PHARMACIST'S IMPACT ON THE MEDICATION RECONCILIATION PROCESS WITH A FOCUS ON CONSOLIDATION OF POLYPHARMACY AT THE TIME OF INPATIENT DISCHARGE

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DISCLOSURE STATEMENT

- IRB status: not required
- Co-investigators:
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- Conflicts of interest: none
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LEARNING OBJECTIVES

- At the close of this presentation, pharmacists will be able to
  - Identify potential barriers to successful medication de-escalation during an inpatient admission.
- At the close of this presentation, pharmacy technicians will be able to
  - Describe the role of a pharmacy technician in the medication reconciliation process.

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BACKGROUND

- Over half of all Americans take 2 or more prescription medications[1]
  - Many more also use over-the-counter (OTC) products
- Polypharmacy can increase the risk of:
  - Adverse drug reactions
  - Drug-drug interactions
  - Drug-disease state interactions
  - Non-adherence

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BACKGROUND

- Polypharmacy complicates the process of obtaining a complete and accurate medication history
- Inaccurate admission medication histories can lead to administration of wrong medications, incorrect doses, missed doses, or discontinued medications
- St. Peter's Health pharmacy department was asked by senior leadership to develop a comprehensive transitions of care program focused on patient safety and patient experience

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BACKGROUND

- Through collaboration with nursing and hospital administration, pharmacy developed a program that included:
  - Admission medication histories
  - Medication list review by a TOC pharmacist
  - Discharge medication review and counseling
- A secondary goal identified by pharmacy was to identify medications that could be de-escalated or discontinued
  - Reduce the total number of medications -> reduce polypharmacy

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PURPOSE

- Implementation of a hospital-wide TOC program that includes pharmacy-driven admission medication histories, admission and discharge medication list review, and discharge medication education to increase patient safety and decrease medication errors through reduction in polypharmacy

METHODS: STUDY DESIGN

- Single-center quasi-experimental design
- Pre-implementation pilot phase
- Prospective intervention phase

Inclusion	Exclusion
Patients admitted through the ED to the medical floor	Patients who are taking two or fewer medications at the time of admission
Patients over the age of 18	Patients under the age of 18

METHODS: OUTCOMES

- **Primary:** Evaluate the efficacy of TOC pharmacists in reducing the number of unnecessary or unsafe medications on discharge medication lists
- **Secondary:**
  - Percent of pharmacist recommendations accepted
  - Number of discrepancies caught on admission medication lists
  - Number of errors on discharge medication lists addressed by a pharmacist
  - Severity of those discrepancies

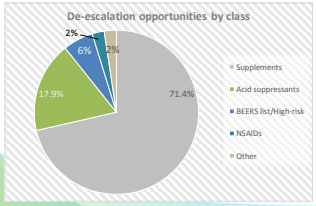
RESULTS: PRIMARY OUTCOME

- 427 medication history interviews met inclusion criteria
- 31 (7%) patients were identified as having at least one de-escalation opportunity
- 11 of those 31 patients (35.5%) had one or more medications de-escalated
- 20 patients of the 31 patients (64.5%) did not have any medications de-escalated

Reason for not de-escalating	Number of patients (%) (N = 20)
Patient not willing	15 (75)
Patient had indication for med	4 (20)
Provider deferred to outpatient	1 (5)

RESULTS: PRIMARY OUTCOMES

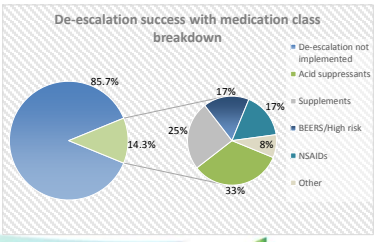
- Total medications identified as de-escalation opportunities: 84



Medication	Number identified (%) (N = 84)
Supplements	60 (71.4)
Acid suppressants	15 (17.9)
BEERS list/high risk medication	5 (6)
NSAIDs	2 (2)
Other	2 (2)

RESULTS: PRIMARY OUTCOME

Pharmacist recommendation success rate = 14.3%	
Medication class	Frequency (%) (N = 12)
Acid suppressants	4 (33)
Supplements	3 (25)
BEERS list or high-risk	2 (17)
NSAIDs	2 (17)
Other	1 (8)



RESULTS: SECONDARY OUTCOMES

Discrepancy Type	Frequency (%) (N = 1040)
Missing medication	377 (36.25)
Patient not taking medication	266 (25.5)
Wrong frequency	170 (16.3)
Wrong dose	151 (14.5)
Wrong medication	30 (2.9)
Wrong time	24 (2.3)
Allergy information updated	12 (1.2)
Other	10 (1)

RESULTS: SECONDARY OUTCOMES

Reference	Description
No harm	No potential for patient harm, nor any change in patient monitoring, level or length of care required
Minor	There was potential for minor, non-life threatening, temporary harm that may or may not require efforts to assess for a change in a patient's condition such as monitoring. These efforts may or may not have potentially caused minimal increase in length of care (< 1 day)
Moderate	There was potential for minor, non-life threatening, temporary harm that would require efforts to assess for a change in a patient's condition such as monitoring, and additional low-level change in a patient's level of care such as a blood test. Any potential increase in the length of care is likely to be minimal (< 1 day)
Serious	There was potential for major, non-life threatening, temporary harm, or minor permanent harm[c] that would require a high level of care such as the administration of an antidote. An increase in the length of care of ≥ 1 day is expected
Severe	There was potential for life-threatening or mortal harm, or major permanent harm that would require a high level of care such as the administration of an antidote or transfer to intensive care. A substantial increase in the length of care of > 1 day is expected

Discrepancy Severity	Frequency (%) (N = 1040)
No harm	931 (89.5)
Minor	84 (8)
Moderate	14 (1.3)
Serious	3 (0.3)
Severe	1 (0.1)

RESULTS: SECONDARY OUTCOMES

- With 152 discharge encounters documented, pharmacists addressed 23 discharge medication errors with minor (11), moderate (8), serious (3), or severe (1) severity scores
- Medication education and counseling
  - Comprehensive counseling on all discharge medications
  - High-risk meds
- Discharge coordination
  - Anticoagulation copay investigations
  - Patient assistance programs
  - Outpatient infusion setup
  - Attaching diagnosis codes to discharge prescriptions for long-term care facilities

RESULTS: SECONDARY OUTCOMES

Discrepancy Type	Discrepancy Severity	Description
Wrong dose	Minor	Incorrect dose of Lasix on discharge list; pharmacist contacted provider, who updated the dose
Wrong dose	Minor	Incorrect dose of spironolactone on discharge list; pharmacist contacted provider and pharmacy and got dose updated
Missing medication	Minor	Prednisone taper left off discharge list; pharmacist contacted provider, who ordered the taper
Wrong frequency	Moderate	Unclear inulin instructions; pharmacist spoke with RN at patient's living facility to clarify
Missing medication	Moderate	Discharge prescription did not get sent to patient's pharmacy; pharmacist contacted provider and sent script to pharmacy
Missing medication	Moderate	Antibiotic not on discharge list; pharmacist contacted provider, who ordered the antibiotic
Missing medication	Serious	Prescriptions were not transmitted to patient's pharmacy; pharmacist contacted provider and got them transmitted
Missing medication	Severe	New-start Eliquis was left off discharge list; pharmacist contacted provider, who ordered the Eliquis

DISCUSSION: INTERPRETATION OF RESULTS

- Establishing a pharmacist-driven TOC service made a positive impact on medication safety
  - Ensured the right medications were continued inpatient
  - Decreased the probability of medication errors and facilitated conversations about safe medication use
  - Provided education to make the transition back to home as safe and easy as possible
- The number of discrepancies identified during this study period (1040) speaks to the vulnerabilities associated with polypharmacy

DISCUSSION: INTERPRETATION OF RESULTS

- Common reasons why patients were unwilling to stop medications:
  - Perceived benefit of the medication
  - Lack of side effects or adverse events
  - Fear of being without the medication
- Another factor contributing to patients not wanting to stop medications is the amount of change already happening to their regimen
  - Changing medications not related to their immediate problem can cause increased confusion
- Pharmacist's role in education is extremely important
  - Help patient have a better understanding of medications
  - Provide information to make decisions on future de-escalation

DISCUSSION: STRENGTHS

- Positive impact of TOC program on patient care and safety
- Enhanced patient access to a pharmacist while admitted
- Provided more direct patient contact for clinical pharmacists
- Expanded clinical pharmacy services on the medical floor

DISCUSSION: LIMITATIONS

- Single-center study design
- Short duration of the intervention period
- Small sample size of patients identified with de-escalation opportunities

DISCUSSION: LESSONS LEARNED

- Communication is key
  - Setting clear expectations, asking for feedback
- Start "up-stream"
  - In hindsight, focusing the implementation of the service in the ED and completing medication histories before the provider saw the patient may have been more advantageous
- Coordinate more "down-stream" follow up
  - More ambulatory care referrals
  - Development of system for contacting PCP offices regarding de-escalation recommendations

CONCLUSIONS

- Reviewing and identifying medication lists for de-escalation opportunities proved worthwhile, but the implementation of de-escalation recommendations remained challenging
- The implementation of a pharmacist-driven TOC service benefitted patients and their safety in multiple ways
  - Reducing the number of potential medication errors by correcting discrepancies on medication lists
  - Providing education and opportunities for polypharmacy consolidation
  - Counseling on discharge medications to ensure patient understanding

FUTURE DIRECTIONS/FOLLOW-UP

- Expand services to the rest of the hospital
  - Addition of second pharmacist and pharmacy technician to the TOC team (total of 2 pharmacists and 2 technicians)
- Implementation of a meds-to-beds program
- Assess patient, pharmacy, and staff satisfaction with the TOC program

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QUESTIONS?

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