Evaluation of a Pharmacist-Led Culture Review Service

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Practice site: Cape Fear Valley Health

Purpose/Background: Pharmacist involvement in antibiotic stewardship programs (ASP) in an inpatient setting is well-established – however many ASP initiatives do not include emergency departments in their review of antibiotic therapy. By some estimates, 67.5% of patients discharged from the emergency department are discharged with an active prescription for antibiotics, oftentimes before final cultures and sensitivities result, making pharmacist involvement in the review of antibiotics crucial. The purpose of this project is to evaluate the impact a pharmacist-led culture review service had on patients discharged from the emergency department. The goal is to assess physician and pharmacist adherence to current clinical practice guidelines, assess rates of physician acceptance of pharmacist recommendations, reduce physician workload, decrease costs associated with untreated infections, and decrease 30-day readmission rates.

Objectives:
Primary objectives: number of interventions and types of interventions
Secondary objectives: validation of guideline recommendations; 30-day readmission rates; avoidance of drug-drug interactions, adverse drug reactions, and allergies; time and financial benefits

Methods: This was a single-center quality improvement study with a data collection period of November 2018 – February 2019. Treatment recommendations were developed for the most common infections seen in the ED utilizing guidelines and the Cape Fear Valley’s antibiogram. Utilizing TheraDoc®, a clinical reporting system, alerts on positive cultures from the previous 7 days were generated into a report. Pharmacists then reviewed the list daily for newly reported culture results as well as finalized susceptibility reports. For any cultures requiring intervention, the pharmacist would review the patients’ health record and bring their recommendation for treatment to the physician in charge (PIC). The pharmacist would call the patient with any new results or prescriptions. Data was collected on an Excel sheet and descriptive statistics were utilized to determine the impact and acceptance rates of interventions made by pharmacists.

Results: A total of 2,064 cultures were reviewed. 1374 of those agreed with therapy recommendations, 405 contradicted therapy recommendations, 226 resulted in an organism without coverage, and 59 resulted with an organism resistant to current treatment. The most common culture types were urine (43%), vaginal (24%), and throat (15%). 85% of pharmacy’s recommendations were accepted, 8% were accepted with modifications, meaning the dose or duration was altered, and 7% were rejected, meaning the provider changed drug choice or chose to treat when pharmacy recommended to not. An estimated $582,350 was saved from these interventions.

Conclusion: This service has a clinical, financial, and time-benefit in an ED setting. It is feasible to replicate at other institutions without the addition of another employee and may be implemented into current workflow.