4-29-2020

Evaluating outcomes of medication-related interventions from the “Seniors At risk for Falls after Emergency Room visit” (SAFER) pilot project

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Purpose

The objective of this study is to evaluate the impact of medication-related interventions for older adults who had a fall-related ED visit, as part of a larger study of multifactorial fall-risk interventions in the primary care setting. This study will also evaluate to what degree medication-related recommendations were adopted by the primary care provider (PCP) over a minimum period of 7 months of follow-up.

Background

Falls are a major threat for older adults as they can lead to increased risk of further injury, loss of independence, decreased mobility, and premature death.[1,2] Even a single fall puts an older adult at higher risk for future falls. Despite numerous studies showing evidence that multifactorial fall risk interventions are effective in decreasing fall risk, even older adults who have an injurious fall often do not receive meaningful interventions to mitigate their fall risk. [3,4,5] Modifiable and non-modifiable risk factors may predispose older adults to falling. High-risk medication (HRM) use is one such modifiable fall risk factor. PCPs often express a lack of time and limited knowledge regarding the risks of HRMs as barriers to deprescribing.[6] Studies have demonstrated that primary care pharmacists can help bridge that gap and play an important role in the interdisciplinary healthcare team, by identifying and intervening to reduce HRMs use in older adults.[7]

Methods

Study Design:

- Four clinical pathways were assigned based on patient's fall risk score, presence of cognitive impairment, and frailty status.
- Retrospective chart review of Pathways 1 - 4 from the SAFER pilot at four primary care clinics.

Timeline:

- December 2018 to June 2019

Inclusion criteria:

- Enrolled in the SAFER pilot project
- Adults ≥75 years
- Presented to an ED for a fall
- Taking ≥1 HRM that is associated with increased falls

Exclusion criteria:

- Not been seen in clinic in the last two years
- Enrolled in hospice or currently hospitalized
- Discharged to a skilled nursing facility (SNF)
- Died within two weeks of ED visit

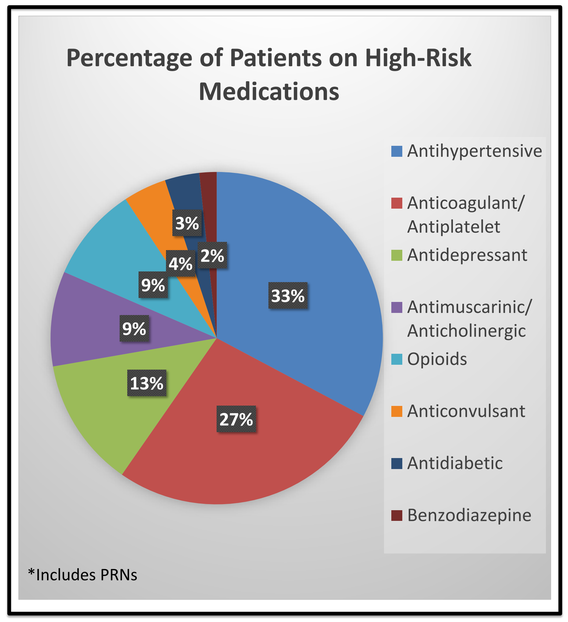
Outcomes

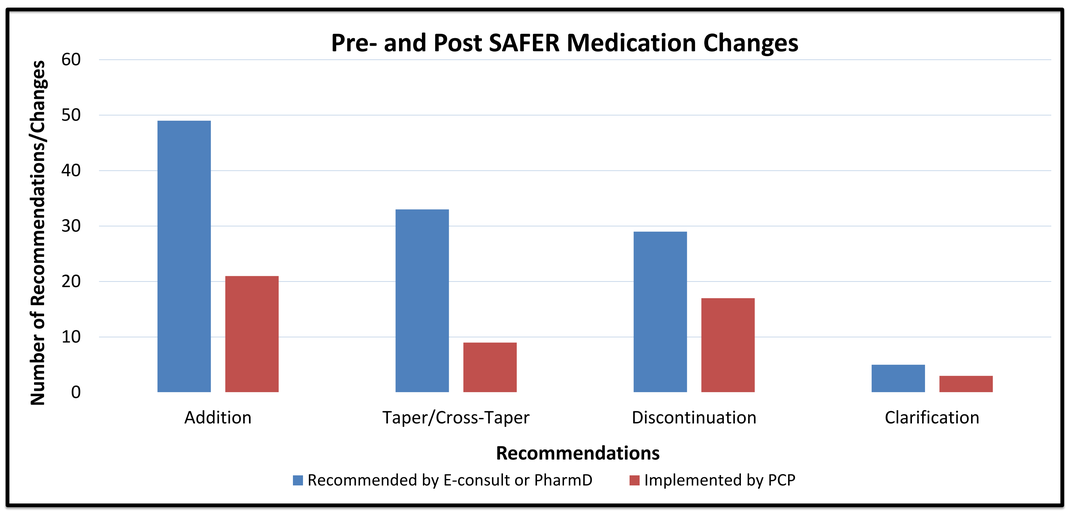
- Number of HRM discontinued or tapered
- Overall reduction in number of medications
- Initiation of osteoporosis prevention or treatment
- Change in blood pressure (BP) or A1c goals
- Number of fall-related ED visits

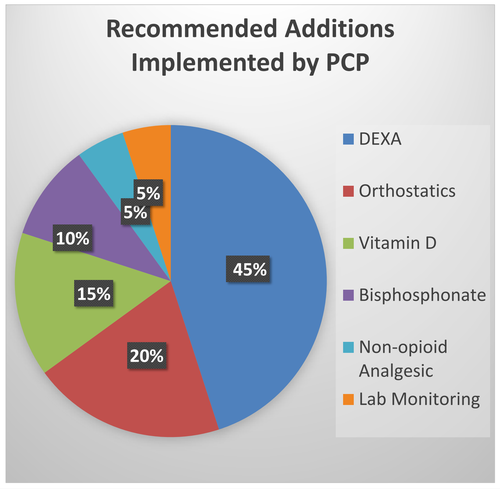
Results

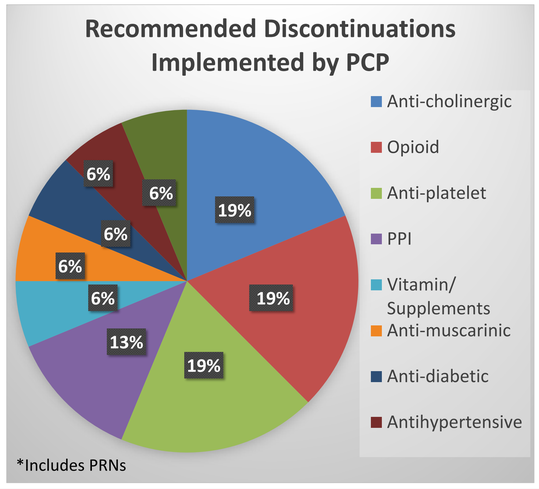
Baseline Characteristics (n = 46)

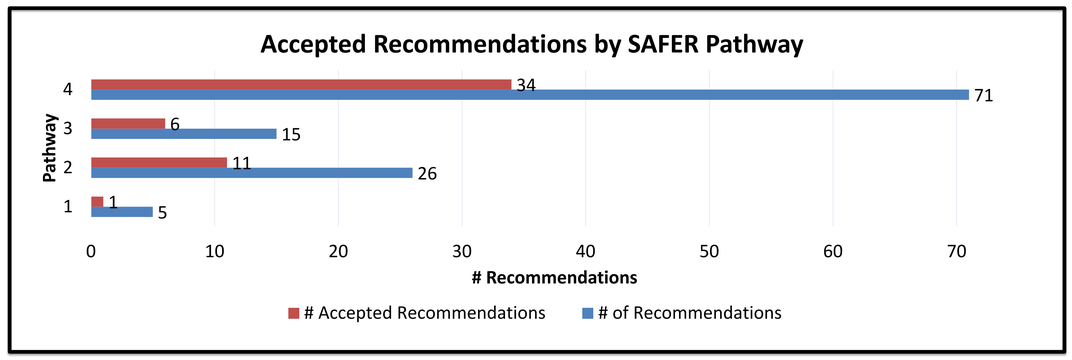
Characteristics		Results
Gender (%)	Female	67%
Age (avg. in years)		84
Pathways	1	12
	2	11
	3	9
	4	14
PCP follow-up within 3 months of fall (%)		91%
PharmD or Geriatric E-consult (%)		54%
Time spent on PharmD consult (avg. in minutes)		43.7
Number of HRMs (avg.)		4.3
Number of HRM drug classes (avg.)		3
% with A1c goal defined in chart		50%
% with BP goal defined in chart		31%
In the year prior to SAFER enrollment, % with any systolic blood pressure <110mmHg		59%
% with prior orthostatic measurement		35%
DEXA	No history of DEXA	50%
	DEXA w/in 3 years	20%
	Last DEXA >3 years	30.4%
% on Vitamin D		56.5%











Preliminary Conclusions

- Results reflect a select case review in preparation for more comprehensive data review and analysis.
- Of sample, 117 medication-related recommendations were made by the Geriatric and PharmD teams (avg of 4.7 per patient). Of those, a total of 52 changes (44%) were implemented by the PCP.
- The most accepted recommendations included ordering DEXA, orthostatic testing, adding Vitamin D, and discontinuing opioids.
- Not all medication changes reflected exact recommendations made by the Geriatric and PharmD teams. Recommendations were generally aligned with overall goals suggested for patient.
- In patients on blood pressure medications, 69% did not have BP goals clearly defined by the PCP on their problem list. Of those, almost 59% had at least one systolic BP reading <110mmHg prior to SAFER enrollment. Given these patients are at high risk to fall, more lenient BP goals may be indicated.
- Only 35% of the 46 patients have received an orthostatic test in the last 12 months prior to enrollment. 35% received testing post enrollment. Of those patients who received orthostatic testing following recommendation, 50% had adjustments made to their BP regimen.
- In those patients with diabetes, 50% did not have A1c goals cleared defined by their PCP on the problem list.
- Only 25 patients (54%) received either Geriatric E-consults or PharmD consults despite every patient being on at least 1 HRM. This suggests that potentially more changes could have been implemented if a consult was conducted. The process of referring to a PharmD for a consult will need to be reviewed.

Limitations:

- Study is a retrospective chart review.
- Control group with which to compare data is not yet available.
- Follow-up timeframe of seven months may not have allowed adequate time for PCP to implement all changes.

Next Steps

- Complete chart review and analysis of the remaining identified patients.
- Compare data with a matched-control group to determine the value of HRM consult recommendations and the clinical pharmacist in reducing HRM use in older patients at high risk to fall.

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