Results. Median overall antimicrobial use was similar between the pre-, during- and postintervention periods at 1,089, 1,100, and 1,146 DOT/1,000 DAR, respectively. For the five most commonly used drugs, reductions in DOT/1,000 DAR were observed between the pre- and during-intervention groups for amoxicillin/sulbactam (20%) and metronidazole (12%), while ceftriaxone, cefepime, and vancomycin use was unchanged.

Conclusion. While no change in median total antibiotic use was observed, a reduction in anti-anaerobic agent use noted, consistent with local efforts to reduce inappropriate antibiotic prescribing for aspiration pneumonitis. Actively involving medical residents and fellows in establishing evidenced-based approaches to antimicrobial stewardship is key to improving antibiotic utilization and minimizing the development of antimicrobial resistance.

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204. Impact of Education and Data Feedback Interventions on Outpatient Prescribing for Urinary Tract Infections
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Background. Urinary tract infections (UTIs) are the most common outpatient indication for antibiotics and an excellent target for outpatient antimicrobial stewardship (AS) interventions. This study evaluated the impact of education and data feedback on outpatient UTI diagnosis and prescribing.

Methods. A clinic-specific antibiogram, diagnosis and treatment guideline, and educational session were provided at one urgent care (UC) and one primary care (PC) clinic in Durham, NC in August and November of 2017. Educators reviewed the appropriate diagnosis, treatment, and duration of therapy for UTIs, including avoidance of treatment for asymptomatic bacteriuria and choice of first-line agents with lower collateral damage. Adult encounters with a UTI diagnosis code from November 2016 to November 2017 and from August 2016 to August 2017 were included in the pre-intervention cohort for UC and PC, respectively. The post-intervention cohort included encounters following education session in April 2018. Summary data of UTI diagnoses and guideline concordant prescriptions were fed back to clinics February 2018. The primary endpoint was proportion of first- or second-line antibiotic choice for UTI according to clinic-specific guidelines. Pre- and postintervention phase and trend changes were assessed by an interrupted time series approach.

Results. Data were collected on 2,660 and 1,016 UTI encounters at UC and PC, respectively. Guideline concordant prescribing increased at UC from 29% at baseline to 47% in the 5 months after the education and at PC from 54% at baseline to 62% in the 8 months after the education (Figures 1 and 2). The mean number of UTI diagnoses per month decreased at UC from 142 at baseline to 102 and at PC from 32 at baseline to 25 after the education.

Conclusion. Clinicians increased guideline concordant prescribing and reduced diagnosis rates for UTIs. AS is effective at improving guideline-directed diagnosis and management of UTIs in outpatient settings.

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205. Reduction of Antibiotic Prescribing Within a Veterans Affairs Emergency Department Through Peer Comparison
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Background. Reduction in inappropriate antibiotic use in Emergency Departments can have a major impact on overall outpatient antibiotic use. Peer comparison has been used to successfully reduce antibiotic prescribing in primary care clinics at our hospitals and others.

Methods. An educational session was held for Emergency Department physicians (EDPs) at VA Pittsburgh. EDPs were then sent monthly comparison charts of their oral anti-infective prescribing rates as well as peer rates. An intervention period of January–March 2018 was compared with a seasonal baseline of the same months in 2017. A random sample of oral antibiotic prescriptions was reviewed in-depth for adherence to consensus guidelines.

Results. During the baseline period of January–March 2017, 427 oral antibiotic prescriptions were written by 16 EDPs during a total of 3,722 patient encounters, with an antibiotic prescription index of 114.1 per 1,000 patient encounters. In comparison, 301 prescriptions were written by the same 16 EDs during 4,874 patient encounters in the post-intervention period (January–March 2018), with an antibiotic prescription index of 61.7 per 1,000 patient encounters (45.9% decrease; P = 0.0001). Azithromycin and fluoroquinolone indices decreased from 29.6 to 16.6 (43.9%; P < 0.0001) and 10.5 to 8.0 (23.8%; P = 0.2) per 1,000 encounters, respectively. Among randomly reviewed prescriptions, there was a trend toward a decrease in inappropriate antibiotic prescription from 27% (20/42) to 16% (5/31) (P = 0.15) among the randomly reviewed prescriptions that were indicated, there were non-significant decreases in the percentages of guideline-discordant agents (22.7% (5/22) to 14.2% (3/21); P = 0.7), and in the percentage of guideline-concordant agents given for a guideline-discordant duration (29.4% (9/30) to 17.2% (5/29); P = 0.72). Likewise, there were non-significant decreases in inappropriate antibiotic prescribing for UTIs (94.1% (16/17) to 75% (3/4); P = 0.35).

Conclusion. In an emergency department setting, initial education followed by monthly peer comparison of overall antibiotic prescribing rates significantly reduced overall antibiotic prescribing. Ongoing data review will reveal if trends toward reductions in inappropriate antibiotic prescribing are significant.

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206. Respiratory Viral Testing Is Associated with Lower Frequency of Antibiotic Prescribing for Acute Upper Respiratory Infections at a Large Ambulatory Cancer Center
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Background. Inappropriate outpatient antibiotic prescribing for acute upper respiratory infections (URIs) is a high priority target for antimicrobial stewardship and has not been described for cancer patients. The goal of this study was to characterize patterns of and factors associated with antibiotic prescribing among ambulatory oncology patients with URIs.

Methods. We selected outpatients >18 years old seen at an ambulatory cancer center with ICD-10 diagnosis code consistent with URI from October 1, 2015 to September 30, 2016 for chart review. Patients without documented symptoms or with lower tract infection at the first clinical encounter for the URI (day 0) were excluded. We obtained demographic, clinical, antimicrobial prescribing and...
viral testing for data for days 0–14. We used generalized estimating equations to test for associations of baseline factors with a ≥1 antibiotic prescription for URI while accounting for correlation among patients seen by the same provider.

**Results.** Of the 341 charts reviewed, 251 (74%) patients, seen by 99 providers were eligible for analysis. A total of 162/251 (65%) had an underlying hematologic malignancy or disorder; of those, 51% had a prior hematopoietic cell transplant. Eighty-four (33%) received ≥1 antibiotic prescription for URI with 63% ordered on day 0. Azithromycin (47%) and fluoroquinolones (25%) were most often prescribed. One hundred thirteen (45%) patients had respiratory viral testing performed; 85 (75%) tested positive (Figure 1). Both antibiotic prescribing (P = 0.005) and viral testing (P = 0.001) varied by clinical service (Figure 2). Viral testing on day 0 was associated with lower risk of antibiotic prescribing while sputum production or chest congestion was associated with higher risk of antibiotic prescribing (Figure 3).

**Conclusion.** Antibiotics were prescribed in one of the three oncology patients with URI, although viral etiologies were identified in most who were tested. Respiratory viral testing was associated with reduced antibiotic prescribing though collinearity between clinical service and viral testing limited our ability to separate these effects on antibiotic prescribing. It is important to further explore the role of viral testing in antibiotic prescribing for URI in outpatient oncology settings.

**207. Impact of Educational Interventions on Antibiotic Prescribing for Acute Upper Respiratory Tract Infections in the Ambulatory Care Setting**

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**Background.** Acute upper respiratory tract infections (URI) result in significant outpatient antimicrobial prescriptions and are targets for antimicrobial stewardship efforts given they are often of viral origin. Our objective was to evaluate the impact of educational antimicrobial stewardship initiatives on the proportion of URI treated with antibiotics in a large, ambulatory setting that included Internal Medicine and Family Medicine clinics.

**Methods.** This quasi-experimental pre–post intervention study evaluated antibiotic prescribing for URI from January 1, 2016 to December 31, 2017. The calendar year 2016 was considered the preintervention time period. The stewardship interventions were implemented in December 2016 and included practitioner education on URI treatment guidelines (education) and commitment to safe antibiotic use posters displayed in patient rooms and clinic waiting areas (poster). Education was provided in both clinics whereas posters were displayed only in the family medicine clinic. ICD-10 codes were used to identify cases, excluding patients with COPD. The primary endpoint was the proportion of patient visits for URI where antibiotics were prescribed for the treatment of acute bronchitis, influenza, and unspecified viral infection collectively.

**Results.** There were 1,533 encounters preintervention and 1,479 postintervention. In the internal medicine clinic (education only), the rate of antibiotics prescribed for all URI diagnoses preintervention was 24.5% vs. 19.0% post (P = 0.022). In the family medicine clinic (education + poster), the antibiotic prescribing rate for all URI diagnoses preintervention was 11.0% vs. 9.4% post (P = 0.242). The overall rate of antibiotics prescribed for all clinics was 16.6% preintervention vs. 13.0% postintervention (P = 0.009).

**Conclusion.** The educational and antimicrobial stewardship initiatives implemented in these outpatient clinics may have contributed to a significantly reduced rate of inappropriately prescribed antibiotics for URI in the internal medicine clinic and both clinics overall. The addition of the poster was not associated with a significant change in practice. However, these results demonstrate the potential utility of the educational initiative, and that stewardship strategies may have a different impact by clinic setting.

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**208. Trends in Antibiotic Prescribing for Acute Respiratory Tract Infections and Implementation of a Provider-Directed Intervention Within the Veterans Affairs Healthcare System (VA)**

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**Background.** We report VA-wide trends over time in acute respiratory infection (ARI) antibiotic prescribing, and early assessment of an intervention to improve ARI management.

**Methods.** We created a retrospective cohort of ARI (sinusitis, pharyngitis, bronchitis, and URI-NOS) visits between 2009 and April 2018. Patients with complicating conditions were excluded. Antibiotic prescribing rates were calculated. A provider-directed VA-wide ARI campaign was initiated in October 2017. The Campaign was implemented locally by antibiotic stewards or regional personnel trained in academic detailing (AD). Campaign components: dashboards for tracking provider and facility prescribing patterns, printable feedback reports, and AD educational materials. Metrics include: ARI antibiotic prescribing rates, bronchitis/URI-NOS antibiotic prescribing rates, guideline-concordant antibiotic selection for sinusitis or pharyngitis, and proportion of ARI visits with a sinusitis diagnosis. A Logistic generalized estimating equation model assessed metrics over time pre-/postintervention and χ² tests compared guideline concordant antibiotic proportions pre-/postintervention.

**Results.** There were 1,580,612 and 137,421 ARI visits pre-/postintervention, respectively. Antibiotic prescribing decreased from 2009, annual odds ratio (OR) 0.94 [95% CI 0.93, 0.96; P < 0.001]. An additional effect was observed postintervention.