



## COMPLETED GRANT SYNOPSIS

### Title: Enhanced Medication Reconciliation to Improve Transitions of Care in a Senior Living Facility

Authors: Leticia R. Moczygamba, PharmD, PhD, Rannon Ching, PharmD, Tyler Gums, PharmD  
University of Texas College of Pharmacy and Tarrytown Pharmacy | Austin, TX

#### Objectives

1. Determine the impact of enhanced medication reconciliation on inpatient admissions, emergency department (ED) visits, readmissions, and potential adverse drug events (ADEs).
2. Examine the feasibility of using transitional care management (TCM) codes as a billing mechanism for this service.
3. Examine the implementation of enhanced medication reconciliation on workflow and process measures.

#### Methods

##### Design

The study was conducted in Austin, TX and was a partnership between an independent pharmacy, Tarrytown Pharmacy, and a senior living facility. We also partnered with the TMF Quality Innovation Network-Quality Improvement Organization to examine Medicare claims for inpatient admissions and ED visits. Tarrytown Pharmacy is an established independent pharmacy that has been serving the Austin community since 1941. Tarrytown Pharmacy provides patient care services, including: immunizations, health screenings (i.e. blood pressure, blood glucose, A1C, and lipid panel testing), and Medicare Part D medication therapy management. Additionally, Tarrytown is equipped with a number of value-added services, including: home delivery, medication synchronization, and compounding. Tarrytown has partnered with the senior living facility for more than 35 years and currently fills prescriptions, including delivery and medication synchronization, for about 25% of their residents (125/493). This project was an opportunity to expand the partnership by focusing on patient outcomes during transitions of care while also exploring the feasibility of using Medicare TCM codes to support a business model for this service.

A pre-post design was employed in this study. Any resident who had a hospital visit or was discharged from the skilled nursing facility back to assisted living or home was eligible for the intervention.

Intervention: Enhanced medication reconciliation was defined as a high-touch technician-pharmacist intervention with a face-to-face pharmacist visit and 2 technician phone calls over a 21-day period. The first pharmacy technician phone call occurred within 24 – 48 hours after an eligible patient was discharged from the hospital. The technician conducted basic medication reconciliation, screened for drug-drug interactions (DDIs) and high-risk drugs (defined as anticoagulants, diabetic agents, or opioids), and assessed knowledge and confidence in taking medications as prescribed. Depending upon patient responses, a red flag may have occurred which initiated a pharmacist consult. At the end of the encounter, the technician scheduled a face-to-face appointment with the pharmacist within 7–14 days after hospital discharge. The technician created a summary report which served to handoff to the pharmacist for the face-to-face visit.

Pharmacist face-to-face visits occurred at the patient’s residence in the senior living facility. Comprehensive medication reconciliation was performed using a combination of medication bottles, patient self-report, and a summary of the technician report. Each medication was assessed for medication-related problems. For patients taking high-risk medications, the pharmacist assessed symptoms that could be a result of an ADE and educated patients about warning signs for ADEs. An up-to-date medication list was created and given to the patient at the end of the visit. An action plan was created to address any medication-related problems or medication reconciliation discrepancies identified during medication reconciliation.

The third and final touch point with the patient was at 21 days post-discharge. This was a brief check-in with the patient, with a technician phone call, to address any lingering issues from the pharmacist visit.

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Patients were asked if they have other questions about their medications and if they have a plan for obtaining medication refills. A pharmacist provided counseling, if needed, based upon patients' medication questions and concerns.

The pharmacy management system, PioneerRx, was used to create customized alerts for patient identification and high-risk medication alerts. PioneerRx was also used to create a patient medication list. The AzovaHealth platform was used for documentation of technician and pharmacist visits and for off-site documentation.

**Study endpoints**

- Medicare claims were used to examine inpatient admissions, ED visits, and 30, 60, and 90-day readmissions in pre and post-periods. A readmission was only counted in one period. If a readmission occurred 10 days after the index admission, it was counted as a 30-day readmission but not as a 60- or 90-day readmission. The pre-intervention period was examined using two time periods: 6 months immediately prior to the intervention baseline (24 – 48 hour phone call) and the 6-month period that was one year prior to the intervention. The post-intervention period was 6 months after the 24 – 48 hour technician phone call (baseline). ADE rates from claims data were not examined due to the denominator being less than 11 patients, which is required for reporting.
- The 24 – 48 hour technician phone call and pharmacist face-to-face encounter were assessed for meeting requirements to be bill Medicare TCM CPT codes 99495 or 99496.
- Process measures include number of prescription and OTC medications, high risk drugs, and potential number and type of medication discrepancies identified during pharmacist medication reconciliation, number and type of medication-related problems, and number and type of pharmacist interventions.
- Due to the small n, descriptive statistics were used for data analysis for all outcomes.

**Results**

- From April 2018–July 2019, 26/70 (37.1%) eligible patients enrolled. Reasons for declination included: nurse/caregiver already reviews medications (n = 22), not interested (n = 17), no perceived need (n = 10), power of attorney declined (n = 4). The mean age of participants was 89.2 ± 3.9 years, and all were white. All patients had the 24 – 48 hour technician call, 21 patients had 23 face-to-face pharmacist encounters, and 13 had the 21-day follow-up technician call. Duration of pharmacist visits ranged from 30 minutes to more than 60 minutes; 43.5% were 30 minutes or less, 21.7% were 31 – 45 minutes, 30.4% were 45 – 60 minutes, and 4.3% were more than 60 minutes.
- The mean number of prescription medications, vitamins, and over-the-counter medications per patient was 7.6, 2.5, and 2.3, respectively. Nine patients were taking anticoagulants and 4 patients were taking diabetes medications. There were a total of 212 potential DDIs. No severe interactions were observed, 22.6% were considered to be major, 58.0% moderate, and 19.3% minor.
- 22/26 patients were matched with the Medicare enrollment database. Of these, 20 were considered to have mature claims and were included in the analysis. In the pre-intervention phase one year prior to the intervention, there was 1 inpatient admission and 8 ED visits. In the pre-intervention phase 6 months prior to the intervention, there were 17 inpatient admissions, 24 ED visits, and 1 30-day readmission. In the 6-month post-intervention period, there were 10 inpatient admissions, 20 ED visits, 4 30-day readmissions, and 1 60-day readmission.
- Although pharmacists met TCM criteria for conducting the phone call and face-to-face visits for TCM visits, changes in the clinic leadership at the senior living facility did not support partnering with the pharmacists for TCM visits. Since one of the requirements for TCM billing is to coordinate with a recognized Medicare provider and share documentation of medication reconciliation, the goal of pharmacists being included in TCM visits and receiving a portion of the compensation for the visit was not achieved in this study.
- A total of 27 discrepancies were identified during medication reconciliation. The majority (85.2%) of discrepancies were related to an incorrect medication list due to a patient taking a medication that was not on their medication

list.

- A total of 22 medication-related problems were identified; 63.6% were ADEs or DDIs, 22.7% nonadherence issues, and 9.0% need for additional medication.
- Pharmacists performed 42 interventions: medication counseling (33.3%), recommended solution to address specific patient concern (33.3%), high-risk medication assessment and counseling (14.3%), DDI assessment and counseling (14.3%), physician phone call or fax (4.8%).
- Pharmacist feedback indicated that overall, the implementation process worked well. A key component was the notification of a hospitalization via fax from the nurse manager at the senior living facility. In this study, this was dependent upon one nurse manager who was highly engaged in the project. Future transitions of care interventions should think about strategies that could automate this process. Also, based upon the trends in hospital and ED visits, working with senior living facilities to identify patients at-risk for medication-related problems prior to a hospitalization may prevent hospital and ED visits.
- Using the existing pharmacy management system to identify participants and alert the technician and pharmacist about high-risk drugs, DDIs, and upcoming visits worked well to integrate the medication reconciliation process with existing workflow. An area for improvement was completion rates for the 21-day follow-up phone call. Targeted staff training and clear assignment of tasks to multiple staff would have addressed this issue. Although documentation of the study outcomes in an external platform worked for the study, it would be ideal to be able to document all outcomes in the existing pharmacy management system to avoid having to work with multiple platforms which can increase time spent on documentation and create fragmentation. The pharmacy technician role was key to efficiently delivering enhanced medication reconciliation.
- All of the pharmacist face-to-face visits were appreciated by patients that participated. Pharmacists observed that the majority of the patients had some degree of lack of knowledge in regards to their medication regimen. There were also gaps in knowledge about medication indication, side effects, directions, and interactions. Most of the patients did not have an up-to-date medication list and appreciated getting one and indicated it was helpful for future doctor appointments. The best method of obtaining an accurate medication list was in-person using a combination of the technician basic medication reconciliation summary and medication bottles from multiple pharmacies and supplements or vitamins that had not been previously mentioned. A social worker and home health nurse requested copies of the medication list and action plan.

### Conclusion

- Next steps for Tarrytown Pharmacy include continuing to use a step-wise approach that includes an initial brief technician call, pharmacist intervention, and follow-up technician phone call for transitions of care interventions. Since the time of the study, the existing pharmacy management software has expanded to include solutions for documenting clinical interventions, which will increase efficiency and alleviates the need for external platforms for documentation. Tarrytown Pharmacy is also examining study findings to determine methods for defining and identifying patients who are at-risk for a hospitalization due to a medication-related problem before a hospitalization or ED visit occurs. Finally, given the COVID19 pandemic, Tarrytown Pharmacy is also exploring ways to maximize methods of service that do not rely on face-to-face visits (e.g., telephone, video).
- The impact of enhanced medication reconciliation on hospital and ED visits and readmissions needs to continue to be explored. In this study, compared to the 6-month period immediately before the intervention, there were fewer inpatient and ED visits but readmissions increased somewhat. In the 6-month period that was one year before the intervention, there was only 1 inpatient admission and 8 ED visits, which indicates this group of older adults was doing relatively well in the year prior to the intervention. Given the increase in inpatient admissions and ED visits in the 6 months prior to the intervention and the older age of participants (mean age 89 years), it is possible that a health condition progressed which led to more utilization of hospital and ED services. This suggests that there may be opportunities for pharmacists to intervene earlier (not based upon a hospitalization or ED visit) to routinely perform medication reconciliation for older adults in the community setting.
- Enhanced medication reconciliation indicated that older adults are taking high-risk medications and have potential DDIs that would benefit from pharmacist review during care transitions.
- Pharmacists should explore opportunities to engage technicians in medication reconciliation and to work with

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community partners, such as senior living facilities, to advance their role in medication reconciliation.

- Community pharmacists should continue to actively engage potential Medicare Part D providers as partners to realize potential billing opportunities with TCM codes.