symptoms: nasal discharge or daytime cough &gt;10 days</li> <li>• Worsening symptoms: worsening or new onset fever, daytime cough, or nasal discharge after initial improvement of a viral URI</li> <li>• Severe symptoms: fever <math>\geq 39^{\circ}\text{C}</math>, purulent nasal discharge for at least 3 consecutive days</li> </ul> <p>Imaging tests are no longer recommended for uncomplicated cases</p>	<p>If bacterial infection is established:</p> <ul style="list-style-type: none"> <li>• <b>First line: amoxicillin or amoxicillin/clavulanate</b></li> <li>• If <b>non-severe penicillin allergy</b>: cefdinir, cefuroxime, cefpodoxime, or ceftriaxone</li> <li>• Children who cannot tolerate oral: single dose of ceftriaxone can be used then switch to oral if improving</li> </ul>	<ul style="list-style-type: none"> <li>• 5-7 days</li> </ul>
	Acute Otitis Media (AOM)	<p>Definitive diagnosis requires either:</p> <ul style="list-style-type: none"> <li>• Moderate or severe bulging of the tympanic membrane (TM) or new onset otorrhea not due to otitis externa</li> <li>• Mild bulging of the TM AND recent (&lt;48 hours) onset of otalgia (holding, tugging, rubbing of the ear) or intense erythema of the TM</li> </ul> <p>AOM should not be diagnosed in children without middle ear effusion (based on pneumatic otoscopy and/or tympanometry)</p>	<ul style="list-style-type: none"> <li>• <b>First line: amoxicillin</b> for children who have not received in within the past 30 days</li> <li>• <b>Amoxicillin/clavulanate</b> if amoxicillin has been taken within 30 days, concurrent purulent conjunctivitis, or history of recurrent AOM unresponsive to amoxicillin</li> <li>• If <b>non-severe penicillin allergy</b>: cefdinir, cefuroxime, cefpodoxime, or ceftriaxone</li> </ul>

# STEWARDSHIP IN ACTION

- Please join our Listserv!

- Reach us directly at:

[wvabxawarness@gmail.com](mailto:wvabxawarness@gmail.com)

The screenshot shows a web page with a green header and a navigation menu. The main content area features the West Virginia Antibiotic Awareness logo on the left and a registration form on the right. The form is titled "Interested in educational courses, webinars, lives chats & possible CME and/or MOC?" and includes a sign-up prompt for a listserv. The form fields include Name (First and Last), Credentials / Title, Email, Phone, Primary Practice Location, and Secondary Practice Location. There is also a section for interest in antimicrobial stewardship work with radio buttons for Yes and No, and a green Submit button at the bottom.

Community members | View All Events

Connect With Us  
Resources

**West Virginia Antibiotic Awareness**

**Interested in educational courses, webinars, lives chats & possible CME and/or MOC?**

Sign up on our listserv to stay connected and get involved with our ongoing outreach aimed at keeping West Virginians wild, wonderful and well!

**Name \***

First Last

**Credentials / Title \***

**Email \***

**Phone**

**Primary Practice Location \***

**Secondary Practice Location**

Interested in being more involved with antimicrobial stewardship work at the local, regional and West Virginia state level?

Yes  No

**Submit**

# STEWARDSHIP IN ACTION

- Creating a virtual presence with twitter as well.

**@WVAbxAwareness**





# TAKEAWAY POINTS

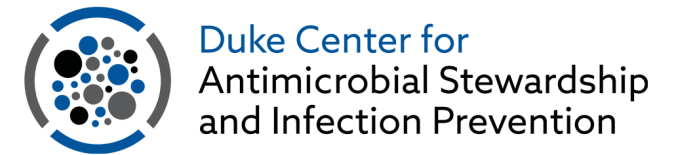
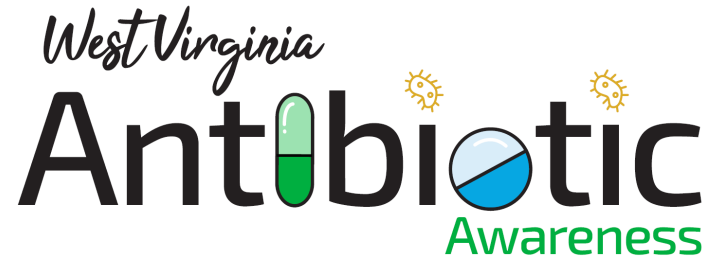
- West Virginia consistently ranks in the top 2 states for outpatient antimicrobial prescription rates
- Preliminary data supports insurance claims as a valid tool for ASP research
- Insurance claims can provide almost real time data about outpatient prescribing habits
- Statewide partnerships create sustainability and are crucial for outpatient ASP at a grander scale
- Advanced practice practitioners are critical to ongoing care & antibiotic stewardship throughout our state

# LEARN MORE ABOUT OUR WORK



# THANK YOU

Together, we can help keep WV Wild, Wonderful & Well!



# Presenters

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