The Power of Pharmacist-to-Pharmacist Handoffs During Transitions of Care

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The Power of Pharmacist-to-Pharmacist Handoffs During Transitions of Care

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The Problem

Hospital readmissions are often medication-related and potentially preventable. Pharmacists can play a vital role in improving medication outcomes during transitions of care (TOC). Although numerous TOC practice models have been described, it remains unclear what practices will promote optimal continuity of care.

What’s Known

Preventable hospital readmissions pose a significant cost to patients and healthcare systems. Readmissions are frequently attributed to medication-related problems and poor communication during TOC. One barrier is the lack of coordination between the hospital and community pharmacy. The Medicare Hospital Readmission Reduction Program (HRRP) reduces payments to hospitals with excess all cause 30-day readmission and incentivize hospitals as well as providers to improve care coordination by implementing clinical activities that reduce readmissions.

One thing is clear – care continuity is improved with effective communications between providers across health settings. While one study found that over 80% of community pharmacists reported receiving discharge medication lists, only 6% reported offering TOC services. Pharmacists acknowledge an increased need for communication during TOC. Across the healthcare system, pharmacists require access to pertinent medical records to facilitate meaningful interventions. Current literature supports potential cost avoidance and revenue generation with TOC services. Randomized trials have shown transitional care programs reduce readmission rates up to 50 percent, resulting in substantial savings for the Medicare
program. This evidence can be used to justify additional personnel and resources to support TOC services.

What’s New

A recently published study examined the impact of pharmacist-to-pharmacist handoffs using electronic communications to reduce hospital readmissions in high-risk patients. In this prospective pragmatic study, patients admitted for chronic obstructive pulmonary disease, pneumonia, heart failure, acute myocardial infarction, or diabetes being discharged to home were recruited. Patients who used a participating TOC community pharmacy were enrolled in the intervention group, while patients who met eligibility criteria but did not use a participating pharmacy were enrolled in the control group (see Table 1). Patients were discharged from four hospitals within an integrated health system (Geisinger Health) in Pennsylvania. TOC community pharmacy partnerships included 9 hospital-owned pharmacies, 18 regional supermarket chain pharmacies, 7 franchised drugstore pharmacies, and 2 independent pharmacies.

Control group patients received usual care, while intervention group patients received scheduled pharmacist consultations post-discharge (see Table 1). The interventions made by inpatient clinical pharmacists were part of their daily job responsibilities. With the exception of the secure messaging system used to communicate with community pharmacists to facilitate post-discharge care coordination, both the usual care and intervention group received the same clinical services while in hospital. Inpatient pharmacists were encouraged to communicate pertinent patient information, including relevant patient and medication-related issues, with community pharmacists. At the participating TOC pharmacies, community pharmacists would review patient information prior to a 20-minute post-discharge consultation that included assuring first fill for discharge medications, reinforcing discharge education, addressing adherence barriers, providing an updated medication list, answering patient questions, and assessing medication therapy and immunization status. Additional consultative sessions were provided by the community pharmacist as needed.

Table 1: Key Study Characteristics

<table>
<thead>
<tr>
<th>Study Design</th>
<th>Prospective experimental study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statistical Analysis</td>
<td>Propensity-score matching used for participants to reduce confounding at a 1:5 intervention-control ratio without replacement</td>
</tr>
<tr>
<td></td>
<td>Logistic models were used for primary endpoint</td>
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<tr>
<td></td>
<td>Cox proportional hazard analysis used to compare time to event</td>
</tr>
<tr>
<td>Usual Care Group</td>
<td>Physician-performed medication reconciliation</td>
</tr>
<tr>
<td></td>
<td>Nurse-delivered discharge medication review</td>
</tr>
<tr>
<td></td>
<td>Limited pharmacist-provided medication education if high risk medications were prescribed</td>
</tr>
</tbody>
</table>
- No communication between inpatient and community pharmacists at discharge
- Post-discharge call from a nurse case manager
- Follow-up appointment with the PCP within 7 days

**Intervention Group**

- Medication history and reconciliation that included contacting the patient’s preferred pharmacy and obtaining records
- Pharmacist completed encounter summaries via standardized templates before patient discharge, which included discharge medication list, medical history, admission diagnosis, problem list, pertinent labs, post-discharge appointments, and contact information for the inpatient pharmacist, physician and nurse who cared for the patient
- Patients received up to 5 in-person or telephonic medication management consultations (median 3.5) with their community pharmacists with the first visit occurring near the time of discharge, 3 to 7 days post-discharge, and up to 3 additional times at monthly intervals

**Primary Endpoint**

- 30-day readmission rate

**Secondary Endpoints**

- 60- and 90-day readmission rates
- Emergency department (ED) visits
- Mortality
- A composite of readmissions, ED visits or mortality at 30, 60 and 90 days after discharge
- A return-on-investment (ROI) and total cost of care estimated via paid claims within 30 days post-discharge for a subset of patients with health plan coverage

An economic analysis was performed using claims data using information from a subset of patients who were enrolled in the Geisinger Health Plan. Total cost of care was defined as “allowed” costs and included the total amount paid to providers by the patient and the insurance plan.

Participants in the intervention group (n=187) were matched with control group participants. The study population was primarily elderly (mean age > 65 in both groups) and white (97-99%). Patients most often had heart failure (71-79%) and diabetes (74-80%) at the time of admission. The mean length of stay was around 5 days, and the “average” patient had approximately 15 prescriptions at discharge. Intervention group patients with one or more
pharmacist visits post-discharge had lower 30-day readmission rates (9% vs. 15%; P < 0.02; NNT 17) and 30-day all-cause mortality (2% vs. 5%; P < 0.04; NNT 34). The composite 30-day endpoint of readmission, ED visit, or death (22% vs. 28%; P < 0.09) was numerically lower in the intervention group but the difference was not statistically significant. Between group differences in endpoints were no longer statistically significant at 60 and 90 days post-discharge. The investigators estimated the return on investment (ROI) to be $8.14 for every $1 expended in the subset of patients with available health plan information.

Our Critical Appraisal

The results of this study are similar to previous literature evaluating the impact of pharmacists’ services on transitional care. A 2017 meta-analysis of pharmacy-based TOC interventions estimated a 32% reduction in all-cause 30-day readmissions. This study demonstrated a 46% relative reduction in the readmission rate among those patients who had at least 1 pharmacist post-discharge follow-up visit. The TOC interventions in this study were part of the pharmacist’s normal workflow, whereas other studies added additional personnel and/or time for clinical services.

Pragmatic studies often result in increased heterogeneity of treatment effect due to their broad inclusion criteria, multiple practice settings, and practitioners with differing levels of expertise. Studies including multiple healthcare systems increases the generalizability of the results. This study was limited to hospitals within an integrated health system in one state. Furthermore, the participating community pharmacies were largely grocery-chain and hospital-owned outpatient pharmacies. Only a few “chain” drugstores and independent pharmacies participated in the TOC network. The study population was rather homogenous, comprised of elderly white patients with heart failure and diabetes residing in Pennsylvania. Additionally, while the admission diagnosis was collected, their overall clinical status was not reported (e.g. disease severity index). Clinically unstable patients and those with debilitating chronic conditions would obviously have poorer outcomes and may have been more appropriate candidates for hospice, assisted living, or skilled nursing facilities.

Beyond their entry-level degree and any residency training, pharmacists in this study were given limited additional training to perform the TOC interventions; a 60-minute session for inpatient pharmacists and 90-minute session for community pharmacists. Documentation forms and clinical references were available to facilitate care, but pharmacists had autonomy to complete follow-up and interventions based on their professional judgment. Patient handoffs occurred through a secure messaging system between hospital and community pharmacists. While a mechanism for secure messaging to community pharmacists may not be available in many healthcare institutions, the study demonstrated the importance and value of this kind of information exchange.

Each intervention patient was matched to a comparable control, but not randomized. Although baseline characteristics appear to be similar between the two groups, the quality of the study is dependent on matching methods. The study did not assess the participant pharmacists’ training, competency, or attitudes. There may have been important differences between groups that influenced study outcomes. Future studies should include information about the pharmacists
training, credentials, willingness, and motivation. Moreover, it is important to report the amount of time allocated to providing the TOC service and how it fits into the existing workflow model.

Significantly lower readmissions and all-cause mortality rates were found only at the 30-day post-discharge time point, not 60 or 90 days. Readmissions occurring shortly post-discharge may be more commonly due to preventable medication-related issues. Thus, closer patient follow-up immediately after hospital discharge may have the biggest impact on medication adherence and access. But we are left wondering — are 30-day readmission rates really the best outcome to assess the success of pharmacist-led clinical TOC services? Admittedly, readmission rates are influenced by many factors unrelated to medications.

Several studies have found that pharmacist-provided services have a positive ROI. The subset analysis performed in this study was limited to patients with one insurer. Thus, the results might not be generalizable to patients with other insurance plans, Medicare, or who are uninsured. None-the-less, the interventions provided by the pharmacists in this study were applied equally regardless of health plan coverage. Reductions in the total cost were primarily attributed to medical cost savings. Not surprisingly, there were no differences in prescription drug costs. The estimated ROI of 8.1 is significant but not unexpected as the intervention incurred minimal costs using existing pharmacy personnel.

The pragmatic study design mirrors real-world practice and the TOC model is feasible. These results should prompt more hospitals to partner with community pharmacies to coordinate post-discharge care. Effective handoffs between pharmacists across healthcare settings can help reduce costly hospital readmissions and ED visits, while increasing revenue for community pharmacies— a win-win.

The Bottom Line

Communication between pharmacists across settings of care, along with pharmacist-provided medication consultations, can improve clinical outcomes and reduce readmissions, all-cause mortality, and total care costs in the first 30-days following hospital discharge in high risk patients. Pharmacist communications through an electronic secure messaging system appears to be an effective method to improve patient handoffs. Alternative communication methods based on healthcare setting preferences and feasibility could include shared electronic health records, facsimile, or telehealth. Contractual relationships between hospitals and community pharmacies should be developed to streamline clinical services, improve communications and health information exchange, and promote collaborative practice.

The Key Points

- Communication across healthcare settings between inpatient and community pharmacists using secure electronic communications promotes effective patient handoffs and health information exchange.
- Coordination and standardization of TOC services, including medication management consultations performed by inpatient pharmacist prior to discharge and community
pharmacists post-discharge, resulted in reductions in 30-day readmission and all-cause mortality, as well as reductions in health care costs.

**FINAL NOTE:** This program will be available for recertification credit through the American Pharmacists Association (APhA) Ambulatory Care Review and Recertification Program. To learn more, visit [https://www.pharmacist.com/ambulatory-care-review-and-recertification-activities](https://www.pharmacist.com/ambulatory-care-review-and-recertification-activities).


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