Background. Antibiotics are commonly overused in the treatment of ventilator-associated tracheitis (VAT). Antimicrobial stewardship programs (ASP) optimize antibiotic prescribing and decrease unnecessary antibiotic use. At our institution, clinicians who have initiated antibiotics for the treatment of tracheitis do not agree with ASP recommendations in 35% of cases. The goal of this study was to compare antibiotic duration and treatment failure in children treated for VAT who did and did not receive an ASP recommendation.

Methods. We performed a retrospective cohort study to evaluate VAT treatment courses and subsequent treatment failures. For this study, we included all children who were hospitalized from January 2009 to February 2013 and reviewed by ASP for receiving a monitored drug with an indication of VAT. Treatment failure was defined as a patient requiring a repeat course of antibiotics with an indication of VAT within 14 days of completing a previous antibiotic course.

Results. A total of 220 VAT cases were included. ASP provided recommendations to optimize antibiotics in 44 cases (20%) and stop antibiotics in 53 cases (24%). The shortest duration of treatment (days) was prescribed when ASP recommended stop therapy (median 4.7, IQR 3.0–6.5) when compared with no intervention (6.0, 4.3–7.0; P = 0.01). Treatment failure occurred in 33 (15%) cases. No difference in antibiotic duration was observed between those who did or did not fail (6.3 vs. 5.9, respectively; P = 0.11). Additionally, treatment failure rates did not differ by ASP recommendation status (no recommendation 15%; optimize 18%; stop 11%; ID involved 20%; P = 0.78).

Conclusion. ASP recommendations for the treatment of pediatric VAT were not associated with an increased likelihood of treatment failure. Further work is needed to standardize the diagnosis and treatment of VAT to avoid unnecessary antibiotic use in these children.

Disclosures. All authors: No reported disclosures.

175. Implementation of Clinical Practice Guidelines for Care of Neonates With Necrotizing Enterocolitis Reduces Broad Spectrum Antibiotic Use in the Neonatal Intensive Care Unit
Jonathan Albert, MD; Ishminder Kaur, MD; Geoffrey Bajwa, MD; Suzanne Touch, MD; Emily Souder, MD; Sarah Long, MD and Vineet Bhandari, MD; 1Department of Pediatrics, St. Christopher's Hospital for Children, Philadelphia, Pennsylvania, 2Section of Infectious Diseases, St. Christopher's Hospital for Children, Philadelphia, Pennsylvania, 3Section of Neonatal-Perinatal Medicine, St. Christopher's Hospital for Children, Philadelphia, Pennsylvania

Session: 49. Antimicrobial Stewardship: Interventions in Pediatric Populations
Thursday, October 4, 2018: 12:30 PM

Background. Exposure to broad spectrum antimicrobial agents (AA) is a known risk factor for colonization and infection with multidrug-resistant organisms (MDROs). Therapy with broad spectrum AAs is commonplace with no published guideline to help minimize their use in the NICU. We aimed to analyze clinical indications for the use of vancomycin and meropenem (V/M) in the NICU and the impact of a necrotizing enterocolitis (NEC) clinical practice guideline (CPG) on the use of V/M in the NICU.

Methods. Patients who received V/M between January 2015 and December 2015 were identified using pharmacy administration data. Medical charts were reviewed retrospectively by two ID physicians to determine whether V/M were clinically indicated for each definitive course. A CPG outlining the optimal use of AAs for NEC was implemented in the NICU in our institution in August 2015 (Figure 1). We analyzed V/M DOT per 1,000 patient-days before and after CPG implementation. There were no parallel changes in antimicrobial stewardship interventions.

Results. At the start of V/M, mean gestation and chronologic age of the study population were 28.8 weeks and 26.9 days, respectively, and the mean weight was 2,676 g. During the study period, 91 patients received 191 courses of vancomycin and 27 patients received 32 courses of meropenem. ~40% of V/M definitive use did not have a clear clinical indication (Table 1). Thirty-three percent of meropenem definitive use was in infants with NEC. During a 7-month baseline period, mean vancomycin and meropenem use was 105 and 56 DOTs per 1,000 patient-days, respectively. Following NEC CPG implementation, mean vancomycin and meropenem use was 101 and 12 DOTs per 1,000 patient-days, respectively (Figures 2 and 3). Following the implementation of NEC CPG, there was a decrease in the utilization of meropenem in the NICU.

Conclusion. Widespread use of V/M was identified in the NICU. Following the implementation of NEC CPG, there was a decrease in the utilization of meropenem in the NICU.

Disclosures. All authors: No reported disclosures.

176. Comparison of Prescribing Practices for Community-Acquired Pneumonia (CAP) Among Outpatient Versus Emergency Department Settings
Leah Koening, BS; Judith M. Martin, MD; 1University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania and 2Department of Pediatrics, Children's Hospital of Pittsburgh, Pittsburgh, Pennsylvania

Session: 49. Antimicrobial Stewardship: Interventions in Pediatric Populations
Thursday, October 4, 2018: 12:30 PM
Background. Antibiotics are the most common prescription drugs given to children, yet inappropriate usage is common. This study compared antibiotic prescribing practices for community-acquired pneumonia (CAP) in the Children’s Hospital of Pittsburgh (CHP) Emergency Department (ED) vs. outpatient practices at sites affiliated with CHP.

Methods. We reviewed electronic medical records from November 2016 through April 2017 for patients 6-71 months who were diagnosed with CAP in the CHP ED and CHP-affiliated outpatient sites. Any healthy child with the appropriate ICD-10 code was included. The primary outcome measure was the prescribed antibiotic treatment. We compared children who received first-line CAP treatment, amoxicillin, prednisolone, or vancomycin to Society of Infectious Diseases (SID) directed second-line CAP treatments: amoxicillin–clavulanate and cefdinir. We collected all noted justifications for antibiotic choice and compared prescribing practices amongst provider types, including physicians, residents, nurse practitioners, and physician assistants.

Results. A total of 1,565 children were included; 52.6% were male, with a mean age of 2.99 years. Three hundred fifty-one of 1,565 (22.4%) were diagnosed in the ED. The prescriptions were as follows: amoxicillin (807/1,565, 51.6%), amoxicillin–clavulanate (231/1,565, 14.8%), cefdinir (156/1,565, 10.0%), and vancomycin (270/1,565, 17.3%), combination therapy (47, 3.0%), and all others (54, 3.5%). In the ED, 232/351 (66.1%) children were prescribed amoxicillin, in contrast to 603/1,214 (49.7%) in the outpatient practice (P = 0.05). If clinicians did not prescribe first-line therapy, most reassessed current antibiotic therapy given for atypical organisms (115/730, 15.8%), drug allergy (106/730, 14.5%), and recent antibiotic use (55/730, 7.5%). Common reasons included: coverage for atypical organisms (157/730, 15.8%), drug allergy (106/730, 14.5%), and recent antibiotic use (55/730, 7.5%).

Conclusion. Providers in the CHP ED were more likely to prescribed first-line therapy of amoxicillin as per IDSA guidelines than their outpatient practice counterparts.

Disclosures. All authors: No reported disclosures.

177. Use of Electronic Best Practice Alert (BPA) to Reduce Inappropriate Testing for Clostridium difficile infection (CDI) at a Tertiary Care Center
John P. Mills, MD; Robert Chang, MD, FACP, SHFM; Krishna Rao, MD, MS; Chru Zimmerman, PharmD; Hee-Won Yoon, MPH; Carolyn Dombrocki, MPH; CIC; and Laraine L. Washier, MD; Division of Infectious Diseases, University of Michigan Medical School, Ann Arbor, Michigan, Internal Medicine, University of Michigan Medical Center, Ann Arbor, Michigan, Department of Internal Medicine, Division of Infectious Diseases, University of Michigan Medical School, Ann Arbor, Michigan, Michigan Medicine, Ann Arbor, Michigan, University of Michigan Medical School, Ann Arbor, Michigan, Infectious Prevention and Epidemiology, Michigan Medicine, Ann Arbor, Michigan
Session: 50. Antimicrobial Stewardship: Interventions Leveraging the Electronic Health Record
Thursday, October 4, 2018: 12:30 PM

Background. Clostridium difficile assays are unable to differentiate between active infection and asymptomatic carriage. Failure to account for noninfectious causes of diarrhea in hospitalized patients may contribute to overtreatment of CDI, leading to unnecessary treatment and increased cost of care. This study assessed if a best practice alert (BPA) could improve ordering practices.

Methods. A BPA was instituted in a tertiary academic medical center in the electronic medical record. The BPA was activated between June 7-17, 2017 alerting ordering providers of C. difficile testing if their patient had received laxatives, oral contrast, or initiation of tube feeds within the preceding 48 hours. Reevaluation of diarrhea was recommended 48 hours after discontinuation of laxatives or initiation of new tube feeds in stable patients. BPA override was available for the following scenarios: high clinical suspicion, concern for severe dehydration, ongoing antimicrobial therapy, and severe diarrhea and diagnosis cannot be delayed, ileus, worsened diarrhea on chronic tube feeds, worsened diarrhea on chronic laxatives. The rate of test positivity was compared before and after BPA implementation by χ2 test.

Results. Between June 7, 2017 and December 31, 2017, the BPA triggered in 1,284 unique clusters (all BPA’s firing within 48 hours of another BPA were considered a single cluster). Chart review showed cancellation of CDI testing in 416 (32.4%) cases and delayed tests for at least 24 hours in 163 (12.7%) cases. Of 868 tests where the BPA was initially or ultimately overridden after 24 hours, 136 (21%) were positive. The most common reasons for BPA override were: 512 (39.9%) high clinical suspicion and 177 (13.8%) worsened diarrhea on tube feeds. The rate of inpatient CDI testing declined from 191.6/10,000 patient-days in the January–June 2017 period to 165.9/10,000 patient-days in December 2017 (P = 0.001). The proportion of positive tests increased from 8.6% to 10.6% (P = 0.006) over the same time periods. Two cases of delayed diagnosis were identified; no treatment complications were noted on chart review.

Conclusion. An electronic BPA may be an effective tool to identify alternative etiologies of diarrhea in hospitalized patients and reduce inappropriate/enrich appropriate CDI testing. No adverse outcomes were noted in patients with delayed CDI diagnosis.

Disclosures. All authors: No reported disclosures.

178. Impact of a Best Practice Alert Linking Clostridium difficile Infection Test Results to a Severity-Based Treatment Order Set
Holly Reed, PharmD; Trevor Van Schooneveld, MD, FACP; Craig Reha, PharmD; and Scott Bergeman, PharmD, FIDSA, FCP, BCPS, Nebraska Medicine, Omaha, Nebraska, Division of Infectious Diseases, University of Nebraska Medical Center, Omaha, Nebraska, Department of Pharmaceutical Care, Nebraska Medicine, Omaha, Nebraska
Session: 50. Antimicrobial Stewardship: Interventions Leveraging the Electronic Health Record
Thursday, October 4, 2018: 12:30 PM

Background. Adherence to practice guidelines for the treatment of Clostridium difficile infection (CDI) has been associated with improved patient outcomes. In March 2014, the hospital’s Antimicrobial Stewardship Program (ASP) implemented a best practice alert (BPA) in the electronic medical record linking a positive test result to guideline-based CDI orders for those not on CDI therapy. We sought to assess provider adherence to practice guidelines before and after implementation of this clinical decision support tool.

Methods. In this quasi-experimental study, a retrospective chart review was conducted on inpatients diagnosed with CDI, defined using a tiered testing algorithm. Those diagnosed with CDI in 2013 served as controls before BPA implementation and patients from 2016 served as cases. Antibiotic prescribing was assessed and guideline compliance evaluated based on institutional guidelines for CDI treatment. Secondary endpoints were resolution of diarrhea, length of stay, in-hospital mortality, 30-day recurrence, and readmission rate. Continuous variables were analyzed using a two-tailed Student’s t-test, or for non-normally distributed data, Mann–Whitney U test. Categorical variables were analyzed using chi-square.

Results. Based on power analysis, 131 CDI cases were randomly selected, 66 in 2013 and 65 in 2016, which accounts for 23.7% (66/278) and 15.9% (65/409) of total inpatient CDI cases, respectively. Mean age was 55.0 ± 19.3 years pre-BPA/Order set and 58.5 ± 14.1 in the post-group. Immunocompromised was present in 53% of the pre-group when compared with 32.3% in the post-group. The majority of patients in both the pre-BPA/Order set group and post-group received metronidazole as initial therapy with 69.7% and 75.4%, respectively. The BPA was opened in 54% (28/57) of triggered encounters and led to signed orders in 82% (23/28) of those patients. Guideline-based prescribing increased from 39.4% in 2013 to 67.7% overall in 2016 (P = 0.014). Secondary endpoints were not significantly different between groups.

Conclusion. After implementation of the BPA linked to a severity-based treatment order set, there was an increase in guideline-compliant prescribing for CDI. Developing a better understanding of how to optimize guideline adherence using BPA will aid ASPs in determining future improvement efforts.

Disclosures. S. Bergeman, Merck: Grant Investigator, Grant recipient.