

Using rapid qualitative methods to inform implementation of provider interventions to reduce the length of antibiotic prescribing for children with acute otitis media

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CCTSI CU-CSU Summit, August 16, 2023



Background

- Acute Otitis Media (AOM) is the most common reason children are prescribed antibiotics.
- Unnecessary antibiotic use results in emergence of antibiotic-resistant pathogens and adverse patient outcomes.
- In 2019, National Guidelines were published recommending a 5-7 day antibiotic duration for non-severe AOM for children ≥ 2 years of age.
- Over 94% of children are still prescribed longer than recommended durations for AOM.

Study objective: To understand facilitators and barriers to implementation of interventions to improve guideline-concordant antibiotic duration prescribing.



Interventions

Electronic Health Record

antibiotic templates with
link to guidelines, help
text, dosage/duration
buttons

Clinician Feedback

antibiotic prescribing
duration compared to
other clinicians



Methods

- The Practical Robust Implementation and Sustainability Model (PRISM) guided the study.
- Conducted 19 semi-structured qualitative interviews (14 clinicians and 5 administrators) from 2 large Urban HealthCare systems.
- Utilized the Rapid Assessment Process to identify themes within PRISM domains. Iterative team-based approach:





Characteristics Influencing Prescribing

Individual Level

- Patient history
- Years of practice/habits
- Connection/familiarity with family
- Perceptions of medication adherence

Organizational Level

- Type of practice
- Important to maintain consistency across providers and settings; impacts patient trust

Short Durations

- Many clinicians use 7 vs 5-day duration, some still 10 days
- Need more evidence; not convinced 5 is sufficient length; compliance concerns
- Decrease in 2 days is not much of a difference
- Mixed views on parental push back



Intervention Implementation

Electronic Health Record

- Ensure not adding extra time/clicks
- Include clinicians early, communicate project to all staff
- Could take time to make changes and need to understand how to encourage use of this template

Clinician Feedback

- Must be anonymous, sent quarterly from someone they know/expert
- Need to clearly explain outcome measuring
- Compare to similar settings (urgent to urgent)



Conclusion

Supportive of interventions

Use of rapid qualitative analysis and PRISM allowed for quick identification of important multi-level factors important to implementation

Providers and parents don't always know latest treatment recommendations, and continued education is needed



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Thanks to the entire RELAX Study Team:

Tim Jenkins, MD

Cindy Terrill, BS

Amy Keith, MPH

Jason Newland, MD

Hanna Hoover, BS

Sherry Dodd, BS

Luke Starnes, PhD, RN

Ritu Banerjee, MD, PhD

Amy Stein, PhD

Sharon Graham, BS

- This project was funded under grant number 1R01HS029153-01 from the Agency for Healthcare Research and Quality (AHRQ), U.S. Department of Health and Human Services (HHS)
- The content is solely the responsibility of the authors and does not necessarily represent the official views of AHRQ.

Questions?

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EHR Changes

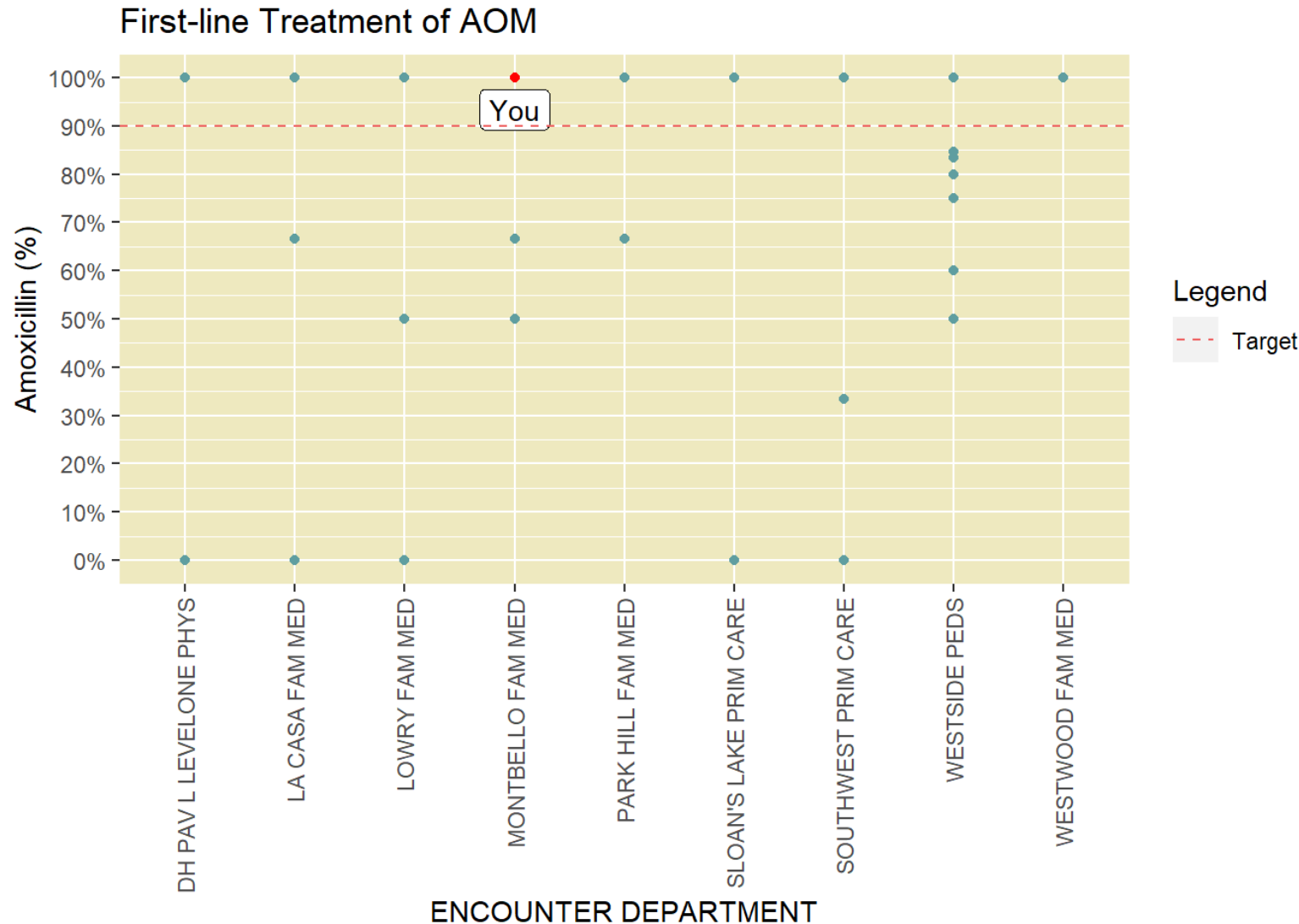
- Link to local guidelines
- Help text
 - Dose, duration for Acute Otitis Media
- Dosage “quick” buttons
- Duration “quick” buttons
- For amoxicillin, amoxicillin-clavulanate and cefdinir

The screenshot shows a medication order form for amoxicillin (AMOXIL) 400 mg/5 mL suspension. The form includes several sections with annotations:

- Link to Guidelines:** An arrow points to the 'Referencelinks:' section, which lists '1. Denver Health Antimicrobial Stewardship' and '2. Micromedex'.
- Help Text:** An arrow points to the 'Order Inst:' section, which contains detailed dosing instructions: 'Acute otitis media: 45 mg/kg BID (max 1 g/dose). Duration <2 yrs 10 days; >=2 yrs 5 days. Strep pharyngitis: 50 mg/kg daily or 25 mg/kg BID (max 1g/day). Duration 10 days. CAP:30mg/kg TID (max 1g/dose) x 5 days.'
- Dosage “Quick” Buttons:** An arrow points to the 'Dose:' field, which has a dropdown menu with options: '25 mg/kg/dose', '30 mg/kg/dose', '45 mg/kg/dose', and '50 mg/kg/dose'.
- Duration “Quick” Buttons:** An arrow points to the 'Duration:' field, which has a dropdown menu with options: 'Doses', 'Days', '5 days', and '10 days'.

Other visible fields include 'Route:' (oral), 'Frequency:' (Daily, BID, TID), 'Starting:' (9/28/2024), 'Ending:', 'Dispense:' (Days/Fill: Full (0 Days), 30 Days, 90 Days), 'Quantity:' (mL), 'Refill:' (0), 'Patient Sig:' (Take by mouth.), 'Report:' (Common sizes: Bottle: 50 mL, 75 mL, 100 mL), and 'Class:' (Normal, Print, Phone In, Fill Later/On Hold, Print to Fax, Take Home Medication). The form also includes checkboxes for 'Do not send renewal requests to me', 'Dispense As Written', and 'AMOXICILIN'. The bottom of the form has a 'Text Required' indicator and 'Accept'/'Cancel' buttons.

Provider Feedback



- **Y-axis:** % of prescriptions for AOM with 5-day duration
- **X-axis:** Clinics
- **Blue dots:** individual providers in each clinic
- **Red dot:** You