APhA Foundation 2021 Incentive Grant Final Report
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Title
Evaluation of a Revised Community Pharmacist-led Transitions of Care Service at a Community Hospital

Introduction (393)
Medication discrepancies are common during transitions of care with 60% of all medication errors occurring during this time.[1] These preventable errors lead to adverse drug events, hospital readmissions, increased healthcare costs, and poor patient outcomes.[2-4] One important factor leading to medication errors, omissions, and non-adherence is lack of communication and break-down of information that often occurs between transitions.[5] A review of current literature shows that there is a beneficial role for pharmacists to address many of these common issues during transitions of care.[6] Commonly utilized interventions include medication reconciliation, follow-up phone calls, face-to-face encounters, transmission of discharge information, and medication therapy management (MTM). However, no single intervention has shown to be most effective in improving continuity of care and the optimal use of a community pharmacist during this time has yet to be fully defined.[7]

A previous effort at a TOC service was initiated by MOP-Dubuque in 2013. This community pharmacist-led service proved to be successful by showing a significant decrease in readmission rates among high-risk patients compared to readmission rates of lower-risk patients. This was accomplished through face-to-face encounters prior to discharge, and follow-up telephone calls at 8 and 25 days post discharge.[8] However, due to lack of resources and time, the service was unsustainable. More recently, another MercyOne medical center in Mason City, Iowa piloted a 5 week transition of care service led by inpatient pharmacists. This successful pilot project was able to show an increase in Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores related to medication education and led to the creation of a full-time TOC pharmacist position. Their TOC service included medication reconciliation, medication education, faxing medication changes to the patient's primary pharmacy, and 24-72 hour follow-up telephone calls post discharge.[9]

With two programs within the MercyOne organization having shown some success, this pilot study aims to revise what was previously established at MOP-Dubuque with components of the service provided by MercyOne in Mason City along with components from current literature. The goal of this study is to improve patient understanding of medications, increase patient access to medications, and prevent adverse events related to medications upon care transitions. Evaluating new ways to engage community pharmacists in the transitions of care process has a significant potential to improve pharmaceutical care through decreasing medication problems and optimizing medication access and adherence.

Objectives (53)

The primary objective of this study was to evaluate the impact of a community-based pharmacist driven transitions of care program at a community hospital. This was accomplished by identifying obstacles to obtaining discharge medications, reporting the number and type of pharmacist identified drug therapy problems, and describing pharmacist interventions at three contact points.

Methods (836)

This study was a prospective, single group pilot evaluation study conducted with patients discharged from the cardiovascular unit (CVU) of a community hospital. Any patient 18 years of age or older being discharged from the CVU between September 1st, 2020 and January 31st, 2021 was included in this study. Priority was given to patients discharged with two or more medication changes. A medication change was defined as a new, discontinued, dose increased, or dose decreased medication. Patients discharged to a facility such as long-term care or hospice were excluded from the study.

Study Procedure:(see Figure 1)

Identification

The community pharmacist attended the CVU interdisciplinary team (IDT) meetings each morning on weekdays. Attending these IDT meetings allowed the community pharmacist to get daily updates on patients and helped identify potential discharges. Once a discharge list was created, the community pharmacist reviewed patients via the hospital's electronic health records and prioritized patients based on the number of medication changes and potential needs at discharge.

Discharge

In preparation for discharge, the community pharmacist aided in medication copay price inquiries and/or creating custom medication lists for patients. Price inquiries came from providers to help determine affordability of potential discharge medications. Common medications needing price inquiries included anticoagulants such as Eliquis or Xarelto, combination inhalers, and insulin. Custom medication lists were created for patients at the discretion of the community pharmacist. The medication list included all current medications and doses at time of discharge, indication of medications, common side effects, best method of administration, and an easy-to-visualize table showing the best time to take each medication. These medication lists were typically reserved for patients being discharged with 4 or more new medications, a new diagnosis of acute myocardial infarction or heart failure, or have low health literacy.

Once all preparation was complete, discharge medication education was provided by the community pharmacist. The community pharmacist educated on indication, administration, and common and serious side effects of each new medication. The community pharmacist also explained any dosing changes and medications to stop or hold if applicable. In addition to answering any questions and addressing concerns, the community pharmacist verified the patient's pharmacy where the discharge prescriptions would be sent or offered the hospital's "first-fill" program which brings filled medications to the patient's bedside before discharge . Before leaving the patient's room, the community pharmacist verified the patient's phone number for 3 day follow-up.

In an effort to increase communication at transitions of care, discharge medication lists were faxed to the patient's primary pharmacy. Discharge lists were only faxed if the patient fills outside of a MercyOne pharmacy.
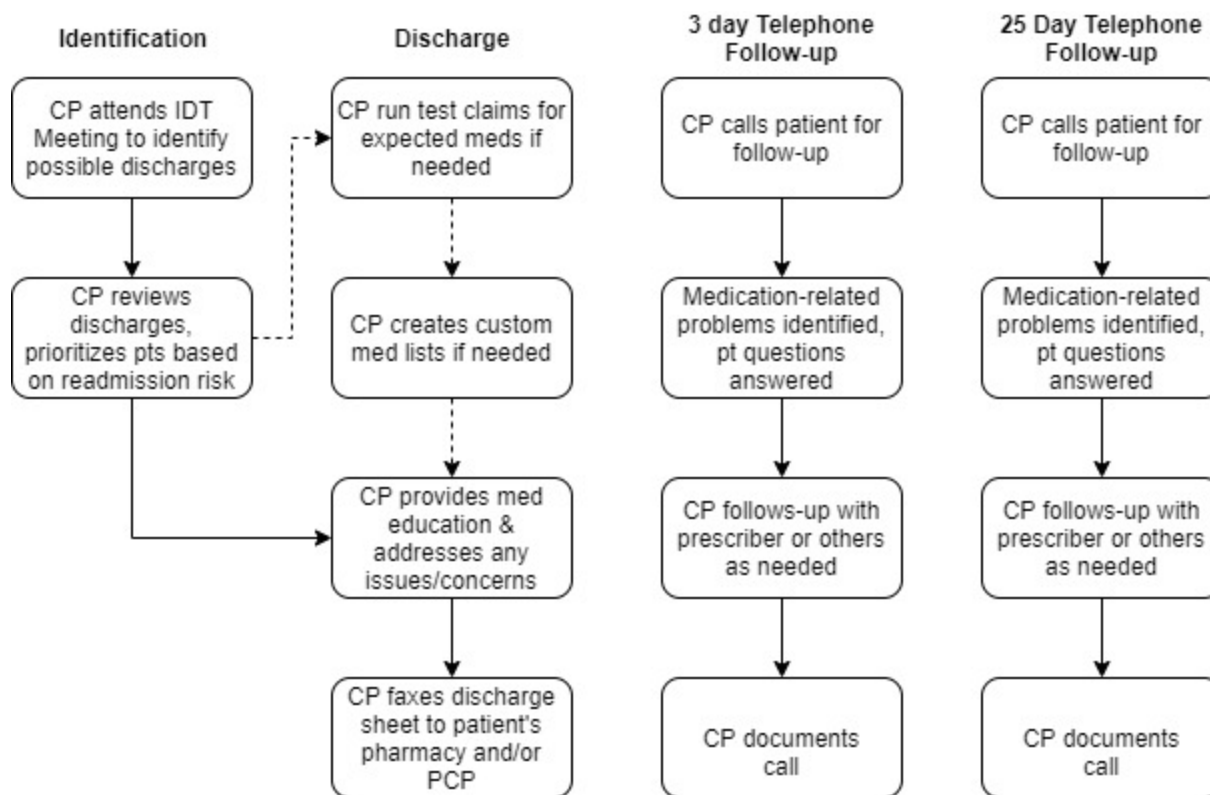
A summary of the intervention, discharge medication list, follow-up appointment dates, primary pharmacy, discharge date, 3 day follow up date, and 25 day follow up date were documented in a Microsoft Excel spreadsheet. Patient demographics recorded include patient name, date of birth, medical record number (FIN #), and telephone number.

3 day telephone follow-up
The goals of the 3 day telephone follow-up are ensuring the patient was able to pick up any new discharge medications, adhering to any medication changes, and tolerating the new medication regimen. The community pharmacist also ensured the patient was aware of follow-up provider appointments while addressing any questions or concerns. A summary of the conversation and any interventions made were recorded in a Microsoft Excel spreadsheet.

25 day telephone follow-up
In addition to the goals of the 3 day follow up, the 25 day follow up was used to determine if the patient obtained refills on continued medications and went to scheduled follow-up appointments. Additionally, any questions or concerns were addressed at this time. A summary of the conversation and any interventions made were recorded in a Microsoft Excel spreadsheet.

Identification

CP attends IDT Meeting to identify possible discharges

CP reviews discharges, prioritizes pts based on readmission risk

Discharge

CP run test claims for expected meds if needed

CP creates custom med lists if needed

CP provides med education & addresses any issues/concerns

CP faxes discharge sheet to patient's pharmacy and/or PCP

3 day Telephone Follow-up

CP calls patient for follow-up

Medication-related problems identified, pt questions answered

CP follows-up with prescriber or others as needed

CP documents call

25 Day Telephone Follow-up

CP calls patient for follow-up

Medication-related problems identified, pt questions answered

CP follows-up with prescriber or others as needed

CP documents call

IDT= Interdisciplinary Team, CP= Community Pharmacist, Pt= Patient

Figure 1. Community pharmacist transitions of care process

Data collection

The study received exemption approval from the University of Iowa's Human Research Protection Program Investigational Research Board (IRB). Data collection occurred at each contact point and was recorded in a password protected Microsoft Excel file. Data collected included age, gender, admitting diagnosis, medication changes at discharge, interventions performed, and time spent per encounter.

Interventions were categorized into five areas and included education, increased access, adherence, communication with pharmacy, and drug therapy problems. Education included interventions that provided education on medications, side effect management, disease states, or medication regimen clarification. Increased access included interventions that decreased cost as a barrier and included proactive drug pricing and the use of savings cards. Additionally, if the pharmacist helped facilitate refills for the patient then that intervention was categorized as increased access. Adherence included interventions where adherence aids were used such as custom medication schedules, calendars, pill planners, and pill splitters. Communication with the primary pharmacy was documented if the community pharmacist faxed or called the patient's primary pharmacy to report medication changes. Drug therapy problems were documented as an intervention if the community pharmacist contacted the prescriber and the intervention led to a dose change or additional or discontinued therapy.

Descriptive statistics were used to characterize and present the frequencies of demographic data, pharmacist interventions, and time spent per encounter.

Results (405)

During the study period, 116 unique patients received at least one intervention as part of the transition of care service. 61% of the patients were male and the average age of the patient was 71 (+/- 11.2 SD). Of the admitting diagnoses, myocardial infarction was the most common, accounting for 33.6%, followed by atrial fibrillation (21.6%), valve replacement (6.9%), stable coronary artery disease (4.3%), heart failure (4.3%), and venous thromboembolism (4.3%). 8.6% of patients had a diagnosis other than those previously listed while 11.2% had more than one of the previously listed primary diagnoses. At discharge, patients had an average of 3.8 medication changes (+/- 2.2).

At discharge, the most common intervention performed was education (n=116), followed by communication with the patient's pharmacy (n=46), increase in medication access (n=23), and adherence aids (n=20). No drug therapy problems that led to a medication change were identified by the community pharmacist during the discharge encounter.

During the follow-up telephone calls, the most common intervention was education for both 3 day and 25 day (n=36 and n=20 respectively). This included education on management of adverse events, drug interactions, disease states, and regimen clarification. Increased medication access was the 2nd most common across 3 day and 25 day follow-up (n=8 and n=9 respectively) and involved interventions related to improved medication cost and refills. Drug therapy problems that led to a therapeutic modification (dose change, drug change) occurred for 14 different patients across both follow-up encounters (n=6 and n=8). Communication with a patient's primary pharmacy was utilized 13 more times across the 3 day and 25 day follow-up (n=6 and n=7 respectively). Lastly, adherence tools were utilized the least after the discharge encounter (n=3 and n=0).

The average time per patient spent on intervention was 11.6 minutes at discharge, 7.4 minutes at 3 day follow-up and 8.6 minutes at 25 day follow-up. 100% of patients received at least 1 intervention at discharge. At the 3 day follow-up, 76 patients were captured for a possible intervention. 40 patients were lost to follow-up due to inability to contact or patients deciding an encounter was not needed. Of these remaining 76 patients, 44 patients had an additional intervention. At the 25 day follow-up, 70 patients were captured for possible intervention with 29 patients receiving an additional intervention.

Discussion (315)

This study showed that the most utilized intervention was education. Although this may seem insignificant compared to some other interventions, education gives patients the ability to manage their own health. Education can be simple such as what a medication is for, how to take it, possible side effects. However, much of the education provided during follow-up phone calls involved education on disease states, drug interactions, adverse event management, and regimen clarification. Education can help improve adherence, prevent self-discontinuation of medications and unnecessary visits to the emergency department.

An objective this study wanted to address was finding ways to increase patient access to medications. 32% of patients received an intervention that led to increased medication access. The pharmacist's role in this increase included proactive price inquiries, therapy changes due to high cost, and request of refills for medication with a single fill.

Another important component of this study was increasing communication to the patient's primary pharmacy. Frequently communication is lost in care transitions and pharmacies are included as a forgotten component of the care team. Keeping communication open with pharmacies can help prevent dispensing of wrong medication, wrong doses, and prevent medication errors. Primary pharmacies were contacted with every patient who had a discontinued medication or dose change at discharge which was 51% of patients in this study.

A significant number of patients discharged from the CVU did not have outstanding pharmacist needs at follow-up. This is due to the innate and established non-pharmacist-centered TOC services in the CVU. The outpatient cardiologists were the same providers caring for these patients on the inpatient side and the majority of patients had a cardiology follow-up within 7 days of discharge, often around the 3 to 5 day mark.

The average time per patient spent on each encounter was manageable but additional research is needed to determine the feasibility of expanding this service to other units throughout the hospital.

Limitations (108)

There were several limitations to this study including small sample size and single-center design. More robust data would be valuable to assessing the impact of this transition of care service. Additionally, The SARS-CoV-2 pandemic limited access to patients at discharge and thus limited this service to the CVU. Also, the availability of the community pharmacist was a limitation. The community pharmacist was not available to provide services in the evening hours as well on the weekends. Patients discharged during these times did not receive this service. Lastly, the study was limited by an uncontrolled design and many patients were lost to follow-up, especially at the 3 day follow-up.

Conclusion (104)

Evaluating new ways to engage community pharmacists in the transitions of care process has the potential to improve pharmaceutical care by decreasing medication problems and optimizing medication access and adherence. Incorporating a community pharmacist into the transitions of care model lacks sufficient data to help define the best utilization. However, this study provides a possible framework for incorporating a community pharmacist into the transitions of care team, especially in a health system setting. Further research is needed to determine if this workflow is feasible to incorporate on a larger scale. Future endpoints that could be studied include patient satisfaction, staff satisfaction, and readmission rates.

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