

A Novel Scoring Tool Within the Electronic Health Record to Identify High-Risk Patients in Need of Medication Reconciliation

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PROBLEM

- It is estimated by The Institute of Medicine that 400,000 preventable adverse drug events (ADEs) occur in hospitalized patients in the United States each year Pevnick JM et al. *BMJ Qual Saf* 2018;27:512-520
- Inaccurate medication histories are a leading cause of preventable ADEs Pevnick JM et al. *BMJ Qual Saf* 2018;27:512-520
- Previous studies have demonstrated that pharmacy student-led medication reconciliation programs can increase the number of medication histories completed, increase the accuracy of medication histories, and accurately identify and intervene on discrepancies Champion HM et al. *Pract* 2019;32(2):207-218
- UCM offers no standardized medication reconciliation process. This offers the opportunity for pharmacy students to collect high-risk patients' medication histories and update their prior to admission (PTA) lists.

GOAL

We aim to increase the number of pharmacist-directed medication reconciliations completed in order to reduce the number of preventable ADEs upon admission by:

- Developing a medication history scoring tool to identify and prioritize high-risk patients
- Utilizing the tool to provide trained pharmacy students the autonomy to complete medication histories

INNOVATION

FIVE POINTS

- No medications on PTA list
- Oral anticoagulants
- Anticonvulsants
- Insulin

Med Rec Scoring
5
3

ONE POINT

- ≥65 years + ≥ 7 meds on list
- Any age + ≥ 10 meds on list
- Presence of HIV, CHF, COPD, asthma, cystic fibrosis, sickle cell, or hemodialysis (summative)
- Presence of oral chemo, antiretrovirals, long-acting opioids, antipsychotics, antibiotics, maintenance inhalers (summative)
- Readmission or ED visit past 180 days

- ≥5 points classifies as high risk
- <5 points classifies as moderate risk

Pharmacy students identify adult patients admitted in CCD or Mitchell Hospitals at high risk and proactively perform these medication histories

STRATEGY

Pharmacy Students Undergo Training

Complete med history modules on Absorb	Receive pharmacist-led instruction	Acquire pharmacist-approved credentialing
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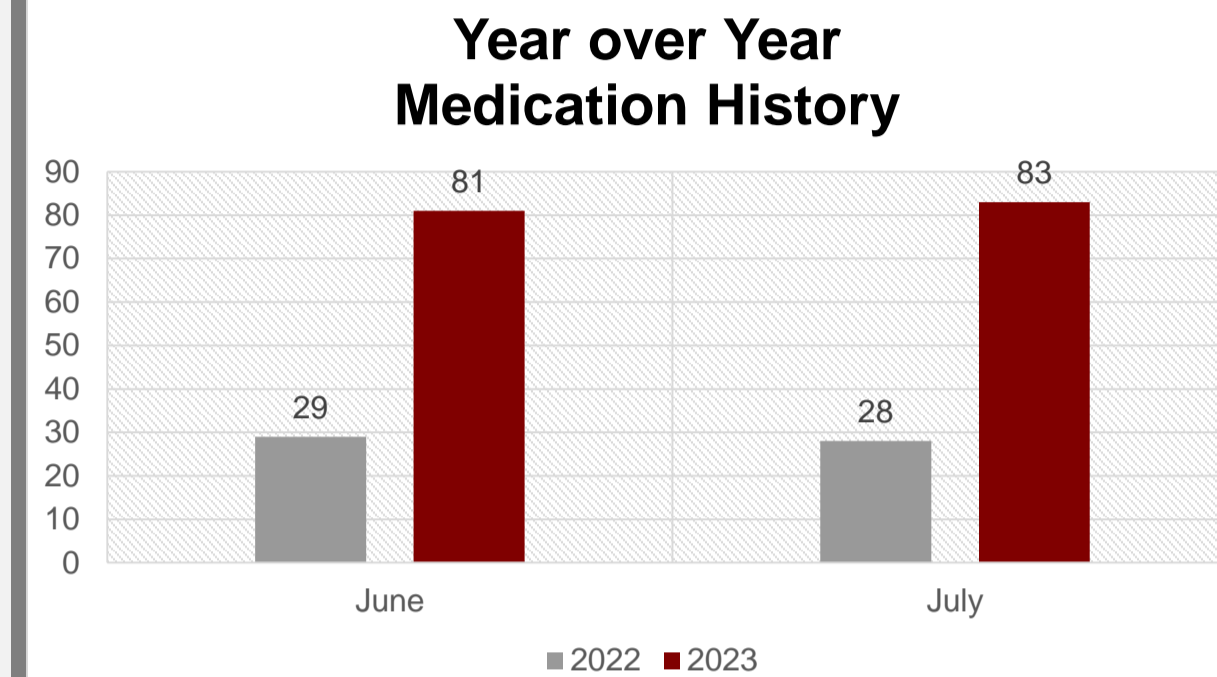
Pharmacy Students Perform Medication History

Collect medication information from ≥2 unique sources, including patient	Update PTA med list in electronic health record and alert pharmacist
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Pharmacists Perform Medication Reconciliation

Review PTA med list for mistakes and leave a note in the chart	Alert physician of changes to be made on inpatient med list
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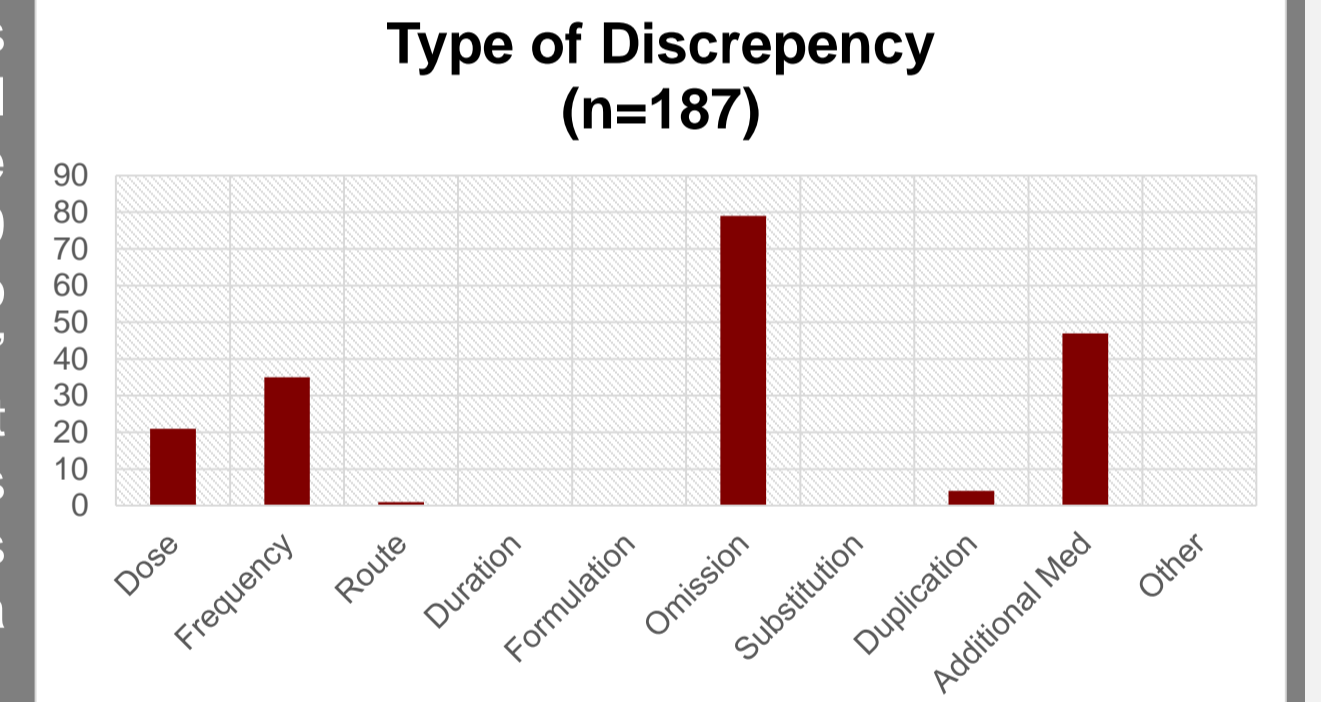
RESULTS TO DATE



The pilot project took place on N09E and N09W, and it ran from January 2023 through March 2023. The new process was implemented system-wide in June 2023. After implementation, incidence of completed medication histories for adult patients admitted to Mitchell Hospital and CCD has increased nearly three-fold between summer 2022 and summer 2023.

We estimate we prevent roughly forty serious or potentially life-threatening errors monthly (based on data from Tu T et al. *Am J Health-Syst Pharm* 2023;80:e104-110).

Between June and July 2023, 187 discrepancies were identified. Of these, 79 discrepancies could be owed to medication omission, meaning, of the 164 patients interviewed, we discovered 79 medications that were being taken prior to admission that did not appear on patients' medication lists. The second- and third- most common errors were additional medications (patient was not taking a medication that was listed) and frequency (patient was taking a medication either more or less often than listed).



NEXT STEPS

- We aim to perform continuous process improvement based on both feedback from students and pharmacists as well as routine audits
- We aim to provide further in-depth training for pharmacists more likely to care for patients whose medication histories will be collected (these patients are most likely admitted to Internal Medicine and Cardiology services)
- We aim to incorporate more health equity factors into the scoring tool (eg. race and type of insurance)
- We aim to expand this program in order to target a higher percentage of the institution's high-risk patients. This would require minimally two additional pharmacy technician FTE's

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