

IMPROVING OUTPATIENT ANTIBIOTIC PRESCRIBING FOR COMMON PEDIATRIC RESPIRATORY INFECTIONS

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Abstract. Inappropriate antibiotic prescribing for common pediatric respiratory infections remains a major driver of antimicrobial resistance, avoidable adverse drug events, and unnecessary healthcare costs. Most respiratory illnesses in children seen in outpatient settings are viral or self-limited, yet antibiotics are still frequently prescribed because of diagnostic uncertainty, time pressure, caregiver expectations, and inconsistent adherence to clinical pathways. This article presents a practical, clinic-ready approach to improving outpatient antibiotic prescribing for children with respiratory infections. It emphasizes three linked pillars: improving diagnostic accuracy using evidence-based criteria and targeted testing, optimizing antibiotic selection and duration when treatment is indicated, and embedding stewardship into routine workflow through decision support, communication strategies, and audit-feedback cycles.

Keywords: pediatric antibiotic stewardship; outpatient care; respiratory tract infections; acute otitis media; pharyngitis.

INTRODUCTION

Outpatient clinics are where most antibiotics are prescribed, and pediatric respiratory complaints are among the most common reasons children visit primary care. This creates a high-impact opportunity and a high-risk environment: small prescribing decisions repeated thousands of times become population-level pressure for antimicrobial resistance. The problem is not that antibiotics are “bad,” but that they are often used when they are unlikely to help, or chosen in ways that increase harm. Viral upper respiratory tract infections, bronchiolitis, and the common cold do not benefit from antibiotics, yet they still trigger prescriptions in many settings because “doing something” can feel safer than explaining why observation is the better medicine [1]. When antibiotics are appropriate, the next problem appears: overly broad spectrum, unnecessary combination therapy, and durations longer than recommended can expose children to diarrhea, rash, allergy labeling, and selection of resistant organisms without additional clinical benefit [1], [2].

Improving outpatient prescribing therefore requires more than posting a guideline on the wall. Clinicians operate within constraints: short visits, limited diagnostics, variable follow-up capacity, and caregiver anxiety. In this environment, stewardship succeeds when it is redesigned as a practical clinical system with clear diagnostic criteria, simple pathways, and communication tools that protect the therapeutic relationship. Evidence from large outpatient datasets suggests that optimal prescribing is often the exception rather than the rule, driven by both suboptimal antibiotic choice and suboptimal duration, even when antibiotics are indicated [4]. A realistic methodology must therefore address the entire decision chain: deciding whether antibiotics are needed, selecting the right agent, selecting the right dose and duration, and documenting a follow-up plan that makes “watchful waiting” a safe clinical choice rather than a gamble.

MATERIALS AND METHODS

Improvement starts with a shared clinical language about which pediatric respiratory conditions commonly lead to overprescribing and why. In outpatient pediatrics, the highest-yield targets are acute otitis media, acute pharyngitis, acute bacterial rhinosinusitis, and nonspecific upper respiratory infections where antibiotics provide no benefit [1]. Each condition has a different stewardship “failure mode.” For the common cold and viral bronchitis-like presentations, the failure is usually prescribing despite a viral diagnosis. For pharyngitis, the failure is treating without confirming group A streptococcus when clinical features are not convincing or when testing is feasible. For acute otitis media and sinusitis, the failure often lies in diagnostic overcalling, not using observation when appropriate, or choosing broader agents and longer courses than necessary. A clinic that tries to “fix everything at once” often fixes nothing; a clinic that focuses on these few high-volume diagnoses can achieve meaningful reductions in antibiotic exposure while maintaining patient safety.

A core clinical strategy is improving diagnostic accuracy through structured criteria and selective testing, because uncertainty is the fuel that feeds unnecessary antibiotics. For acute otitis media, stewardship begins with strict diagnosis, not with the antibiotic choice. Otitis media with effusion should not be mislabeled as acute otitis media; tympanic membrane bulging and acute signs are key. Once diagnosis is secure, observation becomes a powerful tool in selected children, reducing antibiotic use without compromising outcomes when follow-up is reliable. Contemporary pediatric discussions emphasize aligning practice with guideline-based approaches and avoiding routine antibiotics when observation is appropriate, while still treating higher-risk presentations effectively [3].

RESULTS AND DISCUSSION

The next stewardship pillar is optimizing antibiotic selection using narrow-spectrum first-line agents whenever possible. A practical clinic rule is to prefer “Access” antibiotics recommended in stewardship frameworks and to reserve broader agents for clear indications such as failure of first-line therapy, allergy considerations, or high-risk comorbidities [2]. Outpatient pediatric recommendations commonly emphasize amoxicillin or amoxicillin-clavulanate for specific diagnoses where bacteria are likely, while discouraging antibiotics for viral conditions and discouraging macrolides or broad cephalosporins unless justified by allergy or local resistance patterns [1]. In real clinic life, the common drift is predictable: azithromycin is used “because it’s easy,” broad cephalosporins are used “to be safe,” and combination therapy is used “just in case.” Stewardship methodology counters this drift by making first-line choices the default, not the suggestion. This can be achieved through standardized order sets in electronic records, laminated pocket cards, or nursing pre-visit prompts that bring recommended first-line options into the clinician’s immediate reach at the point of decision.

Duration is where many outpatient prescriptions quietly become suboptimal even when the antibiotic choice is reasonable. Longer courses are often prescribed out of habit, fear of relapse, or unclear guidance. Yet contemporary outpatient stewardship is increasingly explicit: duration should be just long enough to achieve clinical cure, not long enough to satisfy tradition. Real-world analyses of pediatric outpatient prescribing show that nonoptimal duration is a major contributor to overall “nonoptimal” antibiotic use, with many prescriptions exceeding recommended lengths [4]. A clinic-level solution is to standardize default durations by diagnosis and age, then allow “override with rationale.” This reduces variation without blocking clinician judgment. In addition, documentation should include a clear safety-net plan: what improvement should look like, when to call back, and

what red flags require urgent reassessment. When families receive a concrete plan, clinicians become less tempted to prescribe “just in case,” and watchful waiting becomes a structured clinical strategy rather than a vague hope.

Communication is a clinical technology, and antibiotic stewardship fails without it. Caregivers often arrive expecting antibiotics because they equate antibiotics with faster recovery, because they fear complications, or because they previously received antibiotics for similar symptoms. Outpatient guidance recognizes that many respiratory conditions are viral and self-limited and that antibiotics are not recommended in those cases [1].

CONCLUSION

Improving outpatient antibiotic prescribing for common pediatric respiratory infections requires a system-level method rather than isolated clinician effort. The most effective strategy links diagnostic accuracy, narrow-spectrum selection, and appropriate duration to a workflow that supports families and protects clinicians from “default prescribing.” Evidence-based outpatient guidance emphasizes that many respiratory conditions do not require antibiotics and outlines diagnosis-specific recommendations for when treatment is indicated. Global stewardship frameworks reinforce the importance of using appropriate first-line agents and preserving broader antibiotics for situations that truly require them. Real-world prescribing data show that nonoptimal choice and duration remain common, making measurement, feedback, and standardized defaults essential components of improvement.

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