

Problem & PURPOSE

- Acute otitis media (AOM) is among the most common pediatric diagnoses in urgent care. Despite evidence supporting watchful waiting for many children with nonsevere AOM, antibiotics continue to be prescribed at high rates. This contributes to antimicrobial resistance, unnecessary adverse effects, and increased healthcare costs.
- The purpose of this project was to improve antimicrobial stewardship in pediatric AOM management through provider education in urgent care settings.

Available Knowledge & Rationale

- Research demonstrates that provider education, clinical decision aids, and caregiver communication strategies can improve antimicrobial stewardship and support evidence-based management of pediatric AOM (El Feghaly et al., 2021; Forrest & Verzone, 2020; Jenkins et al., 2024; Stulpin, 2025).
- Inappropriate antibiotic prescribing remains common despite established guidelines, this project aimed to evaluate whether a targeted educational intervention could improve provider confidence and promote more appropriate prescribing practices in urgent care settings.

Methods

- Context
 - Multiple urgent care clinics in the Midwestern United States
 - Pediatric patients ages 6 months–19 years with AOM
 - NPs, PAs, and physicians participated
- Intervention
 - Quality Improvement Framework: Plan-Do-Study-Act (PDSA) Cycle
 - Providers received:
 - Evidence-based educational module
 - Clinical decision-making algorithm
 - Caregiver communication script
- Study of Intervention
 - Pre/post education provider surveys
 - 60-day retrospective EHR review
 - 30-day post-intervention EHR review
 - Follow-up survey at 2 weeks
- Measures
 - Primary Outcome:** Antibiotic prescribing rates for pediatric AOM visits before and after intervention
 - Secondary Outcomes:** Provider confidence in diagnosing and managing AOM, implementing watchful waiting, and perceived prescribing behaviors related to evidence-based AOM management

Data Analysis

- Descriptive statistics were used to summarize provider survey responses and antibiotic prescribing rates before and after implementation of the intervention.
- A paired-samples *t*-test was conducted to evaluate changes in provider confidence scores between pre- and post-intervention surveys.
- Antibiotic prescribing rates obtained from electronic health record data were compared across the pre- and post-intervention periods to assess changes in prescribing practices. Statistical significance was established at $p < .05$.

Results

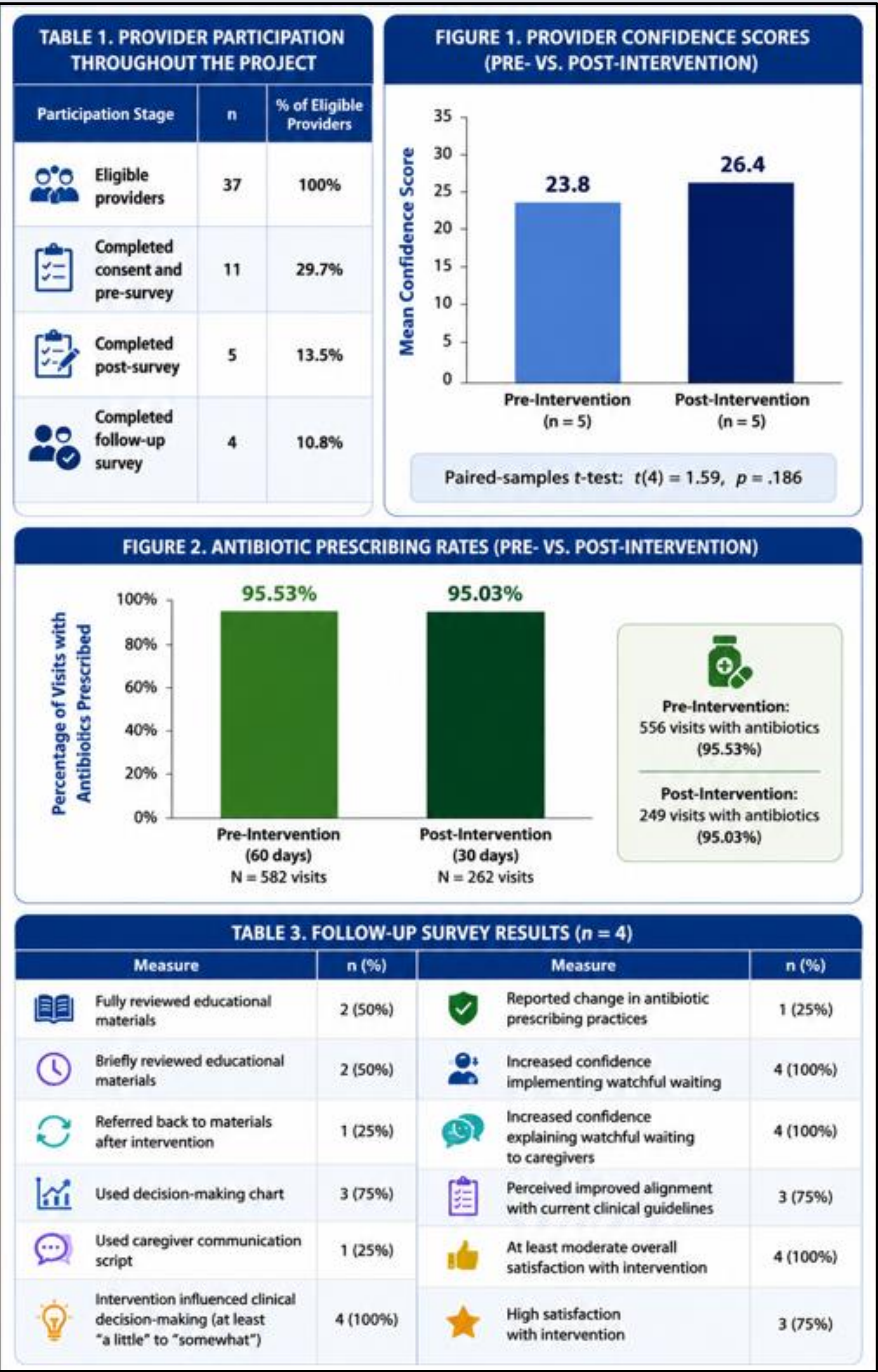


Figure 1. Mean provider confidence scores before and after the educational intervention. Confidence scores increased from 23.8 to 26.4; however, the change was not statistically significant ($t(4) = 1.59, p = .186$).

Discussion

- The educational intervention resulted in improved provider confidence regarding the evidence-based management of pediatric acute otitis media and increased perceived alignment with current clinical guidelines.
- Despite positive findings, antibiotic prescribing rates remained largely unchanged during the 30-day implementation period. These results suggest that while education may improve provider knowledge and readiness for practice change, it may not be sufficient to independently alter established prescribing behaviors.
- Factors such as caregiver expectations, diagnostic uncertainty, workflow demands and established prescribing habits likely continued to influence clinical decision-making. The findings support existing literature indicating that multifaceted antimicrobial stewardship strategies may be necessary to achieve measurable reductions in inappropriate antibiotic use (Frost et al., 2021; Nevedal et al., 2024).

Conclusions

- This quality improvement project demonstrated that a targeted educational intervention may increase provider confidence in implementing evidence-based management strategies for pediatric acute otitis media.
- Antibiotic prescribing declined slightly, while provider confidence increased following the educational intervention. Although the increase in confidence was not statistically significant ($t(4) = 1.59, p = .186$), the findings suggest a positive trend that warrants further evaluation.
- Future quality improvement initiatives should consider longer implementation periods, larger sample size, and additional stewardship strategies, such as audit and feedback processes or clinical decision support tools, to support sustained practice change.

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Project References:

