Improving the Medication Reconciliation Service at a Community Hospital

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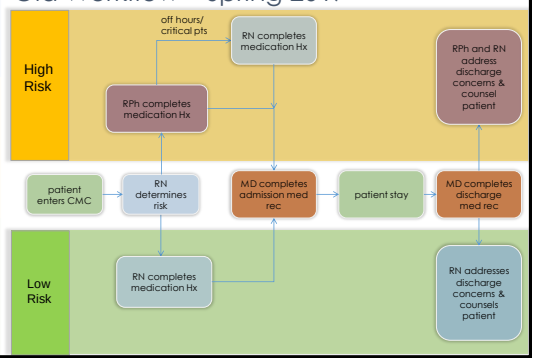
Learning Objectives

- Identify patients at high-risk of experiencing an adverse event during hospitalization due to errors on the home medication list.
- List several strategies for quickly training APPE students to become contributing actors in a hospital medication reconciliation service.

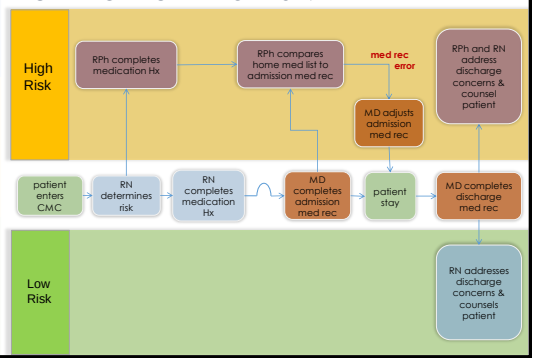
Background

- Accurate medication reconciliation is essential to patient care.[1,2]
- Previous studies have estimated that ~50% of patients are exposed to a potentially harmful error during medication reconciliation.[1,2]
- Spring 2017 – Significant reorganization of pharmacy medication reconciliation services at CMC.
  - No dedicated pharmacist in the Emergency Room
  - Duties shifted to decentralized pharmacist
  - Part-time med rec technician → Full-time

Old Workflow – Spring 2017



New Workflow—Fall 2017



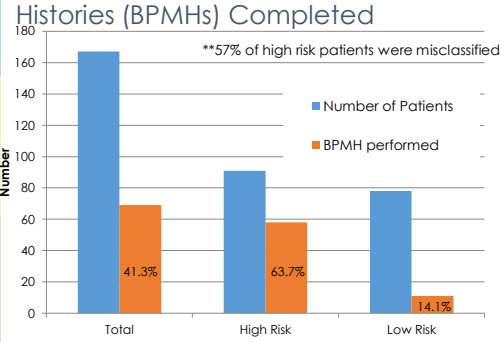
High Risk Criteria

- Patient/family/caregiver not able to provide list or bottles
- Anticoagulants
- Dual antiplatelet therapy
- Antipsychotics
- Antiarrhythmics
- Insulin
- Oral antidiabetics
- Medications for CHF diagnosis
- ≥ 10 Rx medications
- Readmission within 30 days
- 3 admissions in 1 year
- Older patient on opioids
- Evidence of nonadherence
- Med related admission

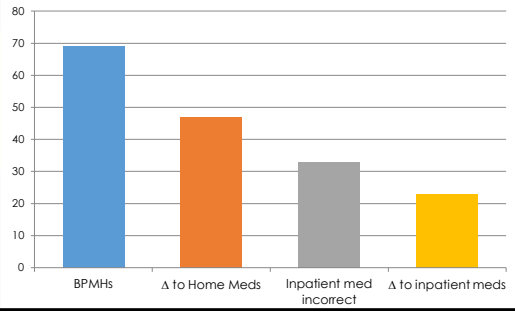
Phase 1 – Retrospective Study

- Patients admitted from Sept. 17 to Nov. 28, 2017 to one of the following units:
  - Medical/Surgical
  - Intensive Care Unit
  - Orthopedics
  - Pediatric
  - Surgery
  - Rehabilitation Unit
- Random sample of 167 patients out of 400 admitted

Phase 1 – Best Possible Medication Histories (BPMHs) Completed



Accuracy of initial home med list



Changes to RPh Med Rec Service

- Pharmacy evaluates risk.
- Notification tool alerts pharmacy of new admission.
- Pain pharmacist conducts BPMHs on all pain patients and collects med list prior to surgery admission.
- **Pharmacy students involved in med rec service.**

- Med rec technician reassigned to other duties.
- 8 hours/day reduction in decentralized RPh hours.

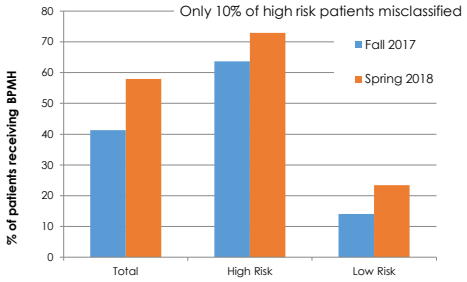
Integration of Pharmacy Students

- Develop best practices in taking BPMH
  - Identify and resolve discrepancies
  - General questions to elicit med list & adherence
  - Specific questions to probe oft-forgotten meds
  - Comparison to problem list
- Develop effective communication
  - Interview techniques
  - Clear and accurate documentation in EMR
  - Gain trust of RPh preceptor

Integration of Pharmacy Students

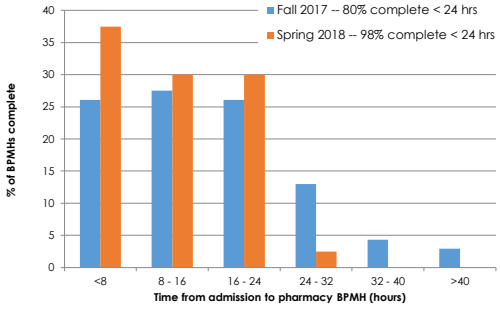
- Materials Developed
  - Introductory training guide
  - Practice cases
  - Training videos
  - Quick reference videos
  - Standardized med rec worksheet

Phase 2 – Evaluating Interventions



**Pharmacy Students were responsible for 8.5% of BPMHs in Jan – Mar 2018

Time Response



Limitations/Challenges

- Inaccuracy of documentation
- Potential subject bias
  - Improvements may not be sustained as focus changes to other practice areas.
- Impact on other Rx services not measured
  - "I've been doing med rec all morning, and I have no idea what is going on with my patients!"
- Students had inconsistent engagement with training materials prior to starting rotation.

Conclusions

- Pharmacists are the ideal practitioners to:
  - Classify patients at high- or low-risk of a med rec error
  - Conduct a BPMH
- Pharmacy students can make meaningful contributions to a hospital medication reconciliation service.
- Conducting a BPMH after admission exposes patients to a greater number of medication errors.

References

- 1. Marquis Investigators. MARQUIS Implementation Manual: A Guide for Medication Reconciliation Quality Improvement. October 2014. Available from http://www.hospitalmedicine.org/MARQUIS.
- Wesley J, Grgurich PE. Impact of Students Pharmacists on the Medication Reconciliation Process in High-Risk Hospitalized General Medicine Patients. Am J Pharm Ed 2014;78(2):1 – 5.

Student Training

To be completed prior to conducting first medication reconciliation:

- ☐ **Read the medication reconciliation guide & watch the video on conducting a patient interview.**
- ☐ **Complete the practice case.**
- ☐ **Fill out the medication history worksheet in Appendix II for the patient in the practice case**
- ☐ **Watch the attached videos on conducting and documenting a BPMH at CMC:**

Reviewing low-risk patients in Sentri 7 and opening a Med Rec Intervention	Video 1
Entering a note in Sentri 7 for an uncompleted BPMH	Video 2
Preparing for the BPMH interview	Video 3
Updating the Home Medication List in Cerner	Video 4
Completing the Ad Hoc Form in Cerner	Video 5
Writing the Hospital Progress Note	Video 6

Reference Videos

Quick Video Links

Documenting in Sentri 7	Reviewing low risk patients in Sentri-7
	Creating a med rec intervention
	Adding a note to an uncompleted med rec intervention
Completing the BPMH Excel Spreadsheet	Constructing the Problem List from Cerner
	Finding Allergies and Reactions in Cerner
	Locating PCP, Pharmacy, and Emergency Contact
	Importing DrFirst medications and home medications into the BPMH excel spreadsheet
Entering Home Medications in Cerner	Entering a PRN medication
	Entering a new scheduled medication
	Entering a medication that the patient is not taking as prescribed
	Modifying an existing medication
	Entering a miscellaneous medication (not in Cerner's database)
	Updating only compliance
Ad Hoc Form	Updating the Medication History Information Form
Final Documentation	Writing the hospital progress note

Patient: Patient, Test | Room: 007 | Reason For Visit: Chest Pain

Allergy	Reaction	Problem List	Meds?	Problem List	Meds?	Checklist
sulfa drugs	tachycardia	anxiety	☑	Dyslipidemia	☑	Update Med History ☐
codiran	bradycardia	back pain/neck pain	☑	HTN	☑	Update Ad Hoc Form ☐
		Depression	☑	hypothyroid	☑	Hospital Progress Note ☐
		Fibromyalgia	☑	RA	☑	Document in Sentri 7 ☐
		Migraine/Tension HA	☑	Insomnia	☐	

Taking	Not taking	Medication	Instruction for Use	Notes and Adherence	Last Dose
☑	☐	acetaminophen-oxyCODONE (Percocet 10/325 oral tablet)	1 tab(s) PO q6Hr PRN for pain, # 30 tab(s), Refill(s) 0	~~Takes 3 - 4 tabs a day for past month~~	2/25 2100
		acetaminophen-HYDROcodone (HYDROCODONE/ACETAMINOPHEN TABLET)	Qty:21; DS: 7; Date Filled: 11/08/2017		
		acetaminophen-HYDROcodone (HYDROCODONE/ACETAMINOPHEN TABLET)	Qty:90; DS: 15; Date Filled: 12/27/2017		
		acetaminophen-oxyCODONE (OXYCODONE/ACETAMINOPHEN TABLET)	Qty:120; DS: 30; Date Filled: 01/08/2018		
☑	☐	amitriptyline (amitriptyline 50 mg oral tablet)	50 mg = 1 tab(s), PO, qHS		2/25 2100
		amitriptyline (AMITRIPTYLINE HCL 25MG TABLET)	Qty:30; DS: 30; Date Filled: 08/28/2017		
		amitriptyline (AMITRIPTYLINE HCL 50MG TABLET)	Qty:90; DS: 30; Date Filled: 02/08/2018		
☐	☑	azithromycin (AZITHROMYCIN 250MG TABLET)	Qty:6; DS: 5; Date Filled: 11/13/2017		
☑	☐	benazepril-hydroCHLOROthiazide (benazepril-hydroCHLOROthiazide 20 mg-12.5 mg oral tablet)	1 tab(s), PO, qDay, # 30 tab(s), Refill(s) 0	~~Takes two tablets every morning~~	2/25 0900
		benazepril-hydroCHLOROthiazide (BENAZEPRIL HCL/HYDROCHLOROTHIAZIDE TABLET)	Qty:180; DS: 90; Date Filled: 02/24/2018		
☑	☐	calcium citrate (Citracal)	1 tablet PO qDay	~~takes every AM~~	2/25 0900
☑	☐	cholecalciferol (cholecalciferol 5000 intl units oral tablet)	tab(s), PO, qDay, Instructions: take 1 tablet by mouth daily, # 100 tab(s)	~~takes every AM~~	2/25 0900

Taking	Not taking	Medication	Instruction for Use	Notes and Adherence	Last Dose
☑	☐	SUMAtriptan (SUMAtriptan 6 mg/0.5 mL subcutaneous solution)	mL, Subcut, qDay, PRN as needed for migraine headache, Instructions: inject 0.5 milliliter by subcutaneous route once; may repeat in 1 hour if pain returns/increases in severity; (max2 doses/24 hours), # 2 EA	~~hasn't used since the middle of last month~~	1/15/2018
☑	☐	vilazodone (Viibryd 40 mg oral tablet)	80 mg, PO, qDay, Refill(s) 0	~~takes 1 tab in AM and 1 tab in PM~~	2/25 2100
		vilazodone (VIIBRYD 20MG TABLET)	Qty:90; DS: 90; Date Filled: 12/18/2017		
		vilazodone (VIIBRYD 40MG TABLET)	Qty:60; DS: 30; Date Filled: 02/24/2018		
☑	☐	zolpidem (ZOLPIDEM TARTRATE 10MG TABLET)	Qty:90; DS: 90; Date Filled: 12/18/2017	~~Takes 5 mg every night~~	2/25 2100
✓		Garcinia	1 capsule BID		2/25 2100
✓		Salon Pas patch	1 patch BID prn pain	~~Applies to lower back~~	2/25 2100
✓		warfarin	2.5 mg Mon/Thur and 5 mg Tue/Wed/Sat/Sun	~~Had a DVT in Sept 2018~~	2/25 2100

KEY: BLACK FONT = CERNER HOME MEDS GRAY FONT = DRFIRST MEDS

INDENTED = Duplicated Medication Names

Checklist

OTCs ☑ Creams ☑ Injectables ☐ Inhalers ☐ Bowel Meds ☐ Aspirin ☑

Probiotic ☑ Herbals ☐ Eye Drops ☐ Patches ☑ Acid Reflux ☐ Sleep ☑

Providers: Doctor, Test Pharmacies: CVS on Brooks Time Spent 45 min

Time Response of Med Rec Service