antibiotic guidelines were developed during the pandemic period. AU rates were monitored quarterly to determine the effects of the AS interventions to prescribing practices.

**Results.** Total and specific AU rates were higher (up to 34% and 80%, respectively) in our index hospital compared to other non-teaching hospitals nationally prior to the pandemic. Total antibiotic utilization increased by only 5.5% in the 2nd quarter 2020, peak of AU during the pandemic. Total, vancomycin, piperacillin-tazobactam, and quinolone utilization rates decreased by 19%, 41%, 38%, and 52%, respectively, at 1st quarter 2021 compared to 4th quarter 2019. Steeper decreases were noted with implementation of educational activities. Ceftiraxone use remained high and was 50% greater than comparator hospitals at 1st quarter 2021.

**Conclusion.** Although problematic during the COVID-19 pandemic, AS can have significant impact on provider prescribing practices and decrease total and specific antibiotic utilization rates. The use of ceftriaxone, an antibiotic commonly used for empiric bacterial coverage for community acquired pneumonia, presents as a continuing challenge.

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

### 150. Improved Susceptibility of *Pseudomonas aeruginosa* to Ceftolozane (CEF) at a Veteran Tertiary Care Hospital, over a 7-Year Period (2011-2017): The Impact of Antibiotic Rotation/Cycling and Reversal of Drug Resistance in *P. aeruginosa*

**Background.** *Pseudomonas aeruginosa* continues to be an important cause of nosocomial infections associated with a high morbidity and mortality. Despite the availability of ceftazidime-avibactam (CAZ-AVI) and ceftolozone-tazobactam (CFT-TAZO), CEF continues to be an empiric agent of choice in several institutions.

**Aim:** To evaluate the prevalence and trend in susceptibilities of *P. aeruginosa* to CEF over a 7-year period, identify possible correlation with the use of CAZ, ATZ, PTZ, CIP, and CAR, (DOT/1000 patient days), as a quality improvement (QI) measure for optimizing CEF use, introduce antibiotic cycling as a tool to avoid emergence of drug resistance in *P. aeruginosa*.

**Methods.** A retrospective review of antimicrobial susceptibility data of all isolates of *P. aeruginosa*, (inpatient and outpatient) at the Detroit VAMC pre and post implementation of antibiotic cycling, over a 7-year period (2011-2017) was performed. Susceptibility testing was performed by reference broth micro-dilution methods in a central laboratory. Data analysis was performed using Pearson correlation coefficient score. Being a QI project, clinical data were not reviewed.

**Results.** A total of 977 isolates were identified during the study period. (drug usage are in DOT/1000 PD); CAZ and ATZ use surged during 2013-14 from 5 to 8 and dropping in 2015-17 to <3; CIP use dropped by 50% from 30 in 2012 to 15 in 2017; CAR use averaged at 10 until 2016 and dropped in 2015-17 to <3; PTZ usage increased to 100 during 2011-14 but dropped in 2015-17 to <2; CAZ and AZT use surged during 2013-14 from 5 to 8 and dropping in 2015-17 to <2; CIP use dropped by 50% from 30 in 2012 to 15 in 2017; *P. aeruginosa* susceptible to CEF decreased from 88% in 2012 to 81% in 2014 mirroring the increased use of CEF, ATZ, CAZ, and CIP; AG use was very low ≤3. With restrictions on the use of ATZ, CAZ, and CIP, from 2014-15, CEF susceptibility increased significantly to 95.5% in 2015. Drug shortage of PTZ in 2015 and increased use of CEF from 2015-17 led to a drop in susceptibility to (82%); *P. aeruginosa* susceptible to CAR and AG averaged 49% and 90% respectively (2011-17). However, reintroduction of PTZ, resulted in improved susceptibility of *P. aeruginosa* to CEF by 40% in 2016.

**Conclusion.** Judicious antimicrobial use and antibiotic rotation play a significant role in reversing drug resistance in *P. aeruginosa*.

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

### 151. Association Between Outpatient Antibiotic Prescribing, Antimicrobial Resistance, and Initial Presentation to Inpatient Setting for Urinary Tract Infections Among Older Adults in New York State

**Background.** Antibiotic prescribing (AP) and resistance (AR) may influence severity of illness in urinary tract infection (UTI). Limited data exist assessing the relationship between county-level AP and AR on initial presentation to hospital for UTI. This study evaluated the association between county-level AP and AR on UTI severity of illness among hospitalized patients in New York State.

**Methods.** Retrospective, cross-sectional analysis, combining data from New York State Statewide Planning and Research Cooperative System (SPARCS) and previously published data on countywide antimicrobial resistance and antimicrobial prescribing. Inclusion criteria: female patients admitted to a New York inpatient setting in 2017, UTI diagnosis (ICD-10: K81.51). Methicillin-susceptible. Exclusion criteria: prescribing or resistance. All patient refined (APR) clinical severity ≥3 was the primary outcome. Counties were classified as prescribing above or below the median prevalence of *E. coli* resistance for TMP-SMX and CEF. Countywide prescribing practices, antimicrobial resistance, patient factors, and location factors were evaluated for association with APR clinical severity ≥3 using chi-squared and logistic regression.

**Results.** 8,024 patients met study criteria. Baseline characteristics are presented in Table 1. 3,597 (44.8%) had an APR severity of ≥3. Factors associated with APR severity ≥3 include age group (P < 0.001), ethnicity (P = 0.013), hospital county (P < 0.001), first line prescribing ≤45.4% (P = 0.049), E. coli TMP-SMX resistance ≥29.0% (P < 0.001) via chi-squared test. In the logistic regression analysis counties with higher first line prescribing was associated with decreased odds for severe infection (aOR: 0.83 [0.72 – 0.97]). Additional factors associated with severe infection are presented in Table 2.

| County | APR severity ≥3 (%) |
|--------|---------------------|
| Albany | 383 (4.8) |
| Bronx | 886 (11) |
| Dutchess | 274 (3.4) |
| Fulton | 22 (0.3) |
| Kings | 1259 (15.7) |
| Manhattan | 1301 (16.2) |
| Orange | 273 (3.4) |
| Putnam | 81 (1) |
| Queens | 1257 (15.7) |
| Richmond | 376 (4.7) |
| Rockland | 254 (3.2) |
| Suffolk | 1439 (18.2) |
| Sullivan | 55 (0.7) |
| Ulster | 144 (1.8) |
| Average | 1022 (12.7) |

**Discussion.** No reported disclosures

### 152. Use of Antimicrobials among Suspected COVID-19 Patients at Selected 12 Hospitals in Bangladesh: Findings from the First Wave of COVID-19 Pandemic

**Background.** The COVID-19 pandemic has posed a significant challenge to hospitals in Bangladesh. The prevalence and trend in antimicrobial use among suspected COVID-19 patients at selected 12 tertiary hospitals in Bangladesh were assessed.

**Methods.** A retrospective review of antimicrobial susceptibility data of all isolates during the study period. Primary outcome was 24-h prescribing ≥45.4% of first line (e.g., CEF). Sensitivity to CEF continued to be an empiric agent of choice in several institutions.

**Results.** A total of 977 isolates were identified during the study period. (drug usage are in DOT/1000 PD); CAZ and ATZ use surged during 2013-14 from 5 to 8 and dropping in 2015-17 to <3; CIP use dropped by 50% from 30 in 2012 to 15 in 2017; *P. aeruginosa* susceptibility to CEF decreased from 88% in 2012 to 81% in 2014 mirroring the increased use of CEF, ATZ, CAZ, and CIP; AG use was very low ≤3. With restrictions on the use of ATZ, CAZ, and CIP, from 2014-15, CEF susceptibility increased significantly to 95.5% in 2015. Drug shortage of PTZ in 2015 and increased use of CEF from 2015-17 led to a drop in susceptibility to (82%); *P. aeruginosa* susceptible to CAR and AG averaged 49% and 90% respectively (2011-17). However, reintroduction of PTZ, resulted in improved susceptibility of *P. aeruginosa* to CEF by 40% in 2016.

**Conclusion.** Judicious antimicrobial use and antibiotic rotation play a significant role in reversing drug resistance in *P. aeruginosa*.

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