SPIDER: Structured Process Informed by Data, Evidence and Research.
A Quality Improvement and Research Collaboration to Support Practices in Improving Care for Complex Elderly Patients

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Background

Polypharmacy is common among elderly patients[1]

- 32% Canadian seniors take ≥ 5 medications on a regular basis[2]
- UTOPIAN data shows: on average, each family physician looks after 24 patients age 65+ who were prescribed ≥10 different medications in the past year
  - 75% of those were prescribed at least 1 potentially inappropriate prescription (PIP)

Polypharmacy increases the risk of poor health, reduced quality of life, physician frustration and high system costs [3,4,5,6]

Choosing Wisely Canada and the Canadian Deprescribing Network recommend wiser use of

- Proton Pump Inhibitors (PPInhs)
- Benzodiazepines
- Antipsychotics
- Long-acting Sulfonylureas

Taking ≥ 10 unique medications has been found to be a reliable index of persistent complexity among elderly patients (≥65yrs) [7]

- Sensitivity: 46.2%
- Specificity: 95.3%
- Positive predictive value: 69%

EMR data can be used to identify elderly patients living with complex care needs and having polypharmacy

Objectives

Primary objective:

- To determine whether a QI-Research Learning Collaborative (SPIDER) will reduce PIPs in primary care for elderly patients (≥ 65yrs) living with polypharmacy (≥ 10 medications) compared to usual care

Secondary objectives:

- To explore patient experience with SPIDER
- To explore care providers' satisfaction
- To assess the cost-effectiveness of SPIDER

Quality Improvement (QI) and Research

This project is a collaboration between Quality Improvement and Research

Quality & Innovation Program, Department of Family and Community Medicine (DFCM)

- Leads QI aspects of the project
- Experienced in practice coaching, designing, implementing and evaluating QI learning and education initiatives
- Expertise in QI methods and measurements

University of Toronto Practice Based Research Network (UTOPIAN)

- Leads research aspects of the project
- Experienced in providing EMR data for research and QI
- Expertise in research methods and measurements

The Intervention: SPIDER

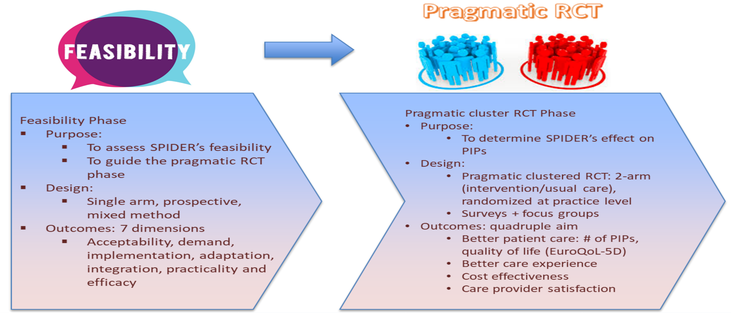
SPIDER: Structured Process Informed by Data, Evidence and Research

- Built on the Institute for Healthcare Improvement (IHI) Breakthrough Series Model
- Key elements
  - Formation of local inter-professional Learning Collaboratives
    - Practice team: family physicians, nurses, pharmacists, front desk staff
    - Policy makers and health planners
    - Patient partners
  - Provision of de-identified and validated EMR data
  - Working with QI coaches and Audit and Feedback (A&F) experts to
    - Identify areas of improvement
    - Prioritize and develop strategies
    - Implement changes fit for local practices
    - Evaluate the impact on practices

Design and Methods

2 Phases involving 7 Practice-Based Research Networks (PBRNs)

- Feasibility phase:
  - Toronto (UTOPIAN)
  - Edmonton (NAPCReN)
- RCT phase:
  - Halifax (MaRNet-FP)
  - Montreal (RRSPUM)
  - Ottawa (OPEN)
  - Winnipeg (MaPCReN)
  - Calgary (SAPCReN)



	2018				2019				2020				2021			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Preparation																
Feasibility																
RCT																
KT																

Results

Funded by CIHR ($1M) with $1.6M from partners; this is a study in progress

Significance and Potential Impact

- Empower patients and physicians to engage in more meaningful discussions about care decisions
- Improve population health and quality of life
- Improve health care provider satisfaction
- Reduce healthcare system costs

References

1. Fulton MM, Riley Allen E. Polypharmacy in the elderly: A literature review. J Am Acad Nurse Pract 2005;17(4):123-32. doi: 10.1111/j.1041-2972.2005.0020.x
2. The Commonwealth Fund's International Health Policy Survey of Seniors. CIHI 2017; Retrieved from: https://www.cihi.ca/sites/default/files/document/cmwf-2017-text-alternative-report-en-web.pdf
3. Lavan AH, Gallagher P. Predicting risk of adverse drug reactions in older adults. Ther Adv Drug Saf 2016;7(1):11-22. doi: 10.1177/2042098615615472 [published Online First: 2016/02/03]
4. Montiel-Luque A, Nunez-Montenegro AJ, Martin-Aurioles E, et al. Medication-related factors associated with health-related quality of life in patients older than 65 years with polypharmacy. PLoS One 2017;12(2):e0171320. doi: 10.1371/journal.pone.0171320 [published Online First: 2017/02/07]
5. Fletcher PC, Berg K, Dalby DM, et al. Risk factors for falling among community-based seniors. J Patient Saf 2009;5(2):61-6. doi: 10.1097/PTS.0b013e3181a551ed [published Online First: 2009/11/19]
6. Morgan SG, Hunt J, Rioux J, et al. Frequency and cost of potentially inappropriate prescribing for older adults: a cross-sectional study. CMAJ Open 2016;4(2):E346-51. doi: 10.9778/cmajo.20150131 [published Online First: 2016/07/12]
7. Dahrouge S, Wodchis W. Identifying high users in Ontario - an algorithm for use in primary care practices. 2017;In press