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
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
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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?

0  Not at all

10  Extremely
We have a problem
(or, a few problems)
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
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. 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

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 60:1-21, 2019.

Key words: medications; drugs; older adult; Beers Criteria

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 outcomes in older adults. The strategies to achieve this aim were:

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)

### Table 1: Seniors’ usage rate of drugs from Beers list,* by jurisdiction, Canada,* 2016

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Indicated uses</th>
<th>Beers criteria rationale (potential harm)</th>
<th>Rate of use</th>
<th>Rate of chronic use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pantoprazole (PPI) (&gt;8 weeks)</td>
<td>Gastroesophageal reflux disease, peptic ulcer disease</td>
<td>Clostridium difficile infection, bone loss, fractures</td>
<td>13.2%</td>
<td>10.3%</td>
</tr>
<tr>
<td>Lorazepam</td>
<td>Anxiety, Insomnia</td>
<td>Cognitive impairment, delirium, falls, fractures</td>
<td>8.8%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Nitrofurantoin</td>
<td>Antibiotic to treat urinary tract infection</td>
<td>Pulmonary toxicity, hepatotoxicity, peripheral neuropathy</td>
<td>5.0%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Raniprazole (PPI) (&gt;8 weeks)</td>
<td>Gastroesophageal reflux disease, peptic ulcer disease</td>
<td>Clostridium difficile infection, bone loss, fractures</td>
<td>4.3%</td>
<td>3.6%</td>
</tr>
<tr>
<td>Amitriptyline</td>
<td>Depression</td>
<td>Sedation, orthostatic hypotension</td>
<td>2.0%</td>
<td>1.6%</td>
</tr>
<tr>
<td>Quetiapine</td>
<td>Schizophrenia, bipolar disorder</td>
<td>Cognitive decline, stroke, mortality</td>
<td>2.8%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Omeprazole (PPI) (&gt;8 weeks)</td>
<td>Gastroesophageal reflux disease, peptic ulcer disease</td>
<td>Clostridium difficile infection, bone loss, fractures</td>
<td>2.7%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Zolpidone</td>
<td>Insomnia</td>
<td>Cognitive impairment, delirium, falls, fractures</td>
<td>2.4%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Oxazepam</td>
<td>Anxiety, Insomnia</td>
<td>Cognitive impairment, delirium, falls, fractures</td>
<td>2.4%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Estradiol (oral/topical patch)</td>
<td>Menopause</td>
<td>Potential carcinogen (breast and endometrium)</td>
<td>2.1%</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

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

- 31% Men over 65 years old
- 42% Women over 65 years old
- 39% Men over 85 years old
- 47% Women over 85 years old

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.

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

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

CIHI: Drug Use Among Seniors in Canada 2016 (2018)
## Top 12 in Seniors - Alberta

<table>
<thead>
<tr>
<th>Rank</th>
<th>Drug class</th>
<th>Rate of use</th>
<th>Chronic rate of use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>HMG-CoA reductase inhibitors</td>
<td>44.3%</td>
<td>39.1%</td>
</tr>
<tr>
<td>2</td>
<td>Proton pump inhibitors</td>
<td>33.8%</td>
<td>24.4%</td>
</tr>
<tr>
<td>3</td>
<td>ACE inhibitors, plain</td>
<td>25.6%</td>
<td>21.7%</td>
</tr>
<tr>
<td>4</td>
<td>Thyroid hormones</td>
<td>23.6%</td>
<td>21.9%</td>
</tr>
<tr>
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<td>Biguanides</td>
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<td>14.5%</td>
</tr>
<tr>
<td>9</td>
<td>Natural opium alkaloids</td>
<td>16.3%</td>
<td>3.0%</td>
</tr>
<tr>
<td>10</td>
<td>Anti-inflammatory preparations, non-steroids for topical use</td>
<td>14.2%</td>
<td>0.6%</td>
</tr>
<tr>
<td>11</td>
<td>Benzodiazepine-related drugs</td>
<td>14.1%</td>
<td>8.4%</td>
</tr>
<tr>
<td>12</td>
<td>Fluoroquinolones</td>
<td>12.8%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

CIHI: Drug Use Among Seniors in Canada 2016 (2018)
## Top 10 Medication Classes

### Alberta vs Canada

<table>
<thead>
<tr>
<th>Rank</th>
<th>Alberta</th>
<th>Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>HMG-CoA reductase inhibitors</td>
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<tr>
<td>9</td>
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<td>Biguanides</td>
</tr>
<tr>
<td>10</td>
<td>Anti-inflammatory preparations, non-steroids for topical use</td>
<td>Benzodiazepine derivatives</td>
</tr>
</tbody>
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CIHI: Drug Use Among Seniors in Canada 2016 (2018)
Beers Criteria Medications
Seniors Claimants in Alberta

<table>
<thead>
<tr>
<th>Sex/age group</th>
<th>Percentage with any Beers use</th>
<th>Percentage with chronic Beers use</th>
</tr>
</thead>
<tbody>
<tr>
<td>65–74</td>
<td>51.3%</td>
<td>31.9%</td>
</tr>
<tr>
<td>75–84</td>
<td>55.5%</td>
<td>37.8%</td>
</tr>
<tr>
<td>85+</td>
<td>57.6%</td>
<td>40.3%</td>
</tr>
<tr>
<td>F — 65–74</td>
<td>57.2%</td>
<td>36.4%</td>
</tr>
<tr>
<td>F — 75–84</td>
<td>60.1%</td>
<td>41.3%</td>
</tr>
<tr>
<td>F — 85+</td>
<td>60.2%</td>
<td>42.6%</td>
</tr>
<tr>
<td>M — 65–74</td>
<td>44.9%</td>
<td>26.9%</td>
</tr>
<tr>
<td>M — 75–84</td>
<td>50.1%</td>
<td>33.6%</td>
</tr>
<tr>
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<td>36.5%</td>
</tr>
<tr>
<td>Total</td>
<td>53.4%</td>
<td>34.8%</td>
</tr>
</tbody>
</table>

CIHI: Drug Use Among Seniors in Canada 2016 (2018)
## Alberta vs Saskatchewan

### Beers Medication Use

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

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

CIHI: Drug Use Among Seniors in Canada 2016 (2018)
PIM Use US – Benzodiazepines

NSDUH, National Survey on Drug Use and Health.

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

Comorbidity of 10 common conditions among UK primary care patients

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


• 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 bupropion)
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 associated with tx

Frailty associated with not tx’ ing
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 \rightarrow Vulnerable \rightarrow Frail

Risk of ↑ frailty not adhering to guidelines

Risk of ↑ frailty adhering to guidelines

## Age-Related Pharmacokinetic Changes

<table>
<thead>
<tr>
<th>Decreases</th>
<th>Increases</th>
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<tbody>
<tr>
<td>Splanchnic &amp; hepatic blood flow</td>
<td>Gastric pH</td>
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<td>Adipose Tissue</td>
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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\(^3\)

Medication use in nursing home residents with advanced dementia

David M. Blass\textsuperscript{1,2,3*}, Betty S. Black\textsuperscript{2,3,4}, Hilary Phillips\textsuperscript{2}, Thomas Finucane\textsuperscript{3,5}, Alva Baker\textsuperscript{2,7}, David Loreck\textsuperscript{8} and Peter V. Rabins\textsuperscript{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
Prescribing cascades

- Arthritis
  - Ibuprofen
    - Hypertension
      - Amlodipine
        - Swollen Ankles
          - Furosemide
            - Incontinence
Risk of drug-drug interactions

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

More medications means a higher chance of interactions.

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
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.

Are benzos effective for insomnia?

Benefits

- 1 person out of 13 will experience one of the benefits below.
- Extra sleep: approx. 35 minutes
- Getting to sleep faster: 14 minutes

Harms

- 1 person out of every 6 will be harmed. This includes delayed reaction time and impaired cognition.
- +50% increase in falls
- 2X increase in hip fractures
- Driving: equivalent to a blood-alcohol level of 0.06-0.11%
Which medications increase the risk of falls in seniors?

- **Diuretics**: 7% increased risk
- **Anti-inflammatory drugs**: 21% increased risk
- **Blood pressure medication**: 24% increased risk
- **Sleeping pills (benzodiazepines)**: 47-57% increased risk
- **Antipsychotics**: 59% increased risk
- **Antidepressants**: 68% increased risk
- **Opioid painkillers**: 68% increased risk

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%)

Induruwa I, et al, Geriatr Gerontol Int. 2017 Nov;17(11):2178-2183,
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. **Mirtazapine** 45 mg daily
7. **Ropinirole** 1 mg q8h prn and 3 mg qhs
8. **Leveteracetam** 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’
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.....

“But what can I take instead?”

I’m going to prescribe this because I don’t have time to explain why all you really need is fresh air.
Barriers to discontinuation

• System’s perspective
  – Research studies do not regularly demonstrate the effects of medication discontinuation

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”

71% of Canadian seniors are willing to stop a medication if their doctor says it is possible.

(Sirois et al., 2016)
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

Proportion of patients who stopped their benzo at 6 months (%)

- **Control**: 78%
- **EMPOWER study**: 45%
- **D-PRESCRIBE study**: 27%

**Intervention**

**Control**
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”

Drug Withdrawal

• # of medications increases ADR 2-3 fold

**BUT**

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

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*

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
Drug Withdrawal

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

¹Shoba, I et al. Drugs Aging 2008; 25(12): 1021 – 1031
Drug Withdrawal

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

Doron Garfinkel MD¹, Sarah Zur-Gil MA² and Joshua Ben-Israel MD³

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

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

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* See text for further explanations
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

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

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
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

Similar to AGS Multimorbidity Guideline, 2012
Interventions - Deprescribing

1. No benefit
   Significant toxicity OR no indication OR obvious contraindication OR cascade prescribing?
   Yes
   No

2. Harm outweighs benefit
   Adverse effects outweigh symptomatic effect or potential future benefits?
   Yes
   No

3. Symptom or disease drugs
   Symptoms stable or nonexistent?
   Yes
   No

4. Preventive drugs
   Potential benefit unlikely to be realized because of limited life expectancy?
   Yes
   No

Continue drug therapy

Withdrawal symptoms or disease recurrence likely if drug therapy discontinued?
   Yes
   No

Taper dose and monitor for adverse drug withdrawal effects

Symptoms stable or nonexistent?
   Yes
   No

Discontinue drug therapy

Restart drug therapy

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 there **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
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 vs $1^0$ 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

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


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.)
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).
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. Copyright © 2008 John Wiley & Sons, Ltd.
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* 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.

IMAI 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.”

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

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, 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

**CONTROL**
34 Pharmacies
261 participants

**INTERVENTION**
36 Pharmacies
242 participants

Randomization

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

Cessation or dose reduction of medication

6 months follow-up

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

Proportion of participants (%)

62 %

82 %

EMPOWER

D-PRESCRIBE

EMPOWER vs D-PREScribe

Cessation rate (benzodiazepines)

Proportion of participants who stopped their benzodiazepines 6 months after intervention

<table>
<thead>
<tr>
<th></th>
<th>Intervention</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMPOWER trial</td>
<td>27%</td>
<td>5%</td>
</tr>
<tr>
<td>D-PREScribe</td>
<td>43%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Tools and resources
Your Turn

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

• What are some challenges with using these tools?
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

- **EMPOWER** deprescribing regimen

Reducing by 25% every 2 weeks is too fast
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

You may be at risk if you are taking opioids/narcotics for chronic pain

Are you taking one of the following medications?

- Buprenorphine (Butrans®)
- Codeine (Tylenol NO. 1®, NO. 2®, NO. 3®)
- Fentanyl (Duragesic®)
- Hydrocodone (Hycodan®)
- Hydromorphone (Dilaudid®)
- Meperidine (Demerol®)
- Methadone (Metadol®)
- Morphine (MS-CONTIN®, M-Eslon®, Kadian®, Statex®)
- Oxycodone (OxyNeo®, Percocet®, Supeudol®)
- Tramadol (Tramacet®, Ralivia®)
Canadian Examples

- **MedStopper**

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>RED - Highest</strong></td>
<td>Warfarin (Coumadin) / Warfarin / anticoagulant</td>
<td>🙁</td>
<td>☹</td>
<td>☹</td>
<td>💊 Taper to NR Targets</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td><strong>RED - Highest</strong></td>
<td>Digoxin / Digitalis / Digitalis / heart failure</td>
<td>🙁</td>
<td>☹</td>
<td>☹</td>
<td>💊 tapered daily for more than 3-4 weeks. Reduce dose by 1.0% every 1-2 weeks. Once at 25% of the original dose and no withdrawl symptoms have been seen, stop the drug. If any with drawl symptoms occur go back to approximately 75% of the previously tolerated dose.</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td><strong>RED - Highest</strong></td>
<td>Prednisone (Predniason, Prednisone, Deltasone) / Corticosteroids / inflammatory conditions</td>
<td>☹</td>
<td>☹</td>
<td>☹</td>
<td>💊 tapered daily for more than 3-4 weeks. Reduce dose by 1.0% every 1-2 weeks. Once at 25% of the original dose and no withdrawl symptoms have been seen, stop the drug. If any with drawl symptoms occur go back to approximately 75% of the previously tolerated dose.</td>
<td>None</td>
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</tr>
<tr>
<td><strong>RED - Highest</strong></td>
<td>Dual-antiplatelet therapy (Plavix / Clopoid / Plavix / Heartburn HR)</td>
<td>☹</td>
<td>☹</td>
<td>☹</td>
<td>💊 tapered daily for more than 3-4 weeks. Reduce dose by 1.0% every 1-2 weeks. Once at 25% of the original dose and no withdrawl symptoms have been seen, stop the drug. If any with drawl symptoms occur go back to approximately 75% of the previously tolerated dose.</td>
<td>None</td>
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<tr>
<td><strong>RED - Highest</strong></td>
<td>Bicalutamide (Oral / injectable) / aromatase inhibitor / hormone / ERBB</td>
<td>☹</td>
<td>☹</td>
<td>☹</td>
<td>💊 tapered daily for more than 3-4 weeks. Reduce dose by 1.0% every 1-2 weeks. Once at 25% of the original dose and no withdrawl symptoms have been seen, stop the drug. If any with drawl symptoms occur go back to approximately 75% of the previously tolerated dose.</td>
<td>None</td>
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</table>
Sleepwell, Choosing Wisely

Stop Sleeping Pills Guide

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, herbal, others)?

Stopping Guidance

YOU HAVE USED SLEEPING PILLS FOR

2 weeks
3-4 weeks
2-3 months
6-7½ months
Over 2 years

You should reduce the dose slowly.

LESS SEDATIVES FOR YOUR OLDER RELATIVES.

A toolkit for reducing inappropriate use of benzodiazepines and sedative-hypnotics among older adults in hospitals

version 1.1

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%

<table>
<thead>
<tr>
<th>SLEEP AGENDA</th>
<th>Example</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wed</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Yesterday, I took a nap from ____ to ____. (Record all naps.)</td>
<td>1:30 pm to 2:30 pm</td>
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<tr>
<td>2. Yesterday, I took ____ mg of medication and/or ____ oz of alcohol to help me sleep.</td>
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<tr>
<td>3. (a) I went to bed at ____ h and (b) I turned off the lights at ____ h.</td>
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<tr>
<td>4. After turning off the lights, I fall asleep after ____ minutes.</td>
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<tr>
<td>5. I woke up ____ times during the night. (Indicate the number of times)</td>
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<td>6. I stayed awake ____ min each time. (Indicate how many minutes you stayed awake each time.)</td>
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<tr>
<td>7. This morning, I woke up at ____ h. (Record the last time you woke up.)</td>
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<tr>
<td>8. This morning I got out of bed at ____ h.</td>
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<tr>
<td>9. When I got up, I felt: 1 = exhausted, 2 = tired, 3 = average, 4 = rested, 5 = very well rested</td>
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<tr>
<td>10. Overall, my sleep last night was: 1=very restless, 2=restless, 3=average, 4=deep, 5=very deep</td>
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</tbody>
</table>

Sleep efficiency = \[ \frac{\text{Total time asleep}}{\text{Total time in bed}} \]
Beers Criteria

**Benzodiazepines**
- Temazepam
- Oxazepam
- Lorazepam
- Alprazolam
- Clonazepam
- Diazepam
- Flurazepam
- Clorazepate

**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 mono-therapy 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 <30% 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

Canadian Examples

1. Don’t use antimicrobials to treat bacteriuria in older adults unless specific 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

Quick summaries of evidence-based medicine.

We are a group of physicians that have developed a framework and rating system to evaluate therapies based on their patient-important benefits and harms as well as a system to evaluate diagnostics by patient sign, symptom, lab test or study.

We only use the highest quality, evidence-based studies (frequently, but not always Cochrane Reviews), and we accept no outside funding or advertisements.

---

**Statins in Persons at Low Risk of Cardiovascular Disease**

No statistically significant mortality benefit

---

**In Summary, for those who received statins:**

<table>
<thead>
<tr>
<th>Benefits in NNT</th>
<th>Harms in NNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>- No statistically significant mortality benefit</td>
<td>- 1 in 21 experienced pain from muscle damage</td>
</tr>
<tr>
<td>- 1 in 217 avoided a nonfatal heart attack (myocardial infarction)</td>
<td>- 1 in 204 developed diabetes mellitus</td>
</tr>
<tr>
<td>- 1 in 313 avoided a nonfatal stroke</td>
<td></td>
</tr>
</tbody>
</table>

View As: NNT %
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

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
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

Why is patient taking a BZRA?
If unsure, find out if history of anxiety, past psychiatrist consult, whether may have been started in hospital for sleep, or for grief reaction.

Engage patients (discuss potential risks, benefits, withdrawal plan, symptoms and duration)

Recommend Deprescribing

Taper and then stop BZRA
(taper slowly in collaboration with patient, for example ~25% every two weeks, and if possible, 12.5% reductions near end and/or planned drug-free days)

- For those ≥ 65 years of age
  - (strong recommendation from systematic review and GRADE approach)
- For those 18-64 years of age
  - (weak recommendation from systematic review and GRADE approach)
- Offer behavioural sleeping advice; consider CBT if available (see reverse)

Monitor every 1-2 weeks for duration of tapering
Expected benefits:
- May improve alertness, cognition, daytime sedation and reduce falls
Withdrawal symptoms:
- Insomnia, anxiety, irritability, sweating, gastrointestinal symptoms (all usually mild and last for days to a few weeks)

Use non-drug approaches to manage insomnia
Use behavioral approaches and/or CBT (see reverse)

Continue BZRA
- Minimize use of drugs that worsen insomnia (e.g. caffeine, alcohol etc.)
- Treat underlying condition
- Consider consulting psychologist or psychiatrist or sleep specialist

If symptoms relapse:
Consider
- Maintaining current BZRA dose for 1-2 weeks, then continue to taper at slow rate
- Alternate drugs
- Other medications have been used to manage insomnia. Assessment of their safety and effectiveness is beyond the scope of this algorithm. See BZRA deprescribing guideline for details.
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

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...”
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.
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
“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?

- 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

Mrs. S. 85 years old
List Mrs. S.’s Beers Criteria meds, prescribing cascades or drug-drug interactions

- 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

Mrs. S. 85 years old
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
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
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- 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
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- 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

2 Prescribing cascades

5 Beers List Drugs
How many prescribing cascades?

Mrs. S. 85 years old

5 Beers
List Drugs

3 Prescribing cascades

Any drug-drug interactions?

- 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 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
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
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

• 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

Mrs. S. 85 years old
Proton Pump Inhibitor (PPI) Deprescribing Algorithm

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

- 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)
(evidence suggests no increased risk in return of symptoms compared to continuing higher dose), or
(daily until symptoms stop) 1/10 patients may have return of symptoms

Decide to lower dose
Decrease to lower dose
Stop and use on-demand

Monitor at 4 and 12 weeks
If verbal:
- Heartburn
- Regurgitation
- 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 pm (ie. Tums®, Rolaid®, Zantac®, Olax®, 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

Stop PPI
Continue PPI
or consult gastroenterologist if considering deprescribing

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Contact deprescribing@bruyere.org or visit deprescribing.org for more information.
**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.

<table>
<thead>
<tr>
<th>WEEKS</th>
<th>MON</th>
<th>TUE</th>
<th>WED</th>
<th>THU</th>
<th>FRI</th>
<th>SAT</th>
<th>SUN</th>
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**EXPLANATIONS**

- Full dose
- Half dose
- Quarter of a dose
- No dose

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BZRA Availability

<table>
<thead>
<tr>
<th>BZRA</th>
<th>Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alprazolam (Xanax®)</td>
<td>0.25 mg, 0.5 mg, 1 mg, 2 mg</td>
</tr>
<tr>
<td>Bromazepam (Lectopam®)</td>
<td>1.5 mg, 3 mg, 6 mg</td>
</tr>
<tr>
<td>Chlordiazepoxide (Librax®)</td>
<td>5 mg, 10 mg, 25 mg</td>
</tr>
<tr>
<td>Clorazepam (Rivotril®)</td>
<td>0.25 mg, 0.5 mg, 1 mg, 2 mg</td>
</tr>
<tr>
<td>Clorazepate (Tranxene®)</td>
<td>3.75 mg, 75 mg, 15 mg</td>
</tr>
<tr>
<td>Diazepam (Valium®)</td>
<td>2 mg, 5 mg, 10 mg</td>
</tr>
<tr>
<td>Flurazepam (Dalmane®)</td>
<td>15 mg, 30 mg</td>
</tr>
<tr>
<td>Lorazepam (Ativan®)</td>
<td>0.5 mg, 1 mg, 2 mg</td>
</tr>
<tr>
<td>Nitrazepam (Mogadon®)</td>
<td>5 mg, 10 mg</td>
</tr>
<tr>
<td>Oxazepam (Serax®)</td>
<td>10 mg, 15 mg, 30 mg</td>
</tr>
<tr>
<td>Temazepam (Restoril®)</td>
<td>15 mg, 30 mg</td>
</tr>
<tr>
<td>Triazolam (Halcion®)</td>
<td>0.125 mg, 0.25 mg</td>
</tr>
<tr>
<td>Zopiclone (Imovane®, Rhovane®)</td>
<td>5 mg, 7.5mg</td>
</tr>
<tr>
<td>Zolpidem (Sublinox®)</td>
<td>5 mg, 10 mg</td>
</tr>
</tbody>
</table>

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

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://sleepwell.ca/

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

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Contact deprescribing@bruyere.org or visit deprescribing.org for more information.

Evidence-based clinical practice guideline for deprescribing benzodiazepine receptor agonists. Unpublished manuscript.
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
- Stop glyburide - monitor glucose levels
- Stop spironolactone
- Teach heart failure self-management / start compression stockings

Month 3

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

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

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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 drills.
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."