1601. 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. We conducted a randomized controlled trial of primary care clinicians in a multi-state primary care network from 8/2016-2/2017. Providers received baseline education. The intervention included personalized feedback from investigators at 1-month intervals on the provider's management of a case of CAP identified by ICD-10 CM codes. Prescription counts of guideline-recommended antibiotic therapy were compared between groups by Pearson's chi-squared. Performance scores incorporating diagnostic and treatment decisions such as physical examination elements, antibiotics and medication dosing appropriate for a CAP encounter as defined by clinical practice guidelines were calculated for each encounter during study intervals.

Results. Among the 43 providers, the majority were physicians (76% control, 86% intervention). There were no significant differences in work hours, years since board certification, sex or race between groups. 316 distinct cases of CAP were diagnosed (214 control; 102 intervention). In patients ≤5 years, there was no significant difference in prescription of amoxicillin 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; 48/53 (94.1%) intervention, P = 0.05). There was a small, but apparent upward trend in mean performance scores in the intervention group (Figure 1).

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

Disclosures. All authors: No reported disclosures.

1602. Antibiotic Prescribing for Pediatric Community-Acquired Pneumonia at Children's Hospitals and General Hospitals Following National Guideline Release

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Background. The 2011 IDSA/PIDS guidelines for pediatric community-acquired pneumonia (CAP) recommend penicillin, amoxicillin, or ampicillin (penicillins) as first-line therapy for most children. The use of penicillins increased at children's hospitals after guideline publication, but trends in antibiotic choice for CAP at general hospitals have not been evaluated.

Methods. Retrospective analysis of children 1–17 years admitted from January 2009 through September 2015 to 522 hospitals, captured via the Pediatric Health Information System and Premier Perspective databases. Children with CAP were identified by a validated ICD-9 code algorithm, excluding those with complicated pneumonia, complex chronic conditions, receipt of intensive care, or MRSA infection or colonization. Receipt of penicillins, cephalosporins, and macrolides was assessed, and trends were modeled using segmented logistic regression, adjusting for age, sex, and insurance provider. Standardized probability of antibiotic receipt was compared between children's and general hospitals.

Results. Of 120,238 children hospitalized with CAP, 54% were admitted to 51 children's hospitals. After adjustment, penicillin use increased and both cephalosporin and macrolide use decreased in both children's and general hospitals (Figure). However, in the final study year, children in general hospitals were less likely to receive penicillins (standardized probability 0.23, 95% CI [0.17, 0.29] vs. 0.57 [0.52, 0.62]) and more likely to receive cephalosporins (0.78 [0.73, 0.82] vs. 0.51 [0.45, 0.57]) and macrolides (0.43 [0.38, 0.47] vs. 0.28 [0.25, 0.32]) than children in children's hospitals.

Conclusion. Publication of national guidelines was associated with improved antibiotic selection for CAP at both children's and general hospitals. However, disparities in prescribing between children's and general hospitals persist.

Figure. Trends in standardized probability of receiving select antibiotics for CAP

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