Sinai Health | Healthy Ageing and Geriatrics

UHN Toronto General Toronto Western Princess Margaret Toronto Rehab Michener Institute

Managing Complex Polypharmacy Scenarios- Learning the Art and Science of “Pharmacological Debridement”

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Bridgepoint Active Healthcare | Circle of Care | Lunenfeld-Tanenbaum Research Institute | Mount Sinai Hospital Joseph and Wolf Lebovic Health Complex

What is polypharmacy?

- Highlighted by WHO for Medication Without Harm initiative
- Most studies have used a threshold of **5 or more medications per day**

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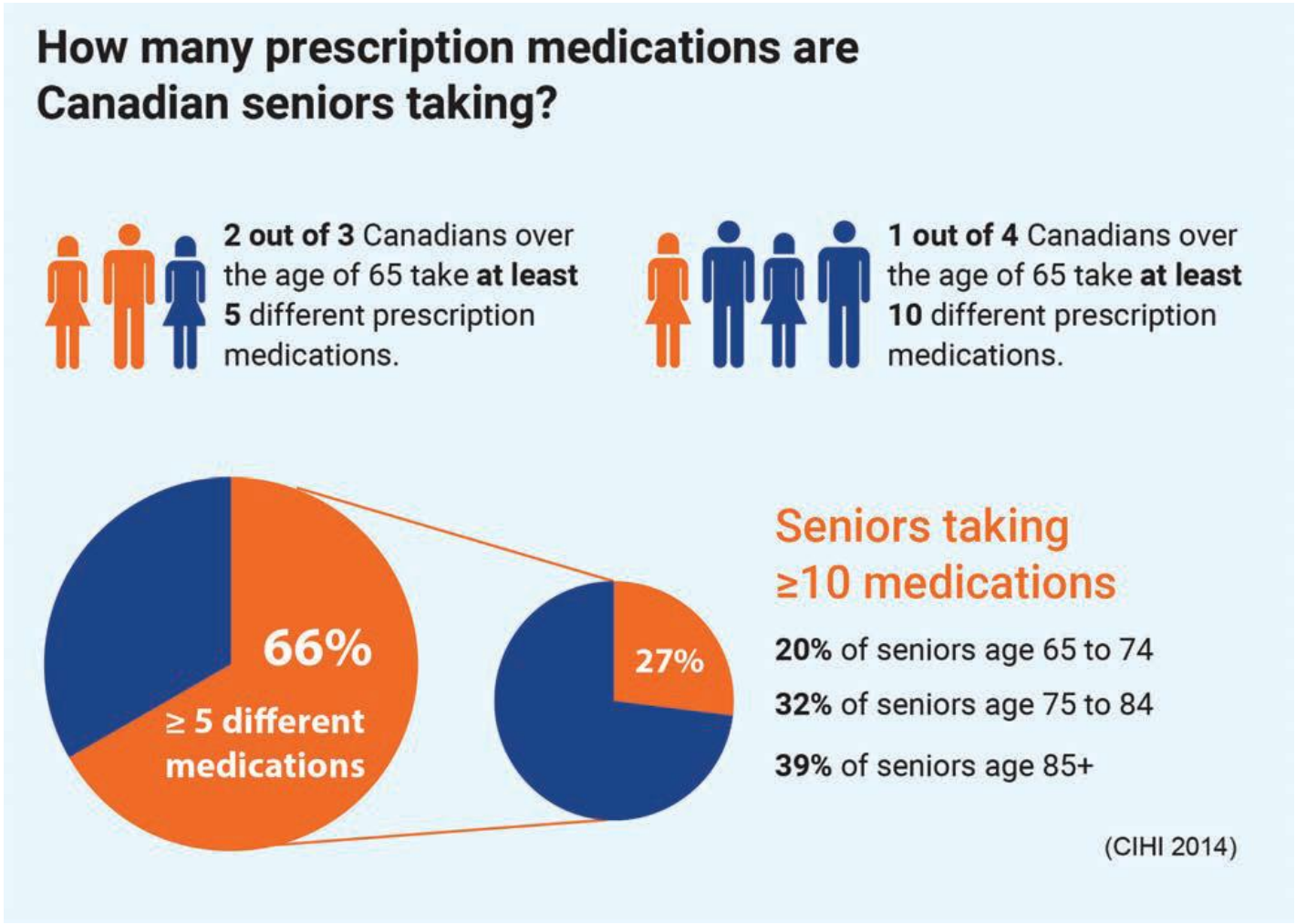
Onder, G & Marengoni, A. JAMA 2017;318(17):1728
Duerden M, et al. Prescriber 2014;25:44-47

Polypharmacy in Older Adults



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Appropriate versus Problematic Polypharmacy

Appropriate	Problematic

• Benefits outweigh risks
• Outcomes important to the older adult considered
  • QOL
  • symptom control
  • prevention
• Evidence-based
	• Risk of harm exceeds the potential benefits or coexists with the benefits

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Effect of Polypharmacy on the Older Adult

1. ↑ Adverse drug reactions
2. ↑ Drug/drug and drug/disease interactions
3. ↓ QoL
4. ↑ Hospitalization & ED visits
5. ↑ Risk of medication errors
6. ↑ Medication non adherence
7. ↑ Drug Expense
8. Precipitate or exacerbate geriatric syndromes (falls etc.)

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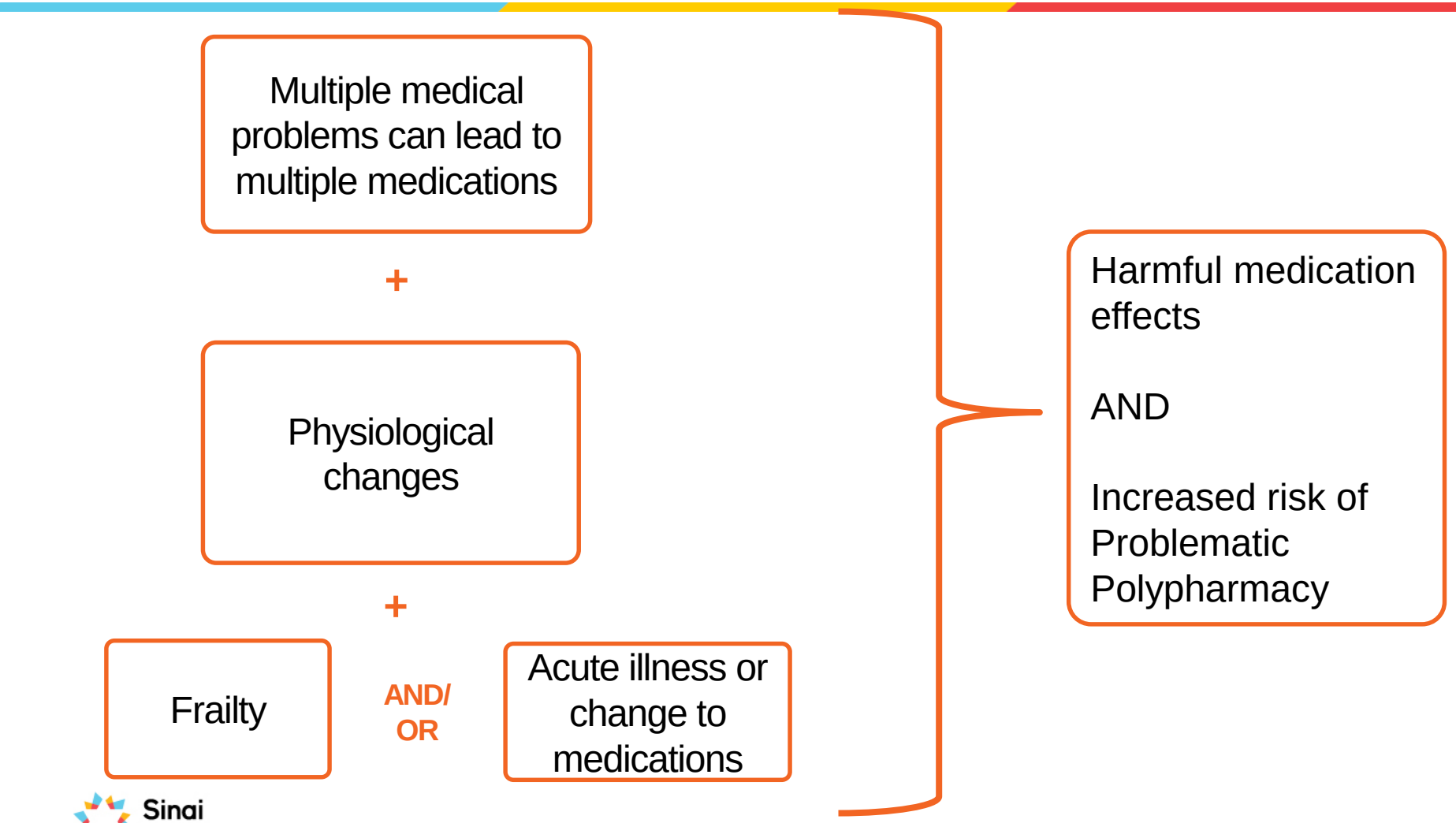
Zed et al. CMAJ 2008;178:1563-1569
Gnjidic D et al. J Clin Epidemiol 2012;65(9):989-95
Fried TR et al. J Am Geriatr Soc 2014;62:2261-2272
Patterson SM et al. Cochrane Database of Syst Rev 2014;(10)
Johansson T et al. Br J Clin Pharmacol 2016;82:532–548

Risk Factors for Polypharmacy



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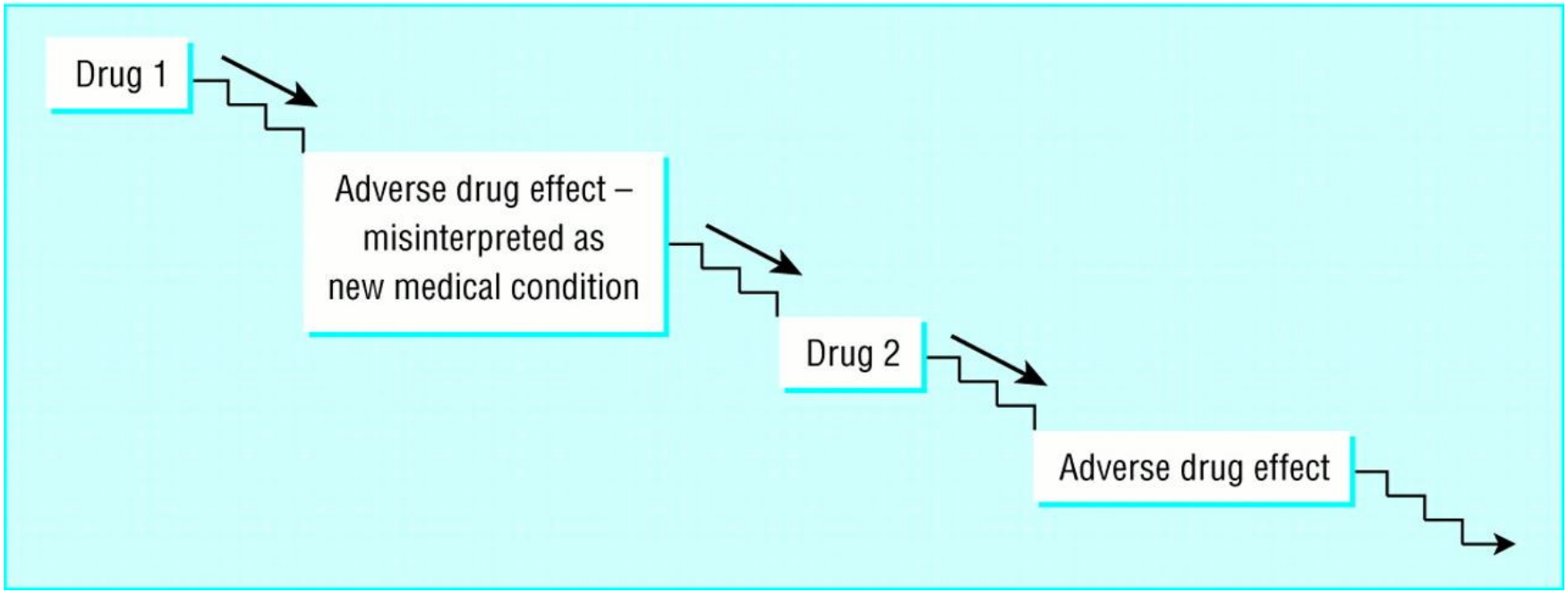
Jackson,L. (2021,Sept01). Polypharmacy: An introductory module for Clinicians.Slideshare: https://www.rgptoronto.ca/resource/introduction-to-polypharmacy-clinician-learning-series/

Prescribing Cascade



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Rochon,P. Gurwitz, *J.BMJ* 1997;315:1096

What's next?

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Deprescribing

- The process of ***tapering***, ***withdrawing***, ***discontinuing*** or ***stopping*** medications to manage polypharmacy, adverse drug effects and inappropriate or ineffective medication use

- Part of “good” prescribing
  - Collaborative
  - In context of care goals, values, preferences, life expectancy

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Thomson W et al. J Am Geriatr Soc 2018;67(1):172-180.

Steps for deprescribing

Step 1: Ensure medication list is accurate and complete

Step 2: Assess each medication for appropriateness

Step 3: Prioritize medications to deprescribe

Step 4: Discontinue and monitor

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Step 1: Ensure list of medications is accurate and complete

- List all prescription and non-prescription medications

- What is being taken and how

Tips to ensure a medication list is accurate

- Request medication history from the pharmacy
- Clinical Viewer
- Ask to bring medications to appointments
- Ask open ended questions
- Ask how medication is being used
- Ask about OTC products
- Encourage open communication
- Engage community pharmacists

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Step 2: Assess each medication

QUESTIONS TO ASK

- Are there underlying causes for problems or symptoms? (e.g. medications)
- Is the medication needed/indicated?
- Is the medication effective?
- Is the dose appropriate?
- What are the risks/side effects of this medication?
- Is the risk/benefit or this medication/treatment in line with goals of care and life expectancy?
- Is the medication being taken as prescribed? Is the patient able take the medication as prescribed? Can the regimen be simplified?
- Is there a cost concern?
- Could this medication be treating a side effect of another medication?

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Step 2: Assess each medication

Identifying potentially inappropriate medications

- Beers Criteria List
  - High alert medications
  - High alert condition

High Alert Medications	High Alert Conditions
• Anticholinergic medications • Tricyclic antidepressants • Benzodiazepines • Warfarin • NSAIDS • Fluoxetine • Antipsychotics • Insulin/Glyburide	• Impaired Kidney Function • Cognitive impairment • Falls • Diabetes • Hypotension • Parkinson's Disease

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Step 2: Assess each medication

Identifying potentially inappropriate medications cont…

STOPP / START

- **S**creening **T**ool of **O**lder **P**eople's potentially inappropriate **P**rescriptions
  - PPI full therapeutic dose >8 weeks
  - NSAIDS for chronic use > 90 days, with heart failure/renal impairment

- **S**creening **T**ool to **A**lert doctors to the **R**ight **T**reatment
  - Statin with documented coronary, cerebral or peripheral vascular disease where functional status is independent and life expectancy > 5 years
  - Antidepressant for moderate-severe depressive symptoms lasting at least three months

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Step 3: Prioritize

- What medications to stop or reduce first?
  - Risk vs Benefit
  - Patient Preference
  - Ease

- Stop one medication at a time (most cases)

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Step 4: Deprescribe and monitor

1. Consider if medication can be stopped abruptly or needs tapering

2. Develop plan
   - include what to monitor and how frequently

3. Monitor for benefit or harm
   - frequent follow-up required after each medication has been stopped/decreased

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Step 4: Deprescribe and monitor

Tools for deprescribing

- Deprescribing.org
  - Provides resources and algorithms for deprescribing
  - PPIs, sedative hypnotics, antihyperglycemics, antipsychotics, AChEIs
  - IOS and Android app available through the IAM Medical Guidelines app

- Canadian Deprescribing Network
  - Provides resources, tools and algorithms for deprescribing
  - Public and professionals

- Medstopper.com
  - Desprescribing resource for health care professionals
  - Provides plans and tips for deprescribing certain medications per indication
  - Assists with prioritization

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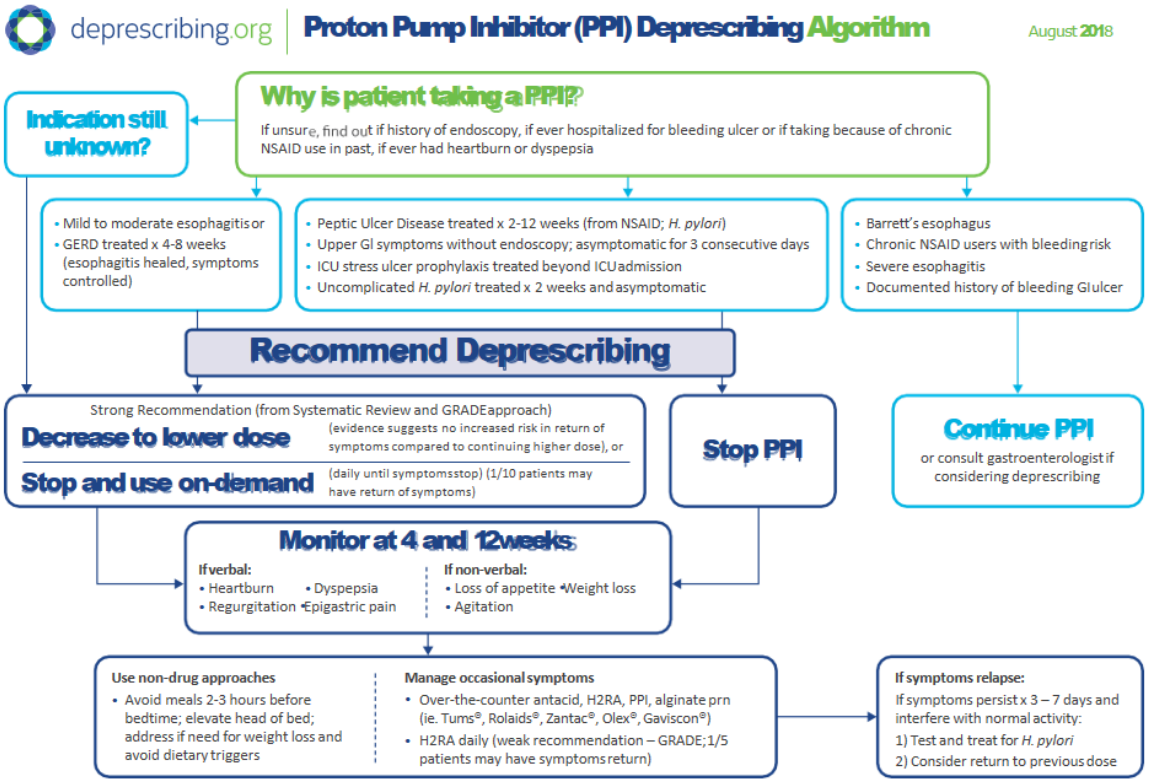
Step 4: Deprescribe and monitor

Tools for deprescribing

Deprescribing Algorithm



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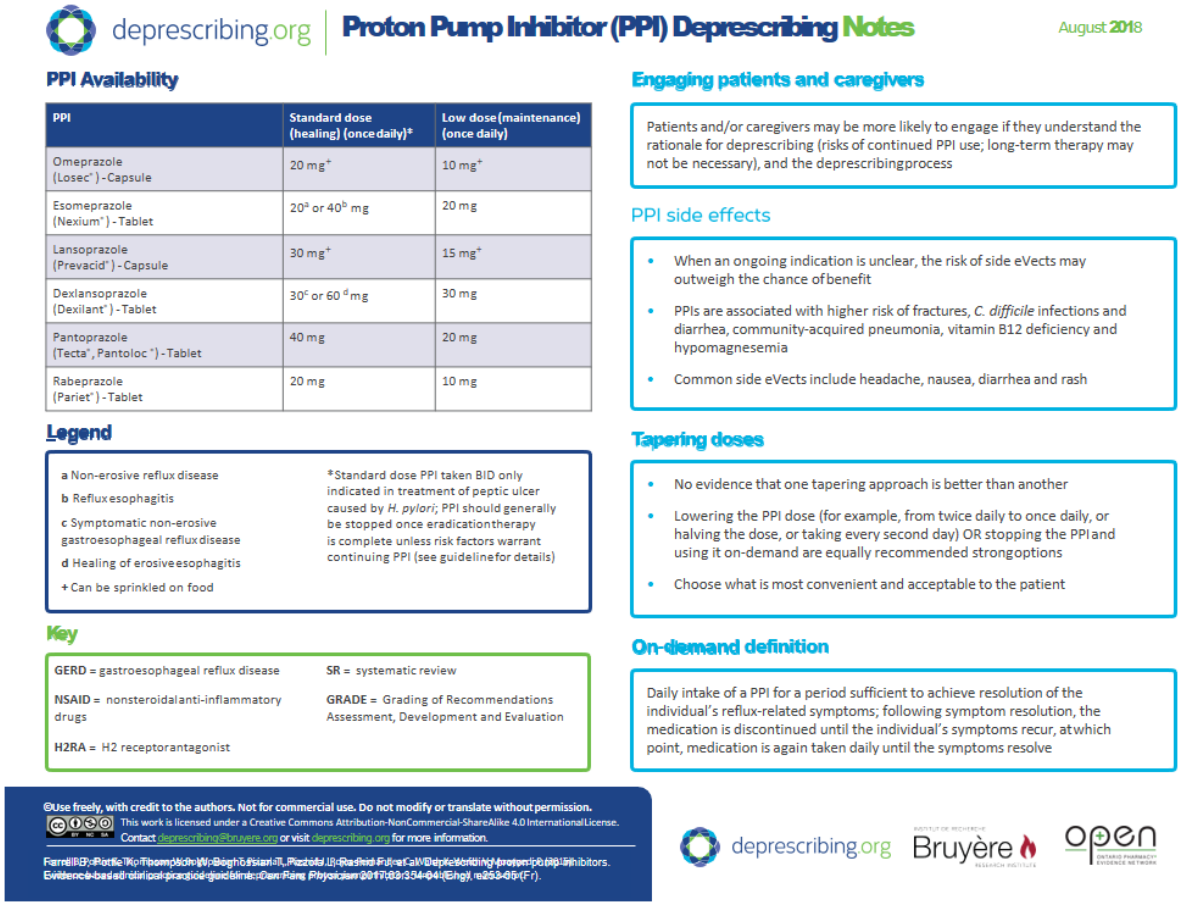
Step 4: Deprescribe and monitor

Tools for deprescribing

Deprescribing Algorithm



deprescribing.org | **Proton Pump Inhibitor (PPI) Deprescribing Notes**

August 2018

PPI Availability

PPI	Standard dose (healing) (once daily)*	Low dose (maintenance) (once daily)
Omeprazole (Losec+) - Capsule	20 mg+	10 mg+
Esomeprazole (Nexium+) - Tablet	20[a] or 40[b] mg	20 mg
Lansoprazole (Prevacid+) - Capsule	30 mg+	15 mg+
Dexlansoprazole (Dexilant+) - Tablet	30[c] or 60 [d] mg	30 mg
Pantoprazole (Tecta+, Pantoloc+) - Tablet	40 mg	20 mg
Rabeprazole (Pariet+) - Tablet	20 mg	10 mg

Legend

a Non-erosive reflux disease

b Reflux esophagitis

c Symptomatic non-erosive gastroesophageal reflux disease

d Healing of erosive esophagitis

+ Can be sprinkled on food

*Standard dose PPI taken BID only indicated in treatment of peptic ulcer caused by *H. pylori*; PPI should generally be stopped once eradication therapy is complete unless risk factors warrant continuing PPI (see guideline for details)

Key

GERD = gastroesophageal reflux disease

NSAID = nonsteroidal anti-inflammatory drugs

H2RA = H2 receptor antagonist

SR = systematic review

GRADE = Grading of Recommendations Assessment, Development and Evaluation

Engaging patients and caregivers

Patients and/or caregivers may be more likely to engage if they understand the rationale for deprescribing (risks of continued PPI use; long-term therapy may not be necessary), and the deprescribing process

PPI side effects

- When an ongoing indication is unclear, the risk of side effects may outweigh the chance of benefit
- PPIs are associated with higher risk of fractures, *C. difficile* infections and diarrhea, community-acquired pneumonia, vitamin B12 deficiency and hypomagnesemia
- Common side effects include headache, nausea, diarrhea and rash

Tapering doses

- No evidence that one tapering approach is better than another
- Lowering the PPI dose (for example, from twice daily to once daily, or halving the dose, or taking every second day) OR stopping the PPI and using it on-demand are equally recommended strong options
- Choose what is most convenient and acceptable to the patient

On-demand definition

Daily intake of a PPI for a period sufficient to achieve resolution of the individual's reflux-related symptoms; following symptom resolution, the medication is discontinued until the individual's symptoms recur, at which point, medication is again taken daily until the symptoms resolve

Farrell B, Pottie K, Thompson W, Boghossian T, Pizzola L, Rashid FJ, et al. Deprescribing proton pump inhibitors. Evidence-based clinical practice guideline. Can Fam Physician 2017;63:354-64 (Eng), e253-65 (Fr).

deprescribing.org | Bruyère Research Institute | open Ontario Pharmacy Evidence Network

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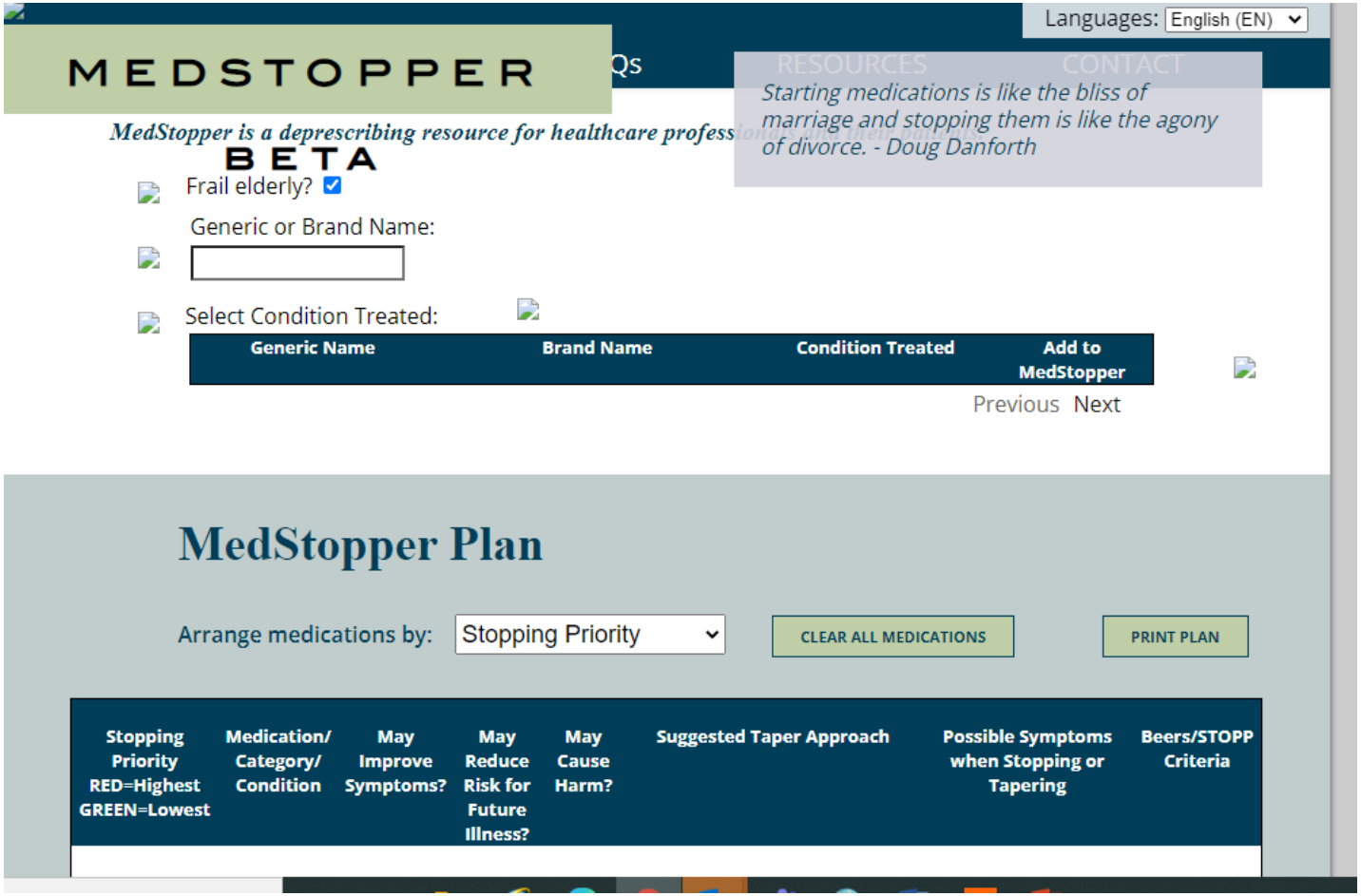
Step 4: Deprescribe and monitor

Tools for deprescribing



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Barriers to Deprescribing

- Time
  - Medication Review
  - Planning
  - Monitoring and Follow-up
- Patient buy-in
- Clinical inertia (fear or poor outcomes, pressure to prescribe and medication “inheritance”)
- Risks of Deprescribing:
  - Withdrawal Reactions
  - Rebound Phenomena
  - Reappearance of symptoms

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Case Study

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Case Study

- 80 y fear old female, lives in retirement home
- No living family, strong social connections but limited due to COVID
- No smoking/ETOH
- **Allergies**- latex (rash)

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Case Study

Medical Conditions

- Atrial fibrillation
- Hypertension
- Degenerative disc disease
- Osteoarthritis (bilateral hip replacements, knee, toe)
- Depression (previous suicide attempt)
- Diabetes Type 2
- Falls
- Wet macular degeneration- connected with CNIB
- Hearing loss (bilateral hearing aids)

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Case Study

Medications

1. Edoxaban 60 mg daily
2. Diltiazem SR 240 mg daily
3. Rosuvastatin 10 mg daily
4. Metformin 500 mg daily
5. Gabapentin 300 mg TID
6. Venlafaxine XR 150 mg daily (recently increased)
7. Quetiapine 25 mg at bedtime
8. Lorazepam 1 mg HS prn
9. Pantoprazole 40 mg daily
10. Vitamin B complex daily (OTC)
11. Acetaminophen 500 mg QID prn (OTC)
12. Ibuprofen 400 mg TID prn (OTC)

Case Study

Labs and Stats

- BP Sitting 132/65 HR 79
- BP Standing 125/63 HR 70
- Hemoglobin 118 (120-160)
- Glucose 4.1 (3.8-7)
- Creatinine 60 (50-115)
- GFR 82 (>/= 60)
- Sodium 142 (135-146)
- Potassium 4.0 (3.2-5)
- Vitamin B12 574 (138-652)
- TSH 2.17 (0.032-4)
- HBA1C 5.9 (<6)
- MOCA (blind) 21/22
- $CHADS_2$ of 3 (Age>75, Hypertension, T2DM)

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Case Study

Patient goals

- Wants to be able to cope with pain
- Concerned about vision and decrease in social connections due to COVID
- Quality over length of life

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Case Study

Step 1 & Step 2: Medication review and assessment

1. Edoxaban 60 mg daily
   - A fib, CHADS score of 3
   - No bleeding
   - Dose appropriate (GFR = 82 mls/min)
2. Diltiazem SR 240 mg daily
   - A fib , BP and HR stable
3. Rosuvastatin 10 mg daily
   - Benefit may not outweigh risk given life expectancy and patient goals
   - **Consider deprescribing**
4. Metformin 500 mg daily
   - HBA1C 5.9 %
   - Target HBA1C for frail older adults Age >80 (8-8.5%)
   - 500 mg is a starting dose (Not a therapeutic dose)
   - **Consider deprescribing**

QUESTIONS TO ASK

- Are there underlying causes for problems or symptoms? (e.g. medications)
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Case Study

Step 1 & Step 2: Medication review and assessment

5. Gabapentin 300 mg TID
   - Unsure of benefit, pain poorly controlled, no evidence of nerve pain→ No clear indication
   - Risk of falls, cognitive impairment, sedating
   - **Consider deprescribing when pain controlled**
6. Venlafaxine XR 150 mg daily (recently increased)
   - Depression (previous suicide attempt)
   - Reassess when pain controlled
7. Quetiapine 25 mg at bedtime
   - Not indicated for sleep, no BPSD
   - Risk outweighs benefit (Falls, ↑ Stroke Risk, ↓ Cognition)
   - **Consider deprescribing**

QUESTIONS TO ASK

- Are there underlying causes for problems or symptoms? (e.g. medications)
- Is the medication needed/indicated?
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Step 1 & Step 2: Medication review and assessment

8. Lorazepam 1 mg hs prn
   - Risk of falls, cognitive impairment
   - **Consider deprescribing when pain better controlled**
9. Pantoprazole 40 mg daily
   - No indication for long-term treatment unless NSAID prescribed
   - Can increased risk of pneumonia, C-difficile
   - Decreased magnesium, calcium and B12 absorption
   - **Consider deprescribing as long as NSAID not used**
10. Vitamin B complex daily (OTC)
    - No clear indication for use
    - **Consider deprescribing**

QUESTIONS TO ASK

- Are there underlying causes for problems or symptoms? (e.g. medications)
- Is the medication needed/indicated?
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Case Study

Step 1 & Step 2: Medication review and assessment

10. Acetaminophen 500 mg qid prn (OTC)
    - As needed use not helping with pain
    - **Consider giving routinely 1000 mg TID and reassess**

11. Ibuprofen 400 mg TID prn (OTC)
    - ↑ risk of bleeding & PUD, ↑ Acute Kidney Injury, ↑ BP
    - **Advise to discontinue**

QUESTIONS TO ASK

- Are there underlying causes for problems or symptoms? (e.g. medications)
- Is the medication needed/indicated?
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Case Study

Step 3 & Step 4: Prioritize and Desprescribe

First Priority: Pain management is the goal for this patient

1. Acetaminophen 1 gm TID (Scheduled)
2. Add Voltaren Emulgel TID
3. Discontinue ibuprofen
4. If above regimen not sufficient -→ Reassess & Adjust treatment if needed

Can also discontinue:

1. Metformin 500 mg daily
2. Rosuvastatin 10 mg daily

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Case Study

Step 3 & Step 4: Prioritize and Desprescribe

Once pain is well managed:

1. Gabapentin 300 mg TID: Taper slowly

Day	Gabapentin dose	If at any time, pain or withdrawal symptoms occur (e.g., anxiety, insomnia, nausea, sweating, irritability, agitation, restlessness, diarrhea, headache, flu-like symptoms), return to the previous dose x 1 week and continue taper more slowly.
Week 1	300mg BID	
Week 2	200mg BID	
Week 3	100mg BID	
Week 5	100mg daily	
Week 6	Discontinue gabapentin	

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Case Study

Step 3 & Step 4: Prioritize and Desprescribe

2. Quetiapine 25 mg HS: Reduce dose to 12.5 mg for 1-2 weeks then discontinue.

- If insomnia persists: safer alternatives-→ melatonin or trazodone

3. Lorazepam 1 mg HS prn-: Consider slow taper of Lorazepam after quetiapine is stopped

4. Pantoprazole → Reduce dose, stop it or on demand dosing

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Case Study

Step 4: Monitor and Follow-up

- Explain to patient/resident/caregiver the rationale for the medication change.
- Plan to assess after medication changes are made, often with help of caregiver, whether the target symptom (or parameter) got better or worse
- Follow up 3-4 days to assess pain

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Case Study- update

- Medications reduced from 12 to 8 so far
- Pain was better controlled with scheduled acetaminophen but suboptimally- alternatives including as needed hydromorphone or NSAID being considered
- Sleep improving with better pain control
- Patient reported being more alert during the day after gabapentin taper initiated

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