Pharmacist Provided Discharge Medication Reconciliation Based on Risk Stratification

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Background and Objectives

Providing accurate and complete medication reconciliation across the continuum of patient care has been identified as an important step to improve patient safety.[1] The Joint Commission's National Patient Safety Goal on medication reconciliation requires a process to "maintain and communicate accurate patient medication information".[2]

Elements of this goal:

- Obtaining a current medication list
- Identifying and resolving discrepancies
- Providing written information and education on medications at discharge

In 2009, Sanford USD Medical Center implemented an interdisciplinary Medication Reconciliation Team consisting of pharmacists and nurses specialized in collecting accurate medication lists on admission in surgical and cardiac catheterization patients. Currently, no pharmacy resources have been dedicated to discharge medication reconciliation at Sanford. Due to limited resources, one strategy proposed to maximize impact on patient safety is to identify patients at "high-risk" for potential medication errors and dedicate pharmacists to this population.[1] The purpose of this study is to evaluate the implementation of a pharmacist dedicated to discharge medication reconciliation and discharge patient education in a pre-defined "high-risk" patient population.

Objectives:

- Determine the frequency and type of discrepancies
- Evaluate the impact of a dedicated admission Medication Reconciliation Team
- Assess the potential for harm related to discrepancies
- Quantify the time providing these services

Study Design

Methods

- A 4 week [M – F] pilot study completed in January 2012 at Sanford Medical Center
- Included inpatients from cardiology and surgical units meeting "High Risk" criteria

"High Risk" Patient Definition

At least two of the following risk factors:

- 65 years of age or older
- Discharge disposition to a skilled living facility
- 10 or more home medications (excluding vitamins/herbals)
- At least one high-alert medication prescribed at discharge

Discrepancies[2]: related to an inaccurate admission medication list or medications ordered at discharge

- Omissions
- Duplications
- Discontinued medications
- Missing/incorrect: dose, route, schedule, or quantity ordered
- Missing indication for "as needed" med

Pharmacist Provided Discharge Medication Reconciliation Process

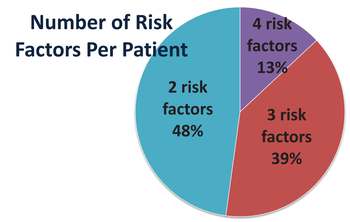
- Patient information and discharge orders reviewed
- Physician contacted to clarify and resolve discrepancies or for pharmacist's clinical recommendations for appropriate therapy or monitoring
- Education provided to patient and/or family on discharge medications

Results

39% of patients had discrepancies related to inaccurate Admission Medication Reconciliation

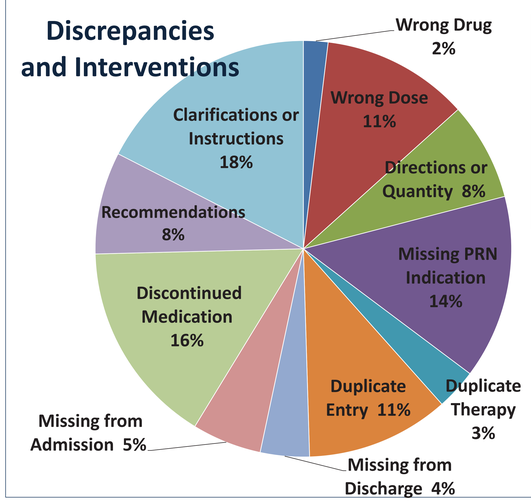
72% of patients had discrepancies related to Discharge Medication Reconciliation

Patient Risk Factors	Number of patients n=92
≥65 years old	80 (87%)
Skilled Living Facility Transfer	23 (25%)
≥10 Home Medications	61 (66%)
High Alert Medication	80 (87%)



307 Total Discrepancies and Interventions, an average 3.3 per patient (range 0-17, median 2.5)

204 New Orders Received, an average 2.2 per patient (range 0-16, median 2)



Patient Demographics	Mean (range) n=92
Age (years)	75 (37 – 94)
Length of Stay (days)	6 (2 – 27)
All Home Medications	14 (0 – 30)
Medications at Discharge	16 (4 – 32)
Time per Patient (min)	67 (20 – 180)

Impact of Dedicated Admission Medication Reconciliation Team on Discrepancies and New Orders

		Med Rec Team n=34 (per patient)	Non-Med Rec Team n=58 (per patient)	P-value*
Discrepancies Related To	Admission Med Rec	4 (0.12)	103 (1.8)	<0.0001
	Discharge Med Rec	28 (0.82)	116 (2)	<0.0001
New Orders Received Related To	Admission Mec Rec	2 (0.05)	51 (0.88)	0.0002
	Discharge Med Rec	36 (1.05)	115 (2)	0.001

*p<0.05 = statistically significant

Discussion

Discharge medication reconciliation by a pharmacist was completed for 16% of the 551 total patients discharged from two inpatient units in January 2012. Of the 92 patients, 79% had at least one medication discrepancy related to inaccurate admission medication reconciliation or related to discharge medication reconciliation. In addition, 75% of the patients had at least one discrepancy or intervention that resulted in a new order at discharge.

Furthermore, it appears that a dedicated specialist for admission medication reconciliation significantly reduced the number of discrepancies related to both admission and discharge medication reconciliation. Potential for harm related to medication discrepancies will be assessed in the future.

Targeting patients at "high risk" for medication errors may be one option to allocate resources for medication reconciliation; however, developing a feasible system to identify patients and provide these services would be important as the average time per patient was more than 60 minutes. In addition, we defined "high risk" patients based on four potential risk factors for medication errors; however, other risk factors may be identified such as length of stay.

Medication reconciliation continues to be a challenging process with the potential for medication errors to occur across the continuum of care. These results demonstrate that dedicated resources specialized in medication reconciliation on admission helps to prevent potential errors during hospitalization and at discharge. In addition, medication reconciliation by a pharmacist at discharge helped reduce preventable medication errors and improve patient care.

References

1. Greenwald JL, Halasyamani L, Greene J, et al. Making inpatient medication reconciliation patient centered, clinically relevant and implementable: A consensus statement on key principles and necessary first steps. Journal of Hospital Medicine. 2010 Oct; 5(8):477-485.
2. The Joint Commission. National Patient Safety Goal on Medication Reconciliation. (2011). Retrieved from http://www.jointcommission.org/hap_2011_npsgs/. Accessed 2011 Oct.