



# Outcomes of Pharmacist Involvement in Medication Reconciliation at Point of Discharge in a CPOE Environment

*Romic Eskandarian, Pharm.D, Director of Pharmacy Services  
Glendale Adventist Medical Center*

**B**ackground Several studies have been demonstrated the efficacy of utilizing a pharmacist during medication reconciliation. During the past several years, the pharmacist staff at Glendale Adventist Medical Center (GAMC) has functioned in an increasingly active role within the Emergency Department by obtaining complete and accurate patient medication histories. Collective data continues to demonstrate that when pharmacists are available to obtain information such as the correct medication name and accurate dosage, the number of medication errors drops, thereby decreasing the potential for patient injury.

If accurate data is not collected at admission, a medication error can follow the patient through discharge and beyond. A patient's medication list often evolves significantly between hospital admission, transfers among internal departments and discharge. During these processes, medications are typically adjusted, started and stopped. A reported 60% of medication errors occur during transitions in care.<sup>1-2</sup> The presence of a pharmacist and their active involvement during the patient discharge process can play a significant role in detecting discrepancies and preventing costly readmissions due to errors in medication history, documentation, and administration.<sup>3</sup> GAMC piloted a process that integrates a pharmacist with the discharge medication reconciliation process. In addition, a computerized provider order entry (CPOE) system was implemented, providing an additional layer of patient safety.

In a published study, data collected showed that in the absence of pharmacist intervention, 30% of medication discrepancies may have resulted in patient harm during hospitalization. The most common unintentional discrepancies were incomplete orders requiring clarification and omission of medications. It was determined that discrepancies occurred most often during patient transfers (when a patient is discharged or moved to another hospital, nursing home or even another floor within the same facility).<sup>4</sup>

## THE RECONCILIATION PROCESS

The GAMC pharmacist receives a call from the unit that is discharging a patient, which triggers the pharmacist to compare the patient's medications listed in the admission orders to the medications documented in: 1) the history and physical; 2) the admission profile; 3) the discharge medication instruction form; 4) the discharge prescriptions.

## THE DATA COLLECTION PROCESS

Discrepancies were noted when an inconsistency in the medication regimen was observed during the manual comparison process. Discrepancies were further divided into the following categories:

- **Items requiring pharmacist intervention**, in which pharmacists made dosage adjustments, identified duplicate therapy medications, consulted physicians regarding medication clarifications, and/or used clinical judgment to make recommendations to modify orders

<sup>1</sup> Wong E. Should the Pharmacy Profession Lead the Medication Reconciliation Process? *Can J Hosp Pharm.* 2011 Sep-Oct; 64(5): 372.

<sup>2</sup> Nickerson A, MacKinnon NJ, Roberts N, Saulnier L. Drug-therapy problems, inconsistencies and omissions identified during a medication reconciliation and seamless care service. *Healthc Q.* 2005;8 Spec No:65-72.

<sup>3</sup> Pharmacist versus physician-obtained medication histories. *Am J Health Syst Pharm.* 2008 May 1;65(9):857-60.

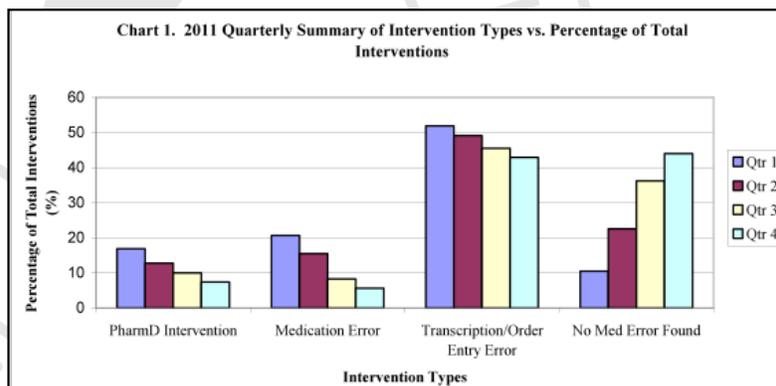
<sup>4</sup> Nester TM, Hale LS. Effectiveness of a pharmacist-acquired medication history in promoting patient safety. *Am J Health Syst Pharm.* 2002 Nov 15;59(22):2221-5.

- **Medication Errors**, where an incorrect medication was selected, a wrong dose or frequency entered, or a medication omission was detected on the discharge medication list
- **Transcription/Order Entry Errors**, in which specific details were omitted on the discharge medication list such as dose, route, frequency,

indication, parameters, next scheduled administration time, or specific duration of therapy or frequency as written by MD order or discharge prescription. Although the patient receives the correct discharge prescription, the list provided by the hospital may contain erroneous information.

## RESULTS

The program, which began in the first quarter of 2011, demonstrated within the first 2 months that pharmacists found medication discrepancies in 90% of the medication discharge lists reviewed. Of those discrepancies, 20% were within the Medication Error Category and over 50% of errors were due to both transcription and order entry errors. Eighteen percent of discrepancies required significant pharmacist intervention. By the completion of the program in the fourth quarter of 2011, errors discovered by pharmacists decreased by 35%. While transcription and order entry errors fell by 10%, discrepancies due to medication errors decreased by 16%. By far, the pharmacist interventions demonstrated the greatest impact in detecting medication order errors.



## DISCUSSION

The pharmacist's continued efforts to educate nurses and physicians demonstrated a decrease in the number of discrepancies found. As more complete and accurate discharge medication lists were being performed by nurses and physicians, the number of errors found by the pharmacist reduced dramatically.

Pharmacists are well equipped to obtain medication histories and perform reconciliation based on their education, experience, and medication knowledge. Using their knowledge of medications and disease states, pharmacists can recognize errors with look alike sound alike medications, or dosages listed where a pharmacist can instantly recognize as incorrect.

Although studies have demonstrated CPOE systems reduce medication errors, they may have limited impact on actual patient harm. Providers must recognize the strengths and weakness of CPOE systems in order to ensure patient safety.

CPOE has eased the process of electronic prescribing at point of discharge, greatly improving legibility of prescriptions, as well as electronically transmitting the orders to a pharmacy of the patient's choice.

## FUTURE PLANS

Pharmacists can help ensure that a patient is discharged home with the correct medications.<sup>4</sup> We have been successful in demonstrating positive results, and hopefully will be able to expand our services and counsel the patients on the medications. Pharmacists are also in an excellent position to educate patients on the importance of maintaining and carrying a current and up to date medication history list. Novel programs where a pharmacist visits the patient in their home have seen up to 30% reductions in readmission rates. By managing patient transitions of care from the hospital to home, not only were unnecessary health care utilization and cost reduced, but more importantly benefitted the patients, who remain healthy at home following a hospitalization.<sup>5</sup>

<sup>4</sup>Nester TM, Hale LS. Effectiveness of a pharmacist-acquired medication history in promoting patient safety. *Am J Health Syst Pharm.* 2002 Nov 15;59(22):2221-5.

<sup>5</sup>Novak CJ, Hastanan S, Moradi M, Terry DF. Reducing unnecessary hospital readmissions: the pharmacist's role in care transitions. *Consult Pharm.* 2012 Mar;27(3):174-9. doi: 10.4140/TCP.n.2012.174.