Title: Impact of a pharmacist-managed antimicrobial stewardship program for patients discharged from the emergency department

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Background and Purpose: Antimicrobial resistance is a growing public health issue, necessitating antimicrobial stewardship (AMS) efforts in all practice settings. The emergency department (ED) has been identified as a fast-paced setting that has a high turnover of patients, which results in rapid decision-making and hinders follow-up for patients discharged on antibiotic regimens without microbiology lab results. Studies have identified the ED as a transition of care that can be improved with AMS efforts. Additionally, these studies have shown that pharmacists can improve prescribing consistency amongst prescribers by using evidence-based recommendations to create empiric treatment regimens. Pharmacists can also provide antibiotic algorithms that can be used to reduce adverse drug events. The purpose of this study is to evaluate the effects of a pharmacist-managed AMS program for patients discharged from the ED.

Objective: The goal of this study is to optimize antimicrobial selection, prevent the occurrence of antibiotic-associated adverse effects, including rates of Clostridium difficile infection, and reduce rates of readmission.

Methods: This study is a single-center, prospective analysis conducted on adult patients presenting to the ED of a 238-bed community hospital and discharged with an antimicrobial prescription. The Institutional Review Board has approved this study. The control group consisted of patients presenting to the ED from July 1, 2016 to August 31, 2016. The treatment group included patients presenting to the ED from January 5, 2017 to March 5, 2017. The 90-day washout period between control and treatment groups was to prevent cross-over between the two groups. A pharmacist-developed empiric treatment algorithm for infections commonly diagnosed in the ED was created as the intervention for this study. Each ED physician was provided the algorithm and the electronic medical record was updated to assist providers in using the algorithm. The primary investigator was also available during designated times to aid the ED physicians.

Data collection included patient-specific information such as age, gender, medication allergies, comorbidities, discharge diagnosis, creatinine clearance, clinical presentation and home medications. Outcome-specific measures were also recorded and included algorithm usage, Clostridium difficile infections within 60 days of initial antimicrobial treatment, frequency of prescribed antibiotics differing from the treatment algorithm, rate at which microbiology results required a change in therapy, and frequency of repeat presentation to the ED, hospital, primary care physician or urgent care facility for all-cause admission. Statistical analysis will be completed by an institutional statistician.

Results: Results are pending completion of study.

Conclusions: Conclusions are pending completion of study.