

Table. Thematic Findings and Representative Quotes

Figure. Thematic Findings and Representative Quotes



**Conclusion:** NH residents expressed a lack of understanding of risks to antibiotic use, unmet informational needs regarding their antibiotic treatments and articulated suggestions to address these information needs.

**Disclosures:** All Authors: No reported disclosures

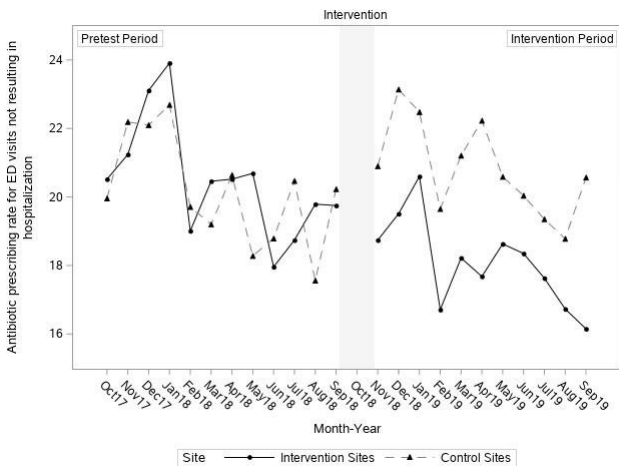
**150. Using audit-and-feedback to improve antibiotic-prescribing in Emergency Departments: a quasi-experimental study across 4 sites in the Veterans Health Administration**

Daniel J. Livorsi, MD, MSc<sup>1</sup>; Rajeshwari Nair, PhD<sup>2</sup>; Andrew Dysangco, MD<sup>3</sup>; Andrea Aylward, PharmD<sup>4</sup>; Bruce Alexander, PharmD<sup>5</sup>; Matthew Smith, MD<sup>6</sup>; Sammantha Kouba, DO<sup>6</sup>; Eli N. Perencevich, MD MS<sup>5</sup>; <sup>1</sup>University of Iowa Carver College of Medicine and Iowa City VA Health Care System, Iowa city, Iowa; <sup>2</sup>Iowa City VA Health Care System, Iowa city, Iowa; <sup>3</sup>Indiana University, Indianapolis, Indiana; <sup>4</sup>Royal C. Johnson Veterans Memorial Hospital, Sioux Falls, South Dakota; <sup>5</sup>University of Iowa, Iowa City, Iowa; <sup>6</sup>University of Iowa Carver College of Medicine, Iowa City, Iowa

**Session:** P-5. Antimicrobial Stewardship: Non-Inpatient Settings

**Background:** Antibiotic-prescribing in Emergency Departments (EDs) is often inappropriate. In this study, we evaluated whether audit-and-feedback could improve antibiotic use in EDs.

Figure 1. Comparison of antibiotic-prescribing between the pretest and intervention periods at 2 intervention EDs and 2 control EDs



**Methods:** We pilot tested an audit-and-feedback intervention using a quasi-experimental study design at 2 intervention and 2 matched-control EDs with a 12-month pretest and a 12-month intervention period. At intervention sites, 27 of 31 (87.1%) clinicians were enrolled; at baseline, they received 1) one-on-one education about antibiotic-prescribing and 2) individualized feedback with comparisons to local peers. Feedback included personalized antibiotic-prescribing data for all ED visits and specifically for viral acute respiratory infections (ARIs); feedback was updated quarterly. The primary outcome was the antibiotic-prescribing rate for ED visits not resulting in hospitalization, and it was assessed using a segmented regression analysis of monthly time series data. Manual chart reviews were performed to assess guideline-concordant management (i.e. prescribing an antibiotic when indicated and not prescribing when not indicated) for 5 ARIs plus cystitis.

**Results:** In the pre-test and intervention periods, intervention sites had 28,146 and 27,396 visits compared to 31,439 and 32,295 visits at control sites. After implementation started, intervention sites saw an immediate decrease in antibiotic use (-10.3%, p=0.15) compared to a 1.5% increase (p=0.88) at control sites. By the end of the intervention period, there was an 8.9% decrease in antibiotic use at intervention sites compared to a 3.4% decrease at control sites [relative risk ratio (RRR) -3.3% (95% CI, -8.4 to +1.7), Figure 1]. Guideline-concordant management improved from 52.1% to 72.2% (p< 0.01) at intervention sites compared to 51.3% to 58.2% (p=0.13) at control sites. Intervention and control sites had similar changes in 30-day outcomes, including late antibiotic prescriptions and hospitalizations.

**Conclusion:** After the implementation of audit-and-feedback at 2 EDs, antibiotic use did not significantly decrease compared to 2 control EDs but guideline-concordant management improved. Future studies should include more study sites to improve statistical power and also evaluate the effectiveness of more frequent and specific feedback.

**Disclosures:** Daniel J. Livorsi, MD, MSc, Merck and Company, Inc (Research Grant or Support) Rajeshwari Nair, PhD, Merck and Company, Inc. (Research Grant or Support)

**151. An Electronic Algorithm to Better Target Antimicrobial Stewardship Program (ASP) Efforts for Children Hospitalized with Community-Acquired Pneumonia (CAP)**

Jeffrey Gerber, MD, PhD<sup>1</sup>; Robert Grundmeier, MD<sup>1</sup>; Keith W. Hamilton, MD<sup>2</sup>; Lauri Hicks, DO, MPH<sup>3</sup>; Melinda M. Neuhauser, PharmD, MPH<sup>4</sup>; Nicole Frager, MPH<sup>5</sup>; Muidia Menon, MS<sup>1</sup>; Ellen Kratz, BA<sup>1</sup>; Anne Jaskowiak, MS<sup>5</sup>; Leigh Cressman, MA<sup>6</sup>; Tony James, BA<sup>5</sup>; Jacqueline Omorogbe, MBE<sup>5</sup>; Ebbing Lautenbach, MD, MPH, MSCE<sup>5</sup>; <sup>1</sup>Children's Hospital of Philadelphia, Philadelphia, Pennsylvania; <sup>2</sup>Division of Infectious Diseases, Philadelphia, Pennsylvania; <sup>3</sup>CDC, Atlanta, Georgia; <sup>4</sup>Centers for Disease Control and Prevention, Chicago, Illinois; <sup>5</sup>University of Pennsylvania, Philadelphia, Pennsylvania; <sup>6</sup>University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania

**Session:** P-6. Antimicrobial Stewardship: Program Development and Implementation

**Background:** Pediatric antibiotic stewardship programs (ASPs) have been successful in decreasing inappropriate antibiotic use. However, they require considerable time and effort. Approaches to increase ASP efficiency are urgently needed. We developed and validated an electronic algorithm to identify inappropriate antibiotic use in children hospitalized with community-acquired pneumonia (CAP).

**Methods:** At Children's Hospital of Philadelphia (CHOP), we used ICD-10 diagnostic codes to identify inpatient patient encounters for pneumonia between 3/15/17 - 3/14/18 for which patients received a systemic antibiotic in the first 48 hours of hospitalization. Exclusion criteria included transfer from another facility, intensive care unit admission or death in first 48 hours, immunocompromising condition, or specific comorbidities. We randomly selected 150 subjects. Inappropriate antibiotic use based on chart review served as the basis for assessment of the electronic algorithm which was constructed using only data in the electronic health record (EHR). Criteria for appropriate prescribing, choice of antibiotic, and duration of therapy were based on established CHOP and IDSA/PIDS guidelines.

**Results:** Of 148 eligible subjects, median age was 3.8, 48% were female, and 129 (86%) were admitted to a general pediatrics service. On chart review, 147 (99%) subjects were correctly diagnosed with CAP. Of these subjects, the choice of initial antibiotic(s) was appropriate in 133 (90%). Of the 147 subjects, 137 (93%) had an appropriate duration of therapy. Test characteristics of the EHR algorithm (compared to chart review) are noted in the Table.

**Conclusion:** In pediatric patients hospitalized with CAP, the electronic algorithm for identifying inappropriate prescribing, antibiotic choice, and duration was highly accurate. This algorithm could have considerable utility in targeting ASP initiatives. The impact of interventions based on this algorithm should be tested in the future

Test Characteristics of Electronic Algorithm for Inappropriate Prescribing, Agent, and Duration

| Test Characteristic              | Value          |
|----------------------------------|----------------|
| <b>Inappropriate Prescribing</b> |                |
| Sensitivity                      | 0% (0/1)       |
| Specificity                      | 99% (145/147)  |
| Positive Predictive Value        | 0% (0/2)       |
| Negative Predictive Value        | 99% (145/146)  |
| <b>Inappropriate Agent</b>       |                |
| Sensitivity                      | 100% (14/14)   |
| Specificity                      | 98% (130/133)  |
| Positive Predictive Value        | 82% (14/17)    |
| Negative Predictive Value        | 100% (130/130) |
| <b>Inappropriate Duration</b>    |                |
| Sensitivity                      | 100% (10/10)   |
| Specificity                      | 100% (137/137) |
| Positive Predictive Value        | 100% (10/10)   |
| Negative Predictive Value        | 100% (137/137) |

**Disclosures:** All Authors: No reported disclosures