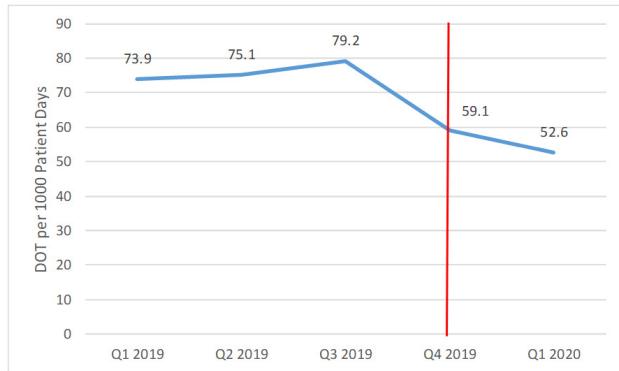


Results: Between October 3, 2019 and March 31, 2020, a total of 221 interventions were made by pharmacists to discontinue metronidazole in hospitalized CAP patients where anaerobic coverage was not indicated. Out of those 221 interventions, 164 (74%) were accepted by providers and only 57 (26%) were rejected.

The DOT per 1000 patient days of metronidazole was assessed for the three quarters prior to our intervention and the two quarters after the intervention. Compared to the three quarters prior, metronidazole DOT per 1000 patient days decreased by 26.6% for the two quarters following implementation of the pharmacist-led intervention (Figure 1).

Figure 1: Metronidazole DOT per 1000 patient days from January 1, 2019 through March 31, 2020. Vertical line indicates when pharmacist workflow was implemented.



Conclusion: A pharmacist antimicrobial stewardship intervention at our institution increased adherence to CAP guidelines and decreased unnecessary antibiotic exposure in hospitalized CAP patients when anaerobic coverage was not indicated.

Disclosures: All Authors: No reported disclosures

43. A Pharmacoepidemiologic Evaluation of Echinocandin Use

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Session: P-3. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background: Invasive candidiasis (IC) is a common healthcare-associated infection. Rates of IC caused by drug-resistant *Candida* spp., designated by the CDC as a serious threat, are increasing, and *Candida auris* alone was recently added as an urgent threat. Echinocandins are guideline-preferred for the treatment of invasive candidiasis due to *in vitro* potency, a favorable toxicity profile, and convenient dosing. The purpose of this study was to perform a pharmacoepidemiologic analysis on patterns of echinocandin use at a large, quaternary care medical center.

Methods: Data reporting echinocandin use, pharmacy data, and clinical microbiologic data obtained from 2017–19 were pooled. Monthly days of therapy (DOT) per 1,000 patient days were calculated during the study period along with number of unique orders. Investigators evaluated the proportion of echinocandin-treated patients with or without positive *Candida* cultures; the relationship between echinocandin use and hospital admission and discharge dates was also evaluated.

Results: Echinocandin monthly DOT/1,000 patient days present averaged 26 (± 5) DOT and did not change appreciably during the study period. Of the patients with microbiologic evidence of *Candida*, 842 (51%) received echinocandin courses. Length of echinocandin therapy was significantly longer for patients with positive *Candida* cultures (5.5 ± 5.9 days) compared to those without positive cultures (3.9 ± 5.0 days; p < 0.001). Of 1,659 echinocandin courses evaluated, 549 courses (33%) were initiated within 2 days of hospital admission and the average time from hospital admission to echinocandin start was 9 (± 13) days. A total of 505 (24%) echinocandin courses were continued until the day of discharge.

Conclusion: The rate of echinocandin use did not change appreciably during the study period. A significant proportion of echinocandin courses were either started upon hospital admission or were continued until the day of discharge. Further studies to evaluate antifungal stewardship opportunities for the echinocandin pharmacologic class are warranted.

Disclosures: Nicholas D. Beyda, PharmD, BCPS, Astellas (Advisor or Review Panel member) Cidara (Grant/Research Support, Scientific Research Study Investigator) Kevin W. Garey, PharmD, MS, FASHP, Merck & Co. (Grant/Research Support, Scientific Research Study Investigator)

44. Antibiotic Class-Based Distribution and Analysis of Reported Beta-Lactam Allergies amongst Hospitalized Patients

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Session: P-3. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background: Reported β-lactam allergy (BLA) is very common, yet less than 10% of these patients exhibit true hypersensitivity. When faced with reported BLAs, physicians often choose alternative antibiotics which can be associated with *C. difficile* infection, drug-resistance development, poorer outcomes, & increased costs. Effective identification of these patients is necessary for subsequent, appropriate BLA “de-labeling.” Here, we conducted a single-center analysis of alternative antibiotic utilization amongst patients reporting BLA and compare the frequency of drug-resistant infections and *C. difficile* infection in allergic & non-allergic patients.

Methods: This is a retrospective review of adult patients hospitalized at The University of Texas Medical Branch from 1/1/2015 to 12/31/2019. Pooled electronic medical records were filtered by antibiotic orders and reported allergies to penicillins or cephalosporins. Patients with drug-resistant and/or *C. difficile* infection (CDI) were identified by ICD-10 codes. Microsoft Excel & MedCalc were used for statistical calculations.

Results: Data were available for 118,326 patients and 9.3% (11,982) reported a BLA, with the highest rates seen in those receiving aztreonam (85.9%, 530/617) & clindamycin (33.7%, 3949/11718). Amongst patients reporting BLA, high ratios-of-consumption (relative to all patients receiving antibiotics) were seen with aztreonam (7.0), clindamycin (2.7), cephalosporin/β-lactamase inhibitors (2.4), & daptomycin (2.1). Compared to the non-BLA population, BLA patients more frequently experienced MRSA infection (3.0% vs 1.5%, OR 1.99, 95% CI 1.79–2.23, p < 0.0001), β-lactam resistance (1.2% vs 0.6%, OR 2.07, 95% CI 1.72–2.49, p < 0.0001), and CDI (1.2% vs 0.7%, OR 1.85, 95% CI 1.54–2.23, p < 0.0001).

Conclusion: Our measured BLA rate matches approximate expectations near 10%. Moreover, these patients experienced significantly higher frequencies of drug-resistant bacterial infections and CDI. Targeted inpatient penicillin allergy testing stands to be particularly effective in those patients receiving disproportionately utilized alternative agents (e.g. aztreonam, clindamycin, daptomycin). β-lactam allergy “de-labeling” in these patients is likely a valuable antimicrobial stewardship target.

Disclosures: All Authors: No reported disclosures

45. Antimicrobial Stewardship for Urinary Tract Infection in Three Emergency Departments Across a Health System

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Session: P-3. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

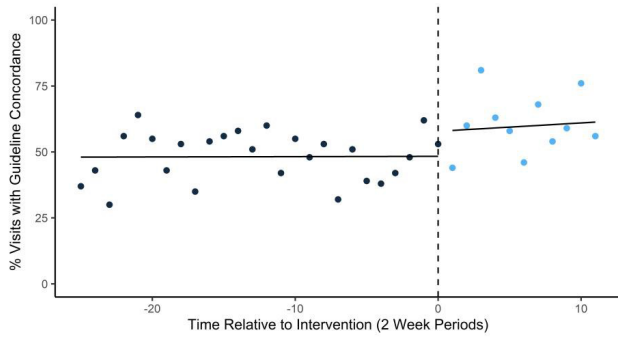
Background: Broad spectrum antibiotics are often prescribed to patients presenting to the emergency department (ED) for evaluation of urinary tract infection and pyelonephritis (UTI). We evaluated the effect of a target-specific antibiogram, education, and feedback on UTI diagnosis and antibiotic prescribing in this setting.

Methods: We created a urine-specific antibiogram from patients seen and treated without admission at three ED locations (one academic and two community hospitals). We then provided a treatment algorithm and supplemental educational content to ED providers in November 2019. Educational content highlighted appropriate diagnosis, antibiotic selection, and treatment duration for UTI. Adult encounters with appropriate ICD-9/10 codes within twelve months prior to content delivery comprised the preintervention cohort. The postintervention cohort consisted of adult visits following educational intervention until April 17, 2020. During the postintervention phase (November 2019 to April 2020), summary data regarding UTI diagnoses and guideline-concordant prescriptions were fed back routinely to ED providers through email. Guideline-concordant prescriptions were defined as those adhering to first or second-line therapy in the treatment algorithm. The proportion of prescriptions meeting this definition fulfilled the primary outcome. An interrupted time series analysis measured changes in guideline concordance.

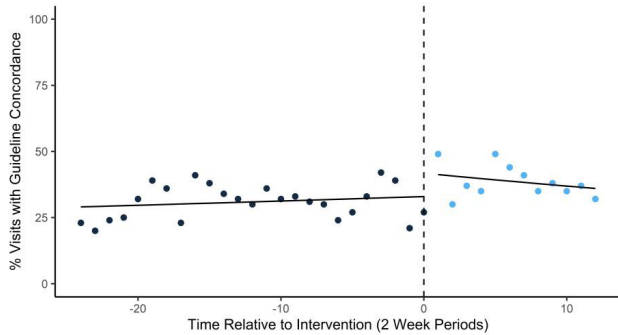
Results: Data from 6,713 distinct encounters were analyzed across the three sites. While guideline concordant prescribing increased following intervention at all locations (30.9% to 38.8%, 48.1% to 49.1%, and 48.2% to 59.6%), these increases were not statistically significant (Figures 1, 2, and 3). The proportion of all ED encounters

with a UTI diagnosis did not differ following the intervention. Interestingly, guideline concordance was greater in the academic ED, compared to the community hospitals.

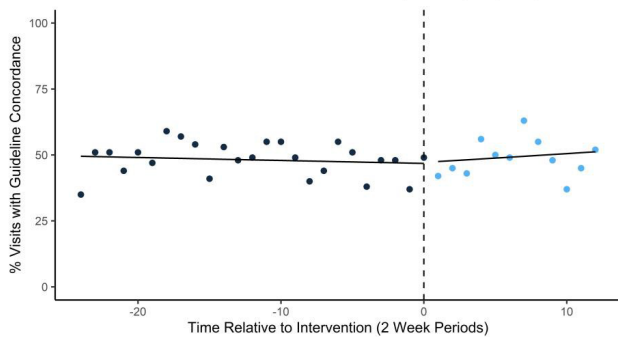
Guideline Concordant Antibiotics in Academic Emergency Department



Guideline Concordant Antibiotics in Community Emergency Department #1



Guideline Concordant Antibiotics in Community Emergency Department #2



Conclusion: Although guideline concordant prescribing for UTI increased in all three ED settings with education and email correspondence feedback, these results were not statistically significant. A variety of methods may be required to realize improved antibiotic prescribing across a diverse group of clinicians.

Disclosures: Rebekah W. Moehring, MD, MPH, Agency for Healthcare Quality and Research (Grant/Research Support) Centers for Disease Control and Prevention (Grant/Research Support)

46. Antimicrobial Stewardship's Selective Antibiotic Suppression Does Not Lead to Adverse Outcomes in Neutropenic Patients with Gram-Negative Bacteremia

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Session: P-3. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background: An antimicrobial stewardship program (ASP) strategy to minimize the use of overly broad antimicrobials is to suppress specific antimicrobial susceptibility results when isolates are sensitive to narrow antibiotics. There is limited data on possible adverse outcomes of this method. Patients with febrile neutropenia (FN) and gram-negative bacteremia (GNB) whose culture is sensitive to non-pseudomonal antibiotics still require broader pseudomonal coverage to treat the syndrome of FN. We evaluated if ASP suppression of anti-pseudomonal antibiotics adversely affects patients with FN and GNB.

Methods: In February 2018, our institution's ASP began suppressing cefepime and meropenem susceptibility results from *E. coli*, *Klebsiella* spp, and *Proteus* spp when sensitive to cefepime (MIC ≤ 2), ceftriaxone and ceftazidime. We performed a retrospective analysis of patients with FN and GNB from 2016 – 2020 to evaluate the appropriateness of antibiotic regimens before and after the ASP intervention. Antibiotic regimens were deemed inappropriate if the patient was de-escalated to a narrow-spectrum, non-pseudomonal agent while neutropenic. Of 338 inpatient encounters identified with any bacteremia and FN, 49 were due to non-*Pseudomonas*, non-ESBL GNB, 20 before and 29 after the intervention. Sixteen of the 29 post-intervention patients were excluded, as their isolates did not meet suppression criteria. This resulted in a total of 13 patients in the post-intervention group.

Results: After culture susceptibility reports were released, 3 out of 20 patients in the pre-intervention group (15%) and 4 out of 13 patients in the post-intervention group (30.8%) were inappropriately tailored to narrow-spectrum antibiotics (p=0.39). There was no significant difference in 30-day mortality, 10.0% pre- and 0% post-intervention (p=0.50), or amount of meropenem prescribed, 45% pre- and 38.5% post-intervention (p=0.74).

Table 1. Characteristics of Pre and Post Meropenem and Cefepime Suppression

	Pre-intervention (n=20)	Post-intervention (n=13)	p-value
Average age (years)	54.3	62.6	0.08
Average ANC at time of positive blood culture (K/uL)	0.00	0.00	1
30-Day Mortality (%)	10.0	0	0.50
Inappropriate definitive antibiotic regimens (%)	15.0	30.8	0.39
Total definitive regimens with Meropenem (%)	45.0	38.5	0.74
Organisms Isolated			
<i>Escherichia coli</i> (n)	17	12	
<i>Klebsiella</i> spp (n)	2	1	
<i>Enterobacter</i> spp (n)	2	0	

Conclusion: These data show no significant difference in inappropriate antibiotic regimens prescribed for patients with FN and GNB after ASP antibiotic suppression was implemented. 30-day mortality was also not affected. The ASP intervention did not decrease meropenem prescriptions in this patient group, which may be appropriate. Larger studies are needed to verify these findings.

Disclosures: Ryan K. Dare, MD, MS, Accelerate Diagnostics, Inc (Research Grant or Support) Mary Burgess, MD, Pfizer Inc (Grant/Research Support)

47. Assessing Viability and Outcomes following the Redistribution of Antibiotic Stewardship Tasks to the Clinical Pharmacist Team

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Session: P-3. Antimicrobial Stewardship: Outcomes Assessment (clinical and economic)

Background: Methodist Hospital and Cardinal Health determined that the TJC-mandated ASP program could be further improved. In February 2018, the program was restructured and ASP responsibilities were extended to all Clinical Pharmacists. Changing the ASP structure can improve the program efficiency via increased number of interventions/day, antibiotics' days of therapy (DOT)/1000 patient-days, total antibiotics' cost, and antibiotics' cost/patient day.

Methods: A retrospective review was conducted for before and after data. The primary endpoints included number of ASP interventions/day, antibiotics DOT, and antibiotics' cost/adjusted patient day. The secondary endpoints included effect on resistance of antibiotics for *Pseudomonas aeruginosa*, 48-hours antibiotic stop review, number of cultures reviewed, 7-days antibiotics review, and restricted antibiotics review.

Reports were obtained from Cardinal Health's Drug Cost Opportunity Analytics program and Electronic Medical Record (EMR). Intervention types analyzed included: de-escalation, 48-hours review, 7-days review, cultures review, and restricted antibiotics review. Efficiency between pre and post implementation was compared via adjusted interventions/day. Resistance pattern of *Pseudomonas aeruginosa*, was also trended.

Interventions were trended and mean/day (SD) was calculated using Wilcoxon Rank Sum Test.

Results: The results showed improved efficiency with ASP interventions/day of 9.87 versus 4.73 (P<0.0001). The DOT/1000 PD decreased from 1098 to 989 days. Antibiotics' costs/adjusted patient day reduced from \$16.62 to \$9.16.