Sustained Reduction in Antibiotic Utilization in Urgent Care: A System-Wide Stewardship Initiative

Kris Decker, PA-C, Jennifer Vande Loo, PA-C, Christopher Chao, MD
WakeMed Health and Hospitals, Raleigh, NC

Objective

Why Antibiotic Stewardship matters in Urgent Care:

- Urgent cares have some of the highest rates of inappropriate antibiotic prescriptions
  - 46% of antibiotics prescribed for URIs in urgent care are inappropriate (CDC)
  - Urgent cares evaluate over 210 million people annually, 30% of outpatient antibiotics are unnecessary (CDC)
- We see common conditions (acute URIs, bronchitis, sinusitis, AOM, UTIs) that are most often associated with inappropriate antibiotics

WakeMed's Opportunity?

- Stewardship interventions in urgent care have been associated with decrease in inappropriate antibiotic prescriptions (JAMA)

Intervention Strategy

Standardized clinical pathways/Diagnostic stewardship

- Smart set in Epic is triggered when a patient presents with chief complaint of URI/LRI symptoms as documented by clinical staff
- Smart set activation automatically places education in the after-visit summary (AVS) about the stewardship program

Real time dashboards and feedback to clinicians

- Clinicians were given access to data for the entire group, not just their own, for comparison

Clinical education and culture change

- Multiple educational presentations regarding best practice guidelines for viral URIs, sinusitis, pneumonia, and UTIs
- Talking points for providers to use with patients about antibiotics and their associated risks and benefits

Patient communication tools

- Handouts available in exam rooms for patients about viral versus bacterial illness
- Education provided in AVS to describe the goals of the antibiotic stewardship program and why they are important

Measurement

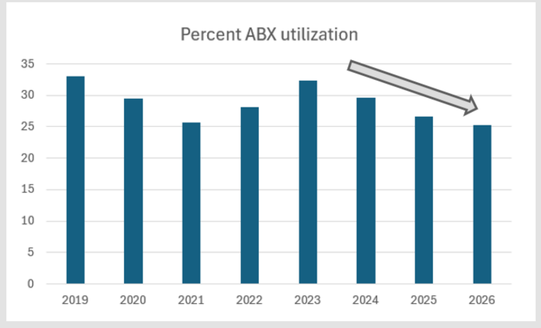
For our antibiotic stewardship project, we chose to **measure total oral antibiotic utilization** as the primary study outcome. Drops and topical antibiotic prescriptions were excluded.

We acknowledge that CDC antibiotic stewardship programs focus on condition-based tracking rather than total antibiotic use. While total antibiotic use lacks clinical context, can cause undertreatment, and does not identify where to intervene, CDC is operating under the assumption that most clinicians are not intentionally or systematically changing diagnoses in response to metrics.

Urgent cares facilitate high patient throughput, have metric visibility, and face pressure from high patient expectations. Diagnosis drift becomes more likely and more impactful in skewing data. Urgent Care also lacks downstream ownership and even a small rate of diagnosis drift can artificially improve condition-based metrics and mask inappropriate prescribing.

Our intent was to create an internal operational measure, and total antibiotic utilization was more representative of prescription culture changes.

Results



Note: Year is based on Fiscal Year (Oct 1-Sept 30)

Results

Baseline antibiotic utilization was 33% pre-COVID-19. During the pandemic, utilization declined to 25.7% in 2021. Following the pandemic, prescribing rebounded towards baseline, reaching 32.3% in 2023.

Year	% Util	Change	Percent Change
2019	33		
2020	29.5	-3.5	-10.6061
2021	25.7	-3.8	-12.8814
2022	28.1	2.4	9.338521
2023	32.3	4.2	14.94662
2024	29.6	-2.7	-8.35913
2025	26.6	-3	-10.1351
2026	25.3	-1.3	-4.88722

In contrast to the transient reduction observed during COVID-19, implementation of a structured stewardship program in May 2024 was associated with an 18% reduction in antibiotic utilization (32.3% to 26.6%) by the end of fiscal year (FY) 2025, with sustained improvement through 2026.

Reduction in antibiotic prescriptions was observed across all urgent cares in the system, with the greatest improvement seen among high antibiotic utilizers, suggesting meaningful change in prescribing behaviors.

While not directly measured, urgent care net promoter scores (NPS) were not negatively impacted.

Key Drivers of Success

Culture Change

- Support implemented to help clinicians feel more confident not prescribing antibiotics when inappropriate

Leadership

- Support for clinicians in resolving patient complaints when antibiotic best practice guidelines were followed

Clinician engagement

- Smart set use consistently > 85%

Standardization

- Clinicians were still given autonomy to prescribe what they felt was indicated

Medical performance bonus

- Process metric: up to 1.5% for activation of the URI/LRI smart set (0.75% for >= 80% activation, 1.5% for >=90% activation)
- Outcome metric: up to 1.5% (0.75% for decreasing antibiotic prescriptions by >=10%, 1.5% for >= 25% mean performance across four quarters for fiscal year '24)

Sustaining gains and defining next steps

How do we sustain improvement?

- Continue tracking and discussions with clinicians
- Continue providing education at all provider meetings about antibiotic best practices
- Transparency through continued access to peer's data
- Individual discussions with high antibiotic utilizers

What are our next steps?

- Move from Global Metrics to condition-specific stewardship
- Ensure we are not driving undertreatment
- Order set optimization and pathway refinement
- Align with other advanced stewardship principles such as corticosteroid stewardship and diagnostic testing stewardship

Antibiotic stewardship is an ongoing process that requires continuous monitoring and reinforcement

Take Home Points

- Reduction in inappropriate antibiotic prescriptions can be successful on a large scale with clinician engagement and patient education
- Not prescribing an antibiotic in the correct context can be well received by patients when supported by clear communication and appropriate clinical structure
- Success requires support at all levels from executive leadership to frontline staff

Acknowledgements

We thank the WakeMed Clinical Process Improvement Team, specifically Scotta Orr, Tammy Fraser, Micah Linn and Neal Chawla, MD, and the urgent care clinicians and staff whose engagement, accountability, and commitment to best practices made this stewardship initiative possible.