

# MedSafer: Working Towards Safer Prescribing

Recipient of the *Marika Z. Roy* Clinical Innovation Prize

Emily G. McDonald MD MSc

Associate Professor of Medicine

McGill University Health Centre



Canadian  
Frailty  
Network

Réseau canadien  
des soins aux  
personnes fragilisées

Centre universitaire  
de santé McGill  
Institut de recherche



McGill University  
Health Centre  
Research Institute



CIHR IRSC



Canadian Institutes  
of Health Research

Instituts de recherche  
en santé du Canada



CENTRE FOR AGING  
+ BRAIN HEALTH  
INNOVATION

Powered by Baycrest

# Conflict of Interest Statement

- Co-creator and owner of MedSafer
- Chief Scientific Officer of MedSafer Corp; IP jointly owned with McGill University and Dr.T. Lee
- Pharma or industry funding: none
- Public operating funds (grants) from the CIHR, CFN and CABHI



# MedSafer Study Team Across Canada

- **MUHC co-Principal Investigator:**  
Todd Lee
- **Other QC Co-Is:**
  - *André Bonnici and the MUHC pharmacy team;*
  - *Louise Papillon-Ferland (U de M);*
- **MUHC research team:** Lina Petrella, Sarah Elsayed, Liliane Mefanche, Kristen Moran, Manoja Chandralingam, Yejim Kim
- **Software Developer:** Alek Lefebvre
- **The Ottawa and Ottawa Civic Hospitals:** James Downar, Allen Huang, Babak Rashidi, Alan Forster
- **The University Health Network (TGH/TWH):** Pete Wu, Sandra Porter, Rachel Whitty, Kiran Battu, Rodrigo Calvalcanti, Tom MacMillan
- **Kingston General Hospital:** Johanna Murphy
- **University of Alberta/Foothills:** Gabriel Fabreau
- **University of Edmonton:** Finlay McAlister, Miriam Fradette
- **University of British Columbia/St. Paul's:** Anita Palepu, Nadia Kahn



# Overmedicating seniors: an epidemic



- Seniors prescribed an average of 7 different drug classes
- 25% of older people prescribed 10 or more drug classes
- More drugs prescribed to people in rural regions, low-income neighbourhoods or residing in long-term care
- *The number of drugs prescribed is the factor most responsible for hospitalizations due to adverse drug events*

A 2016 CIHI report: <https://www.cihi.ca/sites/default/files/document/drug-use-among-seniors-2016-en-web.pdf>



# MEDICATION OVERLOAD

## POLYPHARMACY

5 or more meds

Indicated and beneficial

## MEDICATION OVERLOAD

Medications where:

risk > benefit for **most**

risk > benefit for **some**

Do not really work



# Why it matters

@DrEmilyMcD



**MedSafer**

Working Towards Safer Prescribing

# Polypharmacy and adverse drug events (ADEs)



**42% OF OLDER ADULTS TAKE 5 OR MORE MEDS**



**280,000 HOSPITALIZATIONS DUE TO ADEs EACH YEAR**



**A 200% INCREASE IN POLYPHARMACY OVER 20 YEARS**



**\$62 BILLION IN UNNECESSARY HOSPITALIZATIONS OVER 10 YEARS**



**5 MILLION OLDER ADULTS SOUGHT MEDICAL ATTENTION FOR ADEs IN 2018**



**150,000 PREMATURE DEATHS IN THE NEXT 10 YEARS DUE TO ADEs**

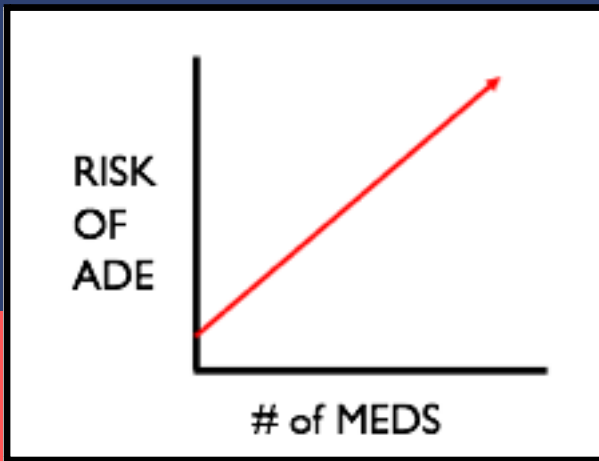


A patient's risk of an adverse drug event increases by 7 to 10% with each medication prescribed.

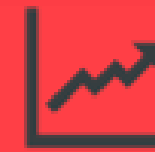


MEDICATION OVERLOAD

[www.LowInstitute.org/pills](http://www.LowInstitute.org/pills)



Taking 10 or more Medications is associated with a 50% increase in falls



MEDICATION OVERLOAD

[www.LowInstitute.org/pills](http://www.LowInstitute.org/pills)

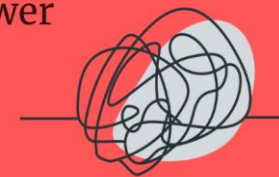
Taking 6 to 9 medications is associated with a 59% greater chance of death in older adults.



MEDICATION OVERLOAD

[www.LowInstitute.org/pills](http://www.LowInstitute.org/pills)

Older patients taking 6 or more drugs in the hospital are twice as likely to experience delirium than those taking fewer drugs.



MEDICATION OVERLOAD

[www.LowInstitute.org/pills](http://www.LowInstitute.org/pills)

# Polypharmacy is harmful

@DrEmilyMcD



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# Adverse drug events

- Respiratory depression or severe constipation from opioids
- Hypoglycemia from diabetic agents
- Swollen legs and feet from gabapentinoids (leading to diuretic use → prescription cascade)
- Fall with hip fracture → sedative hypnotics
- Gastrointestinal hemorrhage → use of combination blood thinners beyond indicated duration



# What do these have in common?

- Well described
- **Frequent**
- Predictable
- Preventable
- Can be ***life altering***
  - *Unnecessary hospitalizations*
  - *Reduced autonomy*
  - *Reduced Quality of Life*



# Potentially inappropriate medications “PIMs” are costly!

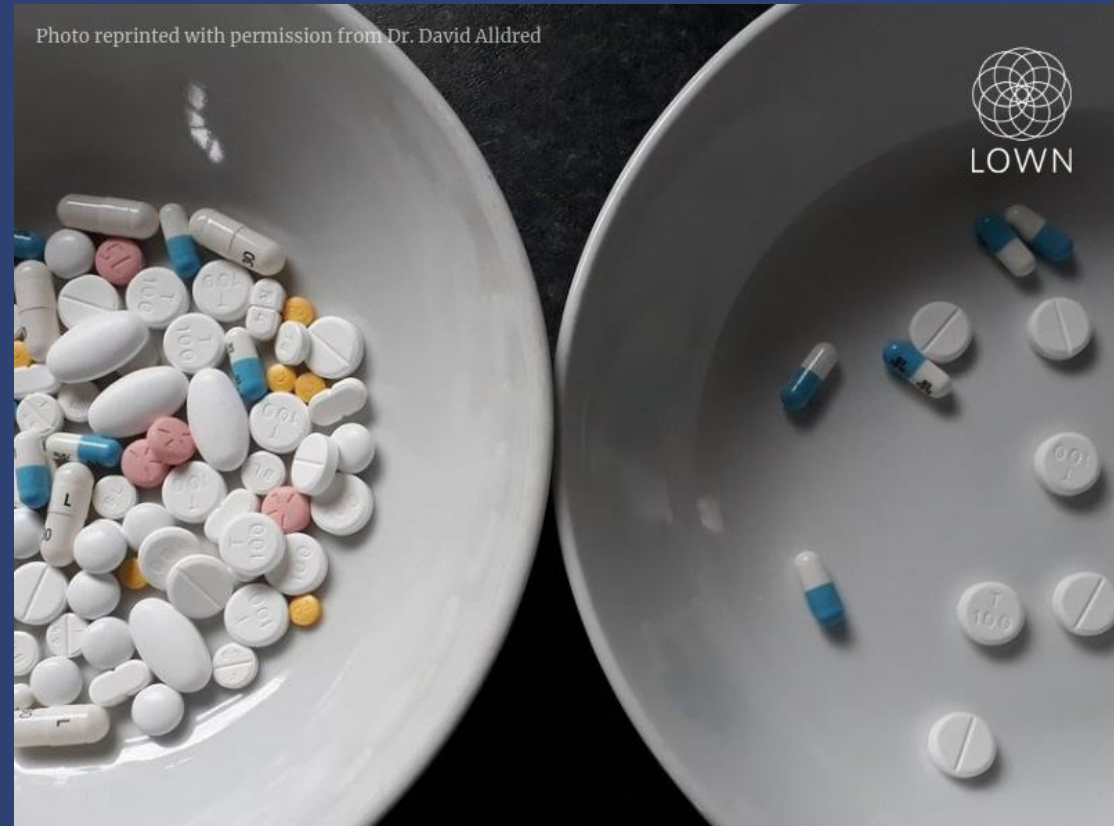
## Frequency and cost of potentially inappropriate prescribing for older adults: a cross-sectional study

Steven G. Morgan PhD, Jordan Hunt MA, Jocelyn Rioux BSc, Jeffery Proulx BSc, Deirdre Weymann MA, Cara Tannenbaum MD MSc

- Outpatient 2013 data from 6 provinces and Beers List
- “We estimated that \$75 per older Canadian, or **\$419 million** in total, was spent on potentially inappropriate medications or PIMs”
- “Indirect health care costs attributable to potentially inappropriate prescribing [...] would be about **\$1.4 billion**”
- US estimate for ADE hospitalizations – 280,000 hospitalizations at an annual cost of \$3.8 billion



# The solution is deprescribing



A week of medications,  
before and after deprescribing.

MEDICATION OVERLOAD

[www.LownInstitute.org/pills](http://www.LownInstitute.org/pills)



# What can be done about Medication Overload?

- A “Prescription Checkup” or deprescribing
- Medication reconciliation → medication *rationalization*



# Patient story (used with permission): my grandmother Nora McDonald

Mom continues to struggle.

She is unable to toilet herself, dress or undress, comb her hair or wash herself.



hospital for a subdural hematoma

She is unable to do her jigsaw puzzles or play games on the computer.

care facility

*and cognitive impairment*

She no longer is interested in reading, can't knit due to her physical limitations and ditto for her crossword puzzles.



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# What are the person's and family goals?

- To maximize functional independence and cognition
- To spend quality time interacting with family



# Medication list:

- Allopurinol 200 MG in the morning (gout prevention)

Could some of these medications have caused her initial fall?

Could some of these medications be contributing to her functional impairment?

- Ropinirole 0.25MG 1 in the morning, 1 in the afternoon, 2 at bedtime (restless legs)
- **Trazodone 100MG. 1 at bedtime (sleep)**





**100s OF RULES** for  
prescribing from  
**MULTIPLE**  
professional  
societies

**10+ CONDITIONS**  
and **10+**  
**MEDICATIONS**

# Barriers to deprescribing

**Cross-referencing is**  
**TIME**  
**CONSUMING**

**Requires**  
specialized medical  
**EXPERTISE**



**Resources ARE**  
**NOT** universally  
available

**Doctors may FEAR**  
stopping  
medications

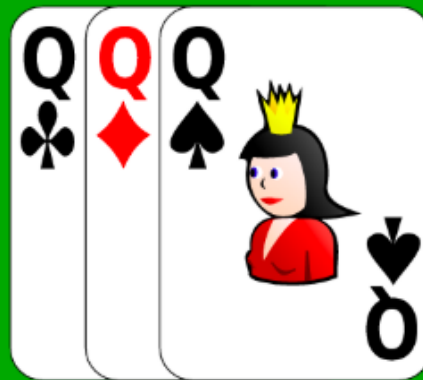
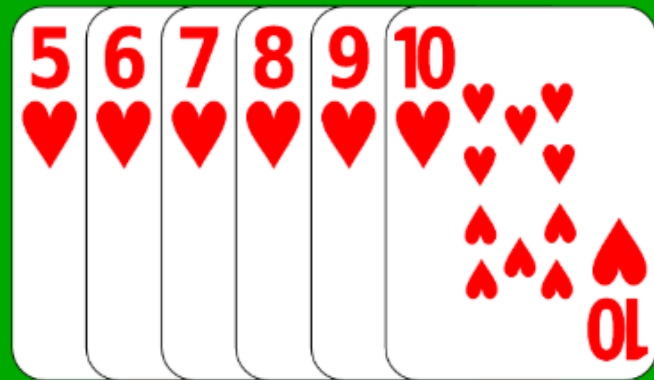


# What was the medication plan?

- Taper opioids, benzodiazepines, trazodone and ropinirole to lowest possible doses (ideally stopping) with a close eye on symptoms and cognition
- Accept blood pressure 140-160mmHg and minimize orthostatic hypotension (fall with traumatic brain injury)



# RUMMY



## What happened?

- Over 3-6 months most of the drugs were weaned off
- Tylenol, tiotropium, melatonin
- “Her cognitive skills have improved”
- “[We] taught her how to play the card game “rummy.” She beats me 2 out of 3 games regularly.”



Nana  
McDonald

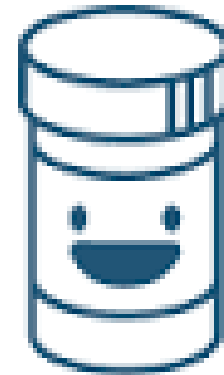


# MedSafer

Identify *deprescribing opportunities* and facilitate a Rx checkup

Cross-reference medical conditions, lab values, life expectancy, and frailty with the medication list

Integrate for use in EMR/EHR



# MedSafer

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# MedSafer Deprescribing Opportunities

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The American Geriatrics Society

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STOPP criteria

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Choosing Wisely

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Canadian Deprescribing Network



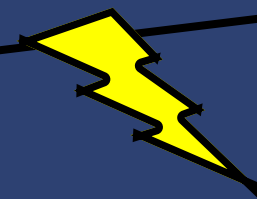
# HOW IT WORKS

1



2

The screenshot shows a medical software interface. At the top, there's a section for 'Add a medication' with a green 'ADD' button and a 'Medications completed' checkbox. Below this is a table with columns: CHART ID, TRADEMARK, GENERIC, DOSE, FORMAT, FREQUENCY, and PIN. The table lists four medications: 1. Zylprim (Allopurinol, 200mg, Tablet, qAM), 2. Colchicine (Colchicine, 0.6mg, Tablet, die / od), 3. Deltasone (Prednisone, 5mg, Tablet, qAM), and 4. Norvasc (Amlodipine, 5mg, Tablet, die / od). Below the table are three panels for clinical decision support: Cardiovascular (with 'Hypertension' checked), Oncologic (with 'ECOG' and 'Breast' options), and CNS (with 'TIA' checked and 'When?' set to '+6 mos').



3





## MedSafer Report - Deprescribing Opportunities

as of 2021-10-18

### James Bond

Male 101yo - TEST

This document contains prioritized **opportunities** for a **reassessment** of the listed medications. Any decisions should take into context what you know about your patient and your clinical assessment of the **risks** and **benefits** of what has been presented.

If you have questions, suggestions, or you would like to report an error, please email [support@medsafer.org](mailto:support@medsafer.org) with the subject line "MedSafer Report"

#### Tapering instructions or withdrawal concerns?

Please refer to the tapering instructions on last page.

#### 1 Drugs considered high risk for adverse drug events

#	DRUG	CAUSE OF ALERT	WHY MIGHT THIS BE INAPPROPRIATE?	TAPERING INSTRUCTIONS
1	clopidogrel (clopidogrel bisulfate) (Abbott-Clopidogrel)	acetylsalicylic acid (Asa)	Dual antithrombotic therapy increases the risk of major hemorrhage and prolonged therapy	No

## 2 Drugs considered intermediate risk for adverse drug event

#	DRUG	CAUSE OF ALERT	WHY MIGHT THIS BE INAPPROPRIATE?	TAPERING INSTRUCTIONS
1	trazodone tab (tablet) 50mg (Trazodone Tab (Tablet) 50mg)	General	<p>Avoid using trazodone as a sleeping pill in older adults. Increased risk of falls, daytime drowsiness, and impaired cognition.</p> <p>For patient material related to this class of medications see link below.</p>	Yes
2	lansoprazole dr cap (delayed release capsule) 30mg (Lansoprazole Dr Cap (Delayed Release Capsule) 30mg)	General	<p>Chronic PPI therapy should be reevaluated regularly. For patients aged 60 years and older along with two or more of the following, ongoing therapy may be beneficial: antiplatelet, NSAID, systemic steroids, anticoagulation, prior upper gastrointestinal bleed. Other scenarios requiring ongoing therapy include: hypersecretory conditions, dual antiplatelet therapy, variceal banding within 14 days, and H. Pylori treatment.</p> <p>For patient material related to this class of medications see link below.</p>	Yes

# Tapering Instructions

NOTE #	DRUG	INSTRUCTIONS
1	<b>QUEtiapine TAB (Tablet) 25mg</b> <b>QUEtiapine TAB (Tablet) 25mg</b>	<p>RECOMMENDATION: for higher doses withdraw gradually over days to weeks.</p> <p>For patient material and a tapering regimen with patient/caregiver involvement, please see the following link on antipsychotics: <a href="http://www.criugm.qc.ca/fichier/pdf/ANTIPSYCHOTIC.pdf">http://www.criugm.qc.ca/fichier/pdf/ANTIPSYCHOTIC.pdf</a></p> <p>For more information on the potential harms of antipsychotics please refer to the following link: <a href="https://www.journalofhospitalmedicine.com/jhospmed/article/195967/hospital-medicine/things-we-do-no-reason-use-antipsychotic-medications">https://www.journalofhospitalmedicine.com/jhospmed/article/195967/hospital-medicine/things-we-do-no-reason-use-antipsychotic-medications</a></p>
1	<b>OLANZapine TAB (Tablet) 2.5mg</b> <b>OLANZapine TAB (Tablet) 2.5mg</b>	<p>RECOMMENDATION: for higher doses withdraw gradually over days to weeks.</p> <p>For patient material and a tapering regimen with patient/caregiver involvement, please see the following link on antipsychotics: <a href="http://www.criugm.qc.ca/fichier/pdf/ANTIPSYCHOTIC.pdf">http://www.criugm.qc.ca/fichier/pdf/ANTIPSYCHOTIC.pdf</a></p> <p>For more information on the potential harms of antipsychotics please refer to the following link: <a href="https://www.journalofhospitalmedicine.com/jhospmed/article/195967/hospital-medicine/things-we-do-no-reason-use-antipsychotic-medications">https://www.journalofhospitalmedicine.com/jhospmed/article/195967/hospital-medicine/things-we-do-no-reason-use-antipsychotic-medications</a></p>
1	<b>traZODone TAB (Tablet) 50mg</b> <b>traZODone TAB (Tablet) 50mg</b>	<p>Reduce by 50% every week at doses higher than 25 mg QHS.</p> <p>For patient material and a tapering regimen with patient/caregiver involvement, please see the following link on sedative-hypnotics: <a href="http://www.criugm.qc.ca/fichier/pdf/BENZOeng.pdf">http://www.criugm.qc.ca/fichier/pdf/BENZOeng.pdf</a></p>

# Funding history

2015 CFN Funding  
for a Pilot (800  
participants)

2015 CIHR Funding  
for Cluster  
Randomized Trial  
(6000 participants)

2018 CABHI Funding  
to integrate with Med  
e-care EMR

2019 Healthy Seniors  
Pilot Project funding  
to integrate with  
Momentum EMR in  
NB

2021 CIHR/FRQS  
funding to integrate  
with Point Click Care

Total funding: \$3.1  
million over 5 years

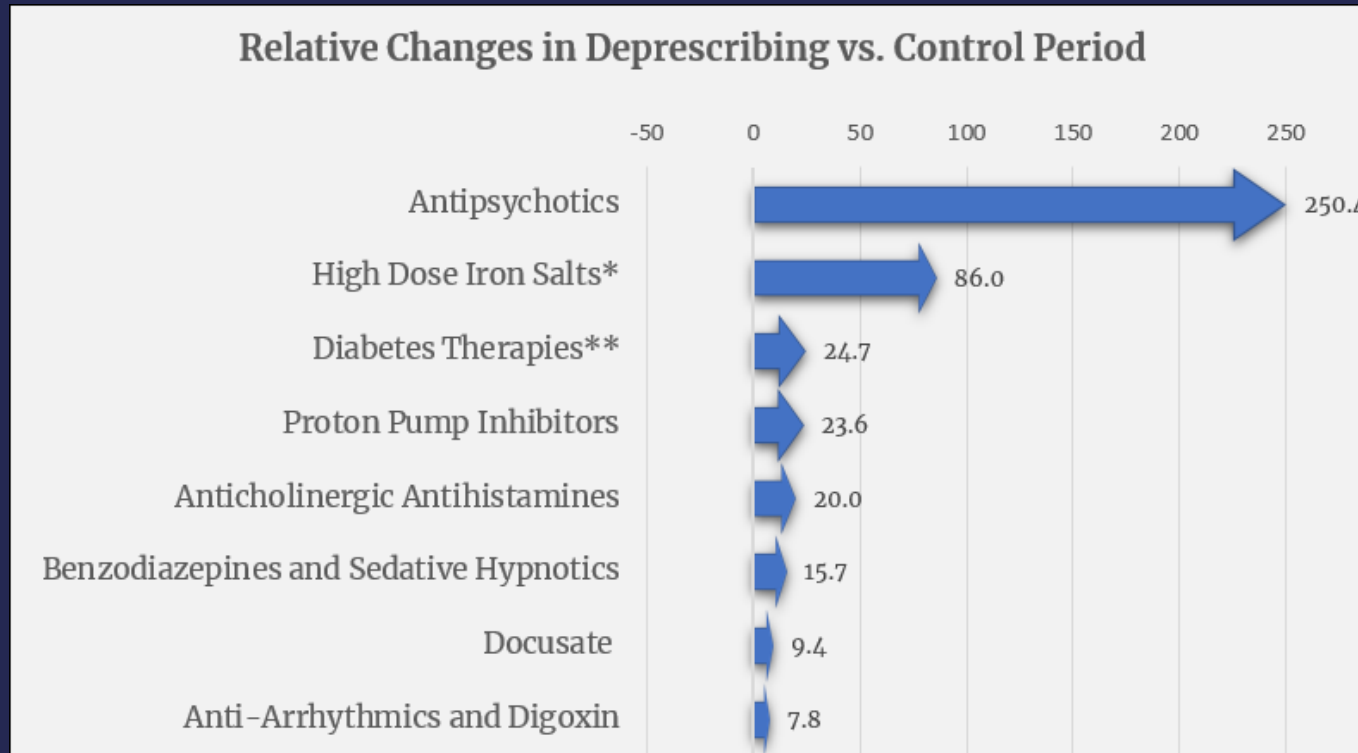


# The MedSafer Pilot:

- Canadian Frailty Network (\$100,000)
- Principal Investigators: Todd C. Lee and Emily G. McDonald
- Co-Investigators:
  - *James Downar, Allen Huang, Alan Forster, Robyn Tamblyn*
- Three sites/four hospitals, controlled trial in older hospitalized adults using MedSafer in Quebec and Ontario
- Published in Journal of the American Geriatrics Society



# Results



Absolute reduction in 1 or more PIMs 8.3% (2.9-13.9%)

NNT of 12

Annual cost savings \$75-100 per patient exposed



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# CIHR clinical trial

- Eleven hospitals divided into 3 clusters:
  - Western Canada: Alberta Foothills Medical Center and University of Alberta Health Centre, British Columbia: St. Paul's Hospital
  - Quebec: Montreal General Hospital, Royal Victoria Hospital, and Lachine Hospital
  - Ontario: Kingston General Hospital, The Ottawa Hospital, The Ottawa Civic Hospital, The Toronto General Hospital, and The Toronto Western Hospital





**"This really is an innovative approach, but I'm afraid we can't consider it. It's never been done before."**

# Cluster randomized trial: if we knew then what we know now (2015→2021)

- Powered for a reduction in 30-day ADEs
  - 25% RR reduction in ADEs at 30-days post discharge
  - Estimate 16% (Forster 2004 + 2005) to 12%
- Completed enrolment in January 2020
- Completed Adjudication of ADEs in 2021



JAMA Network™

≡ JAMA Internal Medicine

Original Investigation | Less Is More

ONLINE FIRST 

January 18, 2022

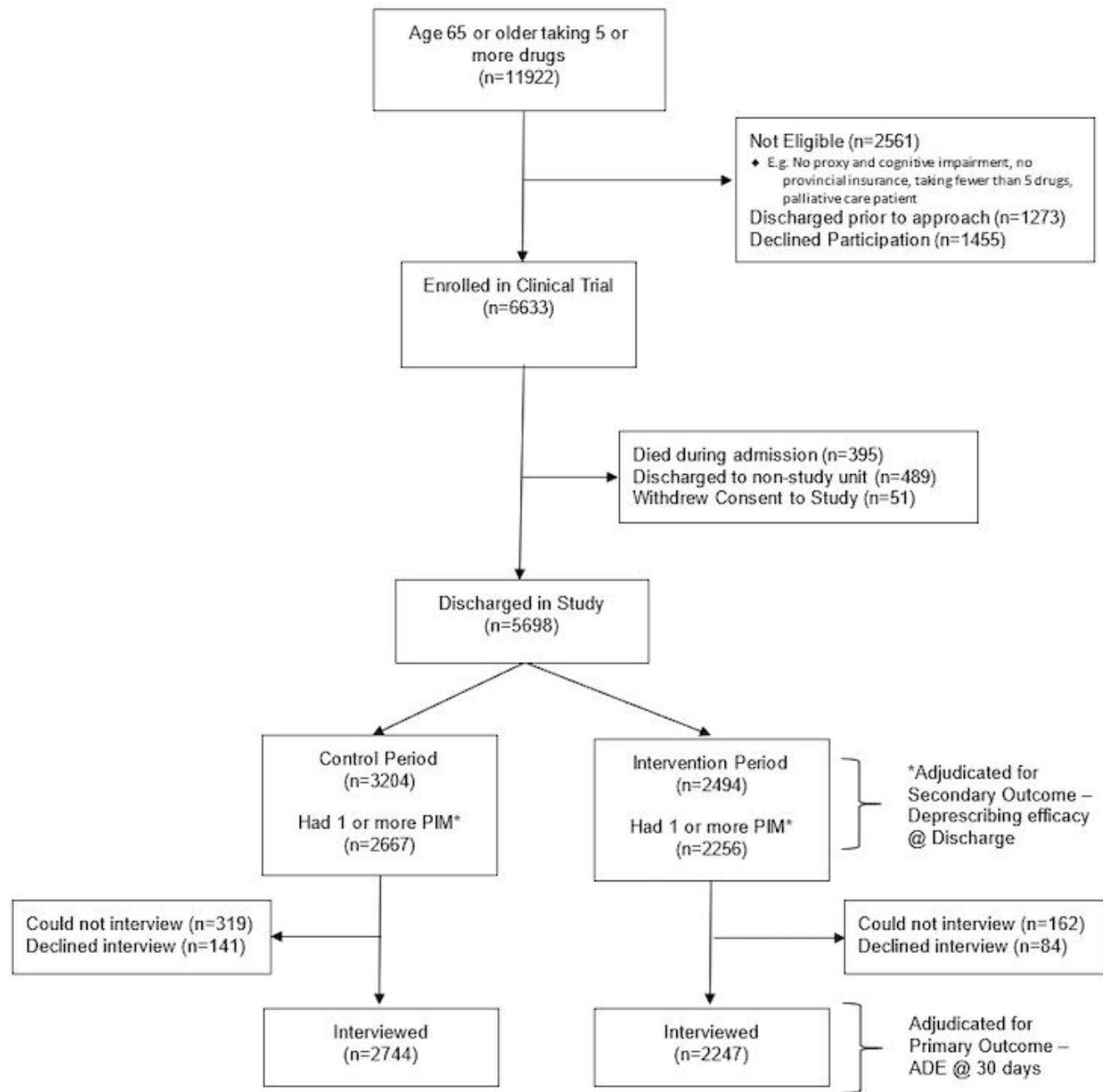
# The MedSafer Study—Electronic Decision Support for Deprescribing in Hospitalized Older Adults

## A Cluster Randomized Clinical Trial

Emily G. McDonald, MD, MSc<sup>1,2,3</sup>; Peter E. Wu, MD, MSc<sup>4</sup>; Babak Rashidi, MD, MHI<sup>5</sup>; [et al](#)

» [Author Affiliations](#) | [Article Information](#)

*JAMA Intern Med.* Published online January 18, 2022. doi:10.1001/jamainternmed.2021.7429



Characteristic	Control (n=3204)	Intervention (n=2494)	P-value
<b>Demographics</b>			
Age (Median, IQR)	78 (71-85)	78 (72-86)	0.0043
Female	1619 (50.5)	1239 (49.7)	0.88
Anglophone	2859 (89.2)	1782 (71.5)	<0.001
Francophone	270 (8.4)	579 (23.2)	
Other Language	75 (2.3)	133 (5.3)	
Admitted from Long Term Care Facility	165 (5.1)	185 (7.4)	<0.001
<b>Medications</b>			
Number of Home Medications (Median, IQR)	10 (8-13)	10 (8-14)	0.25
Number of PIMs Identified (Median, IQR)	2 (1-3)	2 (1-4)	<0.001
Length of Stay (Median, IQR)	7 (4-13)	8 (5-15)	<0.001

**Table 4. Deprescribing Rates of Commonly Alerted Potentially Inappropriate Medications**

Specific PIMs	Possible problem	Control (n = 2667)			Intervention (n = 2256)			% Difference (95% CI)	
		Users (%)	PIM (%)	PIM deprescribed (%)	Users (%)	PIM (%)	PIM deprescribed (%)	Unadjusted	Adjusted
Benzodiazepines and sedative hypnotics <sup>a</sup>	Increased risk of delirium, falls, death	665 (24.9)	553 (83.2)	113 (20.4)	538 (23.8)	524 (97.4)	210 (40.1)	19.6 (14.3 to 25.0)	22.7 (12.0 to 33.5)
Codeine and tramadol <sup>b</sup>	Unpredictably metabolized. If opioids are needed, a safer choice should be made	272 (10.2)	216 (79.4)	74 (34.3)	182 (8.1)	179 (98.4)	98 (54.7)	20.5 (10.8 to 30.1)	43.0 (30.5 to 55.5)
Combination antiplatelet and anticoagulants	Increased risk of bleeding; may be inappropriate	269 (10.1)	215 (79.9)	75 (34.9)	173 (7.7)	146 (84.4)	65 (44.5)	9.6 (-0.6 to 19.9)	24.8 (8.0 to 41.7)
Opioids (excluding codeine and tramadol) <sup>b</sup>	Opioid use outside of cancer pain is associated with risk of death	430 (16.1)	201 (46.7)	57 (28.4)	374 (16.6)	210 (56.1)	83 (39.5)	11.2 (2.1 to 20.3)	17.8 (-2.4 to 37.9)
Trazodone <sup>a</sup>	Off-label use for sleep is not indicated	231 (8.7)	156 (67.5)	23 (14.7)	132 (5.9)	92 (69.7)	30 (32.6)	17.9 (6.8 to 28.9)	24.3 (2.2 to 46.5)
Nonsteroidal anti-inflammatories	Can exacerbate congestive heart failure or hypertension	230 (8.6)	155 (67.4)	36 (23.2)	145 (6.4)	120 (82.8)	42 (35.0)	11.8 (1.0 to 22.6)	12.7 (-3.2 to 28.7)
Antipsychotics <sup>a</sup>	Not recommended as first line treatment for sleep or agitation in dementia	239 (9.0)	144 (60.3)	33 (22.9)	238 (10.5)	206 (86.6)	70 (34.0)	11.1 (1.6 to 20.5)	12.9 (-6.2 to 32.1)
Mirtazapine <sup>a</sup>	Off-label use for sleep is not indicated	136 (5.1)	54 (39.7)	5 (9.3)	122 (5.4)	62 (50.8)	12 (19.4)	10.1 (-2.4 to 22.6)	4.4 (-11.2 to 20.0)
Proton-pump inhibitors	Frequently used without indication	1442 (54.1)	1227 (85.1)	127 (10.4)	1149 (50.9)	1056 (91.9)	222 (21.0)	10.7 (7.7 to 13.7)	9.4 (2.5 to 16.4)
Diabetes therapies <sup>c</sup>	Demonstrated hypoglycemia; contraindicated agents in kidney failure	948 (35.5)	436 (46.0)	159 (36.5)	756 (33.5)	381 (50.4)	192 (50.4)	13.9 (7.2 to 20.7)	11.3 (-2.3 to 25.0)
Gabapentinoids	Frequently used off label and have many adverse effects (fluid retention, worsening cognition, and death)	558 (20.9)	406 (72.8)	86 (21.2)	367 (16.3)	323 (88.0)	114 (35.3)	14.1 (7.6 to 20.7)	0.6 (-11.6 to 12.9)
Thiazides	High risk of hyponatremia if prior hyponatremic event	467 (17.5)	152 (32.5)	78 (51.3)	356 (15.8)	129 (36.2)	101 (78.3)	27.0 (16.3 to 37.6)	32.8 (17.4 to 48.2)
SSRIs	Can contribute to recurrent falls in older adults	407 (15.3)	91 (22.4)	16 (17.6)	351 (15.6)	88 (25.1)	19 (21.6)	4.0 (-7.6 to 15.6)	14.8 (-4.6 to 34.1)
High-dose iron salts <sup>d</sup>	Less tolerated and no more effective than standard dosage	535 (20.1)	129 (24.1)	21 (16.3)	398 (17.6)	109 (27.4)	54 (49.5)	33.3 (21.9 to 44.6)	26.5 (1.2 to 51.7)
Docusate	Ineffective for treatment or prevention of constipation	248 (9.3)	248 (100.0)	99 (39.9)	208 (9.2)	208 (100.0)	133 (63.9)	24.0 (15.1 to 33.0)	23.4 (5.6 to 41.2)
Nonstatin cholesterol medications <sup>c</sup>	Limited evidence of efficacy	145 (5.4)	137 (94.5)	12 (8.8)	120 (5.3)	120 (100.0)	35 (29.2)	20.4 (11.0 to 29.8)	12.7 (-8.3 to 33.8)

Abbreviations: PIM, potentially inappropriate medication; SSRI, selective serotonin reuptake inhibitors.

<sup>a</sup> Excludes patients with psychiatric indication (or seizure for benzodiazepines).

<sup>b</sup> Excludes patients in palliative care or with cancer as possible indication.

<sup>c</sup> Users may have been taking >1 medication, and user numbers represent  $\geq 1$ .

<sup>d</sup> Excludes those already taking low-dose iron salts.

# Deprescribing in Acute Care: MedSafer Study

- Deprescribing increased from 795 (29.8%) of 2667 control to 1249 (55.4%) of 2256 intervention participants [aRD, 22.2%; 95% CI, 16.9% to 27.4%].
- NNT=4
- There was no significant difference in ADEs within 30 days of discharge (138 [5.0%] of 2742 control vs 111 [4.9%] of 2247 intervention participants; adjusted risk difference [aRD] -0.8%; 95% CI, -2.9% to 1.3%).
- There was no difference in ADWEs between groups.



Why no  
change in  
ADEs?

Power

Duration

Adjudication

Not all PIMs are equal

# Government support for safer prescribing

- This year the Ontario government launched a funding opportunity that would compensate long-term care homes for medication management and included funding for MedSafer as one option for that program. This is a description of the funding they are providing:
- <https://news.ontario.ca/en/release/60926/ontario-strengthening-medication-safety-in-long-term-care-homes>.
- This would be effectuated via existing interfaces in Point Click Care and Med-E-Care which are the two dominant EMRs in Ontario.



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**NEWS RELEASE**

# **Ontario Strengthening Medication Safety in Long-Term Care Homes**

Adopting New Technology will Better Protect Residents

March 29, 2021

[Long-Term Care](#)

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Technology can make medication management safer and more efficient by automating and integrating processes across the medication lifecycle. This program will provide supplementary funding to help long-term care homes acquire medication management technologies that support:

- Secure and accurate electronic transmission and handling of prescription information.
- Optimization of medication regimens for long-term care home residents, including the identification of opportunities for deprescribing (stopping a medication or reducing a medication's dose) and decision support at the point of prescribing (e.g., electronic clinical decision support systems)
- Strengthening security of the drug supply (e.g., advanced drug storage solutions, like automated dispensing carts)
- Accurate administration of medication (e.g., software and devices that help support medication administration)
- Oversight and monitoring of the medication use process
- Improved functioning of the medication management system in the long-term care home.



Live Chat

Ms. Mildred "Milly" SMITH

Medication Profile



SMITH, Mildred

"Milly"

Bed: 31D

Chart #: 20180124

**Allergies**

Alert(s) : Meds crushed with yogurt/pudding \*No BP or blood work  
Left arm dt Fistula present.

**Diagnoses**

Diabetes Mellitus : \*Palliative June'17-no longer checking GLU or providing meds"  
Anemia : end stage enemia  
Dementia other than Alzheimers disease : MOCA June '17 score= 17

**Diet**

\*\*Regular Diet :  
\*\*FODMAP diet  
March 6/19\*\*Re  
\*\*Pureed textur  
\*\*Thin Fluids

Hide Details MedSafer Report Search For Another Client

Search in results Order Status Active Orders... (+2) Order Type All Only  Controlled Drug Orders  PRN Protocol  High Alert Orders  Self Admin Orders

Action	Order Info	Medication	Instructions	Schedule
<a href="#">Manage</a>	DIN Code: ^ Rx: ATM60187 OFON: ATM60187 Start Date: 2018-02-07 06:00	ORDER	Change catheter bag weekly on Wednesday mornings.	<a href="#">Non Medication TAR Order</a> Custom Cycle
<a href="#">Manage</a>	DIN Code: ^ Rx: ATM61547 OFON: ATM61547 Start Date: 2018-02-26 00:01	ORDER	ALCOHOL ON SPECIAL OCCASIONS	<a href="#">Non Medication MAR Order</a> PRN



EMR INTEGRATION

## SMITH, Mildred "Milly"

Bed: 31D Chart #: 20180124

Report Date: 2022-04-05

Active Orders Future Orders Hold Orders



*This document contains prioritized opportunities for a reassessment of the listed medications. Any decisions should take into context what you know about your resident and your clinical assessment of the risks and benefits of what has been presented. If you have questions, suggestions, or you would like to report an error, please email [support@medsafer.org](mailto:support@medsafer.org) with the subject line "MedSafer Study"*

Medication	Contition/Second Medication	Rationale	Stopping Priority	Tapering Instructions
Gravol 50 Mg. Supp*	Any	Avoid using gravol in older adults. May precipitate delirium. If needed for the short-term treatment of nausea, doses of less than 25 mg are recommended.	HIGH RISK for adverse event	No
Haloperidol Inj	Dementia	In general, antipsychotics should be avoided in patients with dementia unless symptoms of agitation are severe and non-pharmacological interventions have failed. Antipsychotics increase risk of stroke, falls, confusion, and extra-pyramidal side effects. For patient material related to this class of medications see link below.	HIGH RISK for adverse event	Yes
Scopolamine Inj	Dementia	May worsen or precipitate delirium. Consider weighing the risks and benefits of using medications with anticholinergic properties in older adults.	HIGH RISK for adverse event	Yes
HYDROMorphone Amp	Any	Don't initiate or maintain opioids long-term for chronic pain until there has been a trial of non-pharmacologic treatment and of non-opioid medications. Non-pharmacologic modalities for chronic pain include exercise, weight loss, cognitive-behavioural therapy, massage and physical therapy. Depending on the pain mechanism and co-morbidities, non-opioid medications include: acetaminophen, NSAIDS and other molecules. An opioid trial should be guided by clear criteria for	HIGH RISK for adverse event	Yes

# Questions, Comments, Discussion

- @DrEmilyMcD on Twitter
- [emily.mcdonald@mcgill.ca](mailto:emily.mcdonald@mcgill.ca)
- MedSafer.org

