Implementation of a Collaborative Practice Agreement with the Emergency Department and Urgent Care to Allow for Pharmacist-Managed Culture Review and Antimicrobial Optimization

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Background

Upon discharge from the emergency department (ED) and urgent care (UC), patients often receive antibiotic prescriptions for an acute infection. Empirically prescribed antibiotics target the most probable pathogens because culture data is rarely available at the time of discharge. Once culture and molecular diagnostic results become available, antibiotic regimens may require optimization to target the specific pathogen identified. At St. Peter's Health (SPH), there is currently an outpatient culture follow up program to review cultures for patients discharged from ER and UC. The pharmacist has a significant role in the current process and collaborates with the ED and UC providers on shift to manage any necessary antibiotic modifications. While the ED pharmacist works under a Pharmacy and Therapeutics (P&T) Committee approved protocol to review all positive culture results, antibiotic modifications require final approval by the ED or UC provider on shift. Ongoing opportunities to increase stewardship efforts at SPH include outpatient stewardship and optimization of ED and UC stewardship efforts. Clinical pharmacists possess expertise in interpreting culture and sensitivity results, optimizing antimicrobial use, determining appropriate medication dosing, identifying allergies, selecting the proper route of administration, managing therapy duration, and monitoring drug interactions. ED pharmacists' knowledge and experience enable them to review culture results effectively and make necessary therapy adjustments through a collaborative practice agreement (CPA). Based on the published superiority of a pharmacist-managed culture review combination with known success of the SPH inpatient and ED antimicrobial stewardship initiatives, implementation and integration of this program within SPH has the potential to lead to improved patient outcomes and stewardship efforts. Recommended durations of antibiotic therapy for common infections as previously defined by the SPH Pharmacy Expected Practice Document will be used as a framework for shortening antibiotic durations.

Objectives

Primary Objective: Evaluate the impact ED pharmacists can have on discontinuing or shortening antimicrobial courses for patients who discharged from UC or ED, as defined as decreased days of prescribed antibiotic therapy

Secondary Objectives:

- Determine the impact pharmacists can have on identifying bug-drug mismatch by managing the ED and UC culture queue
- Determine the impact pharmacists can have on identifying potential adverse drug events by managing the ED and UC culture queue
- Analysis of soft cost savings on pharmacists managing the ED and UC culture queue

Methods

- Phase 1: Preliminary Data Collection (Sept – Dec)
- Phase 2: Project Development (Oct – Dec)
- Phase 3: Project Implementation (January)
- Phase 4: Final Data Analysis (Feb – Apr)

Implementation Process

Phase 1: Preliminary Data Collection

Retrospective data was collected through reports from the electronic health record (EHR), and will include all patients who received a discharge prescription for an antibiotic, antiviral, or antifungal agent through the SPH ED and UC. These patients will be reviewed via chart review for potential antibiotic optimization opportunities.

Phase 2: Project Development

- Conduct background research
- Identify stakeholders
- Draft project proposal
- Gain access for data collection
- Develop CPA and gain P&T approval
- Develop pharmacist workflow
- Develop hospital protocol
- Gain approval from stakeholders
- Educate pharmacists and providers on scope of practice

Phase 3: Project Implementation

Identify Patients

Patients with cultures drawn during their ER or UC visit (whether resulted as positive or negative) who discharged will have results that flow into the ED Culture Results Queue.

Establish Workflow

Pharmacists review ER Culture Results Queue daily. Patients will be reviewed for appropriate antibiotic management and any need for optimization. Patients requiring optimization will be contacted and pharmacist will modify antibiotic therapy as indicated.

Documentation

Pharmacist will document on all patients in the ER Culture Results Queue. If modifications to therapy are made, further documentation of change will also be performed in the EHR.

Provider Education and Practice Improvement

Results of this study will be compared to retrospective data and brought to the ER and UC providers for review and discussion. Education on prescribing needs will be provided.

Phase 4: Final Data Analysis

The following areas will be analyzed through a prospective review:

- Pharmacist clinical interventions
- Days of prescribed antibiotic therapy
- Bug-drug mismatch
- Potential adverse drug events
- Cost analysis

Daily Workflow Outline

Current Process

The pharmacist reviews finalized positive cultures from the ED and UC visits each day upon starting their shift.

The pharmacist evaluates multiple facets of each patient chart to evaluate the effectiveness of prescribed therapy.

If therapy is adequate, the pharmacist documents the result and management in the EHR.

If therapy requires modification, the pharmacist contacts the patient to assess for symptom improvement or worsening and reviews the case and therapeutic options with the ED or UC provider on shift. The pharmacist explains the results to the patient and the changes that will be made.

The pharmacist prescribes the modified treatment as ordered from on shift UC and ER provider, and documents intervention in the EHR. The pharmacist may request guidance from the provider for anything they feel is outside of a pharmacist's scope of practice.

Post-Implementation

The pharmacist reviews positive and negative cultures from the ED and UC the day prior.

The pharmacist evaluates multiple facets of each patient chart to evaluate the effectiveness of prescribed therapy.

If therapy is adequate, the pharmacist documents the result and management in the EHR.

If therapy requires modification, the pharmacist contacts the patient to assess for symptom improvement or worsening, reviews their results, and explains the changes that will be made.

The pharmacist independently modifies the prescribed therapy under the CPA and documents interventions in the EHR. The pharmacist may request guidance from the provider for anything they feel is outside of a pharmacist's scope of practice.

Potential Barriers

- Establishing a consistent workflow among multiple pharmacists
- Establishing a consistent documentation regarding adjustments made to discharge prescriptions
- Provider pushback
- Increased volume and workload for ED pharmacists

Author Disclosures

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References