

# MeRIT: Comprehensive Medication Management for High Risk Patients in the Primary Care Setting: A Deprescribing Approach

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## Abstract

**Introduction:** Older adults have an increased risk of adverse drug events and corresponding hospitalizations when exposed to potentially inappropriate medications (PIMs). Pharmacists collaborating with primary care providers is an emerging model for effective, comprehensive deprescribing.

**Research Question or Hypothesis:** Does a pharmacist-led intervention lead to improved deprescribing of PIMs in high-risk older adults in a family medicine clinic?

**Design:** A prospective, nonrandomized interventional study utilizing a historical (or nonequivalent) control group.

**Methods:** Fifty sequential eligible patients in an academic family medicine practice will receive a deprescribing intervention (intervention arm) and be compared to a historical control group of 50 patients identified in the practice medical record. Patients will be identified by the practice risk stratification algorithm. Recruitment will involve this screening process, with patients being contacted via phone and consented at time of visit. A baseline questionnaire will collect demographics and medication history information. The pharmacist-led intervention will include medication reconciliation and comprehensive medication review. Recommendations will be documented in the electronic medical record (EMR). Patient follow up will be coordinated between the pharmacy team and provider. Data collection for the control group will be performed concurrently with participant enrollment. The primary outcome of deprescribing rates of pharmacist recommendations will also compare the effectiveness of the intervention on healthcare utilization, including unplanned readmissions and emergency department (ED) visits, to usual care.

**Results:** We hypothesize an association between pharmacist-led intervention and deprescribing rates.

**Conclusion:** The study is expected to permit an evidence-based statement on a multidisciplinary, pharmacist-led intervention can be impactful on deprescribing.

## Background

Polypharmacy is defined as the simultaneous use of multiple medications by a single patient.[1] A Potentially inappropriate medication (PIM) is defined as a medications that increase the risk of adverse drug events when there is evidence that alternative therapies are equally or more effective.[2]

Older adults are at an increased risk of adverse drug events related to inappropriate prescribing.[3] Patient's receiving PIMs have been shown to be at a higher risk for hospitalization relative to those not on PIMs in analyses that adjusted for patient's level of comorbidities/complexity.[4-6]

Previous studies have suggested the feasibility of deprescribing in the outpatient setting, as well as positive impact on reducing the number of PIMs prescribed and patient reported symptoms.[7-11] However, the impact that these intervention have on clinical outcomes such as adverse drug reactions, hospital admissions, and emergency department visits, as well as the optimal way to deliver these interventions is not yet clear.[7]

Pharmacists are uniquely skilled to be able to assist with the pharmacotherapy of older adults and inclusion into the care team in the primary care setting is a potential solution to the barriers to implementing deprescribing.[12]

## Objectives

**Aims**

- 1) To pilot test and examine the feasibility of a multi-disciplinary, pharmacist-led, comprehensive medication management (CMM) management intervention for high risk older adults with polypharmacy
- 2) Conduct a cost analysis of clinical pharmacy services targeting high risk medication in the elderly
- 3) Assess attitudes of participants and primary care providers regarding the pharmacist provided service

**Primary Data Endpoints:**

1. Rate of medication discontinuation.

**Secondary Data endpoints:**

1. Rate of unplanned, all-cause hospital readmission at 30 days, 3 months, and 6 months between the intervention and control groups.
2. Rate of ED visits at 30 days, 3 months and 6 months between the intervention and control groups.
3. Description of the activities performed by the clinical pharmacists within the model (i.e., discontinuation of inappropriate medications).
4. Cost effectiveness of the pharmacist-initiated comprehensive medication management model in order to ascertain intervention costs and sustainability.
5. Description of views of the interventions from participants

## Methods

**Study Design:** Quasi-experimental pretest-posttest analysis utilizing a nonequivalent control group. Fifty sequential eligible patients in an academic family medicine practice will receive a deprescribing intervention (intervention arm) and be compared to a historical control group of 50 patients identified in the practice medical record.

**Inclusion Criteria**

- Age ≥65 years
- Receive primary care through participating provider at UB|MD Sheridan Family Medicine
- Has active orders for 8 or more medications AND/OR at least 1 order for a medication considered potentially inappropriate per the 2019 Beers criteria.
- 2 or more chronic diseases

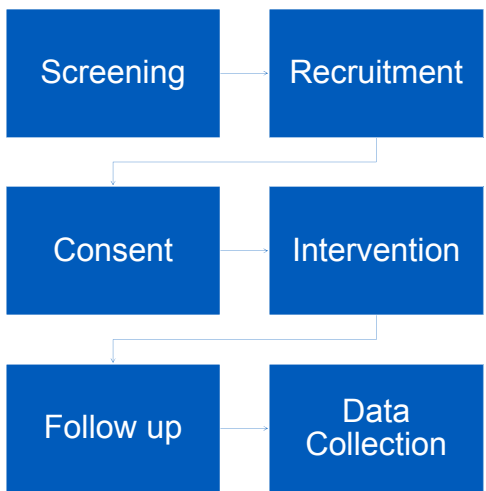
**Exclusion Criteria**

- Patients found to no longer be meeting medication inclusion criteria during medication reconciliation
- Resides in assisted living or other skilled nursing facility
- Primary language other than English
- Diagnosis of dementia or mild cognitive impairment or prescription for acetylcholinesterase inhibitor or memantine.

**Data Collection**

- Electronic Medical Record (EMR): Intervention and control group.
- Patient Risk Stratification: CPC+ Tool (provided monthly)

## Figure A. Study Procedures



### Table A Screening/Recruitment Procedures

Team screens patients of targeted providers for inclusion criteria

Pharmacist reviews for intervention viability and records information

Patient list, per week is tasked to provider to review

If accepted, patients are called using a standard script

Patients are called for upcoming appt and to meet with pharmacy team

Same process is completed for control group minus recruitment

### Table B Consent/Interv./Follow Up Procedures

Patients arrive 30 minutes prior to appt. and provided study info.

Patients are roomed by nursing and then meet with pharmacy

Pharmacy consents patient, review medications, and forms recommendations. They then meet with provider.

Provider completes visit priorities along with addressing pharmacy recommendations.

Pharmacy returns to room to educate, set up follow up/monitoring

Follow up will include the following algorithm:

1 week: For immediate concerns (e.g. - discontinuation of med, adverse effects, etc...)

2 week: If needed, for recommendation changes (e.g. - completion of discontinuation, tapering completion, new medication start, etc...)

4 week: For intervention follow up (e.g. - patient satisfaction survey, full effects of new medication regimen, etc...)

### Table C Data Collection (CPC+ Scoring Algorithm)

Measures	Points		
	0	1	2
<b>Insurance</b>	Insured-Commercial	Medicaid	No Insurance
<b>Inpatient Visits 1 yr</b>	1 or less	2	3 or more
<b>ER Visits 1 yr</b>	1 or less	2	3 or more
<b>Office Visits 1 yr</b>	2 or less	Between 3 and 6	7 or more
<b>Medication Count</b>	2 or less	Between 3 and 5	6 or more
<b>Chronic Disease Count</b>	0 diagnoses	Between 1 and 3	4 or more
<b>Uncontrolled Chronic Disease Count</b>	0 diagnoses	1 or more	N/A
<b>Smoker Y/N</b>	Former/Non	Smoker	N/A
<b>BMI</b>	Between 18.5 and 24.9	Between 25 and 34.9	35 and over
<b>Mental Health</b>	0 diagnoses	Between 1 and 2	3 or more
<b>Age</b>	Between 18 and 55	Between 56 and 74	75 and older
<b>Nursing Home</b>	No		Yes
<b>Controlled Substance Prescription</b>	0	1 or more	N/A

**Table Notes:**

- **Qualifying Chronic Diseases:** Diabetes, Heart Failure, Hypertension, COPD, Asthma, Chronic Kidney Disease
- **Uncontrolled Chronic Disease Logic:** Diabetes – Latest HbA1c > 9, Hypertension – Latest Sys BP >150, COPD – Active Prescription for steroid, Asthma – Diagnosis of Severe, Persistent Asthma, CKD – Latest eGFR <30
- **Medication Count:** does not count Diagnostic Products Misc., Medical Identification Supplies, Medical Device Cleaners, Multiple Vitamins w Minerals, Applicator, Cotton Balls, etc., Specialty Vitamins Products, Diagnostic Tests, Glucose Monitoring Test Supplies, and Needles & Syringes
- **Qualifying Mental Health Diagnoses:** Depression, Alcohol Use Disorder, Bipolar, PTSD, Developmental Disorders, Schizophrenia and Related, and Substance related Disorders
- **Controlled Substance Medications:** Active Prescription for a Schedule 2 drug
- **Highest score achievable is a 22**

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