To Prescribe or Deprescribe, That is the Question

Cheryl A. Sadowski
James L. Silvius (Oct 7)
Kathleen Hunter (Oct 11)

ICCER
October 7 & 11, 2019

CIHR IRSC
Canadian Institutes of Health Research | Instituts de recherche en santé du Canada

UNIVERSITY OF ALBERTA

Canadian Deprescribing Network

Presenter Disclosure

- **Faculty:**
  - Cheryl A Sadowski, B.Sc.(Pharm), Pharm.D, BCGP, FCSHP
    Professor, Faculty of Pharmacy & Pharmaceutical Sciences
    University of Alberta
    Clinical Pharmacist, Geriatric outpatient clinic, Misericordia Community Hospital, Edmonton, AB
  - James L. Silvius BA(Oxon) MD FRCPC
    Provincial Medical Director, Seniors Health, Community Seniors Addictions & Mental Health
    Senior Medical Director, Seniors Health Strategic Clinical Network
    AHS Lead, Medical Assistance in Dying
  - Kathleen Hunter PhD RN NP GNC(C) NCA
    Professor, Faculty of Nursing University of Alberta
    NP Glenrose Specialized Geriatric Services Continence Clinic
- **Relationships:**
  - Drs Sadowski and Silvius are members of the Canadian Deprescribing Network
  - Dr. Silvius is Chair, Canadian Drug Expert Committee (CDEC), CADTH
- **Relationships with financial interests:**
  - **Grants/Research Support:**
    - Dr. Sadowski currently has funding from Pfizer International for research related to management of urinary incontinence.
  - **Speakers Bureau/Honoraria: N/A**
  - **Consulting Fees: N/A**
  - **Patents: N/A**

Presenter Disclosure

- **Faculty:**
  - Cheryl A Sadowski, B.Sc.(Pharm), Pharm.D, BCGP, FCSHP
    Professor, Faculty of Pharmacy & Pharmaceutical Sciences
    University of Alberta
    Clinical Pharmacist, Geriatric outpatient clinic, Misericordia Community Hospital, Edmonton, AB
  - James L. Silvius BA(Oxon) MD FRCPC
    Provincial Medical Director, Seniors Health, Community Seniors Addictions & Mental Health
    Senior Medical Director, Seniors Health Strategic Clinical Network
    AHS Lead, Medical Assistance in Dying
- **Relationships:**
  - Both presenters are members of the Canadian Deprescribing Network
  - Dr. Silvius is Chair, Canadian Drug Expert Committee (CDEC), CADTH
- **Relationships with financial interests:**
  - **Grants/Research Support:**
    - Dr. Sadowski currently has funding from Pfizer International for research related to management of urinary incontinence.
  - **Speakers Bureau/Honoraria: N/A**
  - **Consulting Fees: N/A**
  - **Patents: N/A**

Learning Objectives

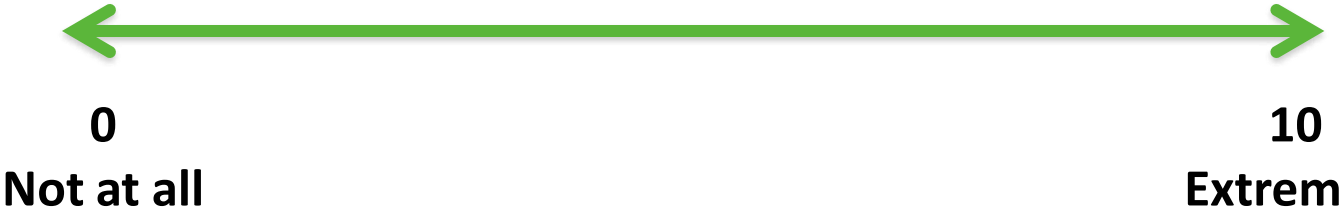
1. Describe medication use patterns in older adults in Canada.
2. Identify contributors to polypharmacy in older adults.
3. Identify which drugs to deprescribe in older adults
4. Apply evidence-based tools to successfully discontinue medications
5. Use effective communication techniques to engage patients and know when to substitute non-drug therapies

Outline

- We have a problem
- We have some solutions
- We can navigate the challenges of implementing the solutions
- We are going to practice implementing those solutions

Self-evaluation

On a scale of 0 to 10, how confident are you managing medication decisions in older adults?



We have a problem
(or, a few problems)


3 128
Benadryl
AgeFree
Essentials

Perspective

- If it was easy to address, we would have addressed it by now.
- Like most complex multifactorial problems, it requires a multipronged multilevel approach over time.
- Usually a simple solution isn't a real solution
- Assigning blame does not help

“I am having accidents…”

Who: an 85 year old female living in a long-term care facility

PMHx:

- HF w/ 1+ peripheral edema
- HTN
- GERD
- Chronic Pain from OA, spinal stenosis
- Urinary Incontinence

Issue: Patient wants to change diuretics. Case Manager is concerned about medications. Comprehensive medication management consult performed with resident, pharmacist and nurse.

Reconciled Medications

1. Lorazepam 1 mg po BID for anxiety
2. Amitriptyline 100 mg po qHS
3. Oxybutynin ER 10 mg po once daily
4. Omeprazole 40 mg po BID
5. OxyContin 20 mg po BID
6. Gabapentin 300 mg po QID
7. Ipratropium Bromide 0.06% nasal soln
8. Claritin 10 mg po once daily
9. Verapamil HCl ER 240 mg po qHS
10. Potassium Cl 20 mEq po once daily
11. Metolazone 2.5 mg 1 tab po QOD
12. Bumetanide 4 mg po once daily
13. Furosemide 60 mg po once daily
14. Spironolactone 50 mg po once daily
13. Glucosamine Chondroitin 1 tab po daily
14. Calcium 500 + Vit. D 2 tabs po once daily
15. Vit. D 2000IU
16. Multivitamins
17. Vit. B complex
18. Vit. E 400 IU
19. Co Q 10
20. Fish oil
21. Folic acid
22. Ginkgo Biloba caps
23. Melatonin
24. Acidophilus caps
25. Metamucil
26. PEG 3350 Oral powder
27. Sennokot 8.6mg

Question

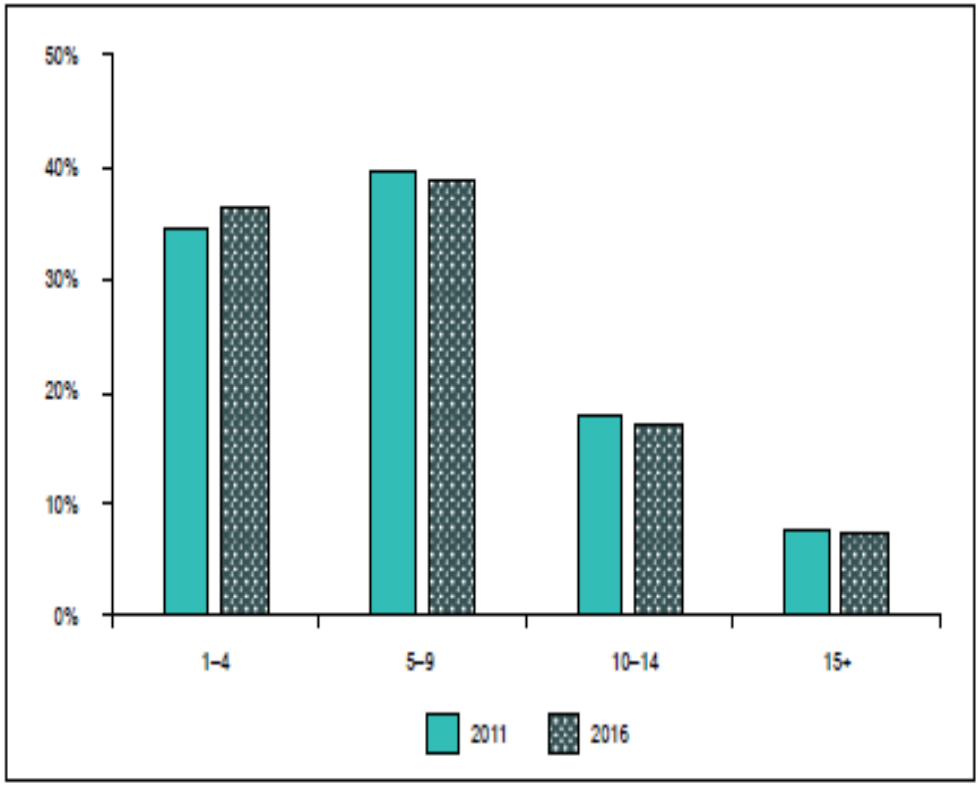
- The average number of medication classes a senior takes in one year is:
  a) 3
  b) 5
  c) 7
  d) 9
  e) 11

Question

- The average number of medication classes a senior takes in one year is:
  a) 3
  b) 5
  c) 7
  d) 9
  e) 11

Medication Use Among Older Canadians

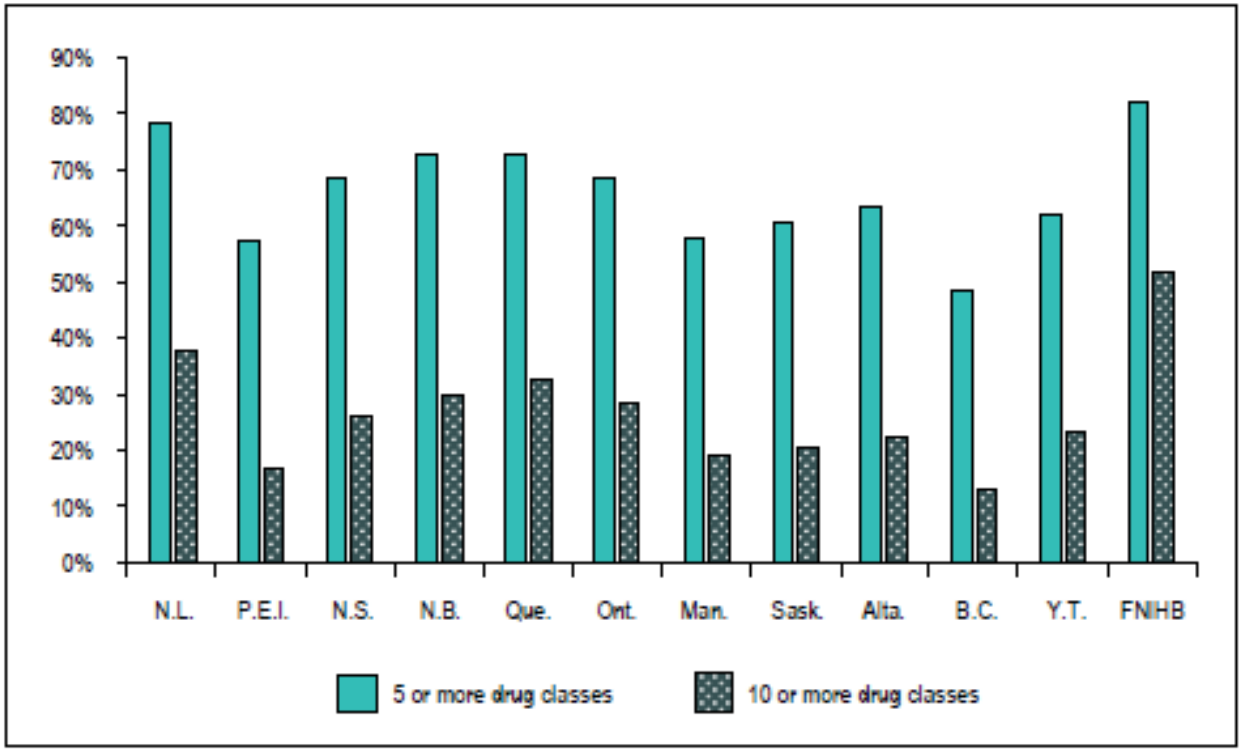
- 17% of the population
- 40% of Canada's spending on prescribed drugs
- 55% of public drug spending



CIHI: Drug Use Among Seniors in Canada 2016 (2018)

Medication Use in Canadian Seniors

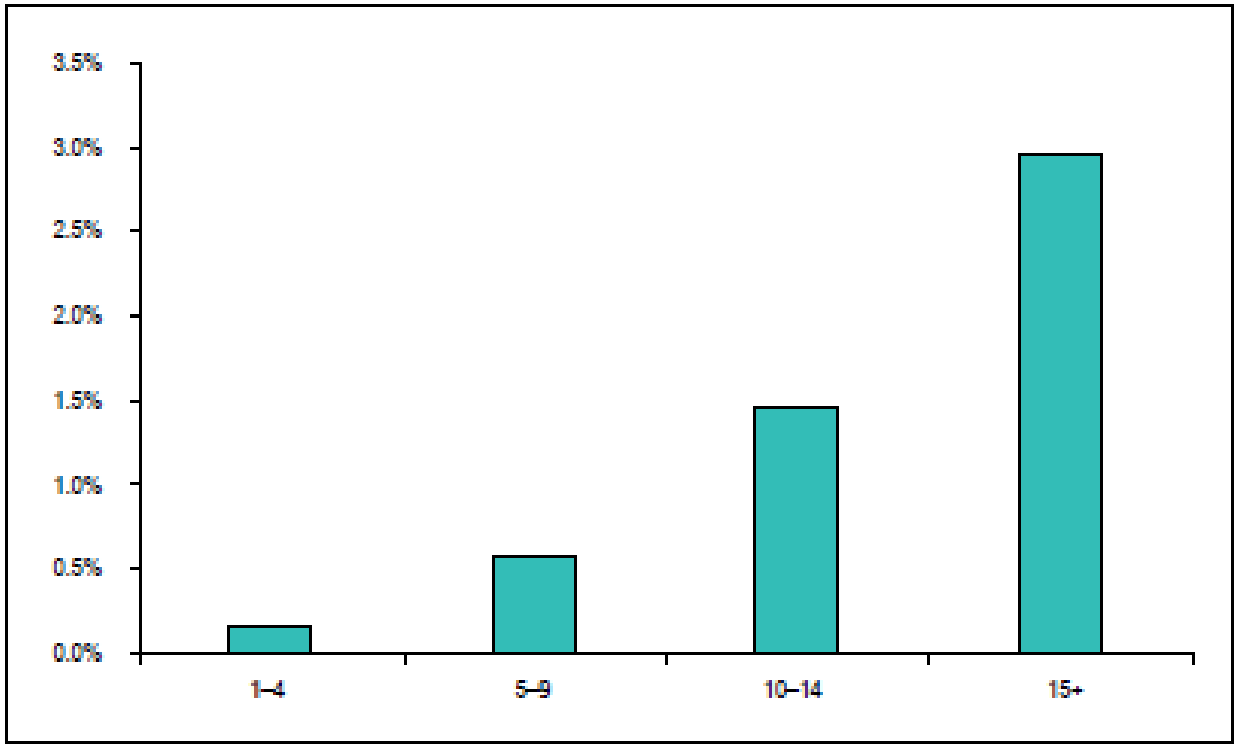
Figure 3 Percentage of seniors, by number of drug classes and jurisdiction, Canada,* 2016



CIHI: Drug Use Among Seniors in Canada 2016 (2018)

Medication Safety

Figure 8 Percentage of seniors hospitalized for an ADR, by number of drug classes, selected jurisdictions,* 2016



CIHI: Drug Use Among Seniors in Canada 2016 (2018)

Potentially Inappropriate Medications

- Also identified as “PIM”
- A medication or medication class where harm outweighs the benefit, and there are safer alternatives available.
- Include explicit or implicit criteria
- The Beers Criteria are explicit, the accepted standard
  - The Beers Criteria are used by CIHI to identify PIM

CLINICAL INVESTIGATION

American Geriatrics Society 2019 Updated AGS Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults

*By the 2019 American Geriatrics Society Beers Criteria® Update Expert Panel**

The American Geriatrics Society (AGS) Beers Criteria® (AGS Beers Criteria®) for Potentially Inappropriate Medication (PIM) Use in Older Adults are widely used by clinicians, educators, researchers, healthcare administrators, and regulators. Since 2011, the AGS has been the steward of the criteria and has produced updates on a 3-year cycle. The AGS Beers Criteria® is an explicit list of PIMs that are typically best avoided by older adults in most circumstances or under specific situations, such as in certain diseases or conditions. For the 2019 update, an interdisciplinary expert panel reviewed the evidence published since the last update (2015) to determine if new criteria should be added or if existing criteria should be removed or undergo changes to their recommendation, rationale, level of evidence, or strength of recommendation. J Am Geriatr Soc 00:1–21, 2019.

Key words: medications; drugs; older adults; Beers list; Beers Criteria

For the 2019 update, an interdisciplinary expert panel reviewed the evidence published since the last update (2015) to determine if new criteria should be added or if existing criteria should be removed or undergo changes to their recommendation, rationale, level of evidence, or strength of recommendation. Each of the five types of criteria in the 2015 update were retained in this 2019 update: medications that are potentially inappropriate in most older adults, those that should typically be avoided in older adults with certain conditions, drugs to use with caution, drug-drug interactions, and drug dose adjustment based on kidney function.

OBJECTIVES

The specific aim was to update the 2015 AGS Beers Criteria® using a comprehensive, systematic review and grading of the evidence on drug-related problems and adverse events in older adults. The strategies to achieve this aim were to:

https://onlinelibrary.wiley.com/doi/pdf/10.1111/jgs.15767

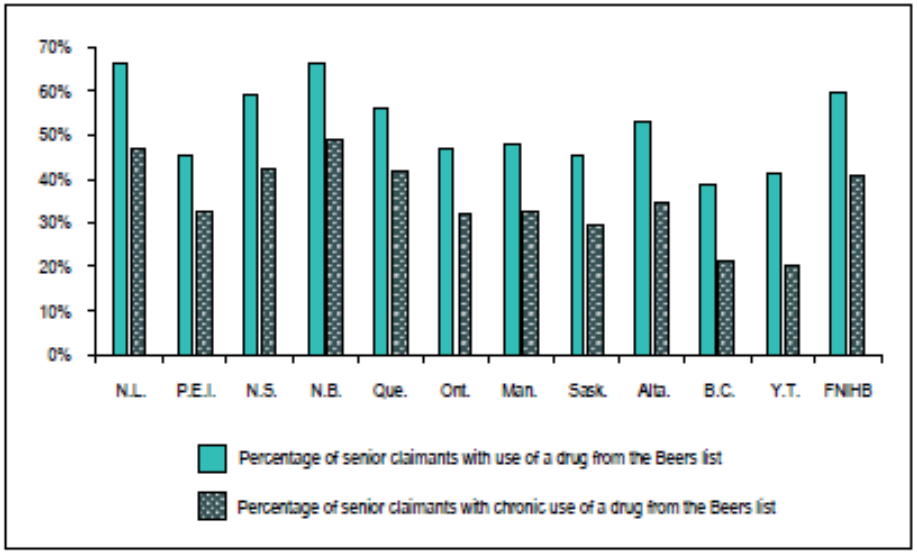
Potentially Inappropriate Medications

- List 3 medications that *you believe* are on the Beers Criteria.
- Explain why they are listed.

Potentially Inappropriate Medication use in Canadian Seniors (CIHI 2018)

Chemical	Indicated uses	Beers criteria rationale (potential harm)	Rate of use	Rate of chronic use
Pantoprazole (PPI) (>8 weeks)	Gastroesophageal reflux disease, peptic ulcer disease	*Clostridium difficile* infection, bone loss, fractures	13.2%	10.3%
Lorazepam	Anxiety, insomnia	Cognitive impairment, delirium, falls, fractures	8.8%	3.6%
Nitrofurantoin	Antibiotic to treat urinary tract infection	Pulmonary toxicity, hepatoxicity, peripheral neuropathy	5.0%	0.1%
Rabeprazole (PPI) (>8 weeks)	Gastroesophageal reflux disease, peptic ulcer disease	*Clostridium difficile* infection, bone loss, fractures	4.3%	3.5%
Amitriptyline	Depression	Sedation, orthostatic hypotension	2.9%	1.8%
Quetiapine	Schizophrenia, bipolar disorder	Cognitive decline, stroke, mortality	2.8%	1.7%
Omeprazole (PPI) (>8 weeks)	Gastroesophageal reflux disease, peptic ulcer disease	*Clostridium difficile* infection, bone loss, fractures	2.7%	2.2%
Zopiclone	Insomnia	Cognitive impairment, delirium, falls, fractures	2.4%	1.5%
Oxazepam	Anxiety, insomnia	Cognitive impairment, delirium, falls, fractures	2.4%	1.4%
Estradiol (oral/ topical patch)	Menopause	Potential carcinogen (breast and endometrium)	2.1%	1.2%

Figure 11 Seniors' usage rate of drugs from Beers list,* by jurisdiction, Canada,† 2016

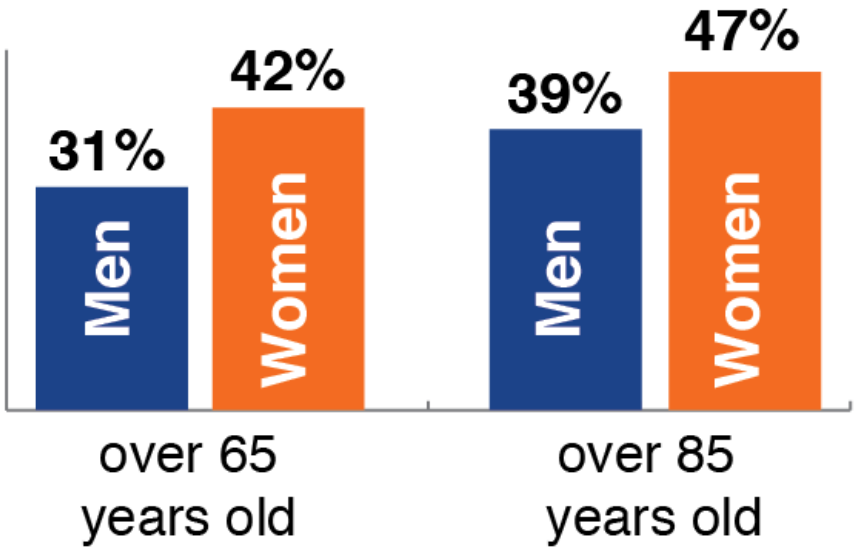


CIHI: Drug Use Among Seniors in Canada 2016 (2018)

What are inappropriate medications?

Medications that pose greater health risks when prescribed for older adults, compared with available drug and non-drug alternatives.

Canadian seniors who take at least one potentially inappropriate medication



Morgan *et al.* 2016.
CMAJ Open; 4: E346-E51.

The cost of inappropriate medication

$419 million

Canadians spend $419M per year on potentially harmful prescription medications. This does not include hospital costs.

$1.4 billion

Canadians spend $1.4B per year in health care costs to treat harmful effects from medications, including fainting, falls, fractures and hospitalizations.

Morgan *et al.* 2016.
CMAJ Open; 4: E346-E51.

CaDeN Priority Medications

- Benzodiazepines
  - falls, fractures, confusion, dementia, hospitalization, MVA
- PPI
  - pneumonia, bone loss, *C. difficile* infection, renal impairment, cardiovascular events
- Sulfonylurea
  - hypoglycemia, cognitive impairment, falls

Your Turn

- What is the most common class of medication used by seniors in Canada?
    a) Opioids
    b) PPI
    c) ACE-I
    d) Thyroid replacements
    e) Statin

Your Turn

- What is the most common class of medication used by seniors in Canada?
    a) Opioids
    b) PPI
    c) ACE-I
    d) Thyroid replacements
    e) Statin

Top 10 in Seniors - Canada

Rank	Drug class	Rate of use	Chronic rate of use
1	HMG-CoA reductase inhibitors	48.4%	43.5%
2	Proton pump inhibitors	32.1%	23.5%
3	ACE inhibitors, plain	24.5%	21.1%
4	Beta-blocking agents, selective	23.5%	20.6%
5	Dihydropyridine derivatives	21.9%	18.8%
6	Thyroid hormones	19.1%	17.9%
7	Angiotensin II antagonists, plain	15.7%	13.8%
8	Natural opium alkaloids	15.1%	2.5%
9	Biguanides	14.9%	12.9%
10	Benzodiazepine derivatives	12.9%	6.1%

CIHI: Drug Use Among Seniors in Canada 2016 (2018)

Top 12 in Seniors - Alberta

Rank	Drug class	Rate of use	Chronic rate of use
1	HMG-CoA reductase inhibitors	44.3%	39.1%
2	Proton pump inhibitors	33.8%	24.4%
3	ACE inhibitors, plain	25.6%	21.7%
4	Thyroid hormones	23.6%	21.9%
5	Beta-blocking agents, selective	22.3%	19.4%
6	Dihydropyridine derivatives	21.0%	17.7%
7	Angiotensin II antagonists, plain	18.3%	15.7%
8	Biguanides	16.7%	14.5%
9	Natural opium alkaloids	16.3%	3.0%
10	Anti-inflammatory preparations, non-steroids for topical use	14.2%	0.6%
11	Benzodiazepine-related drugs	14.1%	8.4%
12	Fluoroquinolones	12.8%	0.0%

CIHI: Drug Use Among Seniors in Canada 2016 (2018)

Top 10 Medication Classes Alberta vs Canada

Rank	Alberta	Canada
1	HMG-CoA reductase inhibitors	HMG-CoA reductase inhibitors
2	Proton pump inhibitors	Proton pump inhibitors
3	ACE inhibitors, plain	ACE inhibitors, plain
4	Thyroid hormones	Beta-blocking agents, selective
5	Beta-blocking agents, selective	Dihydropyridine derivatives
6	Dihydropyridine derivatives	Thyroid hormones
7	Angiotensin II antagonists, plain	Angiotensin II antagonists, plain
8	Biguanides	Natural opium alkaloids
9	Natural opium alkaloids	Biguanides
10	Anti-inflammatory preparations, non-steroids for topical use	Benzodiazepine derivatives

CIHI: Drug Use Among Seniors in Canada 2016 (2018)

Beers Criteria Medications Seniors Claimants in Alberta

Sex/age group	Percentage with any Beers use	Percentage with chronic Beers use
65–74	51.3%	31.9%
75–84	55.5%	37.8%
85+	57.6%	40.3%
F	58.5%	38.9%
F — 65–74	57.2%	36.4%
F — 75–84	60.1%	41.3%
F — 85+	60.2%	42.6%
M	47.4%	30.0%
M — 65–74	44.9%	26.9%
M — 75–84	50.1%	33.6%
M — 85+	53.3%	36.5%
Total	53.4%	34.8%

CIHI: Drug Use Among Seniors in Canada 2016 (2018)

Alberta vs Saskatchewan Beers Medication Use

Sex/age group	AB % any Beers use	SK % any Beers use	AB % chronic Beers use	SK % chronic Beers use
65–74	51.3%	41.6%	31.9%	26.4%
75–84	55.5%	47.9%	37.8%	31.4%
85+	57.6%	52.8%	40.3%	34.7%
F	58.5%	50.2%	38.9%	32.4%
F — 65–74	57.2%	47.0%	36.4%	29.9%
F — 75–84	60.1%	51.6%	41.3%	33.5%
F — 85+	60.2%	55.2%	42.6%	36.5%
M	47.4%	39.9%	30.0%	25.8%
M — 65–74	44.9%	35.9%	26.9%	22.8%
M — 75–84	50.1%	43.3%	33.6%	28.7%
M — 85+	53.3%	48.4%	36.5%	31.4%
Total	53.4%	45.6%	34.8%	29.5%

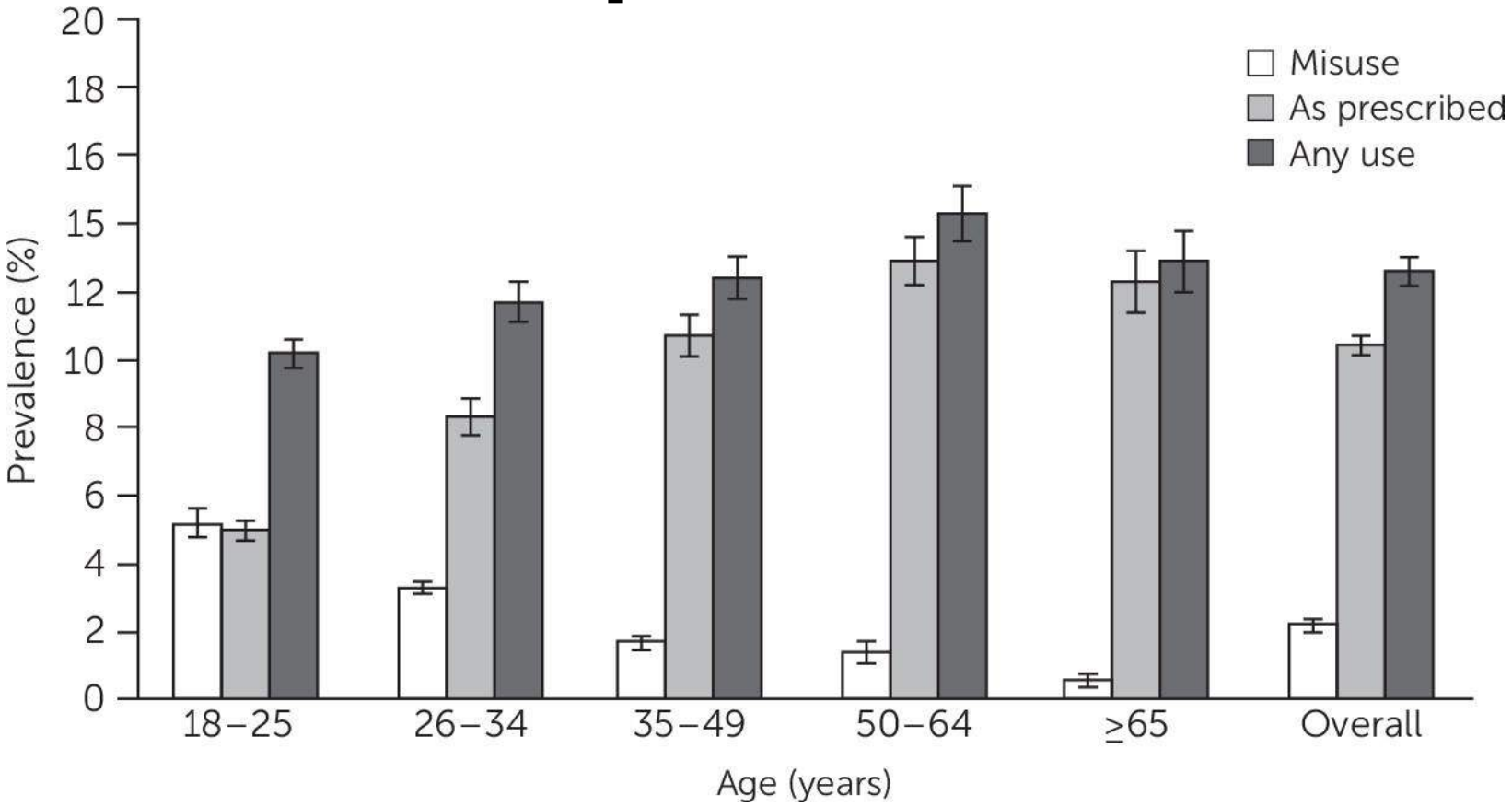
Beers Criteria Medications in Alberta

Medication	Alberta Rank	Overall Use %	Chronic Use %	Canada Rank	Overall Use %	Chronic Use %
Pantoprazole	1	15.3	11.5	1	11.3	8.6
Zopiclone	2	13.9	8.1	5	3.2	2.0
Lorazepam	3	6.5	1.9	2	7.8	2.7
Nitrofurantoin	4	4.7	0.1	3	5.9	0.2
Lansoprazole	5	4.5	3.5	9	2.0	1.5
Omeprazole	6	4.1	3.3	6	2.9	2.3
Estradiol	7	3.2	1.7	10	1.5	0.8
Cyclobenzaprine	8	2.9	0.1	20	1.1	0.1
Amitriptyline	9	2.6	1.7	7	2.8	1.8
Ketorolac	10	1.9	0.0	45	0.3	0.0
Indometacin	11	1.9	0.1	11	1.3	0.1
Quetiapine	12	1.8	1.1	8	2.4	1.4
Metoclopramide	13	1.7	0.2	14	1.2	0.1
Ketorolac	14	1.5	0.0	12	1.3	0.0
Temazepam	15	1.4	0.8	18	1.1	0.6

GI Medications
Sedative Hypnotics
Pain/Muscle

CIHI: Drug Use Among Seniors in Canada 2016 (2018)

PIM Use US – Benzodiazepines



NSDUH, National Survey on Drug Use and Health.

D Maust, et al. Benzodiazepine Use and Misuse Among Adults in the United States. *Psychiatric Services* 2019.

Challenges of Pharmacotherapy in Seniors

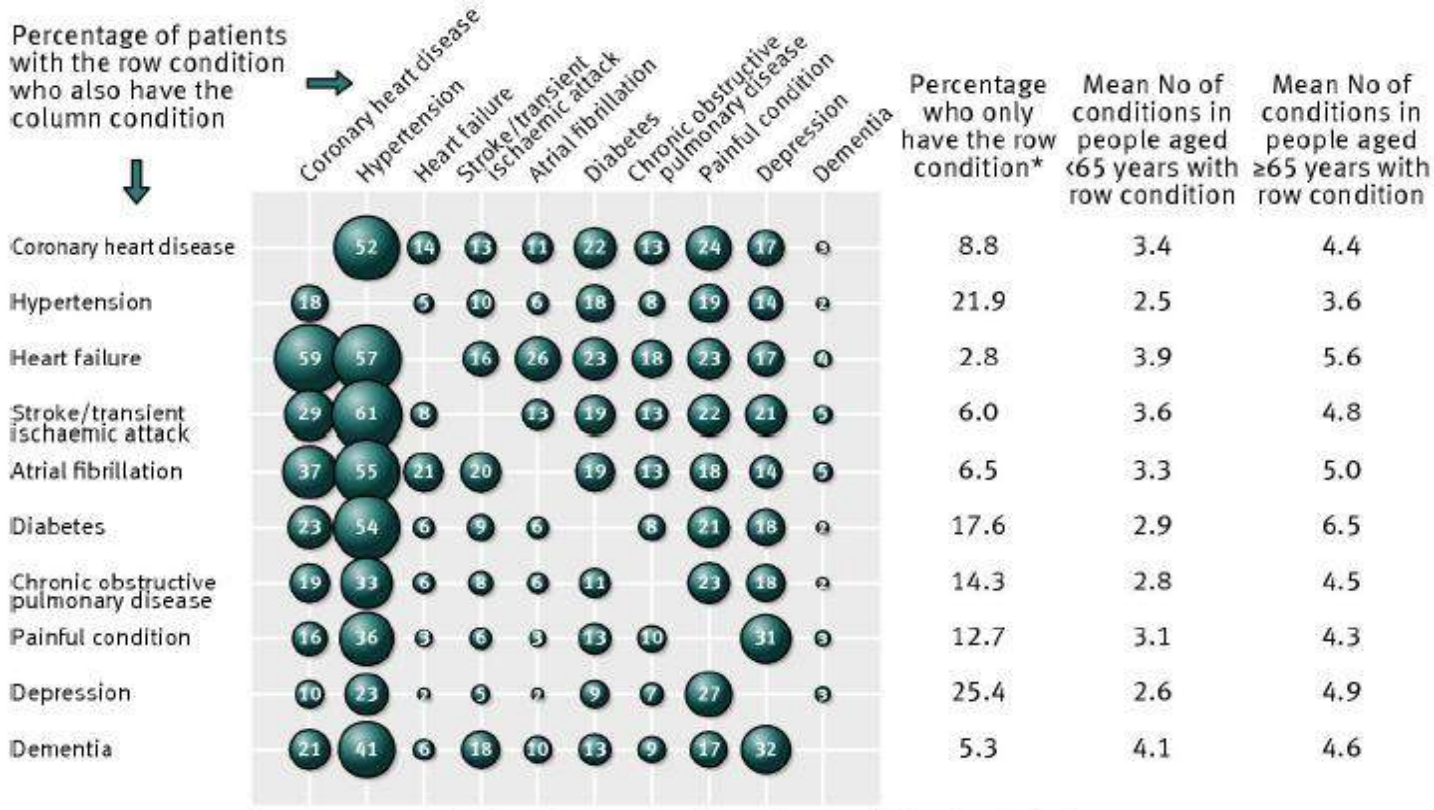
- Diversity
- Multimorbidity/Complexity
- Frailty
- Polypharmacy, cascades
- Interactions, Adverse drug events
- Underuse

Seniors are a diverse group!

- Over 6.3 million seniors in Canada
  (StatsCan 2018 estimates)
- Over 550,000 seniors in Alberta
- Over 90% of seniors live independently in the community

- 56% report being in good health
- 25% of people over the age of 65 live with frailty
- 75-80% of Canadian seniors report having one or more chronic condition

Multimorbidity



* Percentage who do not have one of 39 other conditions in the full count

Comorbidity of 10 common conditions among UK primary care patients[2]

Seniors and Multimorbidity

- Coexistence of multimorbidity and geriatric syndromes
- Multimorbidity associated with
  - mortality
  - disability
  - institutionalization
  - higher number of medications (polypharmacy)
  - adverse drug reactions
  - higher use of resources
  - poorer QOL
    - Boyd CM, 2011, Marengonia A., 2011, Agostini, 2004

Multimorbidity – Competing Outcomes

- Tx meant to improve one outcome (survival) may worsen another (function, new condition)

- Patients are mostly unaware that Tx of one condition could worsen another
    - Fried et al. JAGS 2008

- Seniors face competing outcomes every day:
    - NSAIDS: pain relief vs risk CVA/MI vs GI bleed
    - ASA: MI/angina prevention vs GI upset, bruising
    - Statins: MI prevention vs aches, weakness
    - BP meds: CVA/MI prevention vs dizziness, falls
    - Biphosphonates: # risk vs GI upset, inconvenience

Treatment outcomes

- Significant to prescribers
  - disease specific measures: Hem A1C, BP, Cholesterol level, morbidity, mortality

- Meaningful to seniors
  - life extension vs. quality, preservation of physical and social functioning, relief of symptoms

    - Fried et al. *JAGS 2008*

Multimorbidity

- Boyd C, et al. Clinical Practice Guidelines (CPG) and Quality of Care for Older Patients With Multiple Comorbid Diseases. Implications for Pay for Performance. JAMA 2005;294;716.

- Criticisms of CPG
  - Applicability to older adults
  - Short vs long-term goals
  - Quality of scientific evidence
  - Incorporation of scientific evidence
  - Lack of patient-centred domains (e.g. cost, burden, convenience)

Guidelines and Time to Benefit

- Life expectancy
  - Patients may have a life expectancy that is shorter than the time needed to benefit from specific drugs
    - Holmes et al. *Arch Intern Med 2006*
  - Limitations of prognostic tools & measures
- Time until benefit vs. time until harm
  - ADR higher < 30 days
- Goal setting
  - Short-term (< 1 yr)
  - Mid-term (1-5 y)
  - Long-term goals (> 5 y)
    - Yourman et al. *JAMA 2012*
- Goals of care vs standards of practice

Multimorbidity Case Examples

- Hughes, et al. Guidelines for people not for diseases. Age Ageing 2013;42:62-69
- 2 scenarios
  - Mrs A: A 78-year-old woman with previous MI, type 2 diabetes, osteoarthritis, COPD and depression
  - Mr B: A 75-year-old man with type 2 diabetes mellitus and COPD
- Derive a treatment plan including prescribed drugs, self-care tasks and recommended healthcare follow-up.

Mrs. A

- Minimal drug treatment recommendations
  - Citalopram
  - Omeprazole
  - Metformin
  - Inhaled salbutamol
  - Inhaled salmeterol
  - Aspirin
  - Lisinopril
  - Simvastatin
  - Bisoprolol
  - acetaminophen or topical diclofenac
  - Smoking cessation medication (nicotine replacement, varenicline or buproprion)

Mrs. A

- Self-care recommendations
  - Improve sleep hygiene
  - 20–30 min daily of aerobic exercise
  - Local muscle strengthening exercise
  - Mediterranean diet/healthy diet and eat 2–4 portions of oily fish
  - Alcohol consumption within recommended limits
  - Weight loss
  - Self-monitoring of plasma glucose integrated with the educational program
  - Smoking cessation
  - Appropriate footwear for diabetes and osteoarthritis

Mrs. A

- Follow-up recommendations
  - Active monitoring of mood by family physician
  - Low-intensity psychosocial intervention
  - Annual clinical review for diabetes (includes most recommended care post-MI)
  - Annual clinical review for COPD
  - Annual clinical review for osteoarthritis
  - Annual retinal screening by quality assured digital retinal photography program
  - 3–6 monthly monitoring of HbA1c and 4–6 monthly monitoring of blood pressure
  - One-off pneumococcal and annual influenza immunization
  - Offer referral to smoking intensive support service
  - Offer referral for pulmonary rehabilitation

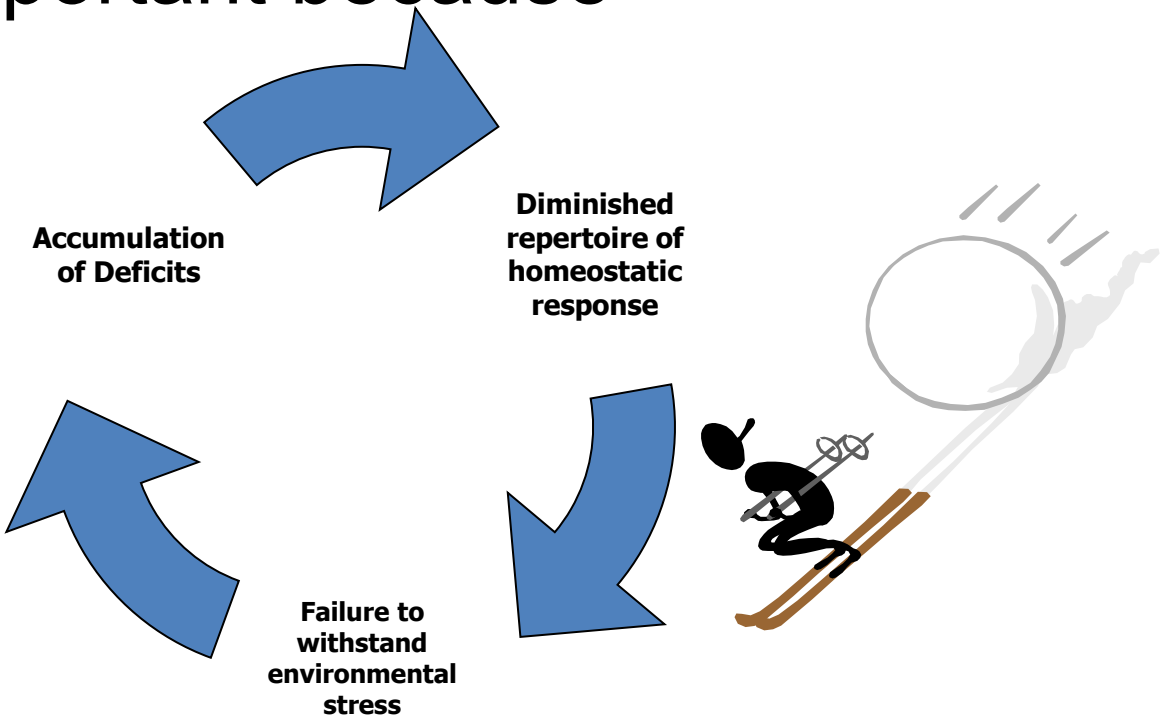
Your Turn

- Is following CPG for Mrs. A patient-centred?

- Does guideline address:
  - Patients over 75y
  - Co-morbidity
  - Patient choices or preferences
  - Potential challenges to adherence

Frailty

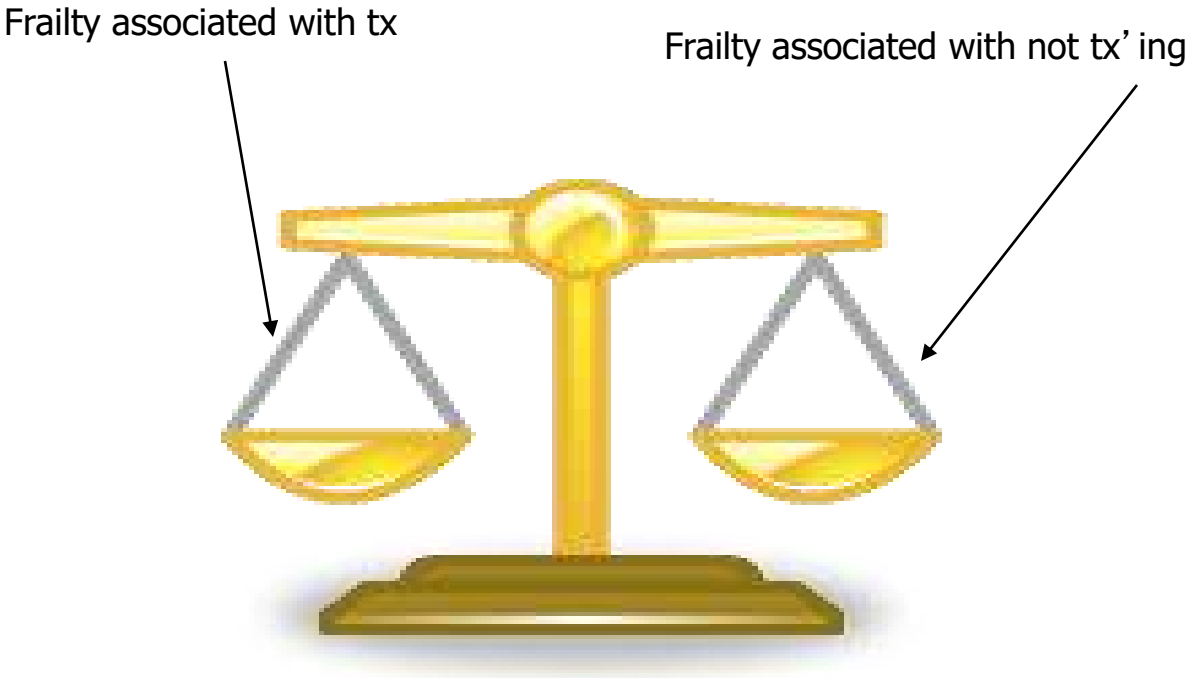
- … is important because



Slide courtesy of Drs. Daryl Rolfson & Ken Rockwood

Frailty

- Deciding to Treat



Frailty

- Do guidelines apply?
  - Older patients generally underrepresented in studies that inform guidelines
  - Frailty not considered
  - Many guidelines do not address goals of care in the context of life expectancy and time to benefit

Fit → Vulnerable → Frail

Risk of ↑ frailty not adhering to guidelines

Risk of ↑ frailty adhering to guidelines

Holmes H, et al, Arch Intern Med 2006;166(6):605-9,
Cox L, et al Can Fam Phys 2011;57 (7):e263-9.

Age-Related Pharmacokinetic Changes

Decreases	Increases
Splanchnic & hepatic blood flow	Gastric pH
Surface area of small intestine & gastric motility	Adipose Tissue
Lean Muscle Mass	α_1 – glycoprotein (protein binding)
Renal tubular secretion & glomerular filtration	
Total body water	
Serum albumin	

Polypharmacy

- Concurrent use of multiple medications (WHO definition)

- Use of more medications than are clinically indicated

- When a medication regimen contains at least one unnecessary medication

Polypharmacy - Consequences

- Clinical consequences can be serious:
  - ADRs[1,3]
  - Falls[2]
  - Medication errors[1]
  - Medication non adherence[1,3]
  - Excessive costs to the patient and society[1]
  - ↑ Risk of geriatric syndromes[3]
  - ↑ Risk of morbidity/mortality[3]
  - ↑ Risk of inappropriate prescribing[3]

[1]*Bain KT, et al. JAGS 2008;56:1946-1952.*
[2]*Sergi G, et al. Drugs Aging 2011;28(7):509-518.*
[3] *Hajjar ER, et al. Am J Geriatr Pharmacother 2007;5(4):345-351.*

INTERNATIONAL JOURNAL OF GERIATRIC PSYCHIATRY
Int J Geriatr Psychiatry 2008; **23**: 490–496.
Published online 18 October 2007 in Wiley InterScience
(www.interscience.wiley.com) **DOI**: 10.1002/gps.1921

Medication use in nursing home residents with advanced dementia

David M. Blass[1,2,3]*, Betty S. Black[2,3,4], Hilary Phillips[2], Thomas Finucane[3,5], Alva Baker[2,7], David Loreck[8] and Peter V. Rabins[2,3,4,6]

Results Patients ($n = 125$) were prescribed a mean of 14.6 medications during the 6 months prior to study enrollment. In a subgroup of patients who died during the study ($n = 88$), as the time of death approached, the total number of medications prescribed did not vary but the types of medications prescribed did change, with an increase in palliative medications such as opiate analgesics and a decrease in other medication classes such as antibiotics, anti-dementia agents, cardiovascular agents, and psychotropic agents, among others. In linear regression analyses, total medication prescription at study entry was associated with study site, antibiotic treatment, presence of cardiovascular disease, and treatment of gastrointestinal or dermatological conditions.

Integrating Palliative Medicine into the Care of Persons with Advanced Dementia: Identifying Appropriate Medication Use

Holly M. Holmes, MD,† Greg A. Sachs, MD,*‡ Joseph W. Shega, MD,*§ Gavin W. Hougham, PhD,*‖ Deon Cox Hayley, DO,*# and William Dale, MD, PhD**

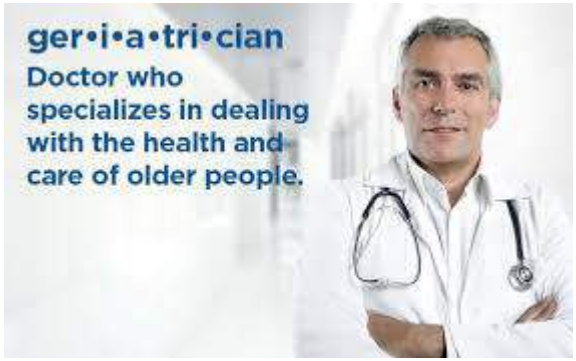
RESULTS: Patients were taking an average of 6.5 medications at enrollment. Six patients were taking 10 or more medications daily. Consensus was reached ranking the appropriateness of 69 of 81 medication classes for patients with advanced dementia. Overall, 5% of the 221 medications prescribed at enrollment were considered to be never appropriate, and 10 of 34 patients (29%) had been taking a medication considered to be never appropriate.

CONCLUSION: Based on these preliminary findings, consensus criteria for prescribing in advanced dementia are needed to decrease polypharmacy and reduce the use of medications that are of minimal benefit or high risk. J Am Geriatr Soc 56:1306–1311, 2008.

Your Turn

- What drives polypharmacy?

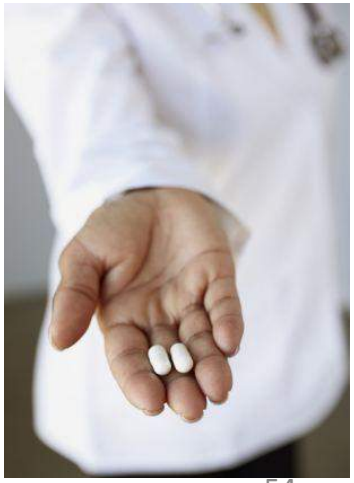
Provider Contributors to Polypharmacy



No standard process

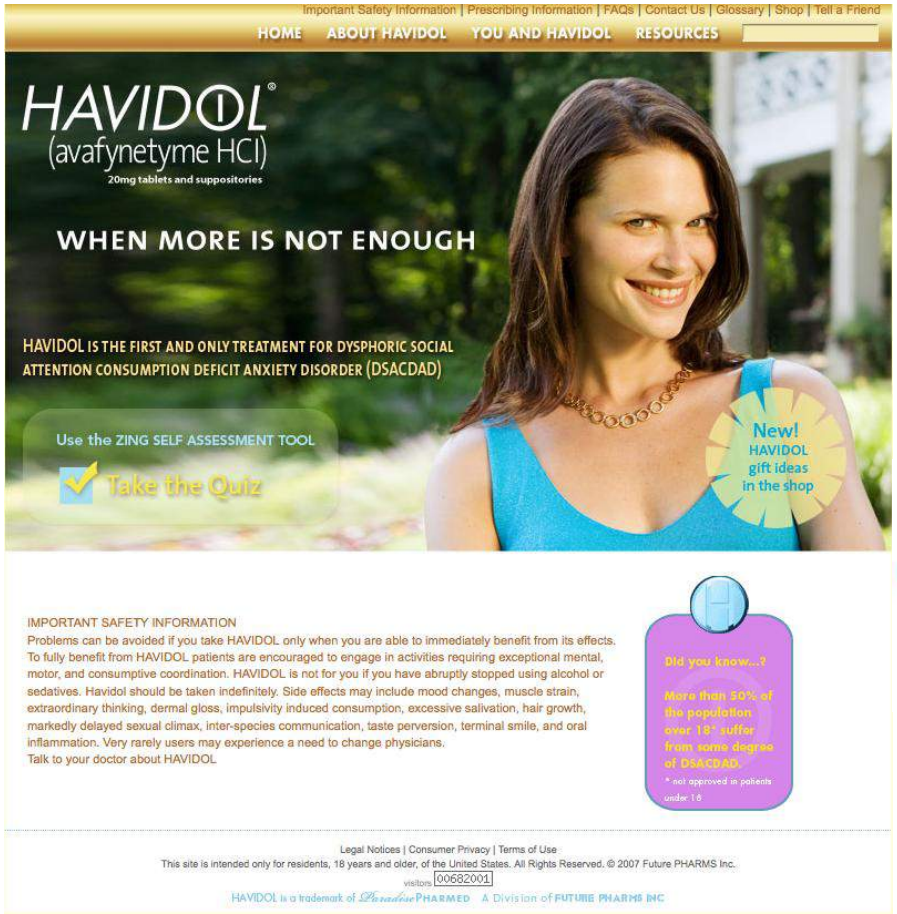
Time Consuming

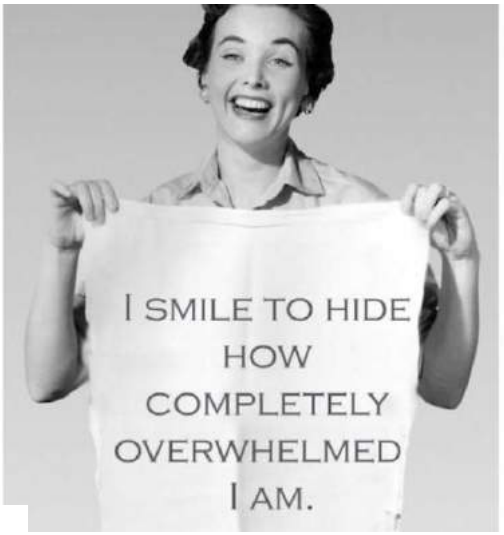
Knowledge and skills

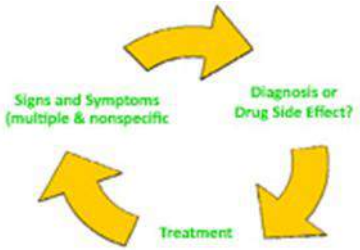


Patient Expectations

Patient and Societal Contributors to Polypharmacy

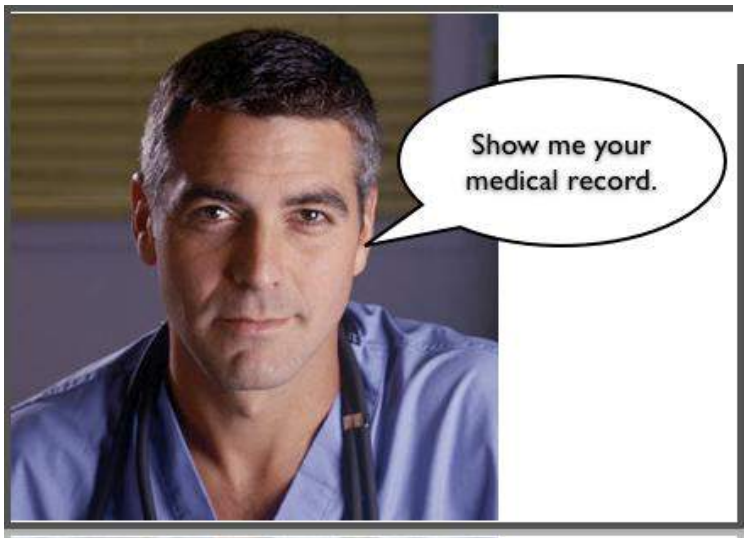






System Contributors to Polypharmacy

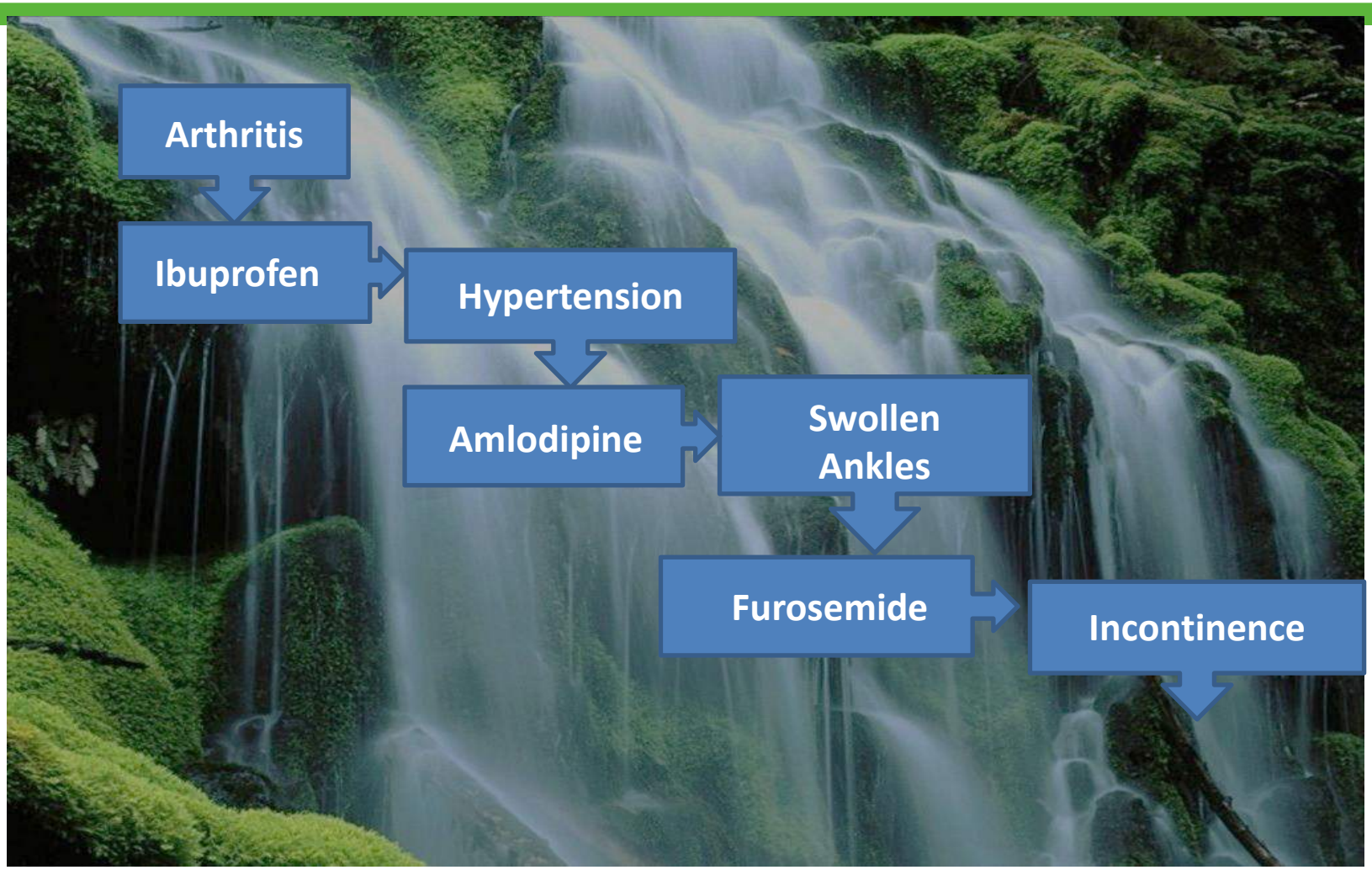
Clinical Practice Guidelines



DRUGCOVERAGE™.CA

A GUIDE TO REIMBURSEMENT

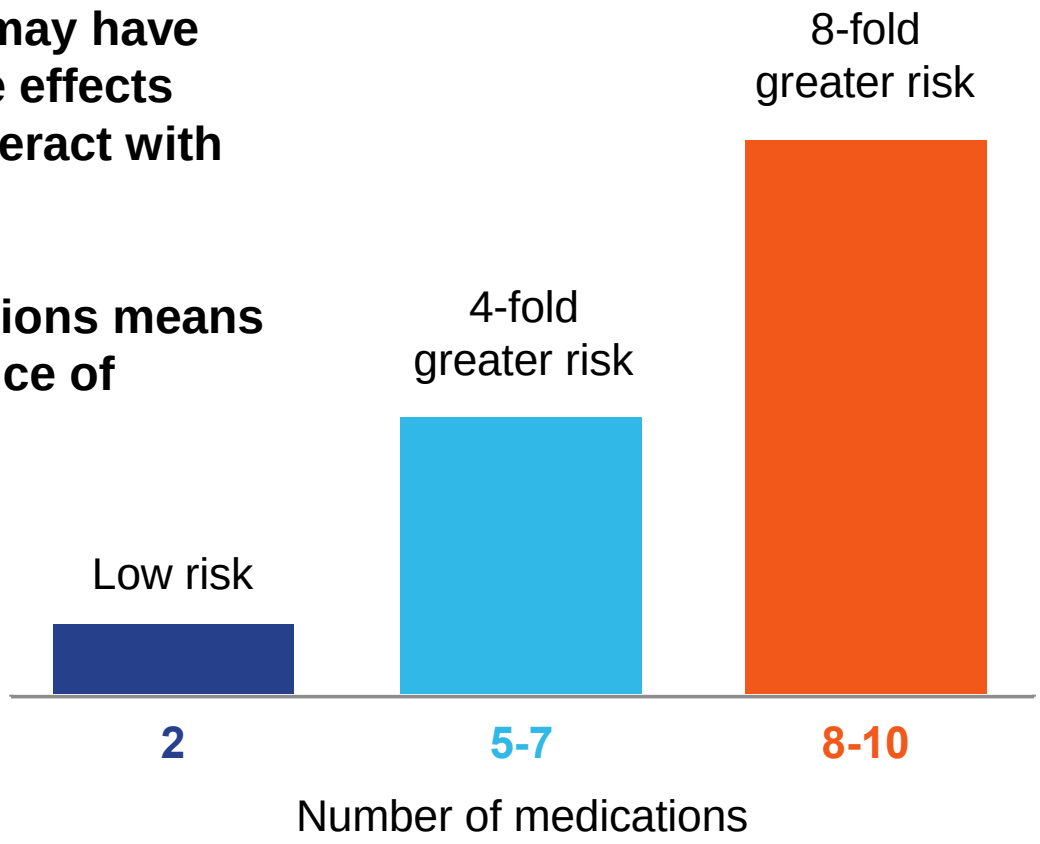
Prescribing cascades



Risk of drug-drug interactions

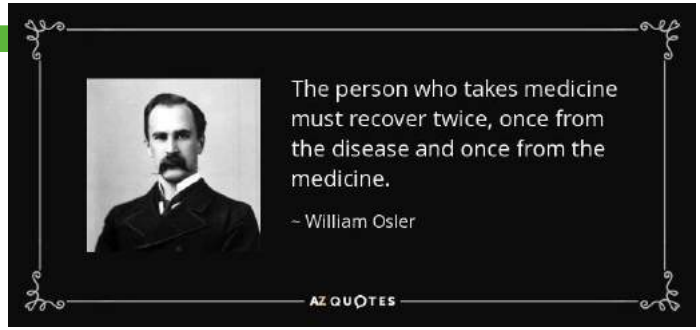
Medications may have unpredictable effects when they interact with each other.

More medications means a higher chance of interactions.



Johnell, K., Klarin, I. 2007. Drug Safety; 30 (10): 911-918

Adverse Drug Events



- Medications contribute to hospital admissions among older persons
  - 50% of these are both predictable and preventable
- Consider adverse drug events, intentional non-adherence, therapeutic failure, adverse drug withdrawal events, medication error and under use of some therapies
- Number of drugs most important risk factor

- Grymonpre R, et al JAGS 1988; 36(12):1092-8; Kalisch LM et al, Int J Qual Health Care 2012;24(3):239-49

Who is most at risk of harmful effects of medication?

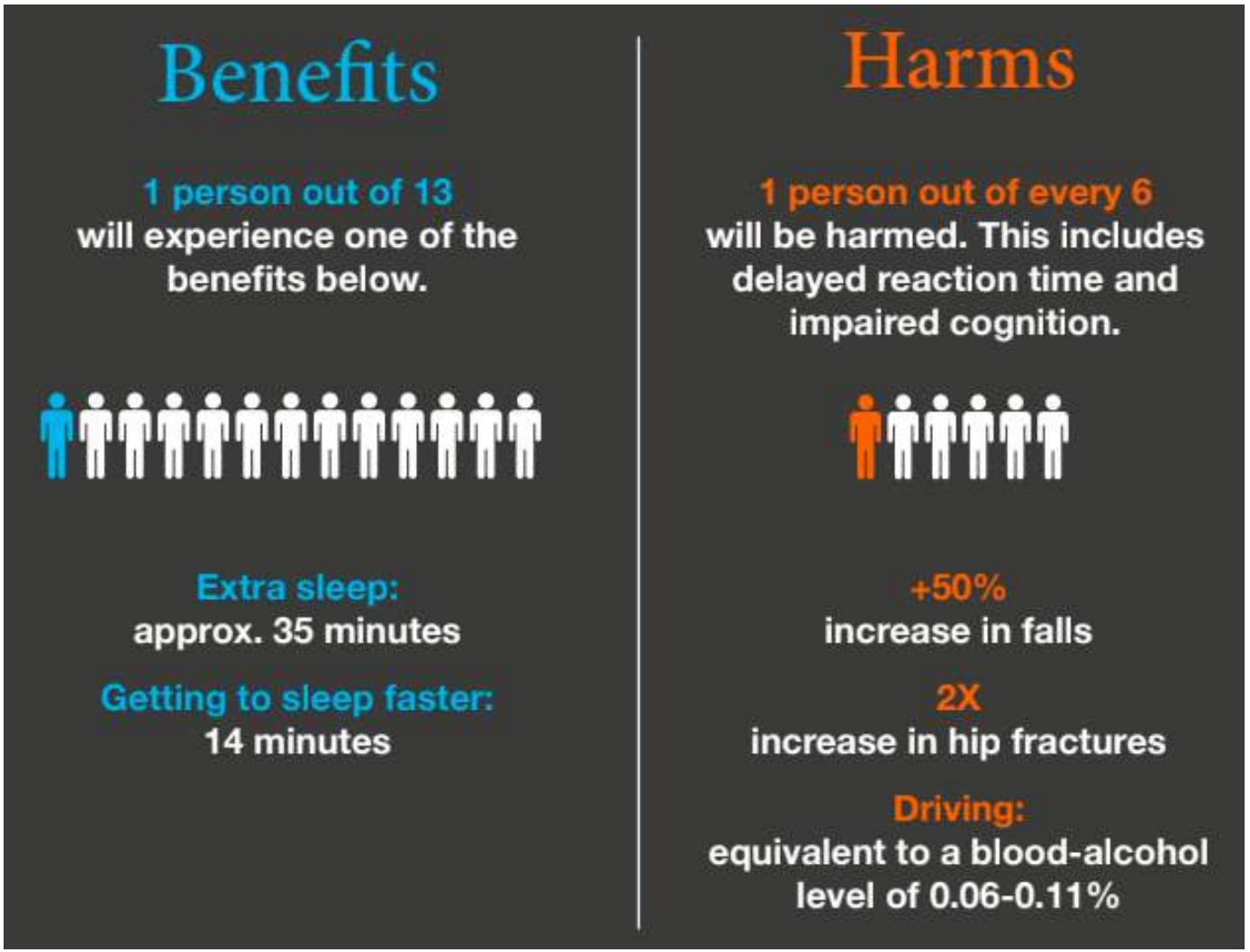
1. People with multiple chronic conditions
2. Women
3. People over the age of 65

In 2016 in Canada:

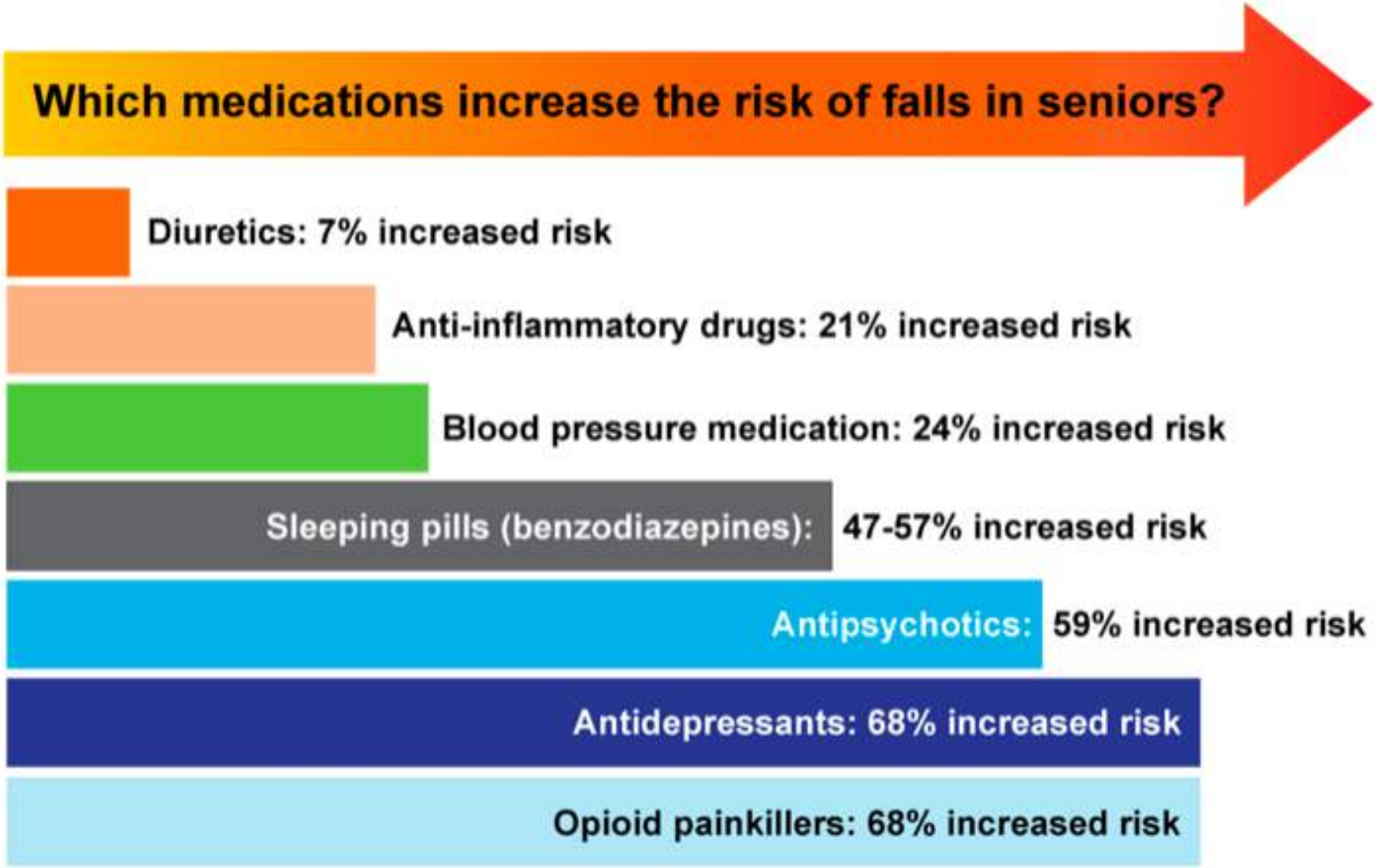
- **0.7% of seniors (= 41,300 seniors)** were hospitalized due to an adverse drug reaction
- **1 in 143 seniors are hospitalized** due to harmful effects of their medication.

Canadian Institute for Health Information. Drug Use Among Seniors in Canada, 2016. Ottawa, ON: CIHI; 2018.

Are benzos effective for insomnia?



CIHI (2018) ; Cumming et al. (2003) ; de Jong et al. (2013) ; Glass, J, et al. (2005) ; Hansen RN, et a l (2015) ; Smith MT et al. (2002)



Sources: de Jong *et al.* 2013; Huang *et al.* 2012; Kelly *et al.* 2003

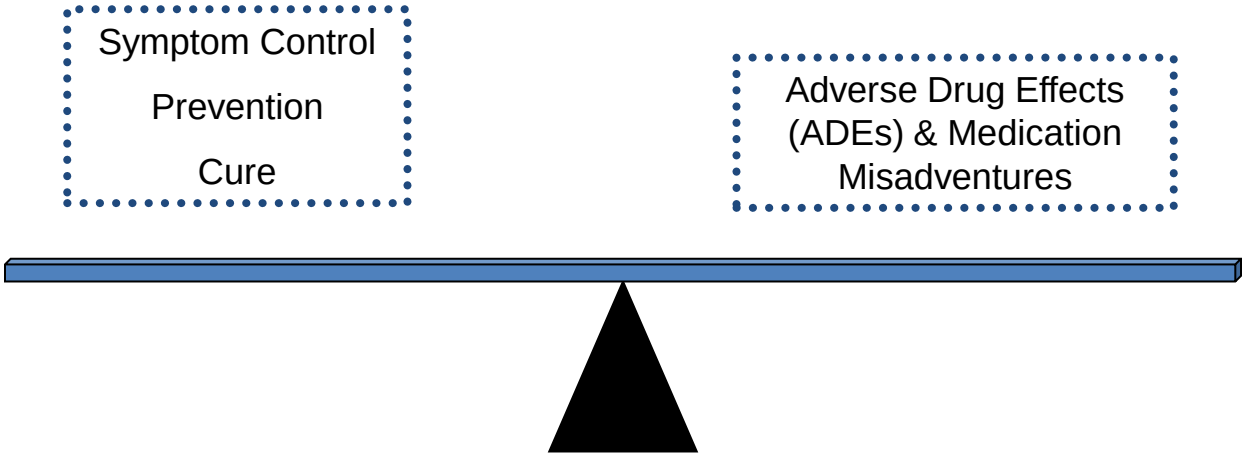
Examples of Under Use

- LMWH for venous thromboprophylaxis (25%)
- Appropriate anticoagulation in A. Fib (51%)
- Optimal treatment for osteoporosis after hip fracture (98%)

Garasto S, et al, Aging Clin Exp Res 2017;29(3):483-490.
Induruwa I, et al, Geriatr Gerontol Int. 2017 Nov;17(11):2178-2183,
Jennings LA, et al. J Am Geriatr Soc. 2010;58(4):650-7

A Fine Balance

- Older patients take many different medications



Your Turn

- What examples of medication misadventures have you observed in your practice?

A Transfer Gone Wrong

- 93 year old woman with dementia sent from LTCF for lethargy and confusion for 1-2 days.
- A few days prior she had a near syncopal event (fall stopped by bathroom sink) and an episode of N/V.
- The patient had been admitted a month prior with three episodes of syncope and some N/V and was diagnosed at that time with seizures and started on levetiracitam

A Transfer Gone Wrong

- PMHx:
  - Dementia
  - Depression
  - GERD
  - Seizure (recently diagnosed)
  - Restless Leg Syndrome
  - CVA
  - HLP
  - CHF
  - CAD
  - HTN
  - PVD

A Transfer Gone Wrong

- On admission:

1. Acebutolol 200 mg daily
2. Clopidogrel 75 mg daily
3. Atorvastatin 10 mg daily
4. Lisinopril 20 mg daily
5. Salt Tablet 1g BID
6. Mirtazipine 45 mg daily
7. Ropinirole 1 mg q8h prn and 3 mg qhs
8. Leveteracitam 500 mg bid
9. Trazodone 50 mg q8h prn
10. Loratadine 10 mg daily
11. Prochlorperazine 25 mg q6h prn
12. Meclizine: 25 mg qid
13. Hydroxyzine 25 mg q8 hours prn
14. Tears eye drops
15. Docusate 100 mg daily
16. PEG 3350
17. Senna
18. MVI
19. TUMS prn
20. Ranitidine 150 mg bid

Medications Rationalized

1. Lisinopril
2. Metoprolol
3. Clopidogrel
4. Atorvastatin
5. Ropinirole
6. Mirtazapine
7. Levetiracetam
8. Multiple Vitamins

20 Meds to 8 at discharge

Navigating the challenges

Barriers to Deprescribing

- What sort of barriers do you experience when trying to reduce medications?

Barriers to discontinuation

- Patient & Family Perspective:
  - Patients can become psychologically attached to medications
  - Perception of medication discontinuation
    - ‘abandoned’
    - ‘substandard’
    - ‘terminal’
    - ‘death is imminent’

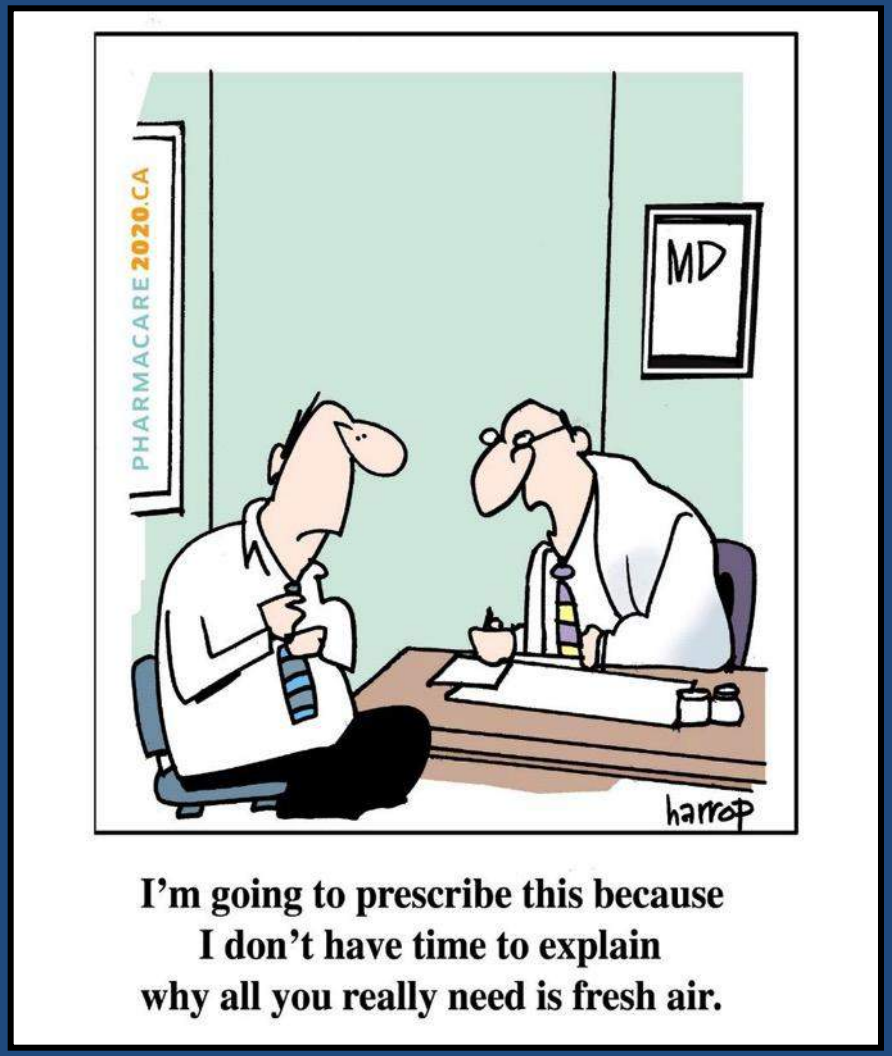
Bain KT, et al. JAGS 2008;56:1946-1952.

Barriers to discontinuation

- Clinician's perspective
  - Once initiated, it may be difficult to stop
  - Concern for a patient's resistance to change
  - Fear of damaging the clinician-patient relationship
  - Uncomfortable discontinuing a medication that another clinician prescribed- this requires tact…..

Bain KT, et al. JAGS 2008;56:1946-1952.

“But what can I take instead?”



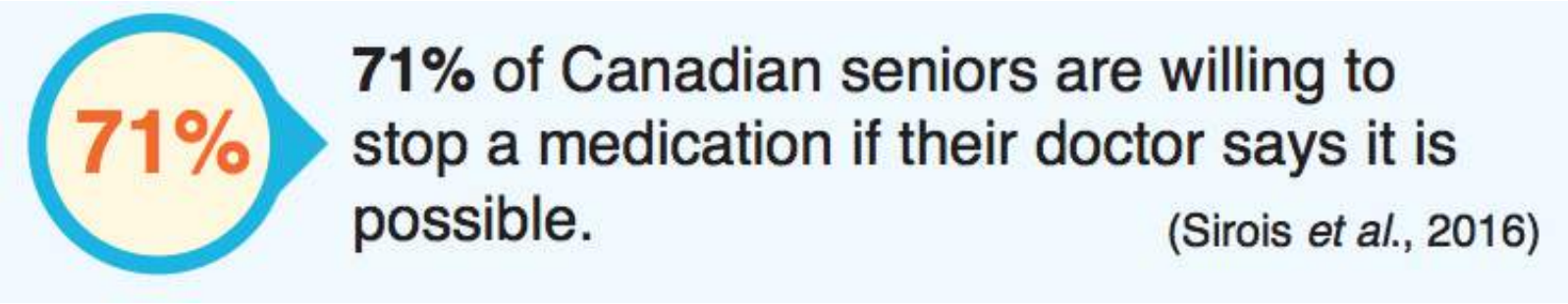
Barriers to discontinuation

- System's perspective
  - Research studies do not regularly demonstrate the effects of medication discontinuation

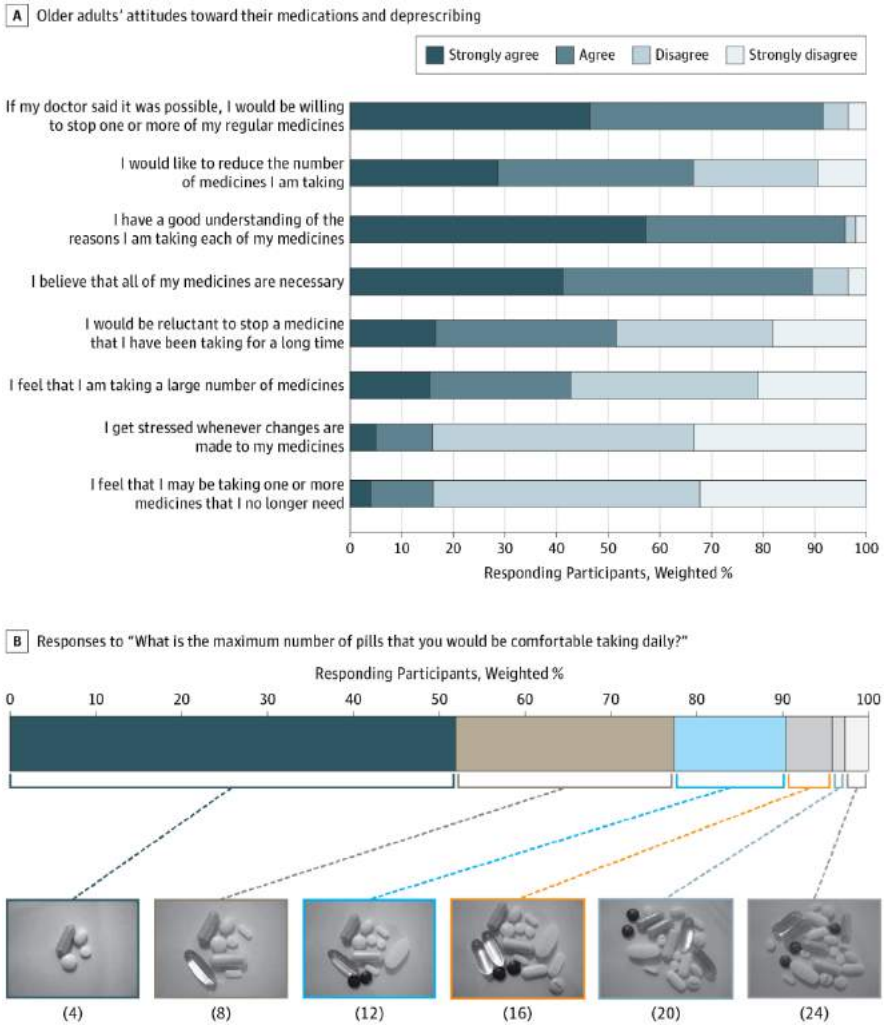
Bain KT, et al. JAGS 2008;56:1946-1952.

Older Adults and Deprescribing

① Direct deprescribing method: *"I see you are taking a lot of pills, I want to discuss getting you off some of them"*

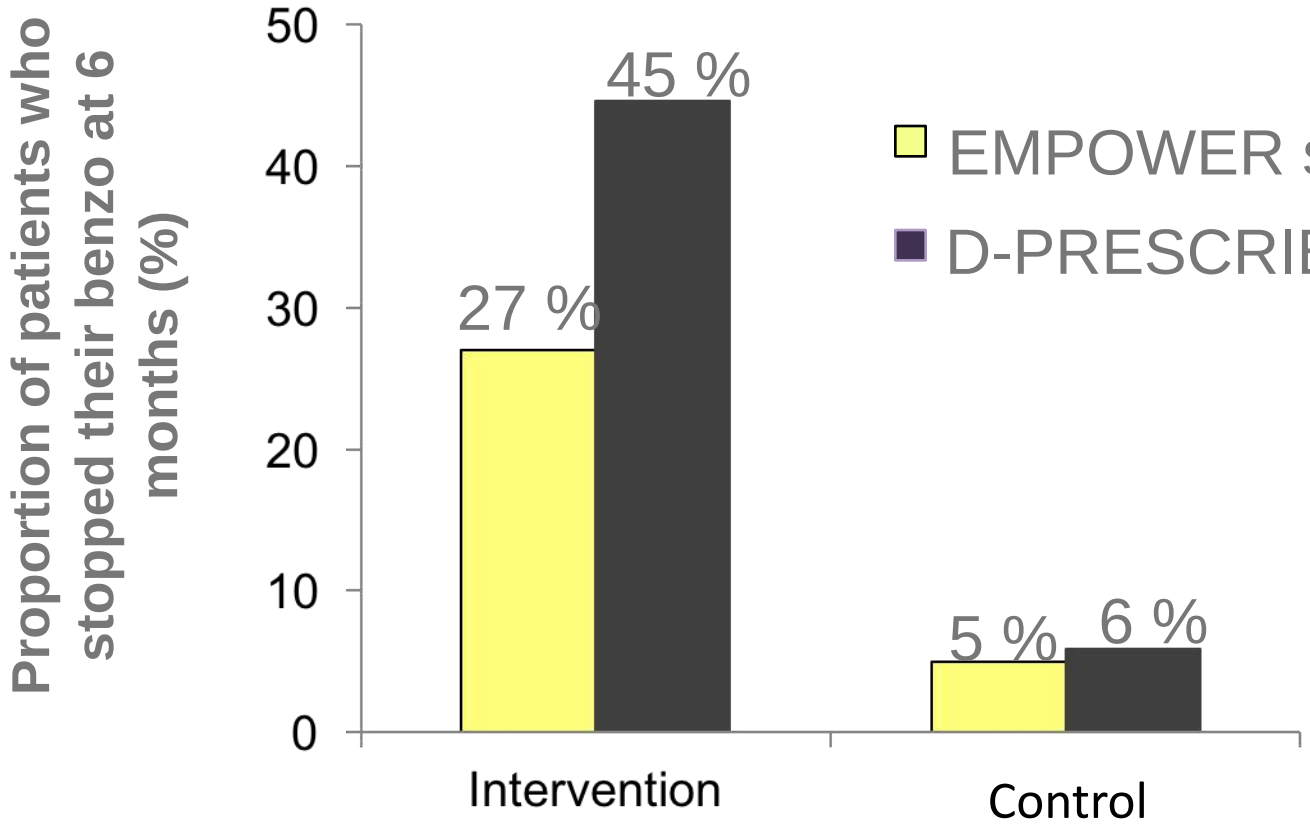


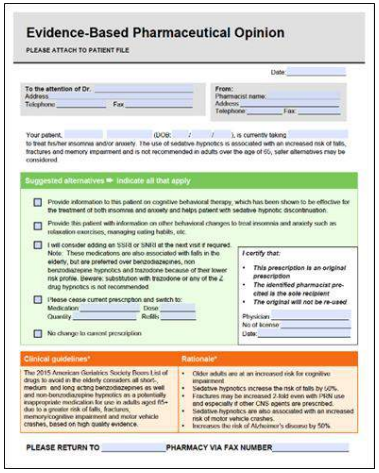
Older Adults and Deprescribing



- 68% willing to de-Rx
  - Aoki 2019
- 67% wanted to reduce the number of medications they were taking
- 92% said they would stop a medication on advice of the MD
  - Reeve 2018

EMPOWER vs D-PRESCRIBE
Cessation rates - benzodiazepines





Product Monographs

PRODUCT MONOGRAPH

PrIMOVANE®
(zopiclone)

Tablets, 5.0 mg and 7.5 mg

Treatment with IMOVANE should usually not exceed 7-10 consecutive days. Use for more than 2-3 consecutive weeks requires complete re-evaluation of the patient. Prescriptions for IMOVANE should be written for short-term use (7-10 days) and it should not be prescribed in quantities exceeding a 1-month supply.

sanofi-aventis Canada Inc.
2905 Place Louis R.-Renaud
Laval, Quebec H7V 0A3

Date of Revision:
September 27, 2018

Submission Control No.: 217812

Drug Withdrawal

- **By definition an adverse drug withdrawal event (ADWE) is**:

  "A clinically significant set of symptoms or signs caused by the removal of a drug"

Bain KT, et al. JAGS 2008;56:1946-1952

Drug Withdrawal

- # of medications increases ADR 2-3 fold

BUT

- Underlying disease could worsen without treatment
  - 26% of drug removals in ambulatory care

Sergi, G et al. Drugs Aging 2011: 28(7): 509-518
Graves, T et al. Arch Intern Med 1997: 157: 2205-2210

Drug Withdrawal

1. Physiological withdrawal reaction

   rebound tachycardia after discontinuing a beta-blocker

2. Exacerbation of the underlying condition

   worsening arthritis pain after stopping an NSAID

3. New Set of Symptoms

   excessive sweating with stop of an SSRI

Bain KT, et al. JAGS 2008;56:1946-1952
Graves T, et al. Arch Intern Med 1997;157:2205-2210

Drug Withdrawal – Risk Factors

- Duration of therapy
- Displaying characteristics of physical dependence or abuse
  - Female, social isolation, history of substance use disorder, history of mental health diagnoses
- Psychological dependence
  - Feeling abandoned, perceive substandard care

Culberson, JW et. Al. Geriatrics 2008;63(9):22-26,31
Bain KT, et al. JAGS 2008;56:1946-1952

Drug Withdrawal

- Classes of medications
- CNS
  - Benzodiazepines
  - Anticonvulsants
  - Antidepressants
- Cardiovascular
  - Beta-blockers

[1]*Shoba, I et al. Drugs Aging 2008; 25(12): 1021 – 1031*
[2]*Bain KT, et al. JAGS 2008;56:1946-1952*

Drug Withdrawal

The war against Polypharmacy: A New Cost-Effective Geriatric-Palliative Approach for Improving Drug Therapy in Disabled Elderly People

Doron Garfinkel MD[1], Sarah Zur-Gil MA[2] and Joshua Ben-Israel MD[3]

[1]Department of Evaluation & Rehabilitation, [2]Pharmacy, and [3]Directorate, Shoham Geriatric Medical Center, Pardes Hana, Israel

Table 3. Success rate after 1 year of follow-up according to types of drugs discontinued

Drug group	No. of patients with drug discontinuation	Recurrence of symptoms/signs* (failures)	Success rate (%)
Nitrates	22	0	100%
H_2 blockers	35	2	94%
Antihypertensives	51	9	82%
Diuretics (furosemide)	27 (25)	4 (4)	85%
Pentoxifylline	15	0	100%
Potassium supplement	20	0	100%
Iron supplement	19	1	95%
Sedatives & tranquilizers	16	2	88%
Antidepressants	19	5	74%
Antipsychotics	13	4	69%

* See text for further explanations

IMAJ 2007; 9:430-434

We have some solutions

What can be done?

Deprescribing means reducing or stopping medications that may not be beneficial or may be causing harm. The goal of deprescribing is to maintain or improve quality of life.

Deprescribing involves patients, caregivers, healthcare providers and policy makers.

Deprescribing must always be done with the healthcare team *and* the patient/resident, and caregivers.

Deprescribing – Possible Outcomes

- Increase adherence
- Reduce ADRs (e.g., falls, cognition)
- Reduce costs
- Improve quality of life/ burden

Iyer S, et al. Drugs Ageing 2008;25:12:1021-31

Evidence – Interventions to Improve Polypharmacy

- 32 relevant trials from 12 countries
- N= 28,672 older adults

- What worked?
  - providing pharmaceutical care
    - involves promoting the correct use of medicines by identifying, preventing and resolving medicine-related problems
  - using computerized decision support
    - a program on the prescriber's computer that aids the selection of appropriate treatment(s)

Rankin A, et al. Cochrane 2018

Evidence – Interventions to Improve Polypharmacy

- Numerous systematic reviews identified:
  - Pharmacist involvement
  - Computerized alerts
  - Tools (e.g. Beers)
  - Education (staff, patients)
  - Geriatrics consults

Garcia 2006, Spinewine 2007, Kaur, 2009

Interventions

- What could you do differently at your facility?

Frameworks

1. ascertain all current medications
2. identify patients at high risk of or experiencing adverse drug reactions
3. estimate life expectancy in high-risk patients
4. define overall care goals in the context of life expectancy
5. define and confirm current indications for ongoing treatment
    - Scott, *Am J Med, 2012*

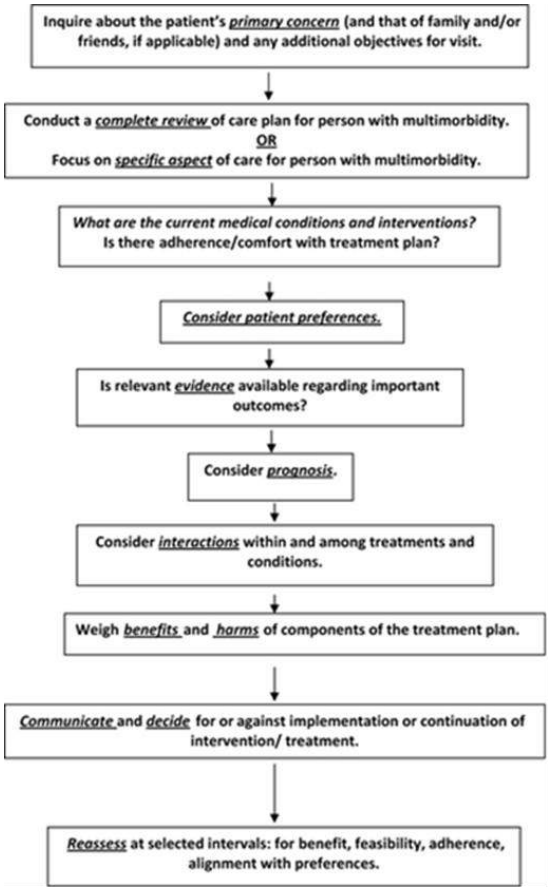
Frameworks

6. determine the time until benefit for disease-modifying medications
7. estimate the magnitude of benefit versus harm in relation to each medication
8. review the relative utility of different drugs
9. identify drugs that may be discontinued
10. implement and monitor a drug minimization plan with ongoing reappraisal of drug utility and patient adherence by a single nominated clinician
    - Scott, *Am J Med, 2012*
    - *Similar to AGS Multimorbidity Guideline, 2012*

Interventions - Deprescribing

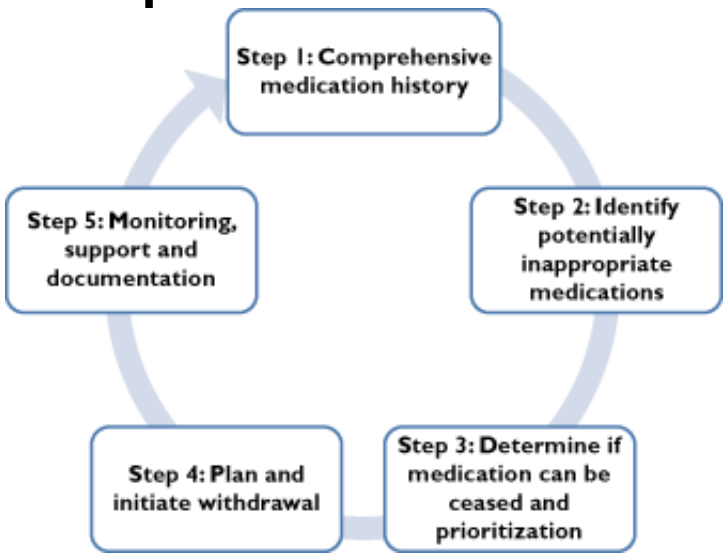
Scott, et al. JAMA Intern Med. 2015;175(5):827-834. doi:10.1001/jamainternmed.2015.0324

Frameworks

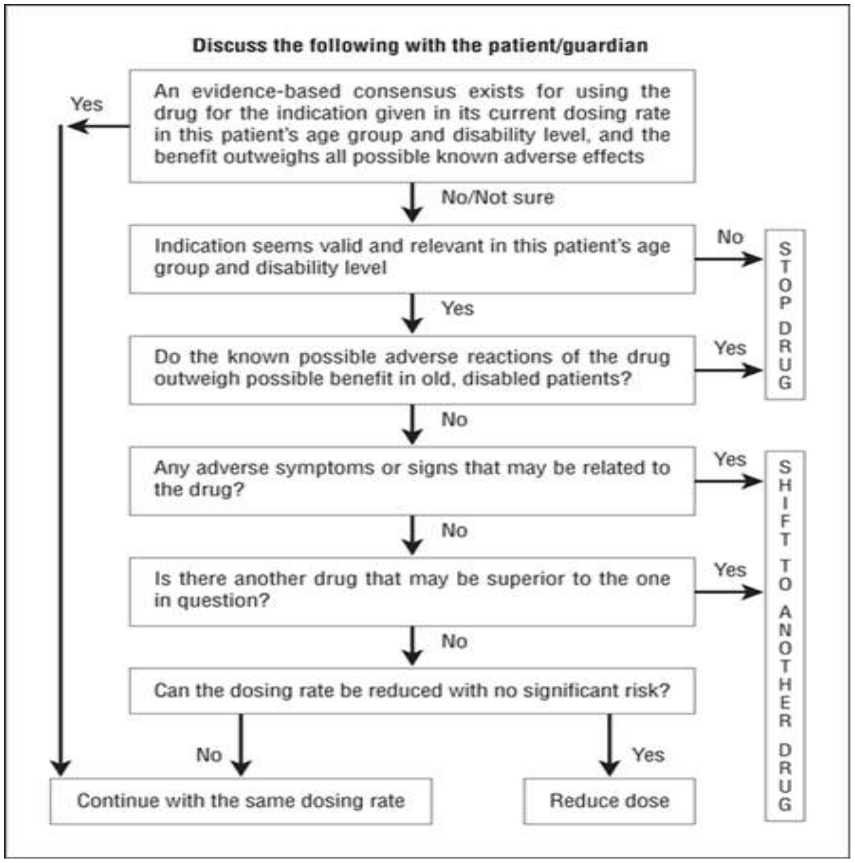

Inquire about the patient's primary concern (and that of family and/or friends, if applicable) and any additional objectives for visit.
Conduct a complete review of care plan for person with multimorbidity.
OR
Focus on specific aspect of care for person with multimorbidity.
What are the current medical conditions and interventions?
Is there adherence/comfort with treatment plan?
Consider patient preferences.
Is relevant evidence available regarding important outcomes?
Consider prognosis.
Consider interactions within and among treatments and conditions.
Weigh benefits and harms of components of the treatment plan.
Communicate and decide for or against implementation or continuation of intervention/ treatment.
Reassess at selected intervals: for benefit, feasibility, adherence, alignment with preferences.

Framework – Deprescribing (Canada)

1. Can the illness/condition/complaint be caused by a drug?
2. Which medications are providing benefit?
3. Which drugs can be stopped or tapered?
4. Can the regimen be simplified further?
   - Kawn, Farrell 2014
   - Similar to Reeve 2014, Scott



Interventions - Deprescribing



Garfinkel (Arch Int Med 2010;170(18):1648-1654)

Frameworks

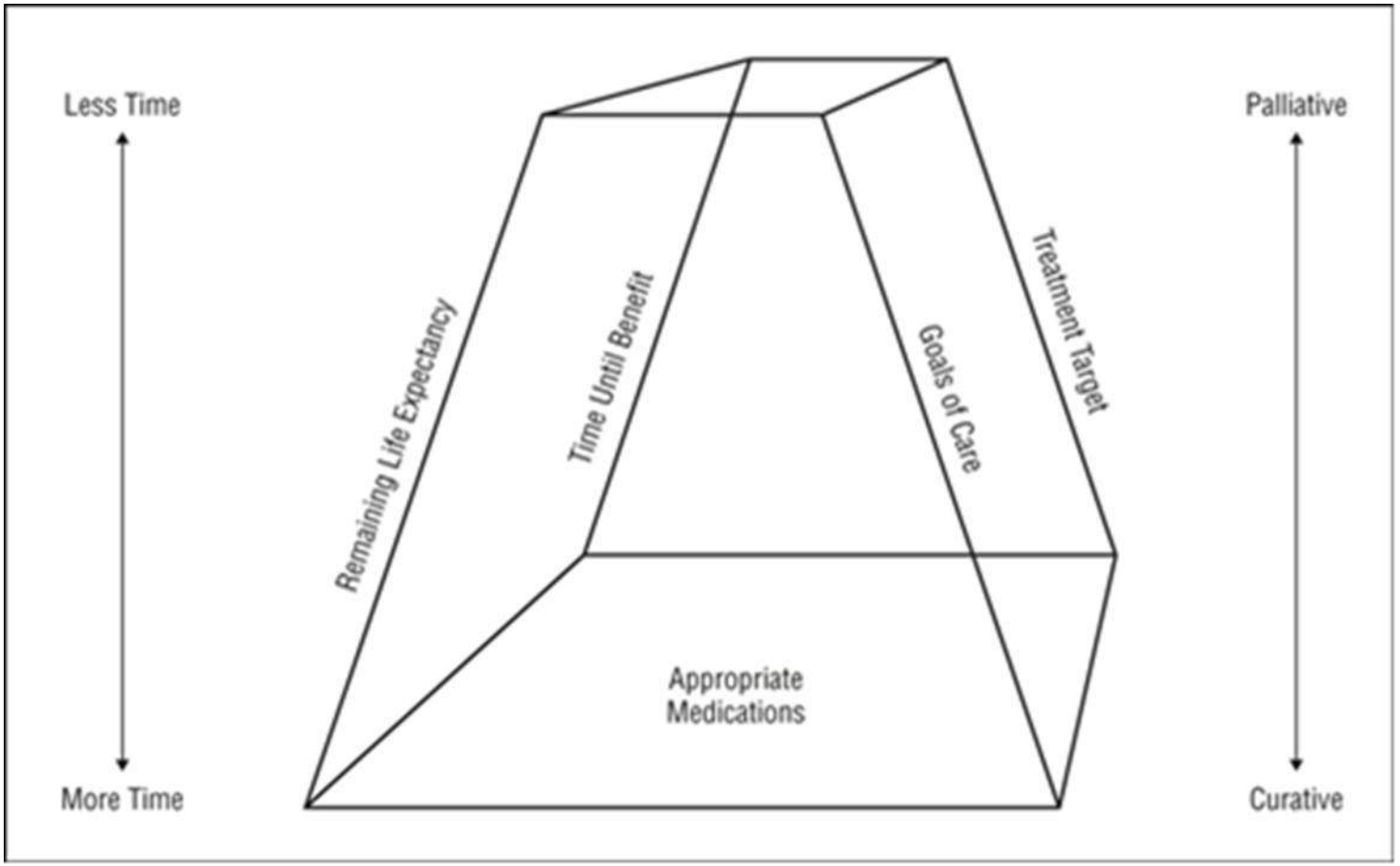
- Conservative Prescribing
  - Think beyond drugs
  - Practice more strategic prescribing
    - Few drugs, use them well
    - Avoid frequent switching
    - Be skeptical about individualizing therapy
    - Start only 1 drug at a time
  - Maintain heightened vigilance regarding safety
  - Approach new drugs and indications cautiously
  - Work with patients for a deliberative shared agenda
  - Consider long-term, broader effects
    - Schiff, Arch Int Med 2011

Framework – in Late Life

1. Determine remaining life expectancy
   - Estimate using life tables
2. Time until benefit
   - Is the patient's estimated life expectancy long enough to realise benefit from a medication?
     - Symptom relief vs1^0 or 2^0 prevention
3. Goals of Care
   - Decision making should involve physician, patient and family
   - Which goals are important when deciding whether to stop, start, or continue therapy?
4. Treatment Targets
   - Compare with goals of care they align
     - Examples:
       - Address symptoms only
       - Prevent mortality or morbidity
       - Maintain current state or function
       - Treat acute illness

Holmes HM, et al. Arch Intern Med. 2006;166:605-609.

Framework – Rational Prescribing



Themes for prioritization

4 major themes:

1. Life Expectancy

   Consider life expectancy for individual
   - Treatment of chronic conditions
   - Prevention therapies

2. Time to Benefit
   - Treatment for conditions (acute or chronic)
     - Time for symptom relief or condition control generally short or established
   - Prevention
     - Benefit may not accrue for variable periods of time (sometimes years)
       - May not start, or may discontinue

3. Goals of Care
   - Consider goals of therapy for individual
     - Treatment of chronic conditions
     - Prevention therapies

4. Treatment Targets

   What is the achievable target that a medication can achieve?
   - Prolong life?
   - Prevent morbidity/mortality?
   - Maintain current status?
   - Treatment/cure of acute illness?

Holmes HM et al *Arch Int Med* 2006 **166**:605-9

What to do first?

- Decide what should be tapered or stopped
- Stop the ones who do not need to be tapered
  - no longer needed
  - have long half-lives
  - don't cause withdrawal symptoms
    - E.g. Oxybutynin
- Make a schedule for those that need to be **tapered:**
  - Beta-blockers
  - Benzodiazepines
  - proton-pump inhibitors
  - Diuretics
  - Narcotics
  - anticonvulsants
- **Follow an evidence-based algorithm**

Medication Use

- How do you currently address PIMs in your practice?

- How do you currently address polypharmacy?

We have evidence of success

Discontinuing antipsychotics

SPECIAL ARTICLE

A RANDOMIZED TRIAL OF A PROGRAM TO REDUCE THE USE OF PSYCHOACTIVE DRUGS IN NURSING HOMES

JERRY AVORN, M.D., STEPHEN B. SOUMERAI, SC.D., DANIEL E. EVERITT, M.D., DENNIS ROSS-DEGNAN, SC.D., MARK H. BEERS, M.D., DAVID SHERMAN, R.PH., SUSANNE R. SALEM-SCHATZ, SC.D., AND DAVID FIELDS, M.D.

Conclusions. An educational program targeted to physicians, nurses, and aides can reduce the use of psychoactive drugs in nursing homes without adversely affecting the overall behavior and level of functioning of the residents. (N Engl J Med 1992;327:168-73.)

Citation: Ballard C, Lana MM, Theodoulou M, Douglas S, McShane R, et al. (2008) A randomised, blinded, placebo-controlled trial in dementia patients continuing or stopping neuroleptics (the DART-AD Trial). PLoS Med 5(4): e76. doi:10.

Conclusions

For most patients with AD, withdrawal of neuroleptics had no overall detrimental effect on functional and cognitive status. Neuroleptics may have some value in the maintenance treatment of more severe neuropsychiatric symptoms, but this benefit must be weighed against the side effects of therapy.

Trial registration: Cochrane Central Registry of Controlled Trials/National Research Register (#ISRCTN33368770).

INTERNATIONAL JOURNAL OF GERIATRIC PSYCHIATRY
Int J Geriatr Psychiatry 2008; **23**: 889–895.
Published online 27 February 2008 in Wiley InterScience
(www.interscience.wiley.com) **DOI**: 10.1002/gps.1998

Stopping antipsychotic drug therapy in demented nursing home patients: a randomized, placebo-controlled study—The Bergen District Nursing Home Study (BEDNURS)

Results By study completion, 23 of the 27 intervention group patients were still off antipsychotics. Symptom scores (NPI) remained stable or even improved in 42 patients (intervention group, 18 out of 27; reference group, 24 out of 28; $p = 0.18$). As compared to patients with stable or improved symptom scores, patients with behavioural deterioration after antipsychotic cessation used higher daily drug doses at baseline ($p = 0.42$).

Conclusion A large share of elderly nursing home patients on long-term treatment with antipsychotics for BPSD, do well without this treatment. Standardized symptom evaluations and drug cessation attempts should therefore be undertaken at regular intervals.

The war against Polypharmacy: A New Cost-Effective Geriatric-Palliative Approach for Improving Drug Therapy in Disabled Elderly People

Doron Garfinkel MD[1], Sarah Zur-Gil MA[2] and Joshua Ben-Israel MD[3]

[1]Department of Evaluation & Rehabilitation, [2]Pharmacy, and [3]Directorate, Shoham Geriatric Medical Center, Pardes Hana, Israel

Table 3. Success rate after 1 year of follow-up according to types of drugs discontinued

Drug group	No. of patients with drug discontinuation	Recurrence of symptoms/signs* (failures)	Success rate (%)
Nitrates	22	0	100%
H_2 blockers	35	2	94%
Antihypertensives	51	9	82%
Diuretics (furosemide)	27 (25)	4 (4)	85%
Pentoxifylline	15	0	100%
Potassium supplement	20	0	100%
Iron supplement	19	1	95%
Sedatives & tranquilizers	16	2	88%
Antidepressants	19	5	74%
Antipsychotics	13	4	69%

* See text for further explanations

Results: A total of 332 different drugs were discontinued in 119 patients (average of 2.8 drugs per patient) and was not associated with significant adverse effects. The overall rate of drug discontinuation failure was 18% of all patients and 10% of all drugs. The 1 year mortality rate was 45% in the control group but only 21% in the study group ($P < 0.001$, chi-square test). The patients' annual referral rate to acute care facilities was 30% in the control group but only 11.8% in the study group ($P < 0.002$). The intervention was associated with a substantial decrease in the cost of drugs.

Conclusions: Application of the geriatric-palliative methodology in the disabled elderly enables simultaneous discontinuation of several medications and yields a number of benefits: reduction in mortality rates and referrals to acute care facilities, lower costs, and improved quality of living.

IMAJ 2007;9:430–434

Benzos vs low-dose trazodone : comparing risk of falls in nursing home residents

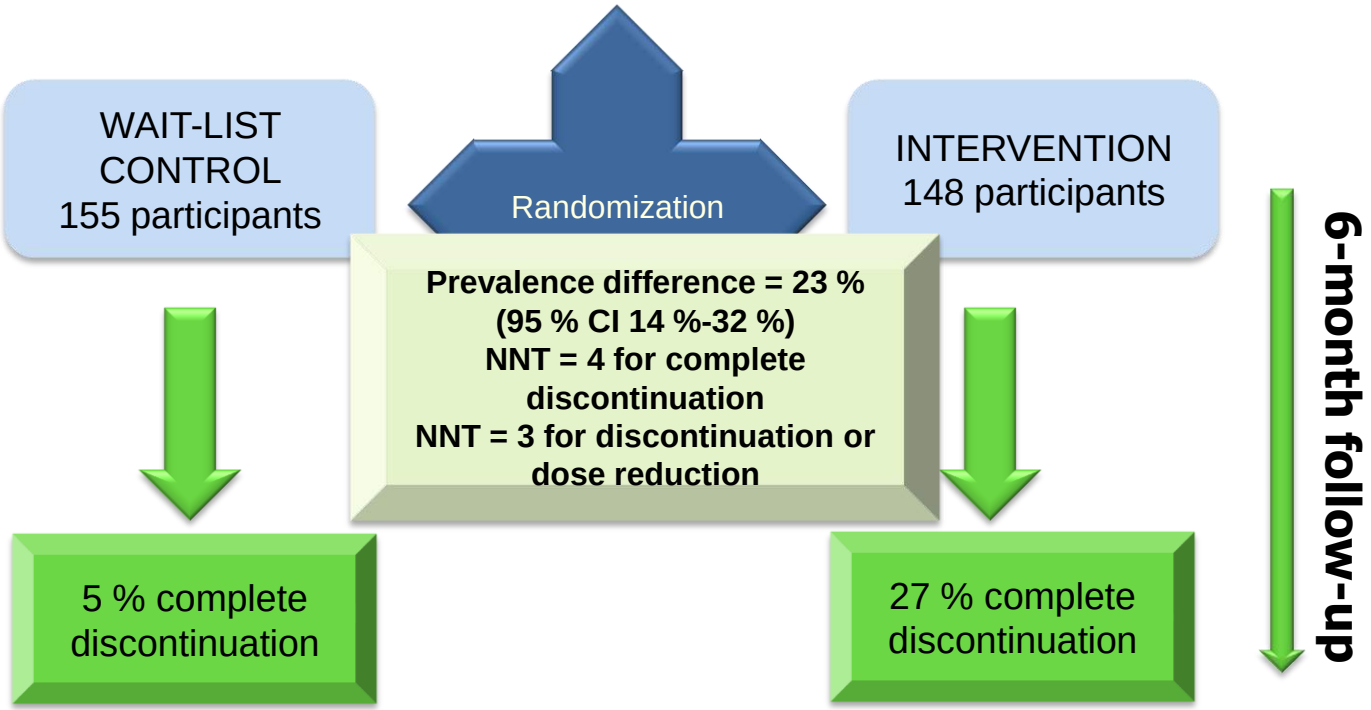
- 7,791 nursing homes residents (Ontario)
- New users of trazodone or benzos
- Fall-related injury - resulting in emergency dept visit or acute care admission – 90 days after initiation :
  - Low-dose trazodone : 5.7%
  - Benzos : 6.0%

"New use of low-dose trazodone was no safer with respect to a risk of a fall-related injury than new use of benzodiazepines."

Bronskill SE. et al. J Am Geriatr Soc. 2018 Oct;66(10):1963-1971

EMPOWER = “Eliminating medications through patient ownership of end results”

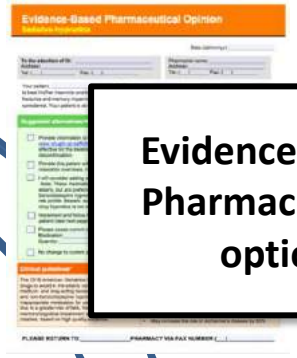
30 community pharmacies around Montreal 2,716 chronic benzo users 65+,
303 participants, benzo users 3 months+, aged 65 years and older
no dementia, not on antipsychotics



Tannenbaum, Martin, Tamblyn, Benedetti, Ahmed. Reduction of inappropriate benzodiazepine prescriptions among older adults through direct patient education: the EMPOWER cluster randomized trial. JAMA Intern Med. 2014 Jun;174(6):890-8.

D-PRESCRIBE trial: involving doctors and pharmacists with the pharmaceutical opinion

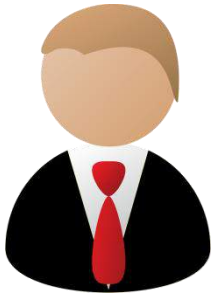
The **pharmacist** identifies a potentially inappropriate prescription



Evidence-based Pharmaceutical option

patient

Conversation on deprescribing



doctor

Martin P. et al. Effect of a Pharmacist-Led Educational Intervention on Inappropriate Medication Prescriptions in Older Adults. The D-PRESCRIBE Randomized Clinical Trial. JAMA November 13,a 2018 Volume 320, Number 18

D-PRESCRIBE trial

70 community pharmacies
503 participants - benzodiazepine, 1st gen. antihistamines, long-acting sulfonylureas or NSAIDs users, for ≥ 3 months, age 65 and above, no dementia

Randomization

CONTROL
34 Pharmacies
261 participants

INTERVENTION
36 Pharmacies
242 participants

Educational brochure sent to patients and pharmaceutical opinion sent to family physicians

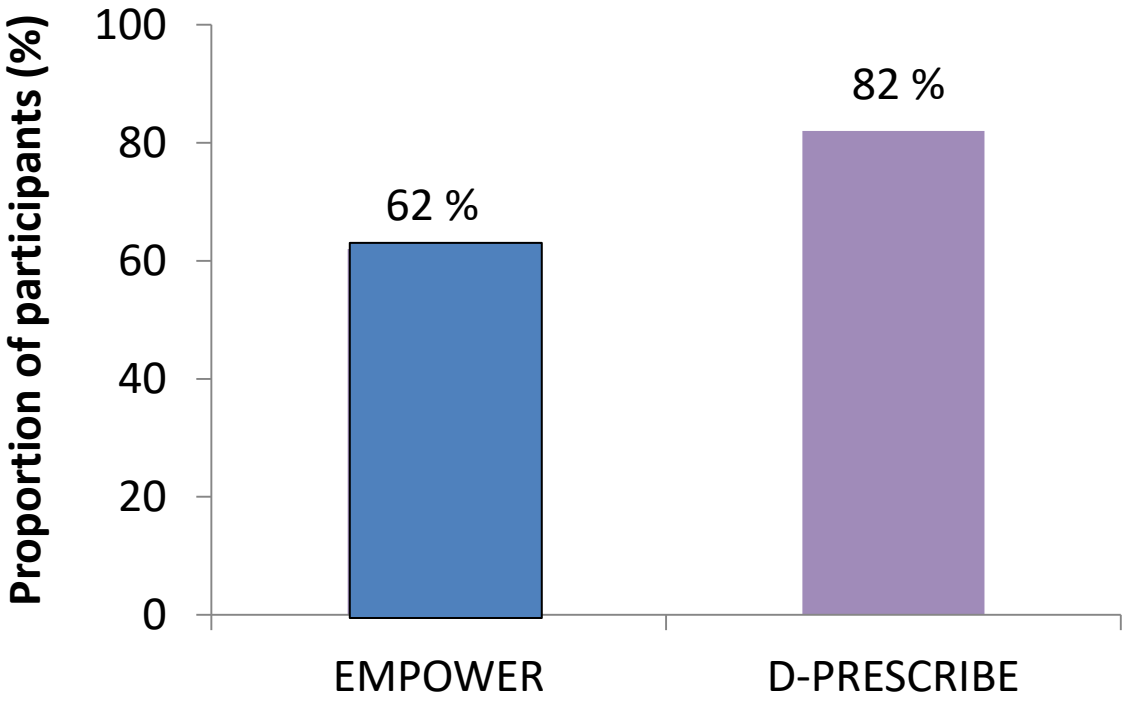
6 months follow-up

Cessation or dose reduction of medication

Cessation or dose reduction of medication

Martin P. et al. Effect of a Pharmacist-Led Educational Intervention on Inappropriate Medication Prescriptions in Older Adults. The D-PRESCRIBE Randomized Clinical Trial. JAMA November 13, 2018 Volume 320, Number 18

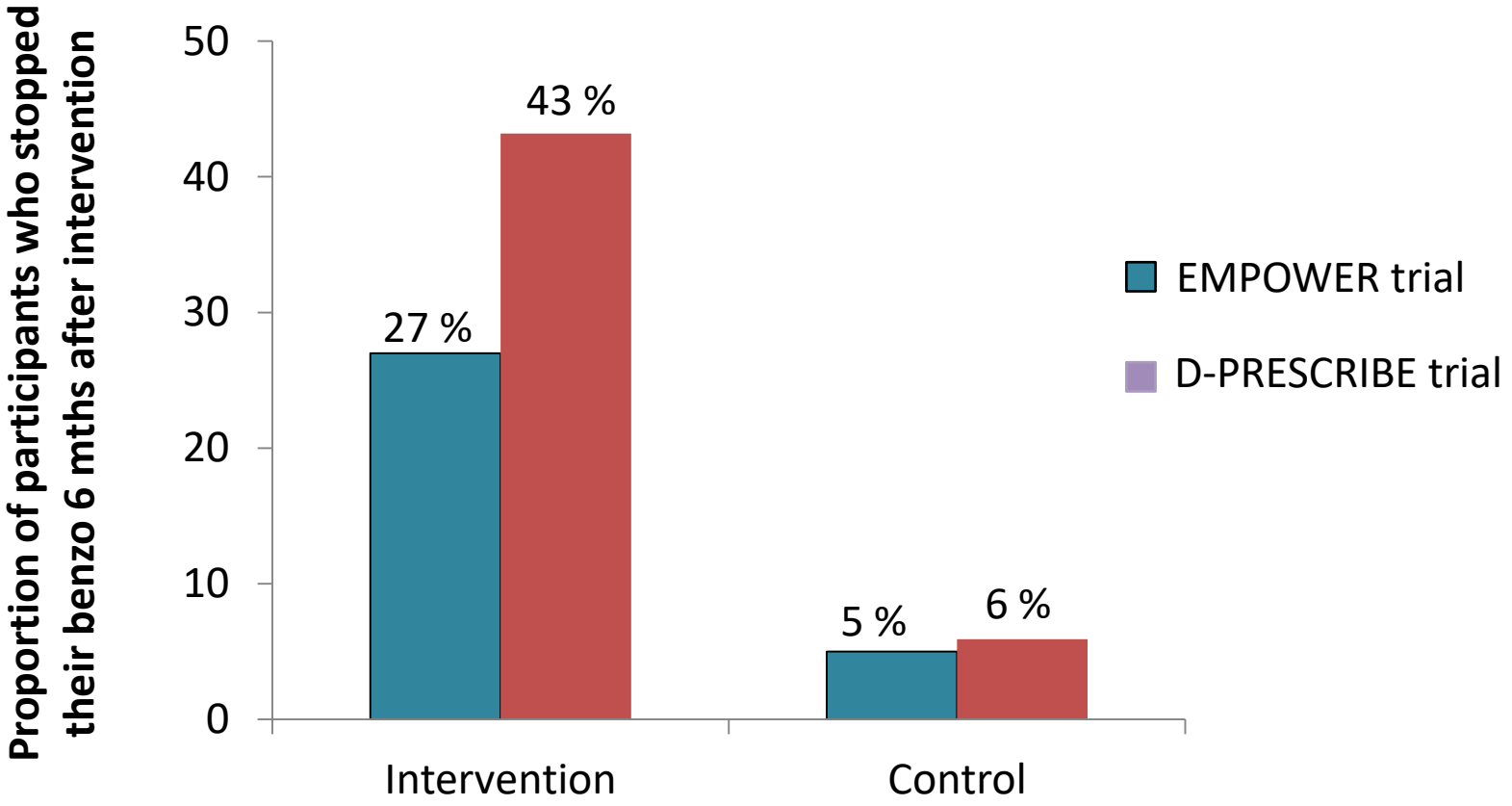
Conversation with doctor or pharmacist about cessation of their benzodiazepine



Martin, Tannenbaum, Tamblyn, Benedetti, Ahmed. D-PRESCRIBE overtakes EMPOWER in patient-centered deprescribing of benzodiazepines: Preliminary results from a pragmatic cluster-randomized community-based trial in Canada. American Geriatrics Society Annual meeting, Avril 2017, présentation orale

EMPOWER vs D-PRESCRIBE

Cessation rate (benzodiazepines)



Martin, Tannenbaum, Tamblyn, Benedetti, Ahmed. D-PRESCRIBE overtakes EMPOWER in patient-centered deprescribing of benzodiazepines: Preliminary results from a pragmatic cluster-randomized community-based trial in Canada. American Geriatrics Society Annual meeting, Avril 2017, présentation orale

Tools and resources

Your Turn

- Which tools have you incorporated into your practice/setting?

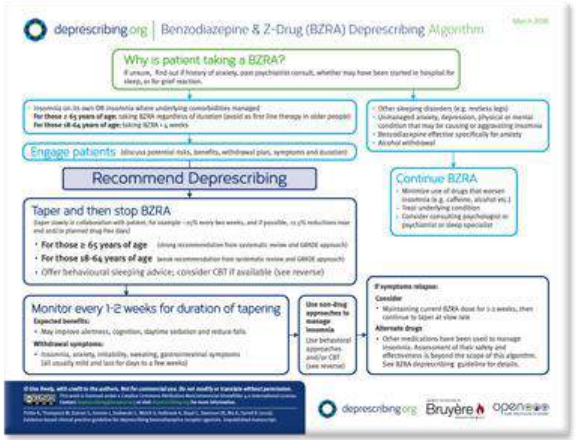
- What are some challenges with using these tools?

Your Turn

I am familiar with the following deprescribing tools and resources:

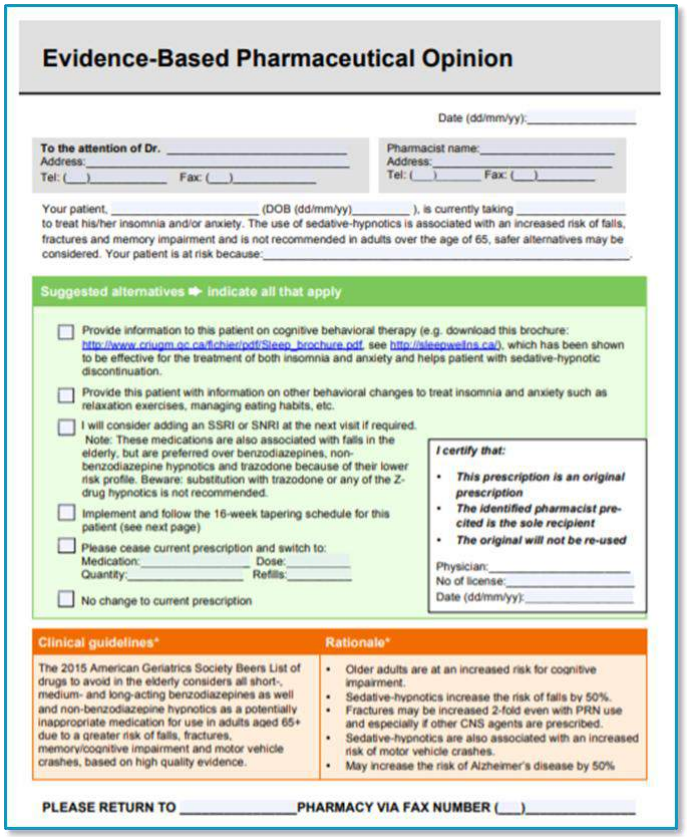
1) EMPOWER brochures for patients
2) The MedStopper website
3) The deprescribing.org and deprescribingnetwork.ca websites
4) Sleepwell.ca
5) None of the above

Deprescribing Tools – Algorithms, Brochures



Download information on how you can stop certain medications at deprescribingnetwork.ca

Tools – Pharmaceutical Opinions



Evidence-Based Pharmaceutical Opinion

Date (dd/mm/yy):_____

To the attention of Dr. _____
Address:_____
Tel: (___)_____ Fax: (___)_____

Pharmacist name:_____
Address:_____
Tel: (___)_____ Fax: (___)_____

Your patient, _____ (DOB (dd/mm/yy)_____), is currently taking _____ to treat his/her insomnia and/or anxiety. The use of sedative-hypnotics is associated with an increased risk of falls, fractures and memory impairment and is not recommended in adults over the age of 65, safer alternatives may be considered. Your patient is at risk because:_____.

Suggested alternatives ➠ indicate all that apply

- ☐ Provide information to this patient on cognitive behavioral therapy (e.g. download this brochure: http://www.criugm.qc.ca/fichier/pdf/Sleep_brochure.pdf, see http://sleepwellns.ca/), which has been shown to be effective for the treatment of both insomnia and anxiety and helps patient with sedative-hypnotic discontinuation.
- ☐ Provide this patient with information on other behavioral changes to treat insomnia and anxiety such as relaxation exercises, managing eating habits, etc.
- ☐ I will consider adding an SSRI or SNRI at the next visit if required.
  Note: These medications are also associated with falls in the elderly, but are preferred over benzodiazepines, non-benzodiazepine hypnotics and trazodone because of their lower risk profile. Beware: substitution with trazodone or any of the Z-drug hypnotics is not recommended.
- ☐ Implement and follow the 16-week tapering schedule for this patient (see next page)
- ☐ Please cease current prescription and switch to:
  Medication:_____ Dose:_____
  Quantity:_____ Refills:_____
- ☐ No change to current prescription

I certify that:

- ***This prescription is an original prescription***
- ***The identified pharmacist pre-cited is the sole recipient***
- ***The original will not be re-used***

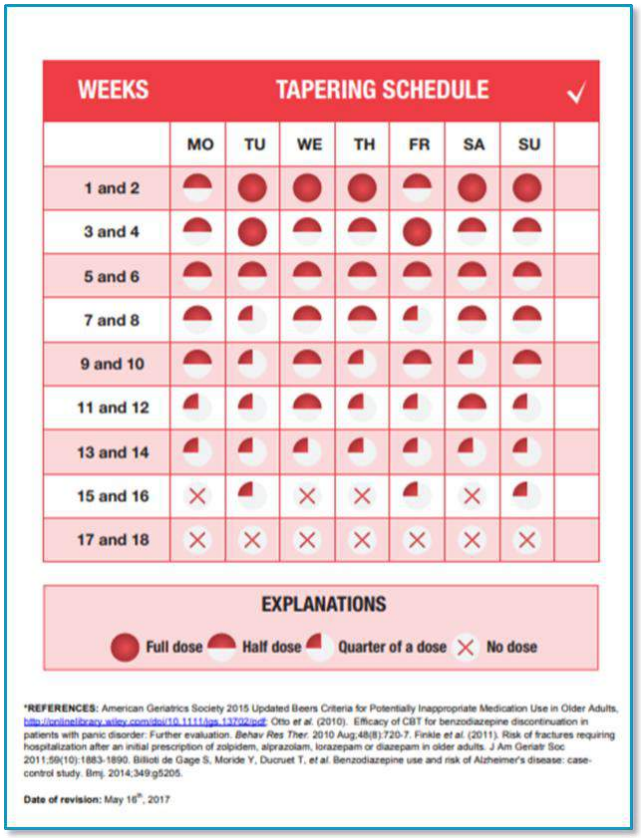
Physician:_____
No of license:_____
Date (dd/mm/yy):_____

Clinical guidelines*	Rationale*
The 2015 American Geriatrics Society Beers List of drugs to avoid in the elderly considers all short-, medium- and long-acting benzodiazepines as well and non-benzodiazepine hypnotics as a potentially inappropriate medication for use in adults aged 65+ due to a greater risk of falls, fractures, memory/cognitive impairment and motor vehicle crashes, based on high quality evidence.	• Older adults are at an increased risk for cognitive impairment. • Sedative-hypnotics increase the risk of falls by 50%. • Fractures may be increased 2-fold even with PRN use and especially if other CNS agents are prescribed. • Sedative-hypnotics are also associated with an increased risk of motor vehicle crashes. • May increase the risk of Alzheimer's disease by 50%

PLEASE RETURN TO _____**PHARMACY VIA FAX NUMBER** (___)_____

- EMPOWER deprescribing regimen

Reducing by 25% every 2 weeks is too fast



WEEKS	TAPERING SCHEDULE ✓						
	MO	TU	WE	TH	FR	SA	SU
1 and 2	◓	●	●	●	◓	●	●
3 and 4	◓	●	◓	◓	●	◓	◓
5 and 6	◓	◓	◓	◓	◓	◓	◓
7 and 8	◓	◔	◓	◓	◔	◓	◓
9 and 10	◓	◔	◓	◔	◓	◔	◓
11 and 12	◔	◔	◓	◔	◔	◓	◔
13 and 14	◔	◔	◔	◔	◔	◔	◔
15 and 16	✕	◔	✕	✕	◔	✕	◔
17 and 18	✕	✕	✕	✕	✕	✕	✕

EXPLANATIONS

● Full dose ◓ Half dose ◔ Quarter of a dose ✕ No dose

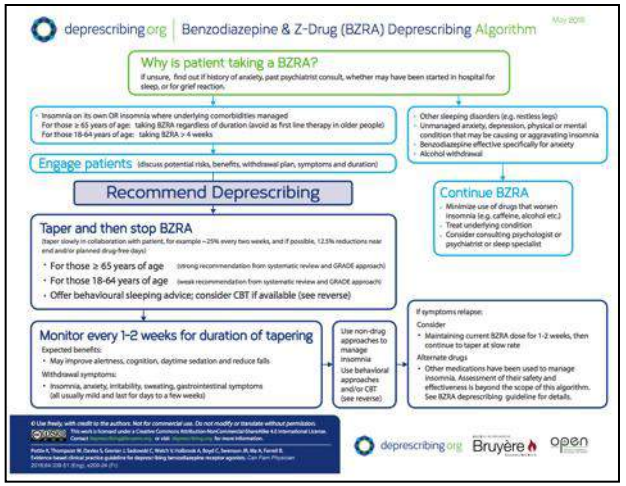
*REFERENCES: American Geriatrics Society 2015 Updated Beers Criteria for Potentially Inappropriate Medication Use in Older Adults. http://onlinelibrary.wiley.com/doi/10.1111/jgs.13702/pdf; Otto et al. (2010). Efficacy of CBT for benzodiazepine discontinuation in patients with panic disorder: Further evaluation. Behav Res Ther. 2010 Aug;48(8):720-7. Finkle et al. (2011). Risk of fractures requiring hospitalization after an initial prescription of zolpidem, alprazolam, lorazepam or diazepam in older adults. J Am Geriatr Soc 2011;59(10):1883-1890. Billioti de Gage S, Moride Y, Ducruet T, et al. Benzodiazepine use and risk of Alzheimer's disease: case-control study. Bmj. 2014;349:g5205.

Date of revision: May 16th, 2017

Tools - Algorithms

An evidence-based deprescribing algorithm exists for:

1) Proton pump inhibitors
2) Antipsychotics
3) Benzodiazepine receptor agonists
4) Antihyperglycemic agents
5) Cholinesterase inhibitors and memantine

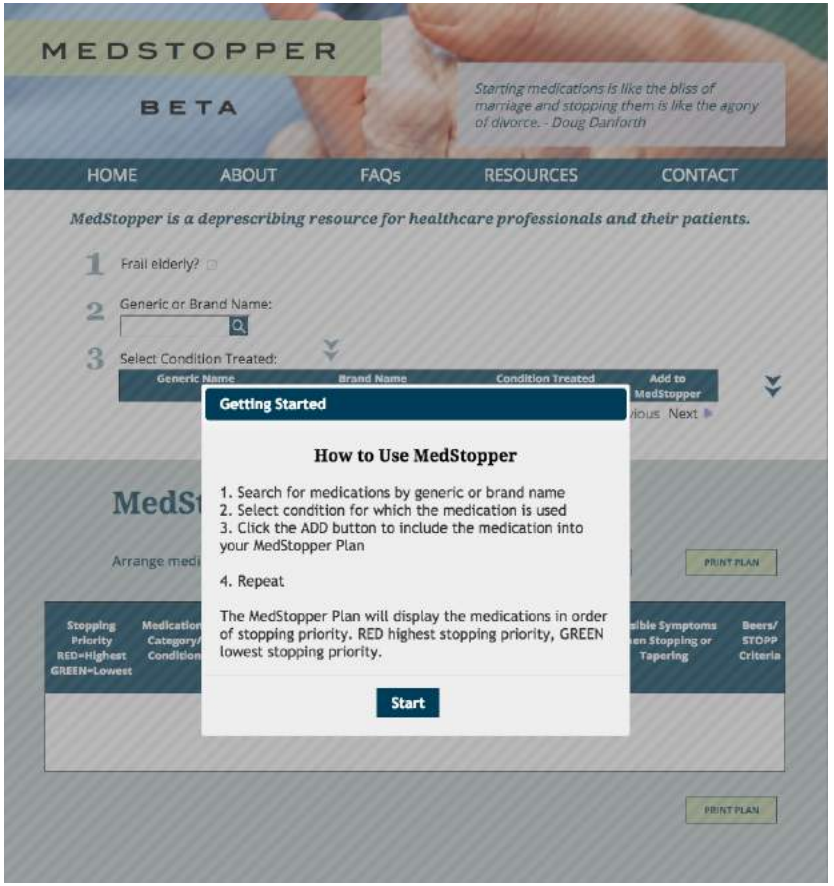


Video and written resources

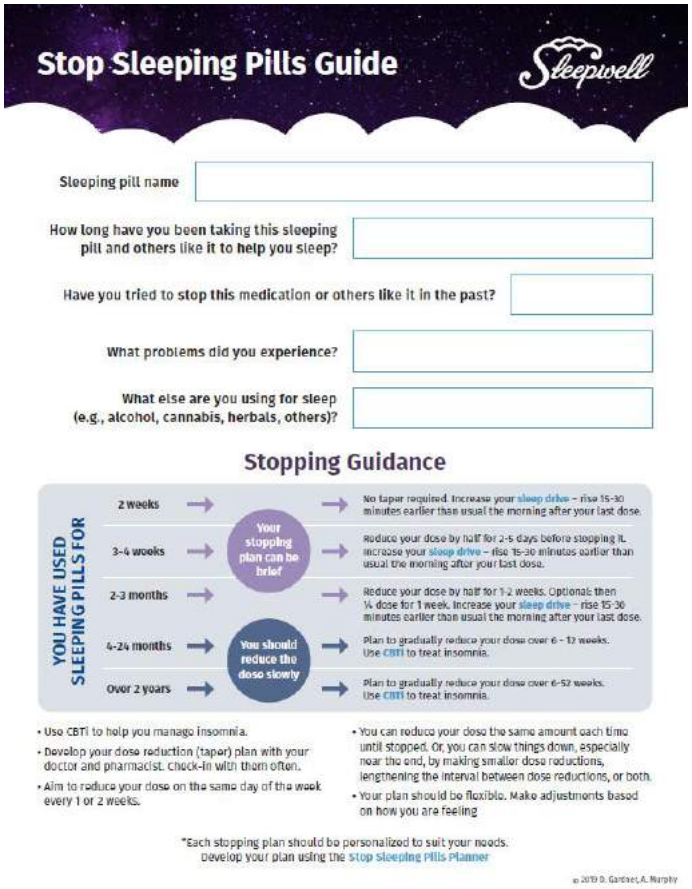
Canadian Examples

- MedStopper

	Stopping Priority RED=Highest GREEN=Lowest	Medication/ Category/ Condition	May Improve Symptoms?	May Reduce Risk for Future Illness?	May Cause Harm?	Suggested Taper Approach	Possible Symptoms when Stopping or Tapering	Beers/ STOPP Criteria
X		warfarin (Coumadin) / Warfarin / **afib/valve**				Taper to INR targets		None
X		digoxin (Lanoxin, Digitek) / Digoxin / **heart failure**				If used daily for more than 3-4 weeks. Reduce dose by 50% every 1 to 2 weeks. Once at 25% of the original dose and no withdrawal symptoms have been seen, stop the drug. If any withdrawal symptoms occur, go back to approximately 75% of the previously tolerated dose.	worsening of symptoms, increase in heart rate	Details
X		prednisone (Sterapred, Orasone, Deltasone) / Corticosteroid / **inflammatory conditions**				If used daily for more than 3-4 weeks. Reduce dose by 5mg/week until 10 mg/day is reached. Subsequent dosages should be decreased by 2.5mg/week until the medication is stopped. If withdrawal symptoms occur, increase the dosage and taper at 1mg/week.	return of symptoms, weakness, fatigue, decreased appetite, weight loss, nausea, vomiting, diarrhea, constipation, abdominal pain, low blood pressure, low blood glucose, joint pain, muscle aches, fever, mental changes	Details
X		pantoprazole (Protonix) / Proton pump inhibitor / **heartburn/GERD**				If used daily for more than 3-4 weeks. Reduce dose by 50% every 1 to 2 weeks. Once at 25% of the original dose and no withdrawal symptoms have been seen, stop the drug. If any withdrawal symptoms occur, go back to approximately 75% of the previously tolerated dose.	return of symptoms, heartburn, reflux	Details
X		fluticasone (Flovent) / Inhaled steroid / **asthma**				If used daily for more than 3-4 weeks. Reduce dose by 50% every 1 to 2 weeks. Once at 25% of the original dose and no withdrawal symptoms have been seen, stop the drug. If any withdrawal symptoms occur, go back to approximately 75% of the previously tolerated dose.	shortness of breath, limitation of activity, need for rescue puffer	None



Sleepwell, Choosing Wisely



Stop Sleeping Pills Guide

Sleepwell

Sleeping pill name

How long have you been taking this sleeping pill and others like it to help you sleep?

Have you tried to stop this medication or others like it in the past?

What problems did you experience?

What else are you using for sleep (e.g., alcohol, cannabis, herbals, others)?

Stopping Guidance

YOU HAVE USED SLEEPING PILLS FOR

2 weeks	Your stopping plan can be brief	No taper required. Increase your sleep drive – rise 15-30 minutes earlier than usual the morning after your last dose.
3-4 weeks		Reduce your dose by half for 2-5 days before stopping it. Increase your sleep drive – rise 15-30 minutes earlier than usual the morning after your last dose.
2-3 months		Reduce your dose by half for 1-2 weeks. Optional: then ¼ dose for 1 week. Increase your sleep drive – rise 15-30 minutes earlier than usual the morning after your last dose.
4-24 months	You should reduce the dose slowly	Plan to gradually reduce your dose over 6 - 12 weeks. Use CBTI to treat insomnia.
Over 2 years		Plan to gradually reduce your dose over 6-52 weeks. Use CBTI to treat insomnia.

- Use CBTI to help you manage insomnia.
- Develop your dose reduction (taper) plan with your doctor and pharmacist. Check-in with them often.
- Aim to reduce your dose on the same day of the week every 1 or 2 weeks.
- You can reduce your dose the same amount each time until stopped. Or, you can slow things down, especially near the end, by making smaller dose reductions, lengthening the interval between dose reductions, or both.
- Your plan should be flexible. Make adjustments based on how you are feeling

*Each stopping plan should be personalized to suit your needs. Develop your plan using the Stop Sleeping Pills Planner

www.sleepwellns.ca

www.choosingwiselycanada.org

ALTERNATIVES

Are you taking this sedative-hypnotic drug to help you sleep?

There are lifestyle changes that can help:

- Do not read or watch TV in bed. Do so in a chair or on your couch.
- Try to get up in the morning and go to bed at night at the same time every day.
- Before going to bed, practice deep breathing or relaxation exercises.
- Get exercise during the day, but not during the last three hours before you go to bed.
- Avoid consuming nicotine, caffeine and alcohol as they are stimulants and may keep you awake.
- Ask your doctor or nurse about using a sleep diary, which can help you understand disruptive sleep patterns.
- Check out the Sleepwell Nova Scotia website (mysleepwell.ca), which offers online cognitive behavioural therapies to improve sleep.
- See our brochure, ***How to get a good night's sleep without medication*** (www.criugm.qc.ca/fichier/pdf/Sleep_brochure.pdf).

MRS. ROBINSON'S STORY

She had been taking lorazepam, a sedative-hypnotic drug just like yours

"I am 65 years old and took lorazepam for 10 years. A few months ago, I fell in the middle of the night on my way to the bathroom and had to go to the hospital. I was lucky and, except for some bruises, I did not hurt myself. I read that lorazepam puts me at risk for falls. I did not know if I could live without lorazepam as I always have trouble falling asleep and sometimes wake up in the middle of the night.

I spoke to my doctor who told me that my body needs less sleep at my age – 6 hours of sleep per night is enough. That's when I decided to try to taper off lorazepam. I spoke to my pharmacist who suggested I follow the step-by-step tapering program (on the next page).

I also applied some new sleeping habits I had discussed with my doctor. First, I stopped exercising before bed; then, I stopped reading in bed; and finally, I got out of bed every morning at the same time whether or not I had a good night's sleep.

I succeeded in getting off lorazepam. I realize now that for the past 10 years I have not been living to my full potential. Stopping lorazepam has lifted a veil – it's like I had been semi-sleeping my life away. I have more energy and don't have so many ups and downs anymore. I am more alert: I don't always sleep well at night, but I don't feel as groggy in the morning. It was my decision! I am so proud of what I have accomplished. If I can do it, so can you!"

Tools – Sleep agenda

Need for treatment of the underlying condition

Example:

Sleep diary improves sleep efficiency 65%

SLEEP AGENDA

	Example	Monday	Tuesday	Wed	Thursday	Friday	Saturday	Sunday
1. Yesterday, I took a nap from ____ to____. (Record all naps.)	1:50 pm to 2:30 pm							
2.Yesterday, I took ____ mg of medication and/or ____ oz of alcohol to help me sleep.	Immovane 3.75 mg							
3. (a) I went to bed at _____ h and (b) I turned off the lights at _____ h.	10:45 pm 11:15 pm							
4. After turning off the lights, I fell asleep after _____ minutes.	60 min							
5. I woke up _____ times during the night. (Indicate the number of times)	3							
6.I stayed awake _____ min each time. (Indicate how many minutes you stayed awake each time.)	10, 5, 45							
7. This morning, I woke up at _____ h. (Record the last time you woke up.)	6:20 am							
8. This morning I got out of bed at _____ h.	6:40 am							
9. When I got up, I felt: 1 = exhausted, 2 = tired, 3 = average, 4 = rested, 5 = very well rested	2							
10. Overall, my sleep last night was: 1=very restless, 2=restless, 3=average, 4=deep, 5=very deep	3							

$$\text{Sleep efficiency} = \frac{\text{Total time asleep}}{\text{Total time in bed}}$$

Beers Criteria

Benzodiazepines

Temazepam
Oxazepam
Lorazepam
Alprazolam
Clonazepam
Diazepam
Flurazepam
Clorazepate

All antipsychotics

Non-benzodiazepine sedative hypnotics

Zolpidem
Zopiclone

Sulfonylurea oral hypoglycemics

Glyburide
Glipizide
Chlorpropamide

Tricyclic antidepressants

Amitriptyline
Imipramine

1st generation antihistamines

Hydroxyzine
Diphenhydramine

Cardiovascular/diuretic agents

Amiodarone
Digoxin > 0.125 mg/day

STOPP/START tool (2015)

- Screening Tool of Older Persons Prescriptions/ Screening Tool to Alert to Right Treatment
- 114 criteria in last version
  - 80 STOPP
    - Long-term use of NSAID (> 3 months) for relief of mild joint pain in osteoarthritis
    - Proton pump inhibitor at treatment dose for peptic ulcer disease at full therapeutic dosage for > 8 weeks
  - 34 START
    - Calcium supplement and bisphosphonate in patients at high risk of osteoporosis due to long term treatment with steroids

STOPP START Criteria

Respiratory System BNF Chapter 3

STOPP

- **Theophylline** as monotherapy for COPD *(safer, more effective alternatives; risk of adverse effects due to narrow therapeutic index).*
- **Systemic corticosteroids** instead of inhaled corticosteroids for maintenance therapy in moderate-severe COPD *(unnecessary exposure to long-term side-effects of systemic steroids).*
- **Nebulised ipratropium** with glaucoma *(may exacerbate glaucoma).*
- **First generation antihistamines** *(sedative, may impair sensorium). Stop if patient has fallen in past 3 months.*

Respiratory System BNF Chapter 3

START

- Regular inhaled **beta 2 agonist** or **anticholinergic (antimuscarinic)** agent for mild to moderate asthma or COPD.
- Review patients with mild or moderate COPD at least once a year and severe or very severe COPD (FEV1 <50% predicted) at least twice a year. Follow NICE guidance regarding treatment selection for COPD. (Use BTS/SIGN guidelines for asthma).

NICE CG 101 COPD

Theophylline

Only offer theophylline after trials of short- and long-acting bronchodilators or to people who cannot use inhaled therapy.

Oral Corticosteroids

Maintenance use of oral corticosteroid therapy in COPD is not normally recommended.

Some people with advanced COPD may need maintenance oral corticosteroids if treatment cannot be stopped after an exacerbation. Keep the dose as low as possible, monitor for osteoporosis and offer prophylaxis.

NICE CG 101 COPD

Assess the need for **oxygen** therapy in people with any of the following:

-very severe airflow obstruction (FEV1 <30% predicted)
-cyanosis
-polycythaemia
-peripheral oedema
-raised jugular venous pressure
-oxygen saturations less than or equal to 92% breathing air.

Give people with FEV1 < 30% a course of **antibiotic** and **oral corticosteroid** tablets to keep at home.

STOPP FRAIL

- Developed to aid deprescribing medications in frailer older adults with limited life expectancy in all healthcare settings

- Organized by organ system

Lavan AH, et al; Age Ageing 2017;46(1):600-7

Drug Burden Index (DBI)

- Anticholinergic activity: calculates cumulative exposure for a given patient
  - Associated with a reduced function, falls, higher frailty score, a higher utilization of health care resources and in some studies, with an increased risk of mortality

Hilmer SN, Mager DE, Simonsick EM, et al. A Drug Burden Index to define the functional burden of medications in older people. Arch Intern Med. 2007;167(8):781–787

Canadian Examples

Choosing Wisely Canada

1. Don’t use antimicrobials to treat bacteriuria in older adults unl urinary tract symptoms are present.
2. Don’t use benzodiazepines or other sedative-hypnotics in older adults as first choice for insomnia, agitation or delirium.
3. Don’t recommend percutaneous feeding tubes in patients with advanced dementia; instead offer oral feeding.
4. Don't use antipsychotics as first choice to treat behavioural and psychological symptoms of dementia.
5. Avoid using medications known to cause hypoglycemia to achieve hemoglobin A1c <7.5% in many adults age 65 and older; moderate control is generally better.

Choosing Wisely - AGS

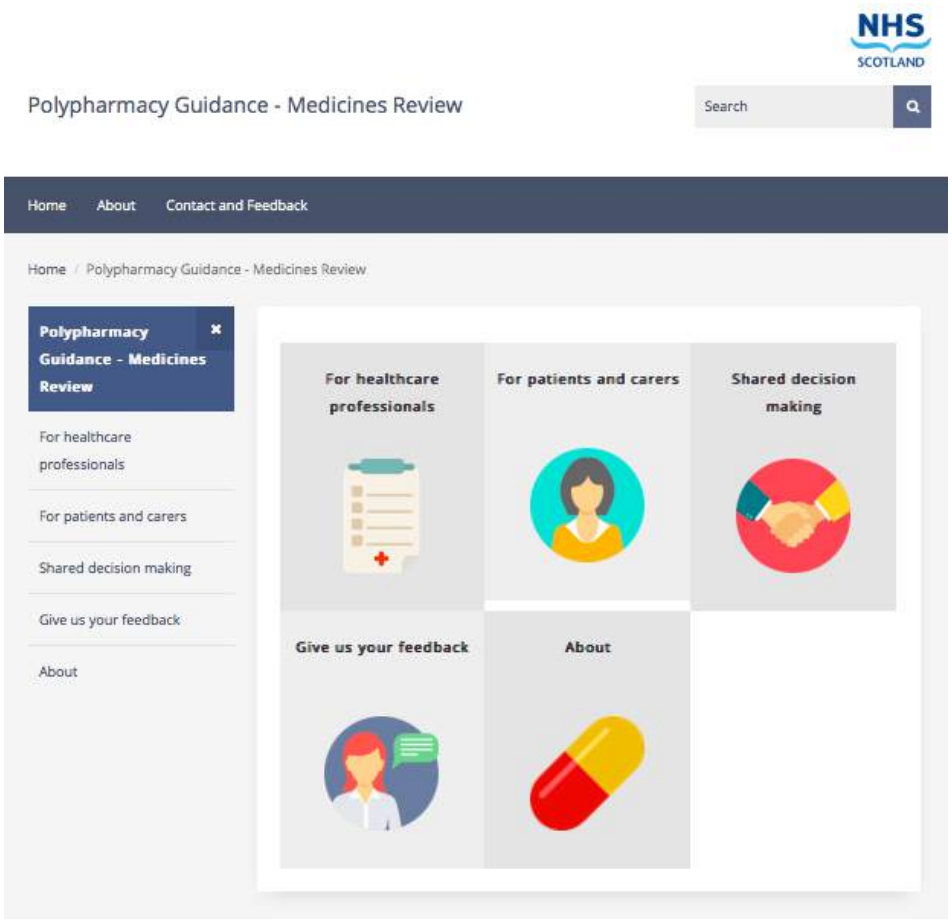
- 10 criteria
- Many similar to CGS
- 9. **Don't prescribe a medication without conducting a drug regimen review.**
  - Older patients disproportionately use more prescription and non-prescription drugs than other populations, increasing the risk for side effects and inappropriate prescribing. Polypharmacy may lead to diminished adherence, adverse drug reactions and increased risk of cognitive impairment, falls and functional decline. Medication review identifies high-risk medications, drug interactions and those continued beyond their indication. Additionally, medication review elucidates unnecessary medications and underuse of medications, and may reduce medication burden. Annual review of medications is an indicator for quality prescribing in vulnerable elderly.

Implicit Tool – Medication Appropriateness Index

The Medication Appropriateness Index (J. Hanlon, 1992)

- Is the medication effective for the condition?
- Is the dosage correct?
- Are the directions correct?
- Are the directions practical?
- Are there clinically significant drug-drug interactions?
- Are there clinically significant drug-disease/condition interactions?
- Is there unnecessary duplication with other drug(s)?
- Is the duration of therapy acceptable?
- Is the drug the least expensive alternative compared to others of equal utility?

Polypharmacy Guidance – Medicines Review



http://www.polypharmacy.scot.nhs.uk/polypharmacy-guidance-medicines-review/

Shared decision-making section

How likely is Metformin to help me?

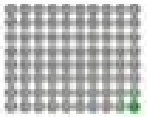
Key

This grey face represents the number of people in the survey group.

This green face represents the one person in the survey group that the medicine has helped.

Research suggests:

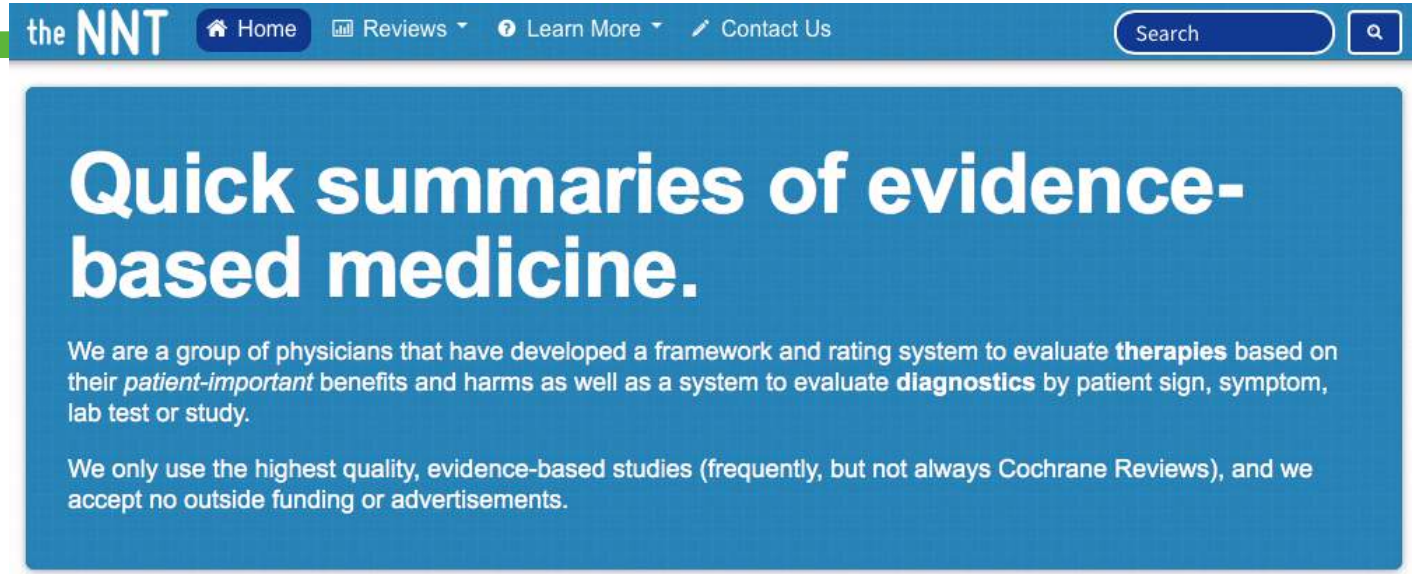
In a group of **80 people** newly diagnosed with Diabetes Type 2, Metformin will prevent one person (on average) from having complications (including foot, eye or kidney problems) or dying in the course of a year.

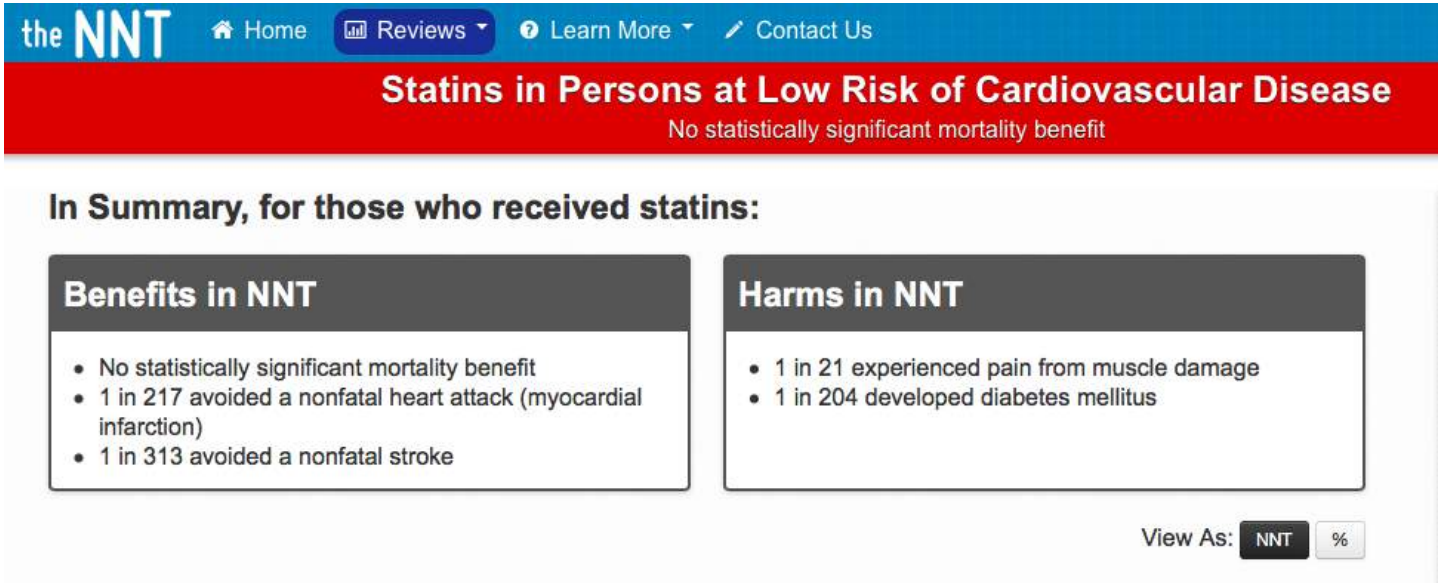


http://www.polypharmacy.scot.nhs.uk/polypharmacy-guidance-medicines-review/shared-decision-making/metformin/

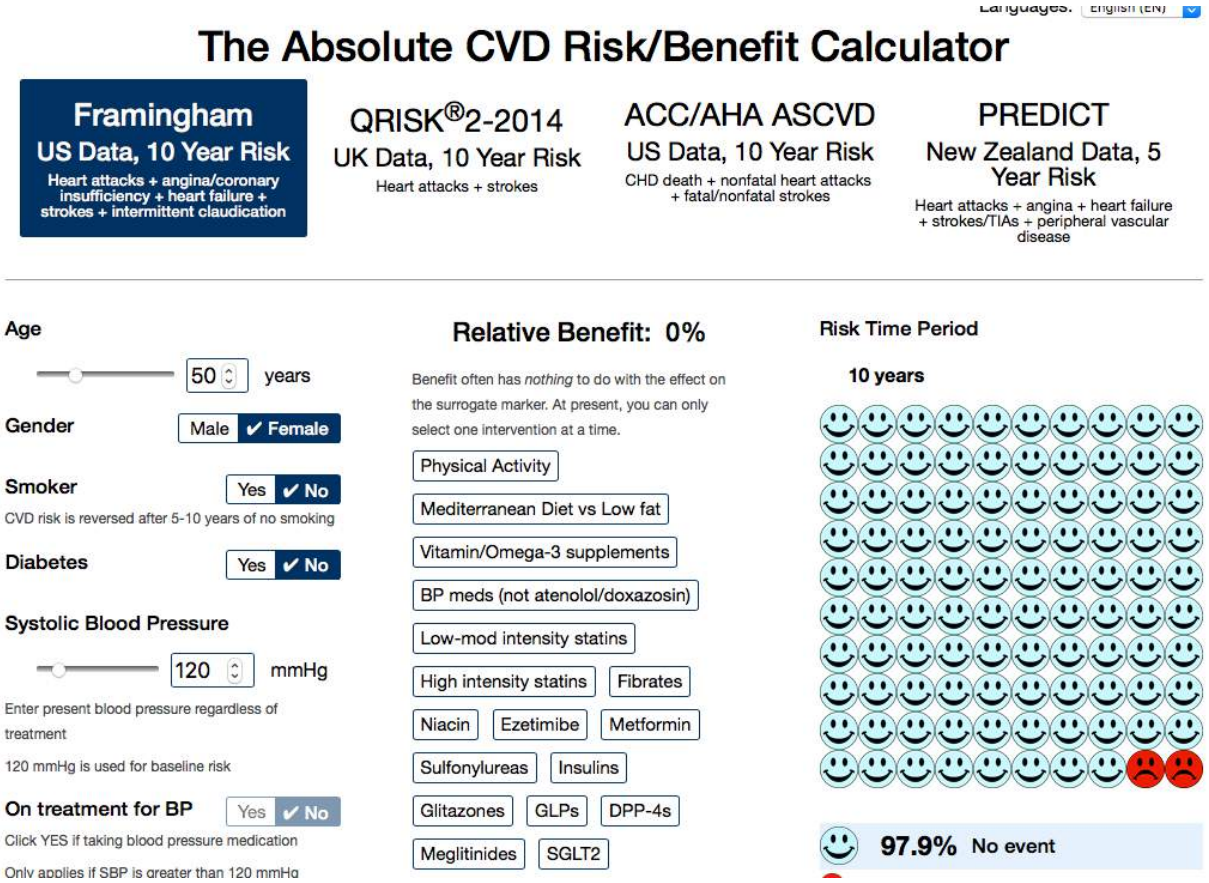
The NNT

thennt.com





The Absolute CVD Risk/Benefit Calculator



http://chd.bestsciencemedicine.com/calc2.html

Deprescribing is a team sport

- **Physiotherapist** – help with pelvic floor muscle exercises, assist with exercise program and fall prevention
- **Social Worker** – help with anxiety, depression, isolation affecting sleep and depression
- **Occupational therapist** – help with mobility aids if needed
- **Dietician** – help to use dietary approaches for GERD, weight loss if needed
- **Nurse** – monitor impact of medication changes, provide education re: nonpharmacologic approaches (CBTi, GERD management, heart failure self-management)
- **Psychologist** – conduct group CBT sessions for insomnia or anxiety, memory testing
- **Pharmacist** – help to identify drug-related problems, develop plans for medication changes, tapering and glucose monitoring if required

"I feel a lot better since I ran out of those pills you gave me."

We can implement these solutions

3 Step Approach

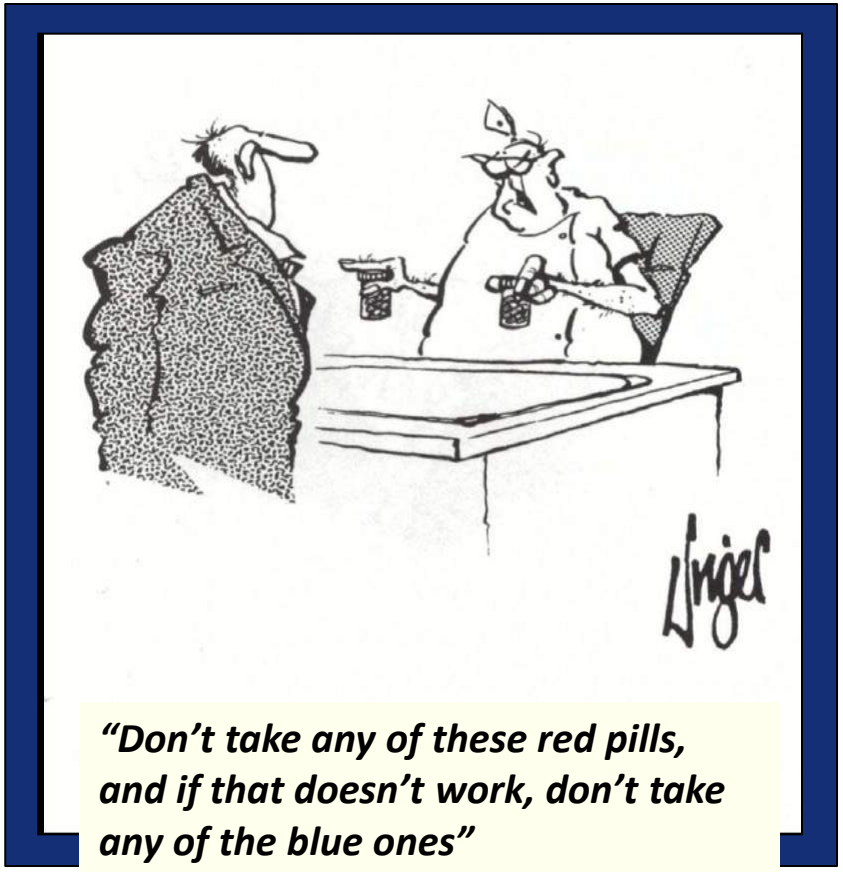
Canadian Deprescribing Network

1. **IDENTIFY** which drugs to deprescribe

2. Use **EVIDENCE-BASED** deprescribing algorithms

3. **ENGAGE** your patients and other health care providers in the deprescribing process using effective communication tools and techniques

Step 1: Identifying which drugs to deprescribe



"Don't take any of these red pills, and if that doesn't work, don't take any of the blue ones"

How do YOU identify which drugs to deprescribe?

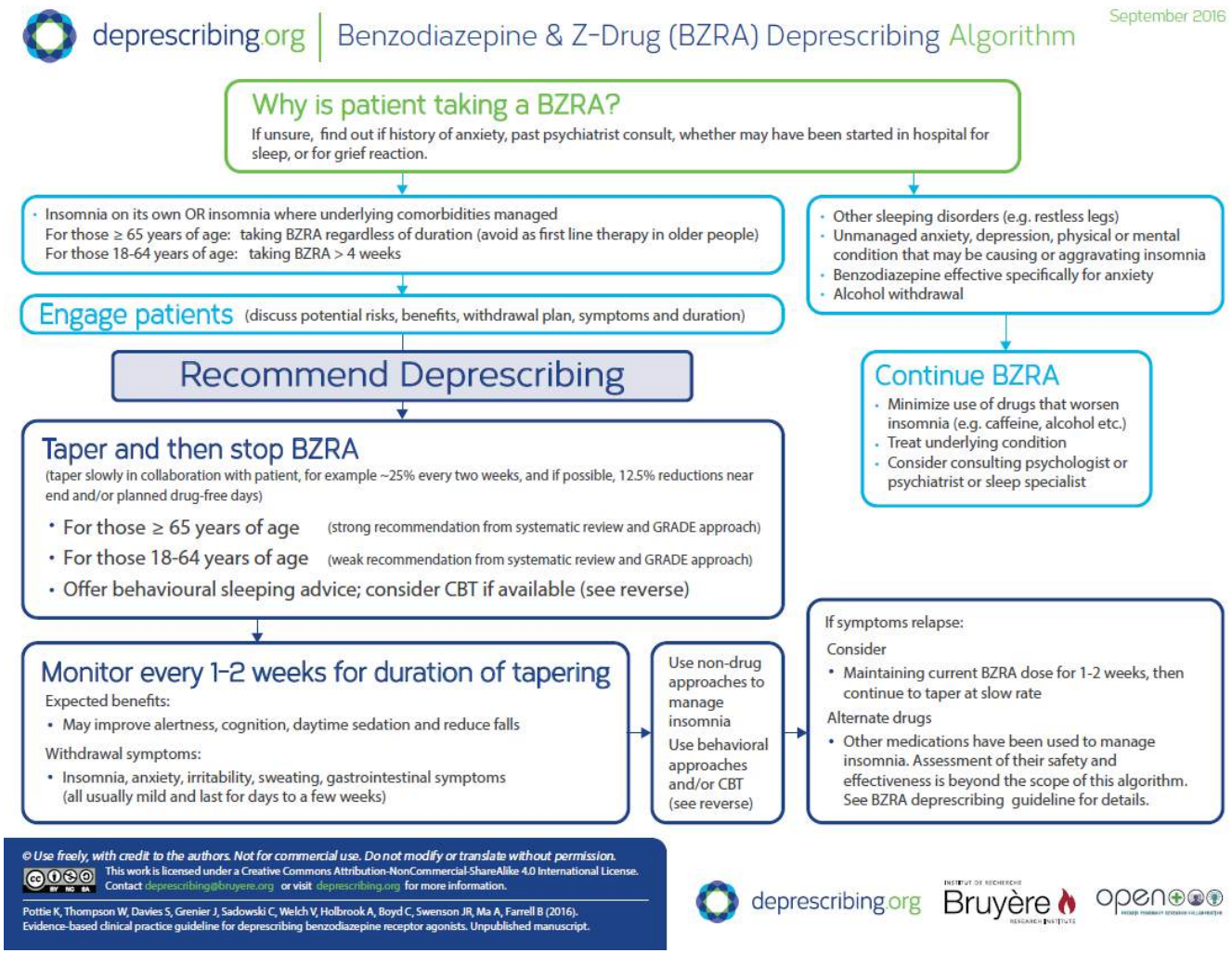
- Explicit criteria (i.e. consensus list of drugs to avoid)
- Lack of evidence to *continue* a drug (based on indication or duration)
- Providing no or little benefit
- Moderate to high probability of harm
- Drug-drug interaction
- Causing a prescribing cascade
- Availability of safer drug or non-drug alternatives

Long-Term Care

- Life-extending drugs usually not necessary
- Drugs for primary prevention
  - Generally not appropriate as the time-to-benefit usually exceeds life expectancy
- Drugs for secondary prevention
  - Prescribe only when ongoing benefit is expected to be within a patient's life expectancy

O'Mahony D, O'Connor MN. Age and Ageing 2011;40:19-422

Step 2: Using algorithms



Discontinuation

- Discontinuation of more than one medication should occur sequentially
  - Discontinue one at a time, observe for effects
  - Able to attribute withdrawal symptoms to the medication ceased

Bain KT, et al. JAGS 2008;56:1946-1952.

Order of discontinuing medications

- First drugs to discontinue:
  - Medications for which there appears to be no clear current indication
- Second drugs to discontinue:
  - Medications where there is a current indication, but which may provide limited or no benefit
- Third drugs to discontinue:
  - Medications that may have benefits, but an unfavorable risk profile
    - Substitute these with other drugs that have a more favourable ratio of benefits to harms

Steinman MA, Hanlon JT. JAMA 2010;304(14):1592-1601

How to discontinue medications

- General rule of thumb
  - Drugs can usually be tapered down at the same rate at which they are titrated up at the initiation of drug therapy
- Common drugs requiring tapering:
  - opioids, beta-blockers, clonidine, gabapentin, antidepressants (SSRIs, SNRIs, TCAs)
- Monitor for adverse withdrawal events (regardless of taper rate)

Steinman MA, Hanlon JT. JAMA 2010;304(14):1592-1601

Step 3: Engage

- “Stop slow as you go low”
- Start with the path of least resistance
  - choose drugs with low impact first (eg. Colace, Iron) to gain patient confidence
  - give the patient the time to process the information
  - choose a time in a patient’s life that is stable
- Be supportive
  - Offer non-pharmacological options
    -sleep hygiene, psychotherapy, community integration
  - Be prepared to spend time
  - Be prepared to try often
  - Be realistic with how much you can take on
- Be flexible
  - all plans are not created equal

Your Turn

- Talk to the person patient next to you about getting off the sleeping pill he/she has been taking for 30 years

Which way did you start the deprescribing conversation?

1. Direct method

"I see you are taking a lot of pills, I want to discuss getting you off some of them"

2. **Indirect method**

"How's your sleep?....There is some new research about sleeping pills that I want to discuss with you. I'd like to try switching you to non-drug therapy"

3. Emotional method

"About your memory problems, falls, etc….I'm ***worried*** *that..."*

Choose the right words to speak to patients

4. Benefits and risks

If we reduce the dose or stop your sleeping pill(s), there is a risk you might have difficulty sleeping for a few nights. We will need to focus on how you can get a good night's sleep without medication. On the plus side, if the sleeping pill is reduced or stopped, you may feel less tired in the morning and have fewer falls.

5. Exploration of options

From your point of view, what matters most to you? How do you feel about these options? Is this something you would consider?

What medications are important for you to keep taking?

6. Use the EMPOWER brochure

Read this, we can talk about it during our next appointment together.

Adapted from : Farrell B, Mangin D. Deprescribing Is an Essential Part of Good Prescribing. Am Fam Physician. 2019 Jan 1;99(1):7-9.

Consistency in Communication

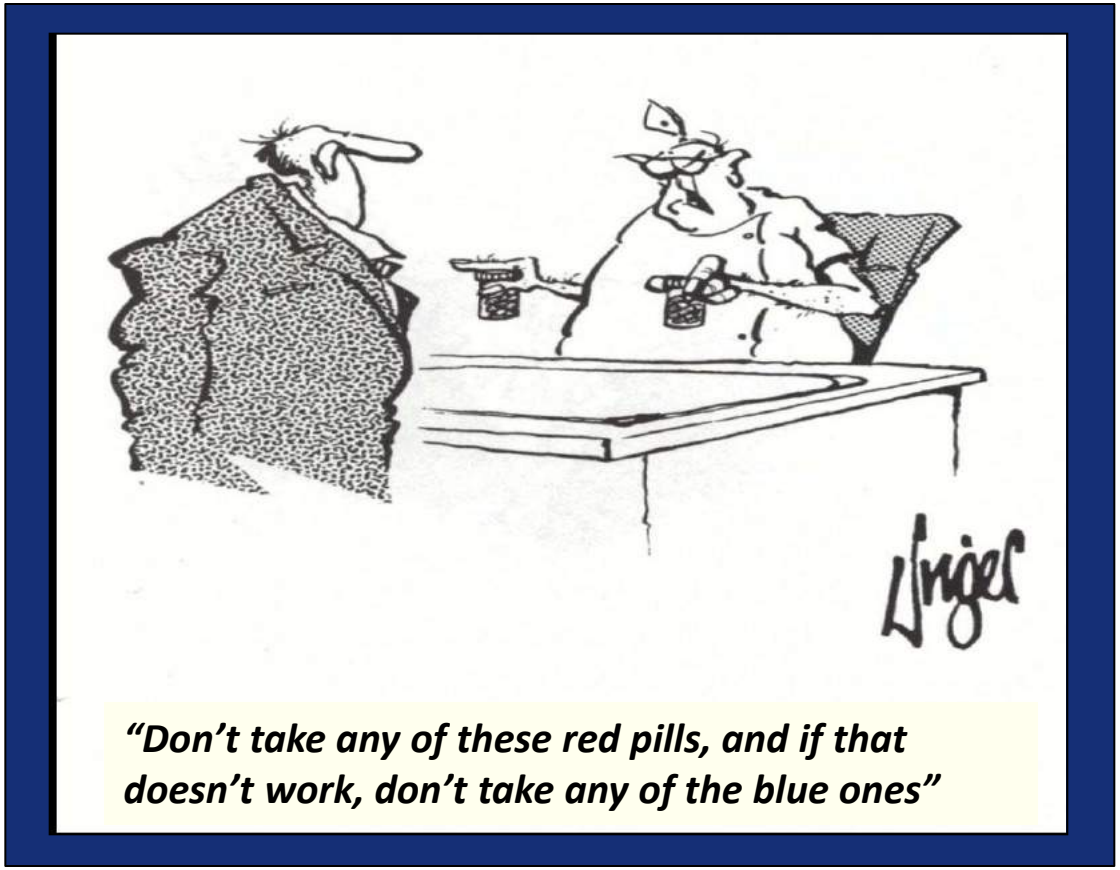
- Keep the message clear, say it often
- “Success is possible”
- Be up front with what could happen and how long it may last
- All team on the same page
- Regular follow up plans
- Include family members in the conversation

Navigating the Challenges

Pulling it together in case studies

Canadian Deprescribing Network

CIHR IRSC
Canadian Institutes of Health Research
Instituts de recherche en santé du Canada



“Don’t take any of these red pills, and if that doesn’t work, don’t take any of the blue ones”

What are your considerations for Mrs. S.'s 17 meds?

Mrs. S. 85 years old

- Amiodarone 200 mg po bid
- Furosemide 40 mg po bid
- Spironolactone 25 mg po qd
- ASA 80 mg po qd
- Fosinopril 10 mg po qd
- Metoprolol 50 mg po bid
- Atorvastatin 10 mg po qd
- Metformin 500 mg po bid
- Glyburide 5 mg po bid
- Alendronate 70 mg po/wk
- Calcium carbonate 1,200 mg/day
- Vitamin D 800 IU/day
- Pantoprazole 40 mg po qd
- Levothyroxine 0.125 mg po qd
- Oxybutynin 5 mg po bid
- Lorazepam 1 mg po qhs
- Hydroxyzine 25 mg po tid prn for dry skin

List Mrs. S.'s Beers Criteria meds, prescribing cascades or drug-drug interactions

Mrs. S. 85 years old

- Amiodarone 200 mg po bid
- Furosemide 40 mg po bid
- Spironolactone 25 mg po qd
- ASA 80 mg po qd
- Fosinopril 10 mg po qd
- Metoprolol 50 mg po bid
- Atorvastatin 10 mg po qd
- Metformin 500 mg po bid
- Glyburide 5 mg po bid
- Alendronate 70 mg po/wk
- Calcium carbonate 1,200 mg/day
- Vitamin D 800 IU/day
- Pantoprazole 40 mg po qd
- Levothyroxine 0.125 mg po qd
- Oxybutynin 5 mg po bid
- Lorazepam 1 mg po qhs
- Hydroxyzine 25 mg po tid prn for dry skin

How many Beers Criteria meds?

Mrs. S. 85 years old

- **Amiodarone 200 mg po bid**
- Furosemide 40 mg po bid
- Spironolactone 25 mg po qd
- ASA 80 mg po qd
- Fosinopril 10 mg po qd
- Metoprolol 50 mg po bid
- Atorvastatin 10 mg po qd
- Metformin 500 mg po bid
- **Glyburide 5 mg po bid**
- Alendronate 70 mg po/wk
- Calcium carbonate 1,200 mg/day
- Vitamin D 800 IU/day
- **Pantoprazole 40 mg po qd**
- Levothyroxine 0.125 mg po qd
- Oxybutynin 5 mg po bid
- **Lorazepam 1 mg po qhs**
- **Hydroxyzine 25 mg po tid prn for dry skin**

5 Beers List Drugs

How many prescribing cascades?

Mrs. S. 85 years old

- Amiodarone 200 mg po bid
- Furosemide 40 mg po bid
- Spironolactone 25 mg po qd
- ASA 80 mg po qd
- Fosinopril 10 mg po qd
- Metoprolol 50 mg po bid
- Atorvastatin 10 mg po qd
- Metformin 500 mg po bid
- Glyburide 5 mg po bid
- Alendronate 70 mg po/wk
- Calcium carbonate 1,200 mg/day
- Vitamin D 800 IU/day
- Pantoprazole 40 mg po qd
- Levothyroxine 0.125 mg po qd
- Oxybutynin 5 mg po bid
- Lorazepam 1 mg po qhs
- Hydroxyzine 25 mg po tid prn for dry skin

5 Beers List Drugs

1 Prescribing cascade

How many prescribing cascades?

Mrs. S. 85 years old

- Amiodarone 200 mg po bid
- Furosemide 40 mg po bid
- Spironolactone 25 mg po qd
- ASA 80 mg po qd
- Fosinopril 10 mg po qd
- Metoprolol 50 mg po bid
- Atorvastatin 10 mg po qd
- Metformin 500 mg po bid
- Glyburide 5 mg po bid
- Alendronate 70 mg po/wk
- Calcium carbonate 1,200 mg/da
- Vitamin D 800 IU/day
- Pantoprazole 40 mg po qd
- Levothyroxine 0.125 mg po qd
- Oxybutynin 5 mg po bid
- Lorazepam 1 mg po qhs
- Hydroxyzine 25 mg po tid prn for dry skin

5 Beers List Drugs

2 Prescribing cascades

How many prescribing cascades?

Mrs. S. 85 years old

- Amiodarone 200 mg po bid
- Furosemide 40 mg po bid
- Spironolactone 25 mg po qd
- ASA 80 mg po qd
- Fosinopril 10 mg po qd
- Metoprolol 50 mg po bid
- Atorvastatin 10 mg po qd
- Metformin 500 mg po bid
- Glyburide 5 mg po bid
- Alendronate 70 mg po/wk
- Calcium carbonate 1,200 mg/day
- Vitamin D 800 IU/day
- Pantoprazole 40 mg po qd
- Levothyroxine 0.125 mg po qd
- Oxybutynin 5 mg po bid
- Lorazepam 1 mg po qhs
- Hydroxyzine 25 mg po tid prn for dry skin

5 Beers List Drugs

3 Prescribing cascades

Any drug-drug interactions?

How many of Mrs. S.'s 17 meds would you deprescribe?

Mrs. S. 85 years old

- **Amiodarone 200 mg po bid**
- Furosemide 40 mg po bid
- Spironolactone 25 mg po qd
- ASA 80 mg po qd
- Fosinopril 10 mg po qd
- Metoprolol 50 mg po bid
- Atorvastatin 10 mg po qd
- Metformin 500 mg po bid
- **Glyburide 5 mg po bid**
- Alendronate 70 mg po/wk
- Calcium carbonate 1,200 mg/day
- Vitamin D 800 IU/day
- **Pantoprazole 40 mg po qd**
- Levothyroxine 0.125 mg po qd
- Oxybutynin 5 mg po bid
- **Lorazepam 1 mg po qhs**
- **Hydroxyzine 25 mg po tid prn for dry skin**

5 Beers List Drugs

3 Prescribing cascades

Any drug-drug interactions?

Potentially, 10 of Mrs. S.'s meds could be deprescribed

Mrs. S. 85 years old

- **Amiodarone 200 mg po bid**
- **Furosemide 40 mg po bid**
- **Spironolactone 25 mg po qd**
- ASA 80 mg po qd
- Fosinopril 10 mg po qd
- Metoprolol 50 mg po bid
- Atorvastatin 10 mg po qd
- Metformin 500 mg po bid
- **Glyburide 5 mg po bid**
- **Alendronate 70 mg po/wk**
- Calcium carbonate 1,200 mg/day
- Vitamin D 800 IU/day
- **Pantoprazole 40 mg po qd**
- **Levothyroxine 0.125 mg po qd**
- **Oxybutynin 5 mg po bid**
- **Lorazepam 1 mg po qhs**
- **Hydroxyzine 25 mg po tid prn for dry skin**

Chart Review

> 10 years ago

- Hypertension– metoprolol
- Diabetes – metformin, glyburide
- Dyslipidemia- rosuvastatin
- STEMI – ASA
- Paroxysmal A. fib post-MI - amiodarone

2-10 years

- Osteoporosis – alendronate, calcium, Vit D
- Hypothyroidism – levothyroxine
- 2nd STEMI, heart failure – furosemide, spironolactone, fosinopril
- Insomnia in hospital – discharged on lorazepam
- Gastroprotection – pantoprazole

>1 year

- Urinary incontinence – oxybutynin

Your turn - 6-month plan

Mrs. S. 85 years old

- **Amiodarone 200 mg po bid**
- **Furosemide 40 mg po bid**
- **Spironolactone 25 mg po qd**
- ASA 80 mg po qd
- Fosinopril 10 mg po qd
- Metoprolol 50 mg po bid
- Atorvastatin 10 mg po qd
- Metformin 500 mg po bid
- **Glyburide 5 mg po bid**
- **Alendronate 70 mg po/wk**
- Calcium carbonate 1,200 mg/day
- Vitamin D 800 IU/day
- **Pantoprazole 40 mg po qd**
- **Levothyroxine 0.125 mg po qd**
- **Oxybutynin 5 mg po bid**
- **Lorazepam 1 mg po qhs**
- **Hydroxyzine 25 mg po tid prn for dry skin**

5 Beers List Drugs

3 Prescribing cascades

You can start with the easy ones…

Mrs. S. 85 years old

- **Amiodarone 200 mg po bid**
- Furosemide 40 mg po bid
- Spironolactone 25 mg po qd
- ASA 80 mg po qd
- Fosinopril 10 mg po qd
- Metoprolol 50 mg po bid
- Atorvastatin 10 mg po qd
- Metformin 500 mg po bid
- Glyburide 5 mg po bid
- Alendronate 70 mg po/wk
- Calcium carbonate 1,200 mg/day
- Vitamin D 800 IU/day
- Pantoprazole 40 mg po qd
- Levothyroxine 0.125 mg po qd
- Oxybutynin 5 mg po bid
- Lorazepam 1 mg po qhs
- **Hydroxyzine 25 mg po tid prn for dry skin**

Or…start with those with evidence-based deprescribing guidelines

Mrs. S. 85 years old

- Amiodarone 200 mg po bid
- Furosemide 40 mg po bid
- Spironolactone 25 mg po qd
- ASA 80 mg po qd
- Fosinopril 10 mg po qd
- Metoprolol 50 mg po bid
- Atorvastatin 10 mg po qd
- Metformin 500 mg po bid
- **Glyburide 5 mg po bid**
- Alendronate 70 mg po/wk
- Calcium carbonate 1,200 mg/day
- Vitamin D 800 IU/day
- **Pantoprazole 40 mg po qd**
- Levothyroxine 0.125 mg po qd
- Oxybutynin 5 mg po bid
- **Lorazepam 1 mg po qhs**
- Hydroxyzine 25 mg po tid prn for dry skin

deprescribing.org | Proton Pump Inhibitor (PPI) Deprescribing Algorithm

September 2015

Why is patient taking a PPI?

If unsure, find out if history of endoscopy, if ever hospitalized for bleeding ulcer or if taking because of chronic NSAID use in past, if ever had heartburn or dyspepsia

Indication still unknown?

- Mild to moderate esophagitis or
- GERD treated x 4-8 weeks (esophagitis healed, symptoms controlled)

- Peptic Ulcer Disease treated x 2-12 weeks (from NSAID; *H. pylori*)
- Upper GI symptoms without endoscopy; asymptomatic for 3 consecutive days
- ICU stress ulcer prophylaxis treated beyond ICU admission
- Uncomplicated *H. pylori* treated x 2 weeks and asymptomatic

- Barrett's esophagus
- Chronic NSAID users with bleeding risk
- Severe esophagitis
- Documented history of bleeding GI ulcer

Recommend Deprescribing

Strong Recommendation (from Systematic Review and GRADE approach)

Decrease to lower dose (evidence suggests no increased risk in return of symptoms compared to continuing higher dose), or

Stop and use on-demand (daily until symptoms stop) (1/10 patients may have return of symptoms)

Stop PPI

Continue PPI

or consult gastroenterologist if considering deprescribing

Monitor at 4 and 12 weeks

If verbal:

- Heartburn
- Regurgitation
- Dyspepsia
- Epigastric pain

If non-verbal:

- Loss of appetite
- Weight loss
- Agitation

Use non-drug approaches

- Avoid meals 2-3 hours before bedtime; elevate head of bed; address if need for weight loss and avoid dietary triggers

Manage occasional symptoms

- Over-the-counter antacid, H2RA, PPI, alginate prn (ie. Tums®, Rolaids®, Zantac®, Olex®, Gaviscon®)
- H2RA daily (weak recommendation – GRADE; 1/5 patients may have symptoms return)

If symptoms relapse:

If symptoms persist x 3 – 7 days and interfere with normal activity:

1) Test and treat for *H. pylori*
2) Consider return to previous dose

Farrell B, Pottie K, Thompson W, Boghossian T, Pizzola L, Rashid J, Rojas-Fernandez C, Walsh K, Welch V, Moayyedi P. (2015). Evidence-based clinical practice guideline for deprescribing proton pump inhibitors. Unpublished manuscript.

deprescribing.org | Bruyère Research Institute | open

CaDeN
Canadian Deprescribing Network

ReCaD
Réseau canadien pour la déprescription

STEP-BY-STEP TAPERING-OFF PROGRAM

We recommend that you follow this schedule under the supervision of your doctor or pharmacist to taper off your sedative-hypnotic medication.

WEEKS	TAPERING SCHEDULE							✓
	MO	TU	WE	TH	FR	SA	SU	
1 and 2	½	1	1	1	½	1	1	
3 and 4	½	1	½	½	1	½	½	
5 and 6	½	½	½	½	½	½	½	
7 and 8	½	¼	½	½	¼	½	½	
9 and 10	½	¼	½	¼	½	¼	½	
11 and 12	¼	¼	½	¼	¼	½	¼	
13 and 14	¼	¼	¼	¼	¼	¼	¼	
15 and 16	✕	¼	✕	✕	¼	✕	¼	
17 and 18	✕	✕	✕	✕	✕	✕	✕	

EXPLANATIONS

1 Full dose ½ Half dose ¼ Quarter of a dose ✕ No dose

Tannenbaum, C., Martin, P., Tamblyn, R., et al. 2014. Reduction of Inappropriate Benzodiazepine Prescriptions Among Older Adults Through Direct Patient Education. Jama Internal Medicine. Available here: http://jamanetwork.com/journals/jamainternalmedicine/fullarticle/1860498

deprescribing.org | Benzodiazepine & Z-Drug (BZRA) Deprescribing Notes

BZRA Availability

BZRA	Strength
Alprazolam (Xanax®) T	0.25 mg, 0.5 mg, 1 mg, 2 mg
Bromazepam (Lectopam®) T	1.5 mg, 3 mg, 6 mg
Chlordiazepoxide (Librax®) C	5 mg, 10 mg, 25 mg
Clonazepam (Rivotril®) T	0.25 mg, 0.5 mg, 1 mg, 2 mg
Clorazepate (Tranxene®) C	3.75 mg, 7.5 mg, 15 mg
Diazepam (Valium®) T	2 mg, 5 mg, 10 mg
Flurazepam (Dalmane®) C	15 mg, 30 mg
Lorazepam (Ativan®) T,S	0.5 mg, 1 mg, 2 mg
Nitrazepam (Mogadon®) T	5 mg, 10 mg
Oxazepam (Serax®) T	10 mg, 15 mg, 30 mg
Temazepam (Restoril®) C	15 mg, 30 mg
Triazolam (Halcion®) T	0.125 mg, 0.25 mg
Zopiclone (Imovane®, Rhovane®) T	5mg, 7.5mg
Zolpidem (Sublinox®) S	5mg, 10mg

T = tablet, C = capsule, S = sublingual tablet

BZRA Side Effects

- BZRAs have been associated with:
  - physical dependence, falls, memory disorder, dementia, functional impairment, daytime sedation and motor vehicle accidents
- Risks increase in older persons

Engaging patients and caregivers

Patients should understand:
- The rationale for deprescribing (associated risks of continued BZRA use, reduced long-term efficacy)
- Withdrawal symptoms (insomnia, anxiety) may occur but are usually mild, transient and short-term (days to a few weeks)
- They are part of the tapering plan, and can control tapering rate and duration

Tapering doses

- No published evidence exists to suggest switching to long-acting BZRAs reduces incidence of withdrawal symptoms or is more effective than tapering shorter-acting BZRAs
- If dosage forms do not allow 25% reduction, consider 50% reduction initially using drug-free days during latter part of tapering, or switch to lorazepam or oxazepam for final taper steps

Behavioural management

Primary care:
1. Go to bed only when sleepy
2. Do not use bed or bedroom for anything but sleep (or intimacy)
3. If not asleep within about 20-30 min at the beginning of the night or after an awakening, exit the bedroom
4. If not asleep within 20-30 min on returning to bed, repeat #3
5. Use alarm to awaken at the same time every morning
6. Do not nap
7. Avoid caffeine after noon
8. Avoid exercise, nicotine, alcohol, and big meals within 2 hrs of bedtime

Institutional care:
1. Pull up curtains during the day to obtain bright light exposure
2. Keep alarm noises to a minimum
3. Increase daytime activity & discourage daytime sleeping
4. Reduce number of naps (no more than 30 mins and no naps after 2 pm)
5. Offer warm decaf drink, warm milk at night
6. Restrict food, caffeine, smoking before bedtime
7. Have the resident toilet before going to bed
8. Encourage regular bedtime and rising times
9. Avoid waking at night to provide direct care
10. Offer backrub, gentle massage

Using CBT

What is cognitive behavioural therapy (CBT)?
- CBT includes 5-6 educational sessions about sleep/insomnia, stimulus control, sleep restriction, sleep hygiene, relaxation training and support

Does it work?
- CBT has been shown in trials to improve sleep outcomes with sustained long-term benefits

Who can provide it?
- Clinical psychologists usually deliver CBT, however, others can be trained or can provide aspects of CBT education; self-help programs are available

How can providers and patients find out about it?
- Some resources can be found here: http://sleepwellns.ca/

Pottie K, Thompson W, Davies S, Grenier J, Sadowski C, Welch V, Holbrook A, Boyd C, Swenson JR, Ma A, Farrell B (2016). Evidence-based clinical practice guideline for deprescribing benzodiazepine receptor agonists. Unpublished manuscript.

deprescribing.org | Bruyère Research Institute | open

Back to Mrs. S's medications

Month 1

- Stop **amiodarone**
- Stop **hydroxyzine**
- Humidifier, eliminate soaps and use skin cream for dry skin
- Monitor glucose
- Start CBT-I
- Start tapering of **lorazepam**

Month 2

- Stop **alendronate**
- Start denosumab injections q6mths
- Start **glyburide** taper 2.5 mg bid

Month 3

- Stop **glyburide** - monitor glucose levels
- Stop **spironolactone**
- Teach heart failure self-management / start compression stockings

Mrs. S's medication changes

Month 4

- Monitor blood glucose levels
- Substitute **metoprolol** bid with bisoprolol 5mg qd

Month 5

- Reinforce heart failure self-management
- Begin Kegel exercises, counselling about avoidance of tea and coffee to prevent urinary frequency

Month 6

- **Furosemide** - taper to 40 mg daily, with prn dosing as needed for symptoms
- Discontinue **oxybutynin**

At 1 year follow-up

Mrs. S's medications

- Fosinopril 10 mg daily
- Furosemide 20 mg at 5 pm prn
- ASA 80mg daily
- Bisoprolol 5mg daily
- Metformin 500 mg bid
- Atorvastatin 10 mg daily
- Pantoprazole 40mg daily
- Levothyroxine 0.125 mg daily
- Calcium carbonate 1,200 mg/day
- Vitamin D 800 IU/day
- Denosumab 60mg s/c inj q6months

Mrs. S's life:

- Less fluid retention
- Less fatigued
- Urinary urgency and urge incontinence improved
- No more memory complaints
- No more episodes of dizziness
- Dry skin improved
- No reflux
- Lower risk of falls
- Lower risk of hypoglycemia
- Sleeps 6 hours per night, less depressed and anxious

Summary

- There are algorithms to assist in deprescribing some drug classes
- A systematic process can be applied to all drug classes
- For most drug classes a tapering approach is appropriate

Canadian Deprescribing Network

Contact information:
Cheryl Sadowski
cherylas@ualberta.ca
Phone: (780) 492-5078

Learn more about the **Canadian Deprescribing Network** and stay in touch.

Subscribe to the newsletter

Website: deprescribingnetwork.ca
Website: deprescribing.org
Email: info@deprescribingnetwork.ca
Twitter: @DeprescribeNet
Facebook: @deprescribingnetwork

For your Pill Drill you'll go to Room Six Sixty-three,
where a voice will instruct you, *"Repeat after me…*

This small white pill is what I munch
at breakfast and right after lunch.
I take the pill that's kelly green
before each meal and in between.
These loganberry-colored pills
I take for early morning chills.
I take the pill with zebra stripes
to cure my early evening gripes.
These orange-tinted ones, of course,
I take to cure my charley horse.

"I take three blues at half past eight
to slow my exhalation rate.
On alternate nights at nine p.m.
I swallow pinkies. Four of them.
The reds, which make my eyebrows strong,
I eat like popcorn all day long.
The speckled browns are what I keep
beside my bed to help me sleep.
This long flat one is what I take
if I should die before I wake."