Conclusion: The rate of penicillin-resistant *S. pneumoniae* isolate was not positively correlated with penicillin consumption at the population level. Increased penicillin consumption might not induce penicillin resistance of *S. pneumoniae*.

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234. Improving Antibiotic Prophylaxis Selection for Patients Undergoing Urology Procedures

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Session: P-8. Antimicrobial Stewardship: Trends in Antimicrobial Prescribing

Background: Evidence evaluating prescribing patterns in antibiotic (ABC) prophylaxis (PPX) for urology (UGY) procedures is limited. Although national guidelines give direction on the ABC PPX for specific procedures, ABC PPX should also be based on local ABC resistance patterns, individual host factors and procedure type factors. Our institution's urine culture antibiogram illustrates increasing resistance to Cefazolin, a national guideline preferred ABC. The purpose of this study is to assess the impact of a quality improvement intervention on prescribing practices for ABC PPX in patients undergoing UGY procedures.

Methods: This is a retrospective study evaluating all patients receiving perioperative ABC PPX for UGY procedures from 01/01/2019 to 07/31/2019. The intervention (focusing on UGY provider education for ABC PPX based on local ABC resistance patterns, host factors and UGY procedure type) occurred on multiple in-person sessions during 04/2019. Emphasis occurred with replacing Cefazolin with Ceftriaxone, given local resistance patterns. We compared patient characteristics, appropriate ABC PPX use (deemed by local ABC Stewardship Team) and postoperative infections between the "pre" (01/01/2019 – 03/31/2019) and "post" (05/01/2019 – 07/31/2019) groups.

Results: The "pre" group had 85 patients and the "post" group had 80 patients. 62% had a same day UGY procedure with the most common procedures designated as "clean-contaminated" (81.8%) and ASA physical status classification as "ASA II" (53.9%). After the intervention, appropriate ABC PPX choice improved (14.5% to 76%, $P < 0.001$) based on local ABC resistance patterns. No significant difference is noted in urine culture collection before procedure (36.4% to 43.7%, $P = 0.3$), ABC PPX choice based on prior patient-specific culture results including multi-drug resistant pathogens (75% to 82.3%, $P = 0.6$), use of ABC PPX post-procedure (40% to 35%, $P = 0.5$) and postoperative infections (7% to 11.2%, $P = 0.4$).

Conclusion: Utilization of education sessions as a quality improvement intervention resulted in significant improvement in ABC PPX choice for UGY procedures based on local ABC resistance patterns. Further interventions are necessary to optimize additional areas related to ABC PPX use for UGY procedures.

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235. In outpatient clinics serving Veterans, antibiotic prescriptions precede a minority of antibiotic-associated adverse events.

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Session: P-8. Antimicrobial Stewardship: Trends in Antimicrobial Prescribing

Background: An estimated 30% of antibiotic prescriptions in outpatient settings may be inappropriate. Antibiotic exposure increases an individual's risk of *Clostridioides difficile* infection (CDI) and acquiring drug-resistant pathogens. To quantify the increased risk of CDI and drug-resistant pathogens posed by antibiotics prescribed in outpatient visits, we examined a two-year cohort of patients seen in primary care clinics at VA Community-Based Outpatient Clinics (CBOC) associated with a large VA Medical Center.

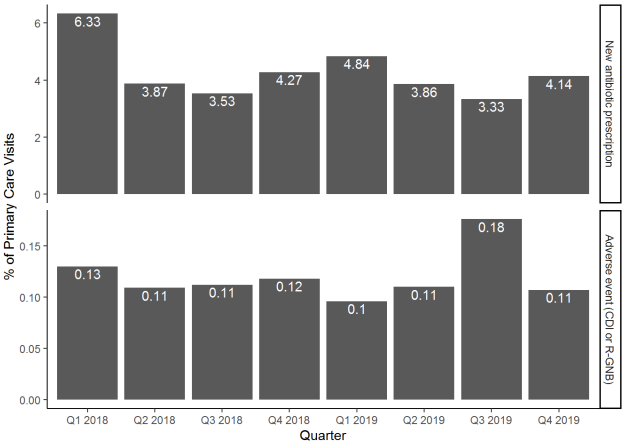
Methods: Among patients with an in-person visit at 13 CBOCs in 2018–2019, we examined rates of antibiotic-associated adverse events (AEs), defined as community-onset CDI or acquisition of resistant Gram-negative bacteria (R-GNB), in the 90 days following those visits. For each visit, we used administrative databases to determine if systemic antibiotics were prescribed, if there was an associated infectious diagnosis, and the subsequent occurrence of AEs. We summarized quarterly rates of prescribed antibiotics and AEs, characterized patients with and without AEs, and estimated the risk ratio of AE for an antibiotic prescription.

Results: Following 236,665 primary care visits, we observed 62 and 225 AEs due to CDI and R-GNB, respectively (0.12% combined rate) among 278 patients (5 with both). Patients who developed CDI or R-GNB had a higher Charlson Comorbidity Index (3.6 ± SD 3.0 and 2.68 ± SD 2.7, respectively) compared to those without AEs (0.72 ± SD 1.3; **Table**). The rate of new antibiotic prescriptions was 4% in visits without and 10% in visits with a subsequent AE, yielding a risk ratio of 2.5 (95% CI: 1.7–3.7). The rates of both antibiotic prescribing and AE were steady over the examined two-year period (**Figure**).

Table

Characteristics	All Outpatient Visits (N = 236665)	No Antibiotic-Associated Adverse Event (N = 236382)	Community-Associated Resistant Gram-Negative Bacteria (N = 225)	Community-Associated *C. difficile* infection (N = 62)
Patients				
No. unique patients	85393	85369	225	58
Age at first visit (± SD)	66.7 ± 14.7	66.7 ± 14.8	71.3 ± 10.4	66.6 ± 10.5
Male, n (%)	222492 (94%)	222229 (94%)	208 (92%)	58 (94%)
Charlson Comorbidity Index at first visit (± SD)	0.72 ± 1.3	0.72 ± 1.3	2.68 ± 2.7	3.6 ± 3.0
Outpatient Visit				
Antibiotic prescription, n (% of visits)	10177 (4%)	10148 (4%)	23 (10%)	6 (10%)
Acute respiratory infection	5090 (2%)	5082 (2%)	5 (2%)	3 (5%)
Skin and soft tissue infection	646 (0%)	639 (0%)	6 (3%)	1 (2%)
Urinary tract infection	583 (0%)	579 (0%)	4 (2%)	0 (0%)
Pneumonia or Influenza infection	562 (0%)	558 (0%)	3 (1%)	1 (2%)

Figure



Conclusion: Among all patients with a CBOC visit between 2018–2019, an AE, defined as CDI or R-GNB acquisition, was observed following only 0.1% of primary care visits. Among patients who experienced an AE, only 10% of primary care visits preceding those events included a new antibiotic prescription. While this analysis does not address antibiotics during inpatient stays or prescribed by specialty clinics, these findings suggest that among Veterans, outpatient antibiotic exposure may have only a modest contribution to the risk of AE.

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236. Incorporating Clinical Guidance into Computerized Prescriber Order Entry May Reduce Fluoroquinolone Utilization for the Treatment of Diverticulitis at a Rural Community Health System

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Session: P-8. Antimicrobial Stewardship: Trends in Antimicrobial Prescribing

Background: Fluoroquinolones are associated with many adverse effects. As a result, many hospitals are investigating methods to reduce fluoroquinolone use. Computerized prescriber order entry (CPOE) provides an opportunity to develop and implement clinically guided order sets that discourage the use of fluoroquinolones. To date, there are few studies investigating the effect of clinically guided order sets on medication utilization. This study aims to investigate the hypothesis that incorporating clinical guidance and leveraging antimicrobial stewardship into a CPOE diverticulitis order set would reduce fluoroquinolone use in the treatment of diverticulitis.

Methods: A diverticulitis order set was revised to provide guided antibiotic selection based on a patient's penicillin allergy. Patients were split into two groups based on admission date relative to the implementation date of the revised order set. Fluoroquinolone use was compared between both groups. The primary outcome was the percentage of patients who were ordered a fluoroquinolone-containing regimen during their stay. The secondary outcome was the percentage of regimens that contained a fluoroquinolone. A subgroup analysis was conducted exclusively on patients whose antibiotics were ordered with the diverticulitis order set.

Results: 494 patients were included in the study. 316 patients in the pre-order set group, 178 patients in the post-order set group. 56% of patients in the pre-group