

initial antibiotic administered. Antibiotics were discontinued early in 29/82 (35.4%) of patients. Thirty-one patients (33.7%) were discharged to a skilled nursing facility.

Conclusion. These results indicate that the majority of patients aged 65 and older who presented to the emergency department with altered mental status and no other UTI symptoms such as dysuria, urinary frequency, or urgency were treated with antibiotics. When antibiotics are initiated the majority of providers are adhering to organizational guidelines for antibiotic selection and duration. The results will be shared with Emergency Department and Internal Medicine leadership to foster practice change.

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1112. Improving Urine Culturing Practices in a Neurocritical Care Unit through a Multidisciplinary Algorithm-Based Approach

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Background. Asymptomatic bacteriuria is common in hospitalized patients with urinary catheters. Inappropriate urine culturing as part of reflexive response to fever contributes to unnecessary and excessive antibiotic use, selection for resistant organisms, increased risk for *Clostridium difficile* infections, and false elevation in catheter-associated urinary tract infection (CAUTI) rates. This project aimed to implement an evidence-based urine culture algorithm in a 33-bed neurocritical care unit, a unit with a historically elevated CAUTI rate due to a high prevalence of noninfectious fever.

Methods. A multidisciplinary quality improvement project was initiated in August 2018 by the Infection Prevention, Quality and Safety, Neurocritical Care, Trauma, and Neurosurgery teams of an urban academic health center. The group implemented a urine culture algorithm that was adapted from the Infectious Diseases Society of America (IDSA) guidelines that clearly highlighted appropriate indications for sending urine cultures. The team agreed to utilize a urinalysis with reflex to culture as the preferred method to evaluate for CAUTI. The algorithm was implemented in September 2018. Outcomes were compared for pre-implementation (March-August 2018) and post-implementation (September 2018-February 2019).

Results. The NHSN CAUTI rate decreased from 4.52/1,000 Foley days to 1.27/1,000 Foley days (P-value 0.037) as a result of the intervention. The number of urine cultures ordered decreased by 82% after implementation. No cases of bacteremia or mortality secondary to a urinary source were identified during the project. Total days of antibiotic therapy for the unit was similar between the pre- and post-implementation time periods (P = 0.631).

Conclusion. Implementation of a urine culture algorithm in a neurocritical care unit resulted in reduced CAUTI rate with less financial and operational waste in unnecessary orders and treatment, without resulting in adverse events to patients as a result of missed diagnosis.

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1113. Outpatient Antimicrobial Stewardship: Targets for Urinary Tract Infections

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Background. Urinary tract infections (UTIs) remain one of the most commonly diagnosed infectious diseases in the United States in both the inpatient and outpatient settings, accounting for 10.5 million outpatient visits in 2007. Of these visits, 5.4 million were seen in primary care offices. Outpatient antimicrobial stewardship programs are emerging and a focused approach to UTIs is needed to help guide new programs.

Methods. Data were collected by retrospective chart review of outpatient males at the VA Western New York Healthcare System using encounters from January 2005 to March 2018. Appropriate treatment was defined as antimicrobial prescribing in the setting of at least 2 signs/symptoms of UTI. Categorical data were analyzed using the chi-square test and continuous data using the Student t-test. Factors that differed significantly (P < 0.05) between the comparator groups were built into a multivariate logistic regression model to determine factors associated with inappropriate prescribing, which were presented as an Odds Ratio (OR) and 95% Confidence Interval (CI).

Results. A total of 607 outpatients met criteria for inclusion, of which 40% were treated inappropriately. Of the 60% treated appropriately (therapy was indicated and empiric drug choice was correct), 95% of patients received a correct dose and 57% received an appropriate duration. Several risk factors were identified for inappropriate prescribing. Female patients were more likely to be treated inappropriately, OR 4.7 (95% CI, 2.4-9.1). Patients with a higher Charlson Comorbidity Index of 5-10 were 2.9 times more likely to be treated inappropriately (95% CI, 1.8-5.0). Those patients who received a urine culture or imaging were more likely to be treated appropriately: OR 0.6 (95% CI, 0.4-0.9) and 0.5 (95% CI, 0.3-0.7), respectively.

Conclusion. Outpatient antibiotic prescribing for UTIs is suboptimal. Outpatient stewardship programs may wish to educate providers on symptoms of UTI. Interestingly, those with signs and symptoms consistent with UTI were more likely to have a urine culture and/or imaging completed suggesting that providers were aware of a true diagnosis of a UTI. Stewardship programs should pay special attention to patients with numerous comorbidities as they are often inappropriately treated.

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1114. Oral β -lactams for the Treatment of *Escherichia coli* Bacteremia Secondary to Complicated Urinary Tract Infections Including Pyelonephritis

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Background. Complicated urinary tract infections (cUTI) including pyelonephritis may result in bacteremia, increasing the rate of morbidity and mortality. The Infectious Diseases Society of America recommends a fluoroquinolone as empiric therapy or trimethoprim/sulfamethoxazole as definitive therapy for acute pyelonephritis (AP). Oral β -lactams (BL) are considered sub-optimal based on historical efficacy data with aminopenicillins and variable bioavailability. Increasing resistance and toxicity with preferred agents, justifies further evaluation of oral BL for *E. coli* bacteremia secondary to urinary source.

Methods. This was a single-center, retrospective cohort study of patients with *E. coli* bacteremia secondary to AP or cUTI who received oral step-down therapy with a BL or non-BL. The primary outcome was the rate of clinical success defined by microbiological cure, clinical cure, and infection-related readmission. Secondary outcomes were time to oral step-down, total days of therapy, length of hospital stay, incidence of therapy escalation, 30-day readmissions, and antibiotic-associated adverse events.

Results. A total of 46 patients were included, with 23 patients in each group. The difference in clinical success between the BL and non-BL groups was not statistically significant (91.3% vs. 100%, P = 0.489). The most frequent oral step-down agents prescribed were cephalexin and ciprofloxacin. The median time to oral step-down was significantly lower in the non-BL group (4.39 vs. 3.41 days, P = 0.038), and the median duration of therapy in each group was 15 days. No patients required therapy escalation after oral step-down or had infection-related readmission within 30 days of discharge.

Conclusion. The observed clinical success rate of 91.3% remains consistent with previous studies evaluating oral BL as step-down therapy for Enterobacteriaceae bloodstream infections. The results of this study support the safety and efficacy of oral BL as step-down therapy for *E. coli* bacteremia due to cUTI, although larger studies may be beneficial.

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1115. Reducing Broad-Spectrum Antibiotics for Uncomplicated Urinary Tract Infections: A Multimodal Stewardship Intervention

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Background. Urinary tract infections (UTIs) are the second most common reason for antibiotics in hospitalized patients, with most receiving broad-spectrum antibiotics (BSA) regardless of infection severity. The antimicrobial stewardship program (ASP) conducted a multimodal stewardship intervention targeting reduction in one BSA, ceftriaxone, and promoted narrow-spectrum antibiotics (NSA) such as cefazolin and cephalexin for uncomplicated UTIs.

Methods. Phase 1: In February 2018, the ASP created a pocket card (Figure 1) containing (1) a urinary antibiogram outlining the most common urine pathogens and their local susceptibility to NSA and (2) NSA guidelines for UTIs with 0-1 systemic inflammatory response syndrome (SIRS) criteria. ASP performed a daily prospective audit with feedback on all new orders of ceftriaxone and promoted prescription of NSA. Phase 2: In August 2018, a Best Practice Alert (BPA) in the electronic medical record (EMR) was designed to interrupt providers ordering ceftriaxone with the indication of a UTI, and prompted NSA prescription instead. Quarterly didactic sessions on UTI antibiotic use and BPA functionality were done. We compared antibiotics usage rates across the 3 study phases (pre-intervention, phase I and phase II) by computing rate ratios (RRs) using Poisson regression.

Results. Compared with pre-intervention, phase 1 resulted in a significant decrease in ceftriaxone DOT (RR: 1.06, CI: 1.03-1.09, P < 0.001) and ceftriaxone orders for UTI (RR: 1.14, P < 0.001) and an increase in cefazolin DOT (RR: 0.89, P = 0.029) and orders for UTI (RR: 0.12, P < 0.001). It also resulted in a significant increase in cephalexin DOT (RR: 0.92, P = 0.002) and orders for UTI (RR: 0.58, P < 0.001). In phase 2, an additional significant reduction in ceftriaxone DOT (RR: 1.04, CI: 1.01-1.08, P = 0.018) and orders for UTI (RR: 1.62, P < 0.001) and an increase in cefazolin