Impact of Personalized Audit and Feedback on Management of Pediatric Outpatient Community-Acquired Pneumonia

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Background

- Community-acquired pneumonia (CAP) is a common infection in children
- Guidelines recommend amoxicillin as first line therapy for CAP, while macrolides are recommended for school-aged children with atypical pneumonia
- Despite guidelines, antibiotic choice for CAP varies widely among providers
- We aimed to determine the impact of outpatient audit and feedback to individual providers on adherence with published guidelines

Methods

- Study Design: Randomized controlled trial of primary care clinicians
- Study site: Nemours Children’s Health System, a multi-state primary care network
- Data source: Electronic health records
- Study population: All primary care providers utilizing the electronic health record from 8/2016-2/2017
- Intervention:
  - All providers received baseline education
  - At 1-month intervals, intervention group received monthly personalized feedback from investigators on the provider’s management of a case of CAP identified by ICD-10 codes
- Outcomes:
  - Prescription counts of guideline-recommended antibiotic therapy
  - Performance scores incorporating diagnostic and treatment decisions based on clinical practice guidelines were calculated for each interval
- Analysis: Prescription counts were compared between groups using Pearson’s chi-squared; Performance scores modeled in a mixed effects model adjusted for baseline provider characteristics and relevant patient characteristics

Results

- 316 cases of CAP: 214 control, 102 Intervention
- In patients <5 years, no significant difference in rate of amoxicillin prescribing between groups (61/103 (59.2%) control; 23/48 (47.9%) intervention, p=0.19).
- In patients ≥5 years, there was a significant difference in prescription of guideline recommended antibiotics of amoxicillin or azithromycin (81/103 (78.6%) control; 23/48 (47.9%) intervention, p<0.05).

Conclusions

- Personalized, scheduled audit and feedback in the outpatient setting had a small but measurable impact on improving provider adherence with guidelines
- Audit and feedback alone is insufficient to substantially improve guideline adherence in the management of CAP and should likely be combined with other antimicrobial stewardship interventions

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