

Outpatient Stewardship Priorities

85-95% of Human antibiotic use is outpatient¹

Zahra Kassamali Escobar, PharmD
10/6/2026

¹CDC. Antibiotic use in the United States. Sep 15, 2026.

<https://www.cdc.gov/antibiotic-use/hcp/data-research/antibiotic-prescribing.html>

Fall Trends

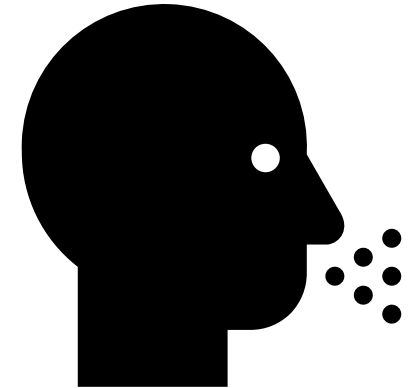
Pumpkin Spice



Sweater Weather



Respiratory tract infections



Outpatient stewardship is coded for "Address antibiotic prescribing for respiratory viral infections"

Clinical Infectious Diseases

BRIEF REPORT

Unnecessary Antibiotic Prescribing in US Ambulatory Care Settings, 2010–2015

Adam L. Hersh,¹ Laura M. King,² Daniel J. Shapiro,³ Lauri A. Hicks,² and Katherine E. Fleming-Dutra²

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*We used the prior CDC study's tiered diagnosis system to assign a single diagnosis to each visit based on the **most likely indication for antibiotics**. We categorized diagnoses into **acute respiratory infection** (ARI: sinusitis, pneumonia, acute otitis media [AOM], pharyngitis, asthma, allergy, bronchitis, bronchiolitis, influenza, nonsuppurative otitis media, viral upper respiratory infection, and viral pneumonia) **and other conditions**.*

Among 1.16 million UC encounters, antibiotics were prescribed during 34% of UC encounters and respiratory conditions accounted for 61% of all antibiotics prescribed.

Clinical Infectious Diseases

INVITED ARTICLE



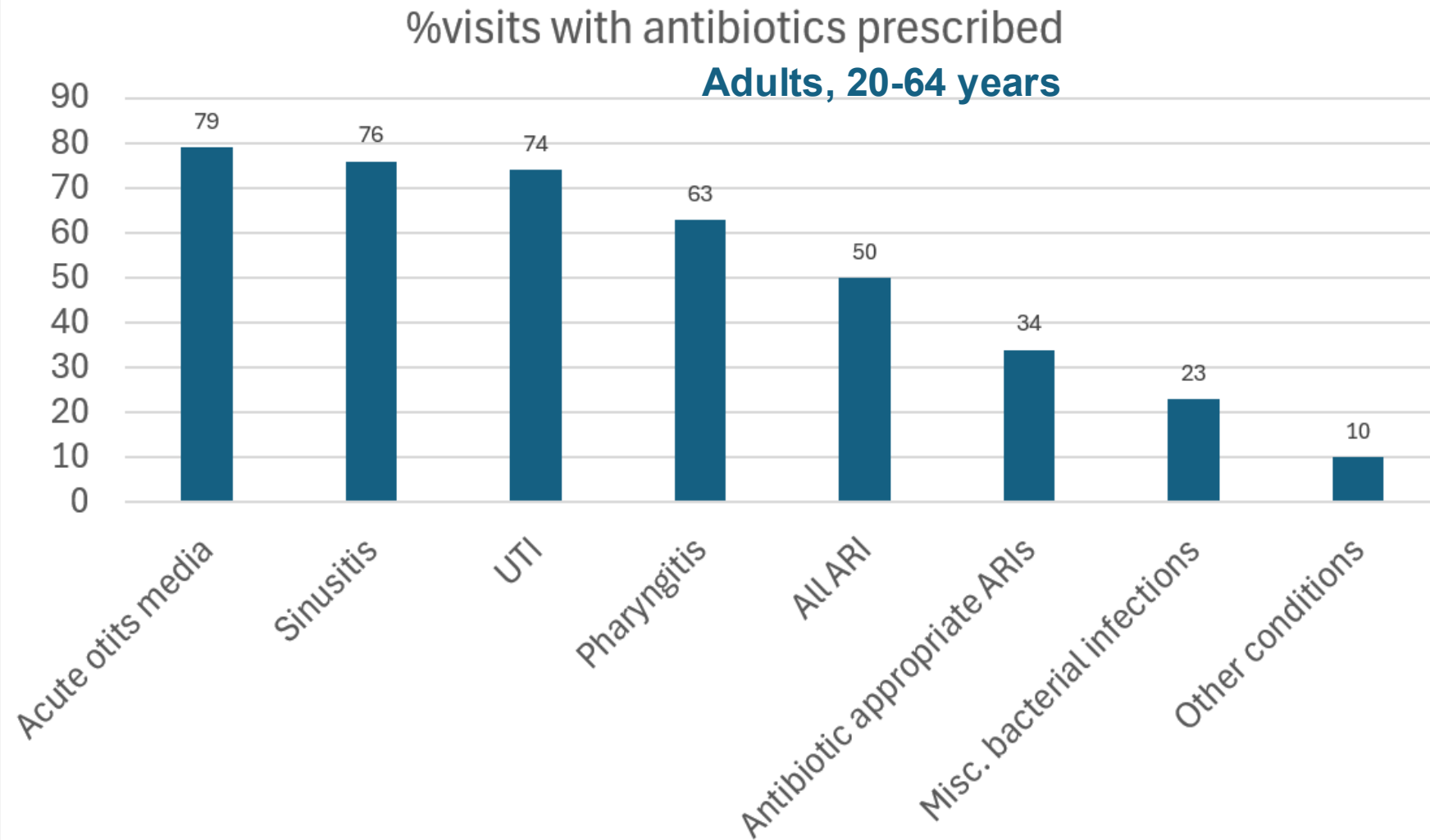
HEALTHCARE EPIDEMIOLOGY: Robert Weinstein, Section Editor

Antibiotic Prescribing Variability in a Large Urgent Care Network: A New Target for Outpatient Stewardship

Edward Stenehjem,^{1,2} Anthony Wallin,² Katherine E Fleming-Dutra,³ Whitney R Buckel,⁴ Valoree Stanfield,¹ Kimberly D Brunisholz,⁵ Jeff Sorensen,⁶ Matthew H Samore,⁷ Raj Srivastava,^{5,8} Lauri A Hicks,³ and Adam L Hersh⁹

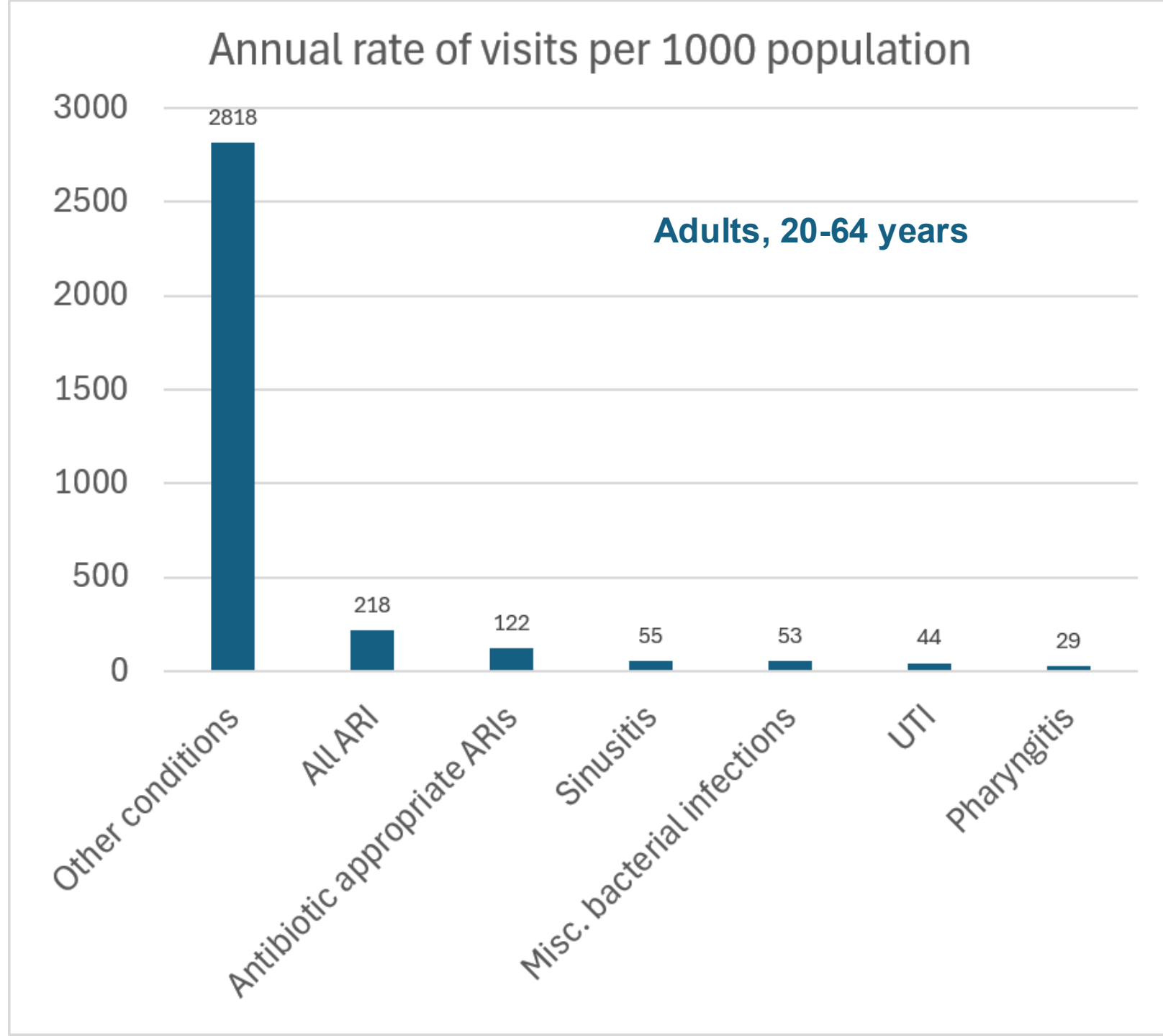
¹Office of Patient Experience, Intermountain Healthcare, Salt Lake City, Utah, USA, ²Intermountain Urgent Care, Intermountain Healthcare, Salt Lake City, Utah, USA, ³Office of Antibiotic Stewardship, Division of Healthcare Quality Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia, USA, ⁴System Pharmacy Services, Intermountain Healthcare, Salt Lake City, Utah, USA, ⁵Intermountain Healthcare Delivery Institute, Intermountain Healthcare, Salt Lake City, Utah, USA, ⁶Office of Research, Intermountain Healthcare, Salt Lake City, Utah, USA, ⁷Department of Internal Medicine, Division of Epidemiology, University of Utah School of Medicine, Salt Lake City, Utah, USA, ⁸Department of Pediatrics, Division of Pediatric Inpatient Medicine, University of Utah School of Medicine, Salt Lake City, Utah, USA, and ⁹Department of Pediatrics, Division of Infectious Diseases, University of Utah School of Medicine, Salt Lake City, Utah, USA

Not all outpatient antibiotic use is for respiratory viral infections

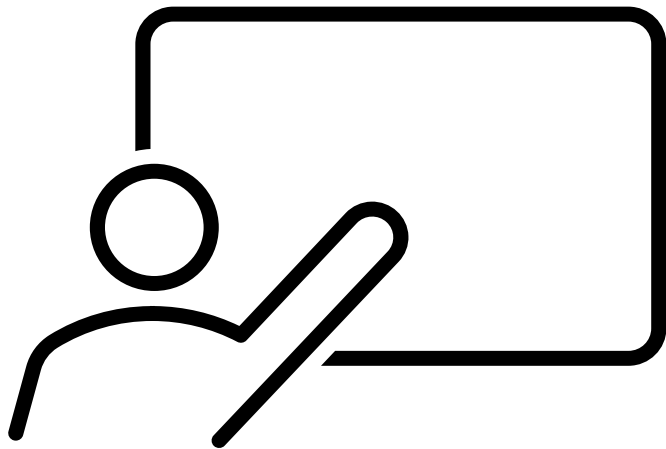


Not all
outpatient
antibiotic use is
for respiratory
viral infections

...But a lot of it is

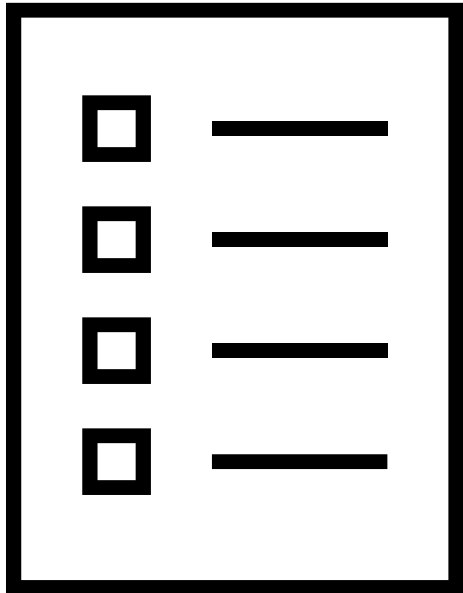


Talking points



- 2-3 acute respiratory tract infections per year/adult
- Symptom duration usually 1-2 weeks but may continue up to 6 weeks
- Symptom-based treatment can provide patient relief
- Antibiotics do not cure RTIs nor do they reduce time to resolution
- Antibiotics cause harms (economic, side effects, etc.)

Which program would you prioritize for outpatient antibiotic stewardship?



A ballot box icon consisting of a large square frame. Inside the frame, on the left side, are four small square checkboxes, each followed by a horizontal line for writing an answer.

- a) Non-antibiotic prescription kit
- b) Comparing providers and their antibiotic prescribing for respiratory viral infections to their peers
- c) Neither! I would focus on something non-respiratory because not all outpatient stewardship....

Non-antibiotic prescription kit



Symptom Relief for Viral Illnesses



Symptom Relief for Viral Illnesses



1. DIAGNOSIS

- ☐ Cold or cough
- ☐ Middle ear fluid (Otitis Media with Effusion, OME)
- ☐ Flu
- ☐ Viral sore throat
- ☐ Bronchitis
- ☐ Other:

You have been diagnosed with an illness caused by a virus. Antibiotics do not work on viruses. When antibiotics aren't needed, they won't help you, and the side effects could still hurt you. The treatments prescribed below will help you feel better while your body fights off the virus.

3. SPECIFIC MEDICINES

- ☐ Fever or aches:
- ☐ Ear pain:
- ☐ Sore throat and congestion:

Use medicines according to the package instructions or as directed by your healthcare professional. Stop the medication when the symptoms get better.

Signed: _____

To learn more about antibiotic prescribing and use, visit www.cdc.gov/antibiotic-use.



2. GENERAL INSTRUCTIONS

- ☐ Drink extra water and fluids.
- ☐ Use a cool mist vaporizer or saline nasal spray to relieve congestion.
- ☐ For sore throats in older children and adults, use ice chips, sore throat spray, or lozenges.
- ☐ Use honey to relieve cough. Do not give honey to an infant younger than 1.

4. FOLLOW UP

- ☐ If not improved in _____ days/hours, if new symptoms occur, or if you have other concerns, please call or return to the office for a recheck.
- ☐ Phone: _____
- ☐ Other: _____

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Communication Practices and Antibiotic Use for Acute Respiratory Tract Infections

Communication strategy	Reduction risk in abx Rx for ARTI
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Negative treatment recommendation	None
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What we have here is just a virus, so antibiotics won't help

Positive treatment recommendation	52%
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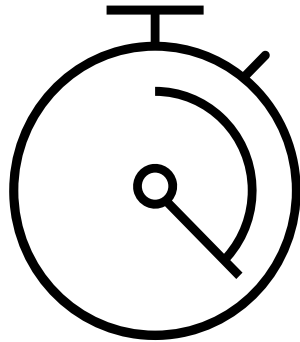
Symptomatic management

You can give her a teaspoonful of honey just before bedtime until the cough clears up

Positive + negative treatment recommendation	85%
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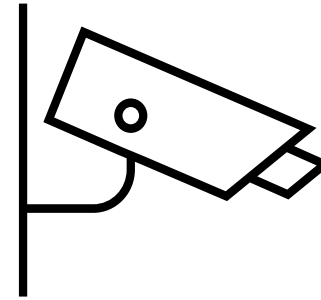


Delayed Antibiotic Prescribing



Delayed antibiotics:

prescription provided to patient but they are advised not to take unless symptoms worsened after defined time period



Watchful waiting:

set observation time established before the provision of an antibiotic prescription

Delayed Antibiotic Data

9 RCTs + 4 observational studies (N = 55,682)

- No difference in symptom severity
 - *Except* children < 5 years. Higher symptom severity 2-4 days after initial visit with delayed vs. immediate antibiotics
- Symptom resolution 1/2 day longer in delayed vs. immediate antibiotics
- Delayed antibiotics = reduced reconsultation rate (4-5%)
 - Seen in observational studies not randomized; selection bias?
- Lower rates of complications/hospitalizations with delayed prescribing (but not statistically different)
- Potentially higher satisfaction but marginal difference (0.09 on a 5-point Likert scale)

Delayed Antibiotic Data

9 RCTs + 4 observational studies (N = 55,682)

- No difference in symptom severity
- Children < 5 years had higher follow-up symptom severity 2-4 days with delayed vs. immediate antibiotics
- Symptom resolution was half a day longer in delayed vs. immediate antibiotics

BOTTOM LINE

- Delayed prescribing, no signal of harm in patients >5 years old
- Selection bias = a good strategy for some but maybe not not all patients

In favor of non-antibiotic kits

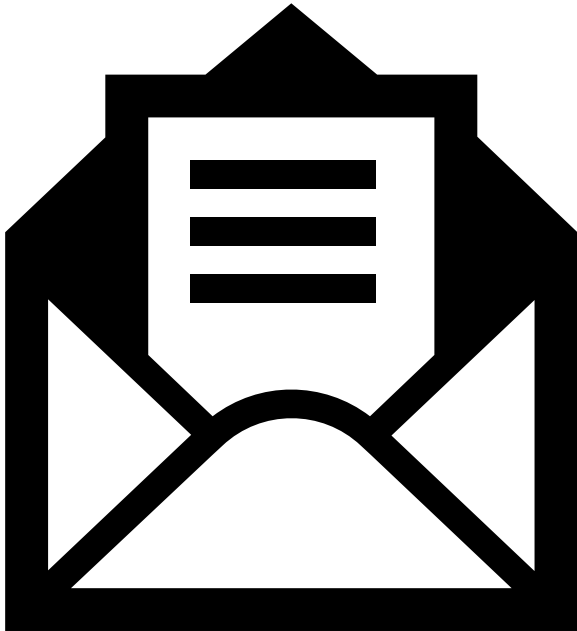
- ❖ Symptom-based treatment provides patient relief
- ❖ Positive (symptom-based) care associated with patient satisfaction and reduced antibiotic prescribing for RTI
- ❖ Delayed antibiotic prescribing is generally safe (some exceptions)
- ❖ Providing a pre-made kit = reduced friction for patients having to purchase and select individual products
- ❖ Business opportunity for local pharmacy if unable to source within an individual institution



Provider Peer comparison



Peer Comparison



Emails sent to clinicians comparing to peers and labeled as "top performers" or "not top performers"

Effect of Behavioral Interventions on Inappropriate Antibiotic Prescribing Among Primary Care Practices

47 Primary care practices, 248 clinicians randomized to 0-3 stewardship interventions x18 months

- **Suggested alternatives**

EMR suggests non-antibiotic therapies

- **Accountable justification**

Clinicians prompted to enter free-text justification for antibiotic in the EMR

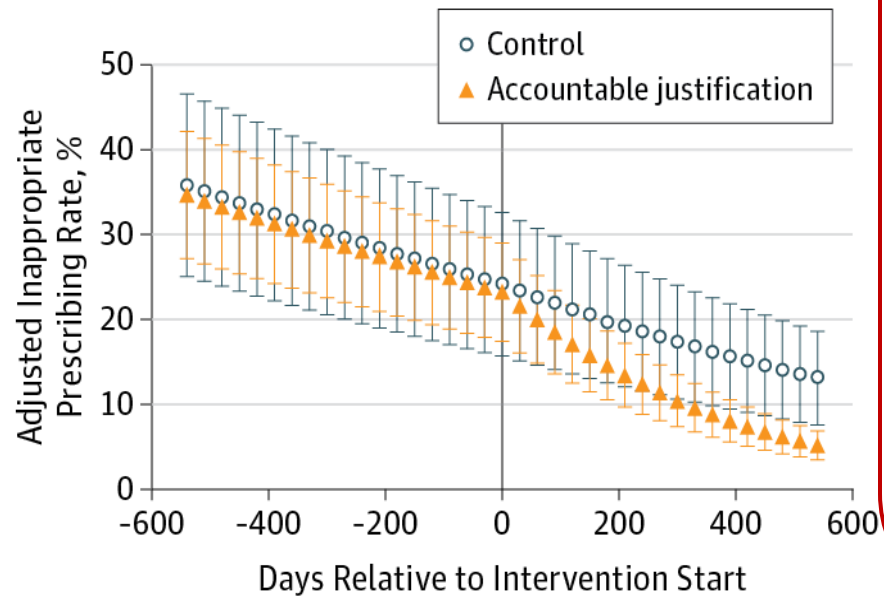
- **Peer comparison**

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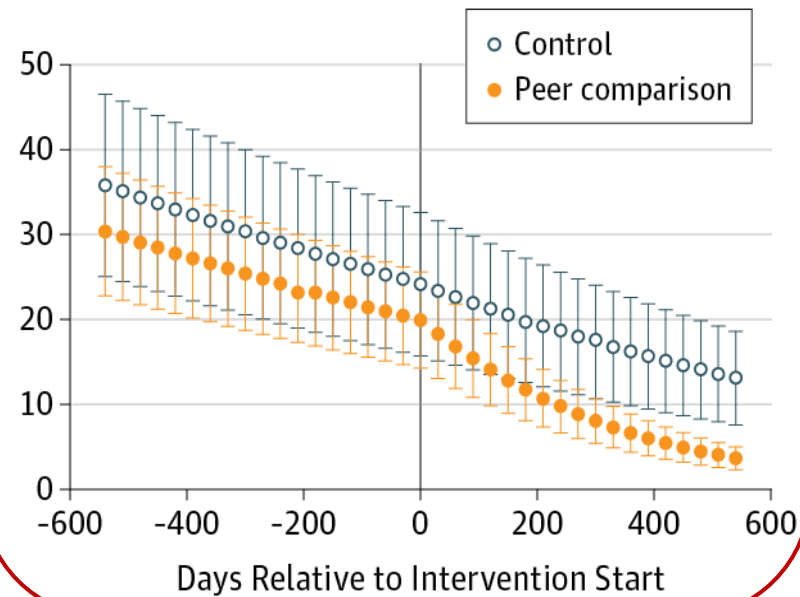
From: **Effect of Behavioral Interventions on Inappropriate Antibiotic Prescribing Among Primary Care Practices: A Randomized Clinical Trial**

JAMA. 2016;315(6):562-570. doi:10.1001/jama.2016.0275

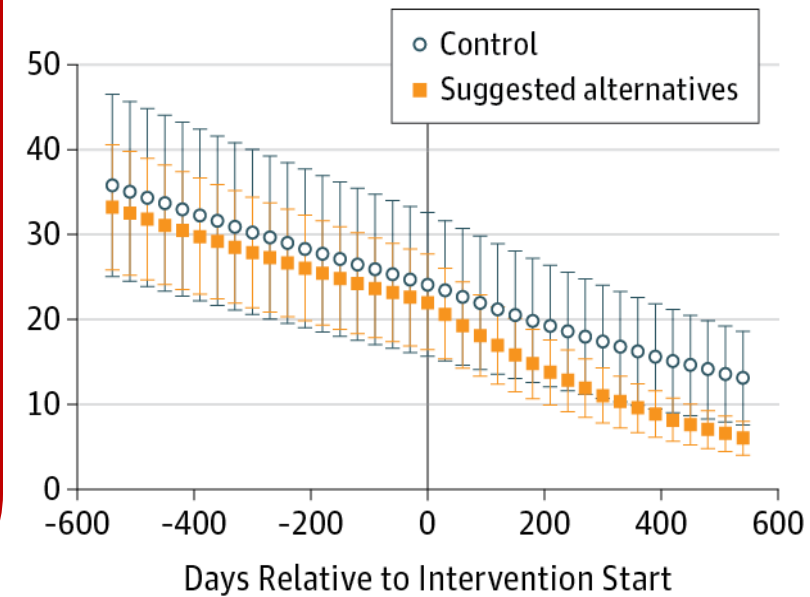
A Accountable justification



B Peer comparison



C Suggested alternatives



Adjusted Rates of Antibiotic Prescribing at Primary Care Office Visits for Antibiotic-Inappropriate Acute Respiratory Tract Infections Over Time .

Providers are a high yield target for changing practice

What increased the probability of giving antibiotics for a viral illness?



Visit Characteristics	Increase in Probability
Provider thought parent expected antibiotics	26%
Rhonchi or wheezing on lung exam	17%
Parent reported being very anxious about the child's current illness on pre-visit survey	9%

Numbers are Social

NUMBERS ARE SOCIAL



Numbers shape collective attention

"What gets measured gets managed"

Provoke emotions

People use numbers to do things

Define a situation

Promote accountability

Change behavior



Julie Szymczak, PhD

Associate Professor, Division of Epidemiology

Department of Internal Medicine

Director, Utah Quality Advancement Laboratory (UQuAL)

In favor of peer comparison

- ❖ Highly evidence-based
- ❖ Implementation requires good IT access & relationship and email
- ❖ Hospital Admin likes numbers
- ❖ Numbers can be tracked
- ❖ What gets measured matters



Choices & Feasibility



Non-Antibiotic Rx Kits

Logistics

Who are the stakeholders

Inventory management

Where will these be stored, can they be kept safely

Maintenance costs

Who bears them – patient, pharmacy, insurance company, institution



Peer Comparison

Social structure

Are providers invested in/believing of the comparison

Leverage for contractors

How does feedback matter

Visit volume and reliability

Comparisons valid for ≥ 20 visits

But wait...there's more



CSIM DASHBOARD_{UTI}

Data Logistics

Already in place

Antibiotic Stewardship

Choice and duration

Diagnostic Stewardship

Asymptomatic bacteriuria (ASB)

1. Inappropriate Diagnosis of UTI (by urine culture data)

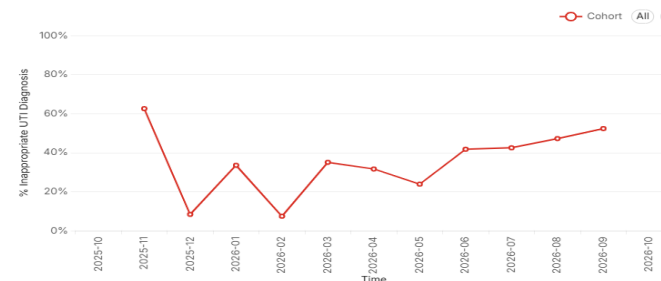
Number of treated asymptomatic patients with a positive urine culture

Number of treated patients (symptomatic and asymptomatic) with a positive urine culture

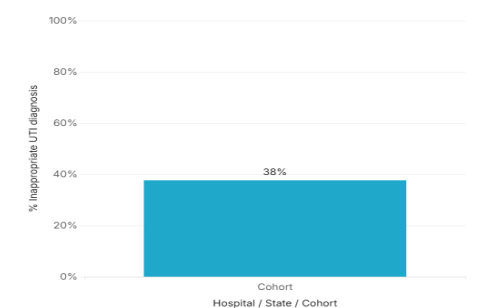
Goal: Lower % is better!

The cohort and state averages are weighted by the number of urine cultures submitted by the hospitals.

Inappropriate UTI diagnosis (time series)



Overall inappropriate UTI diagnosis — all reporting dates



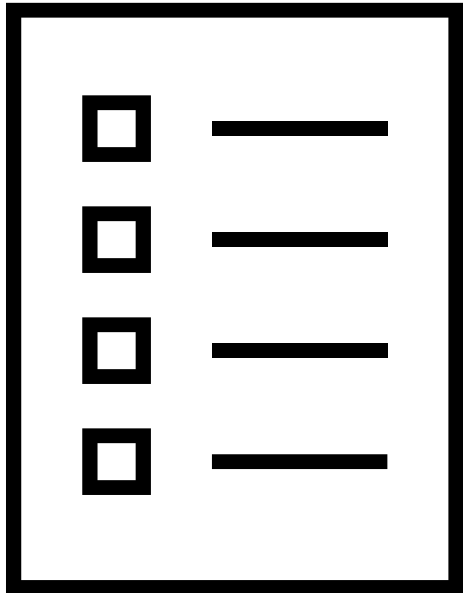
Decisions

Controversy

Lebron James is better than Michael Jordan



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Takeaways

- Most human antibiotic use is outside of the hospital
- A lot of use = a lot of opportunity
- Outpatient antibiotic stewardship is *more* than respiratory tract infections
- Feasibility > Impact
Peer comparison and non-antibiotic kits are both great options, so is UTI stewardship
- Michael Jordan > Lebron



Takeaways, continued

Stewardship is better with friends

even when you disagree with their hot takes

