

The feasibility of an inter-professional transitions of care service in an older adult population



While attention in transitions of care has been focused on hospital readmissions, emergency department (ED) visits and revisits should not be overlooked. One in 12 patients treated and discharged from the ED revisits within three days, and one in five patients revisits within 30 days [1]. ED visits are associated with high rates of functional decline and subsequent healthcare costs; revisits can total 117.7% of all first-time ED visits [1–3].

In general, poor adherence to discharge medications and polypharmacy contribute to high ED revisit rates [4,5]. Patients struggle to understand discharge instructions and may rely on a caregiver for interpretation [6]. Older adults are at especially high risk of post-ED visit complications; those with low socioeconomic status may experience difficulties with transportation to obtain medications [7]. Older adults are more likely to be burdened with comorbidities that may impact adherence or increase the risk of side effects and medication interactions [5,8]. Transitions of care services to address medication-related concerns in older adults may help reduce ED revisit rates.

Two outpatient partners positioned to help overcome barriers to transitional care include community pharmacists and home health care providers. Pharmacists have demonstrated a positive impact on quality metrics after hospital admission and success with transitions of care services including delivery of medications, phone and home consultations, and inter-professional care [9–12]. Home health care providers play a vital role in helping patients understand discharge instructions after hospitalization [6]. We hypothesized that partnering community pharmacists and home health care nurses in a unique transitions of care service could reduce ED revisits in the older adult population.

The aim of this project was to determine feasibility of an inter-professional transitions of care service in the ED for an older adult population. Secondary aims were to assess influence of those services on ED revisit rates and hospital admissions, medication adherence, and identification and resolution of medication-related problems (MRPs).

This prospective, observational, feasibility study was approved by our Institutional Review Board.

The study was conducted in Columbus, Ohio. For the first five months, patients were recruited from an urban, community ED with 30 beds and an average census of 55,000. After continued low recruitment, recruitment expanded to the affiliated academic tertiary care ED with an average annual census of 82,000. Recruitment continued at the academic ED for two more months for a total study recruitment time of seven months. The study pharmacy, Uptown Pharmacy, an independent community pharmacy located approximately 12 miles from both EDs was selected due to their contemporary pharmacy practice model that combined traditional dispensing and compounding services with personalized patient care services such as immunizations, medication therapy management services (MTM), medication synchronization, and point-of-care testing. The study home health care agency, Black Stone Health, is a regional agency in Columbus. Black Stone Health was selected due to a pre-existing relationship with the ED for home health services.

Older adults in the ED were approached for enrollment Mondays through Wednesdays from 11 am to 7 pm. Initial recruitment was

limited to adults ≥ 65 years of age discharged home from the ED and expanded to adults ≥ 50 years of age after four months of low recruitment. Exclusion criteria included non-English-speaking patients, prisoners, patients discharged to a facility that provides medications, patients living >50 miles from the hospital, and patients discharged with disqualifying prescriptions including prescriptions for schedule II or intravenous medications. Enrollment goal was 100 patients. Participation incentives included medication delivery to the patient's home at no cost and a monthly raffle for a \$25 gift card.

Initially, participants could choose to participate in one of two transitions of care services: 1) pharmacy-only or 2) pharmacy and home health care (Fig. 1). For both services, the ED research recruiter obtained consent from eligible participants and faxed the intake form to the pharmacy. The intake form, which included demographics as well as abbreviated past medical history, was coupled with the discharge summary to provide the pharmacist with comprehensive visit documentation.

For patients receiving the pharmacy-only service, the study pharmacist completed medication reconciliation for the patient by calling the patient's regular community pharmacy and comparing that list to the discharge medication list. Next, the pharmacist performed a prospective drug utilization review (DUR). This involved critically reviewing the patient's discharge medication(s) and current regimen, and identifying and resolving MRPs, such as drug–drug interactions, prior to dispensing [13]. Next, the pharmacist called the patient to complete a comprehensive medication review (CMR). Similar to a DUR, a CMR is a review of the patient's medication therapy. However, a CMR also included taking an in-depth look at disease-state goals and motivational interviewing to meet those goals. CMRs involve consultation with the patient directly [14]. After the CMR, the pharmacist documented any MRPs identified and resolved those with the provider and/or patient. The final prescriptions were prepared and delivered via a third party courier within 24 h of ED discharge. The patients were contacted at days three and 10 to assess current disease state status, monitor medication use, and reiterate key education. At 30 days post-discharge, a final assessment of medication adherence and review of the number of ED revisits and hospital admissions since the previous ED visit were completed.

Patients receiving the pharmacy and home health care service received the same pharmacist interventions described in the pharmacy-only service. Additionally, these patients received a home health care nurse visit 24–48 h post-discharge. During the home visit, the nurse conducted medication reconciliation with home medications and provided additional medication education with additional visits up to five times throughout the 30 days.

A third service was added to address barriers to enrollment. This service provided either the pharmacy-only or pharmacy and home health care service without the medication delivery. Patients still received the pharmacist phone calls and home health care visits but could fill discharge prescriptions at their regular community pharmacy.

Four hundred forty patients were screened for enrollment. Of the 184 patients who were discharged, 29 patients (16%) were excluded for non-medication reasons, 58 patients (32%) were not prescribed a medication. Of those who were discharged with a prescription (97 patients), 53% ($n = 51$) were prescribed a non-deliverable schedule II medication (Fig. 2). In total, 43 patients (9%) were eligible for the study.

Of those eligible, three patients consented to participate. Of those who declined participation, reasons included comfort obtaining their own prescriptions or having delivery service via their current community pharmacy. Many patients expressed high satisfaction with their current community pharmacy and preferred to discuss their medications with their own pharmacist.

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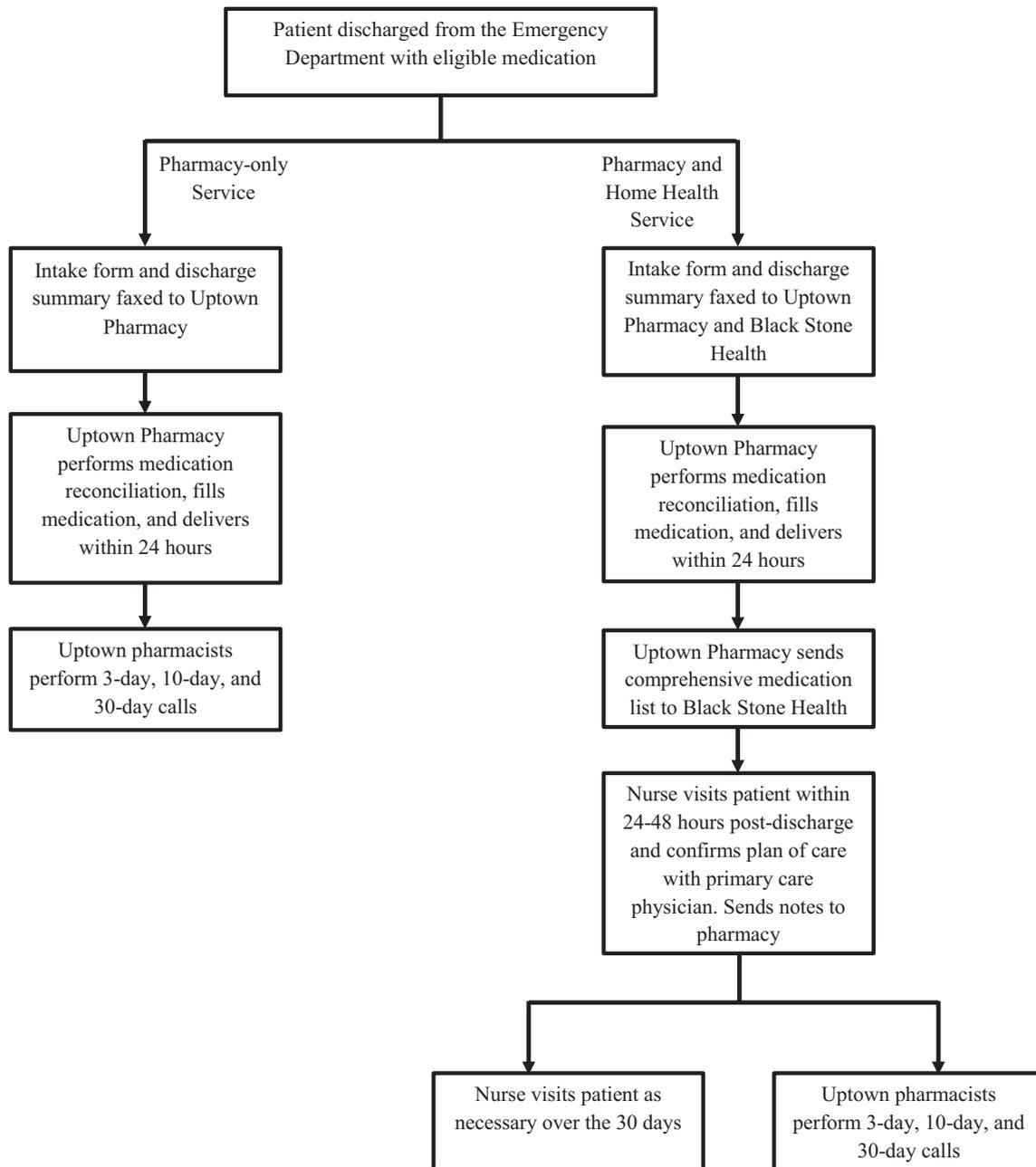


Fig. 1. Workflow for pharmacy-only and pharmacy plus home health care services. Third arm is either service without medication delivery.

All three patients enrolled in the pharmacy-only service. A total of 15 discharge medications were prescribed, including seven new medications. Medication reconciliation and prospective DUR were completed for all patients, as well as telephonic CMRs. Medications were delivered to all patients successfully. Three MRPs required interventions made by pharmacists. MRPs identified were indication, safety, and cost. Each intervention directly correlated to the patient's ability to obtain and take the appropriate medication.

Despite multiple attempts, only one patient was reached for follow up at days three and 10. The patient reported zero missed doses of the

discharge medication and zero ED revisits. No patients were reached for day 30 calls.

This study aimed to demonstrate feasibility and impact of an inter-professional transitions of care service in the ED for an older adult population. The service demonstrated a lack of feasibility and identified barriers and lessons learned.

The lack of feasibility may be a result of identified barriers, including restrictive patient eligibility criteria and lack of participant interest. Of 184 patients discharged, only 43 were eligible. This is consistent with literature reporting difficulty enrolling

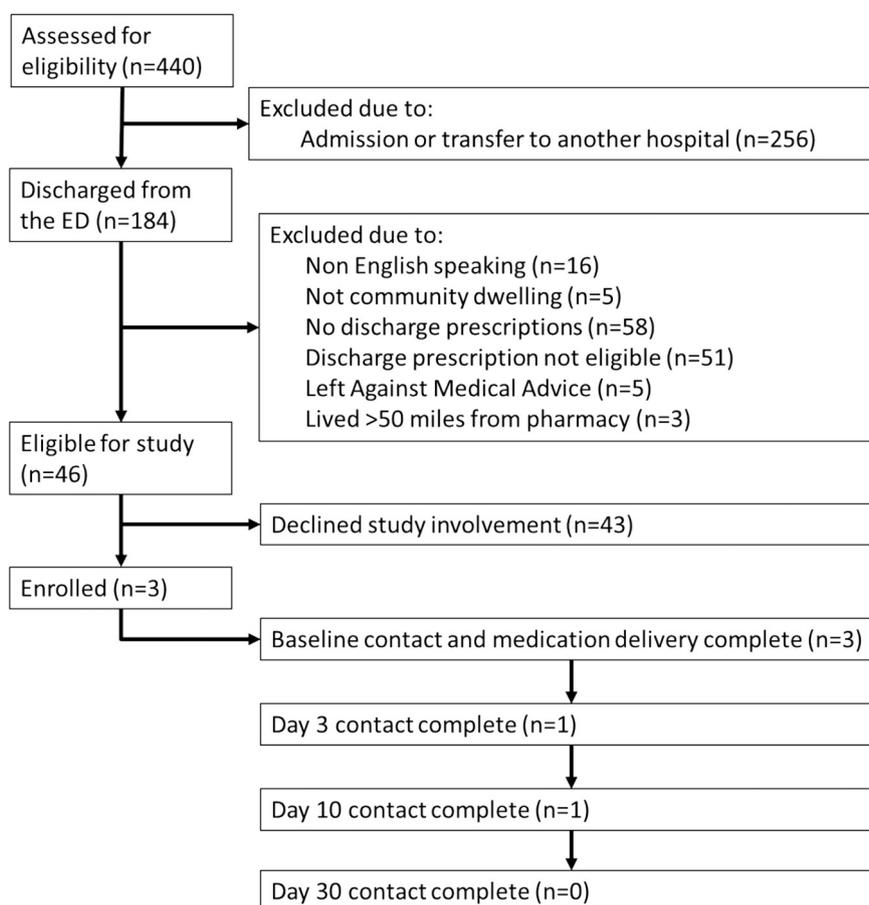


Fig. 2. Patient enrollment from eligibility assessment to completion of study.

patients in transitions of care programs due to restrictive study criteria [15]. Approximately one third ($n = 58$) of discharged patients were prescribed ineligible prescriptions, mainly schedule II prescriptions. The rate of schedule II prescriptions in our cohort was higher than expected with 53% of older adults discharged with a schedule II prescription. This trend is similar to other evaluations of opioid prescribing including a national ED database for all ages that showed 31% of prescriptions written were for schedule II agents [16]. Another study found a sixth of prescriptions written from the ED were for opioids [17]. It is known that outpatient opioid prescribing peaks in between age 45 and 64, so this finding was unanticipated in our cohort and has led to further investigation into prescribing practices at the study EDs [18].

While we cannot directly assess the pharmacist's role in these transitions of care service from the results, the pharmacist's impact is consistent with other findings [19–21]. Only three patients enrolled in the study; in all cases, multiple MRPs were identified and resolved by the pharmacist. In a similar study conducted by Patton, et al., patients were contacted by a local community pharmacy post-hospital discharge at 72 h, 7 days, and 30 days to address outcomes related to this study. Similarly, they identified and resolved a large number of MRPs relative to the number of enrollees [21]. These findings suggest a pharmacist can play a meaningful role in resolving

medication-related issues and the role of the community pharmacist should be further explored.

In the follow-up phase of this study, contact was lost with patients between days three and 10. Patton, et al. was successful in contacting patients for follow-ups and gathered data related to hospital readmissions, demonstrating the reach of the pharmacists' role [21]. Notably, the ED patients approached for this study anecdotally reported high satisfaction with their current community pharmacy, consistent with other studies assessing satisfaction with community pharmacists [22,23]. One notable difference is that Patton, et al. required patients to be regular patients of their study pharmacy in order to participate, so an established relationship existed prior to the intervention [21]. For EDs interested in exploring transitions of care through partnerships with community pharmacists, collaboration with multiple local pharmacies may be necessary.

We hypothesized that an inter-professional team would potentially solve many transitions of care issues. Due to our lack of findings, we cannot comment on this. However, many studies have aimed to measure the value of an inter-professional approach, including nursing, social work, and paramedics [24,25]. There is still much to be learned about how inter-professional teams come together in a meaningful way in transitions of care settings.

Valuable lessons have been learned from this study. First, patients seem to be loyal to their own community pharmacies. As a result, health care providers may consider redesigning transitions of care

services with a patient-centered approach, including partnerships with local community pharmacies. Furthermore, there is much to be learned about connecting outpatient providers for an inter-professional approach. While the home health care service was not selected for this study, parties from the home health agency, pharmacy, and ED worked together to establish 'best practices' in processes and workflow for the study which may prove helpful in future collaborations.

Several limitations to this study exist. Results may not be generalizable to patients in other EDs where access to transportation and pharmacies may differ. In this study, recruitment times were limited and patients self-selected into the program, limiting enrollment and potentially biasing likelihood to engage. Additionally the low numbers of enrolled subjects limit any conclusions about the efficacy of this type of program.

In conclusion, this project aimed to demonstrate the feasibility and impact of an inter-professional, transitions of care service in the ED for older adult population. A lack of feasibility, mostly due to patient-specific factors was determined. Patients were interested in pharmacy-only services; they were not interested in receiving home health care services. For the three patients enrolled, MRPs were identified requiring the community pharmacist to intervene and resolve the problems. These findings suggest the possibility of greater impact with wider patient engagement. Future studies should focus on addressing the patient-specific factors prohibiting engagement and identifying the role of the pharmacist and home health care on the transitions of care health care team.

This work was supported by the Community Pharmacy Foundation [grant number 169]. CPF provided insight to study design, guidance and feedback on study implementation, perspectives on what they would like to see published, and approved journal selection.

The authors have no conflicts of interest to disclose.

We certify that this work is novel clinical research that reports on an area of clinical care that has had little investigation: how older adults get their medications after an ED visit.

This information was presented as an abstract at the American Pharmacists Association, March 2016, Baltimore, MD.

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<https://doi.org/10.1016/j.ajem.2018.07.047>

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