Impact of Pharmacist-facilitated Medication Reconciliation at Hospital Discharge on Medication Error Rates

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**BACKGROUND**

Medication errors and avoidable hospital admissions are a major problem plaguing modern healthcare. Current estimates indicate that nearly 60% of medication-related hospital admissions can be prevented. Often times these admissions arise as a result of incomplete or mismanaged medications during transitions of care. Some examples of medication errors found on discharge instructions are:

1. **Therapeutic Duplication:** Prescription for Lovastatin and simvastatin
2. **Conflicting Instructions:** TMP/SMX “1 tab by mouth daily”, and again listed “1 tab by mouth MWI”
3. **Inappropriate Dosing:** Salmeterol/fluticasone 250-50 “use twice a day as needed”

Medication errors are common. Preliminary data from a Geisinger System Therapeutics review of 100 patient charts revealed an average of 2.5 medication errors per hospital discharge. Usually, care in this setting consists of a physician-led medication reconciliation with no pharmacist input. One proposed solution to this issue is pharmacist-provision of medication reconciliation, a process whose goal is to minimize medication errors such as omissions, dosing inconsistencies, therapeutic duplications and drug interactions. As experts on the safe and efficacious use of medications, pharmacists are well positioned to lead the reconciliation process.

In a study by Schripfer et al., pharmacists providing medication reconciliation recognized discrepancies between pre-hospital and discharge medication regimens in 49% of patients and reduced preventable adverse drug events at 30 days compared to control (2% versus 11%, p = 0.01).

**PURPOSE**

Aim: To reduce medication reconciliation errors through a pharmacist-facilitated reconciliation process.

Hypothesis: We hypothesize that patients who received the pharmacist intervention will have fewer reconciliation errors than those who did not.

**STUDY OBJECTIVE:** To evaluate the impact of a pharmacist pre-discharge medication reconciliation initiative on the rate of medication reconciliation errors.

**METHODS**

**Setting:** Geisinger Medical Center, a 540 bed tertiary hospital located in Danville, PA.

**Intervention:**

- The pilot program was initiated on two hospitalist teams within Geisinger Medical Center starting March 9th, 2012.
- This initiative enabled physicians to consult pharmacists for medication reconciliation prior to discharge.
- Consulted pharmacists assessed patient’s medical charts, medications prior to admission, and medications needed from the hospital stay to create a comprehensive list of discharge medications.
- Physicians then review and sign off on the list of discharge medications.

**Design:** Single-center, observational, comparative study.

**Inclusion Criteria:** Patients between the ages of 18 and 90 years old discharged from a medical or surgical unit at Geisinger from March 9th, 2012 to August 31st, 2012.

**Matching:**

- Cases will be matched to non-interventional controls on a 1:1 basis using several key criteria, then randomized into a combined list for review. (See Table 1 for criteria)
- Patients ordered to receive pharmacist-provided discharge medication reconciliation.

**Controls:** Patients identified from hospitalized patients without pharmacist discharge consultation during the same timeframe.

**Chart Review:**

- Two teams each consisting of two pharmacists will evaluate the quantity and type of medication reconciliation errors present in the charts using a pre-defined list of errors adopted from Wong et al. (see Table 2 for error review)
- Each chart will be independently reviewed for these errors by two pharmacists, discrepancies between the two reviews will be adjudicated by a 3rd pharmacist from the other team.
- For each reconciliation error identified, the pharmacists will record the name of the medication, the type of error, and a short description of the error.
- All pharmacists involved in this process will undergo a standardized training regimen prior to chart review.
- A 3rd team of two pharmacists not involved in the error collection phase will then classify the likelihood of an adverse event as unlikely, possible, or probable.

**OUTCOMES**

**Primary Endpoint:** Difference in medication error rates between intervention and control groups

**Secondary Endpoints:** Differences in error rates stratified by:
- Medication error type
- Medication error severity
- Length of hospitalization
- Unique pharmacist
- Average time from consult to pharmacist-order completion
- 30 day re-hospitalization rate

This study has received IRB approval and data collection is currently underway.

**REFERENCES**


**DISCLOSURES**

The authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation:

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