Considerations for Safe Prescribing in Older Adults

Katie Marks, PharmD Palliative Care Clinical Pharmacist

Disclosure Statement

This presenter has no relevant financial relationships with ineligible companies to disclose.

Objectives

Recognize challenges for safe medication use and potentially inappropriate medications

Identify safety strategies and resources available to evaluate clinically important prescribing concerns

Apply concepts using a safety protocol for deprescribing through a patient case

Pre-Test Questions

(select all that apply)

Which of the following medications is considered high risk or potentially inappropriate?

a) Glipizide

b) Rosuvastatin

c) Ibuprofen

d) Levothyroxine

For which of the following conditions would we consider recommending to taper or deprescribe omeprazole?

a) Mild to moderate esophagitis

b) History of peptic ulcer disease

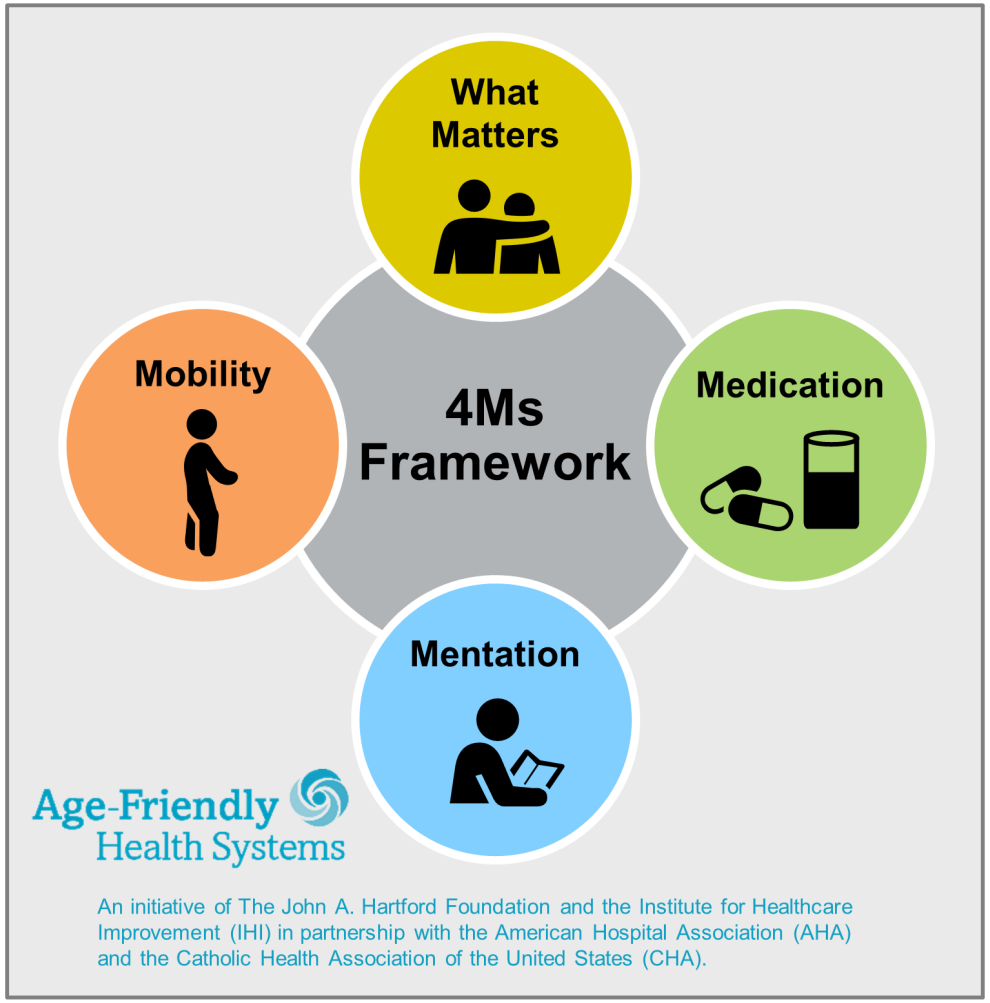
c) History of bleeding GI ulcer

d) Barrett's esophagus

Patient Safety Story

Nana: 88-year-old female

Age-Friendly Care



What Matters

Know and align care with each older adult's specific health outcome goals and care preferences including, but not limited to, end-of-life care, and across settings of care.

Medication

If medication is necessary, use Age-Friendly medication that does not interfere with What Matters to the older adult, Mobility, or Mentation across settings of care.

Mentation

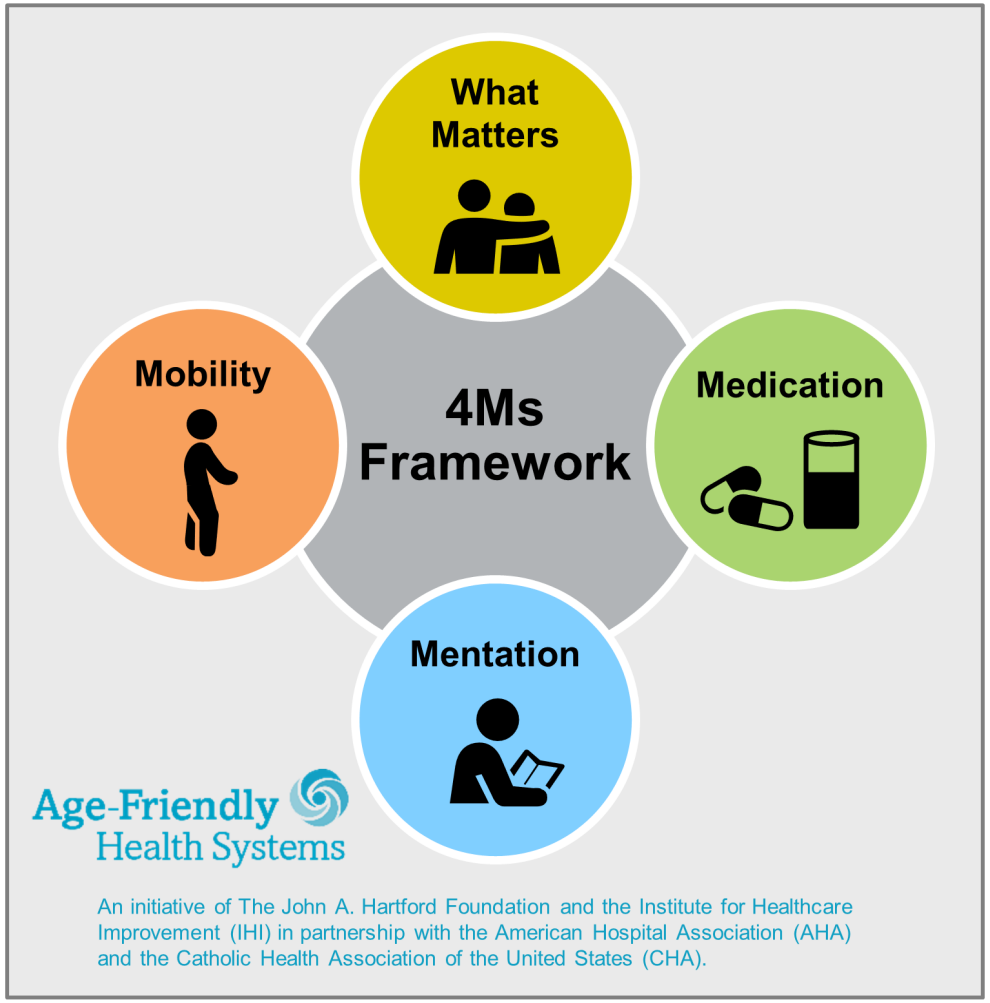
Prevent, identify, treat, and manage dementia, depression, and delirium across settings of care.

Mobility

Ensure that older adults move safely every day in order to maintain function and do What Matters.

Age-Friendly Health Systems | Institute for Healthcare Improvement (ihi.org)

Age-Friendly Care



For related work, this graphic may be used in its entirety without requesting permission.
Graphic files and guidance at ihi.org/AgeFriendly

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Goals of Care

Serious Illness Conversation Guide

CLINICIAN STEPS

☐ **Set up**
- Thinking in advance
- Is this okay?
- Combined approach
- Benefit for patient/family
- No decisions today

☐ **Guide** (right column)

☐ **Summarize and confirm**

☐ **Act**
- Affirm commitment
- Make recommendations to patient
- Document conversation
- Provide patient with Family Communication Guide

CONVERSATION GUIDE

Understanding	What is your understanding now of where you are with your illness?
Information preferences	How much information about what is likely to be ahead with your illness would you like from me? FOR EXAMPLE: Some patients like to know about time, others like to know what to expect, others like to know both.
Prognosis	***Share prognosis, tailored to information preferences***
Goals	If your health situation worsens, what are your most important goals?
Fears / Worries	What are your biggest fears and worries about the future with your health?
Function	What abilities are so critical to your life that you can't imagine living without them?
Trade-offs	If you become sicker, how much are you willing to go through for the possibility of gaining more time?
Family	How much does your family know about your priorities and wishes? (Suggest bringing family and/or health care agent to next visit to discuss together)

JAMA Intern Med. 2014;174(12):1994-2003. doi:10.1001/jamainternmed.2014.5271

Active Learning Q#1

- How do you define “older adult”?

Active Learning Q#1

- How do you define "older adult"?
  - Chronological age – time elapsed since birth
  - Physiological age – genetics, lifestyle, nutrition, comorbidities
  - Functional status – activities of daily living

Challenges for safe medication use in Older Adults

Physiologic changes

Challenges for safe medication use in Older Adults

Physiologic changes

- Increased proportion of body fat, decreased total body water
- Decreased ability to metabolize and eliminate medications
- Increased blood-brain-barrier permeability
- **Overall increased sensitivity to medications**

Anesthesiol Clin. 2019;37(3):475-492.
doi:10.1016/j.anclin.2019.04.007

Physiologic changes

Cognitive changes

Challenges for safe medication use in Older Adults

Age-related cognitive changes

"Normal" decline

- Subtle
- Multitasking
- Word-finding

"Abnormal" decline

- Rapid or severe
- Navigating
- Solving problems
- Repetitive questioning
- Personality changes

Clin Geriatr Med. 2013;29(4):737-752.
doi:10.1016/j.cger.2013.07.002

Physiologic changes

Cognitive changes

Low representation in research studies

Challenges for safe medication use in Older Adults

Active Learning Q#2

Common clinical trial exclusion criteria?

Active Learning Q#2

- Common clinical trial exclusion criteria?
  - Increasing age
  - Comorbidities
  - Impaired cognition or mobility
  - Transportation

Contemp Clin Trials. 2021;109:106515.
doi:10.1016/j.cct.2021.106515

Physiologic changes

Cognitive changes

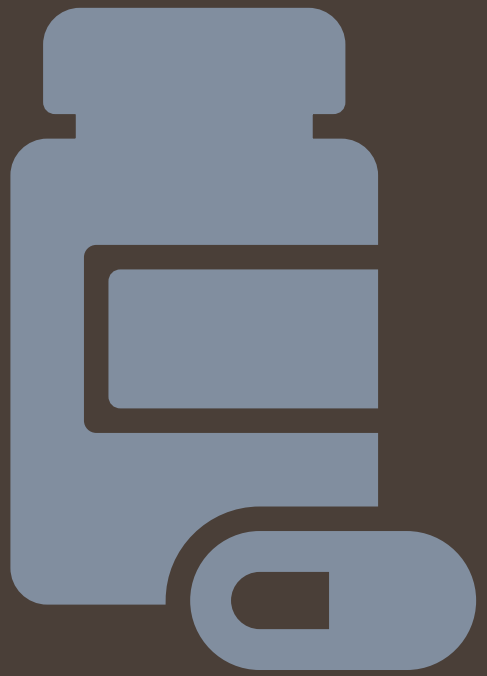
Low representation in research studies

Polypharmacy

Challenges for safe medication use in Older Adults

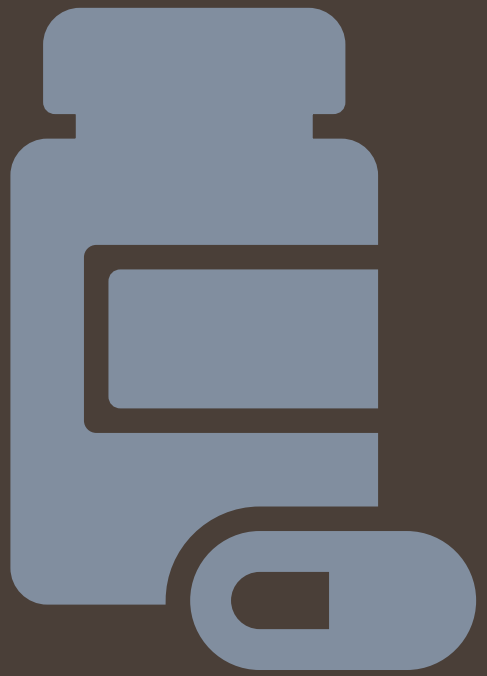
Active Learning Q#3

- How do you define “polypharmacy”?



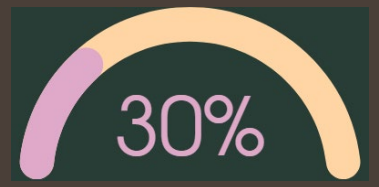
Active Learning Q#3

- How do you define "polypharmacy"?
  - Debated → usually ~5 or more medications



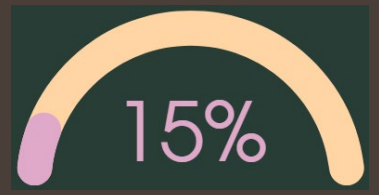
Eur Geriatr Med. 2021;12(3):443-452. doi:10.1007/s41999-021-00479-3

Polypharmacy



In developed countries **~30% of patients aged 65+** are prescribed **5 or more drugs**

~1 in 5 drugs commonly used in older people may be considered **inappropriate**



Observational studies have documented **adverse drug events** in **at least ~15% of older patients**, contributing to ill health, disability, hospitalization, and death

Scott IA et al JAMA 2015; 175 (5) 827-834

Polypharmacy

What's the issue?

- Falls
- Disability
- Frailty
- DDIs
- Impaired cognition

The number of medications that a patient is prescribed is the single most important predictor of adverse drug events in older adults

Scott IA et al JAMA 2015; 175 (5) 827-834

Polypharmacy

How did we get here?

- Fragmented care
- Prescribing cascades

What do we do now?

- Deprescribe!

Resources

- VIONE
- AGS Beers Criteria®
- STOPP/START criteria
- Deprescribing.org

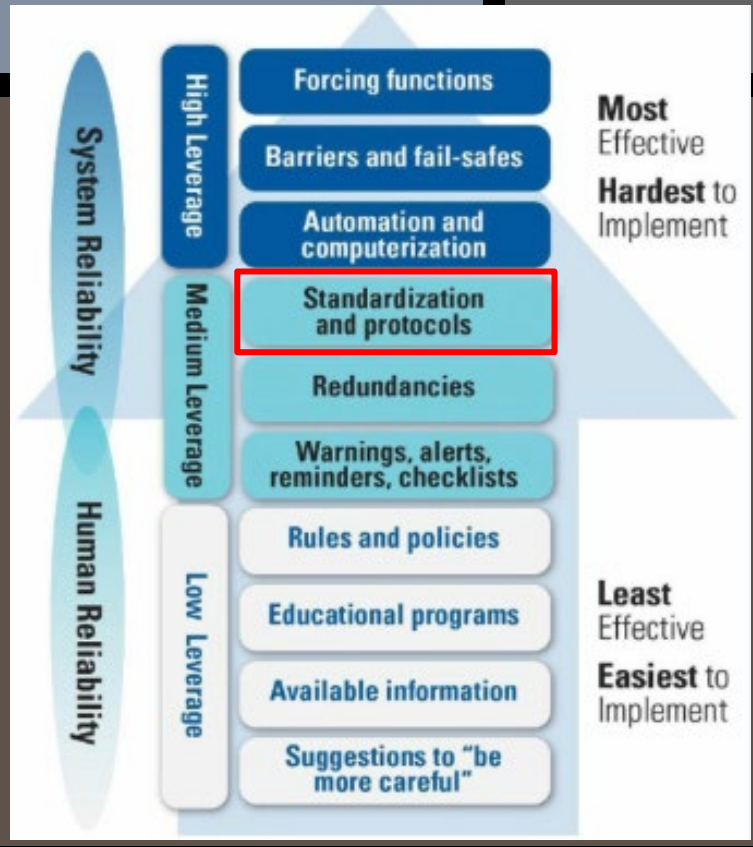
Medium-Leverage Risk Reduction Strategy: Deprescribing Protocol

Clinical Review & Education

Special Communication | LESS IS MORE

Reducing Inappropriate Polypharmacy
The Process of Deprescribing

Ian A. Scott, MBBS, FRACP, MHA, MEd; Sarah N. Hilmer, MBBS, FRACP, PhD; Emily Reeve, BPharm (Hons), PhD; Kathleen Potter, PhD, FRACGP; David Le Couteur, PhD, FRACP; Deborah Rigby, BPharm, GradDipClinPharm, FASCP, FACP, FAICD; Danijela Gnjidic, PhD; Christopher B. Del Mar, MB, BChir, MD, FRACGP; Elizabeth E. Roughead, PhD; Amy Page, MClinPharm; Jesse Jansen, MPsych, PhD; Jennifer H. Martin, MB, ChB, FRACP, PhD



Scott IA et al JAMA 2015; 175 (5) 827-834

Deprescribing Protocol

Scott IA et al JAMA 2015; 175 (5) 827-834

But first …

Goals of care!

Nana's goals of care

- Neighborhood walks
- Socializing with friends
- Daily crossword puzzles
- Snacking all day
- Attend grandchildren's weddings

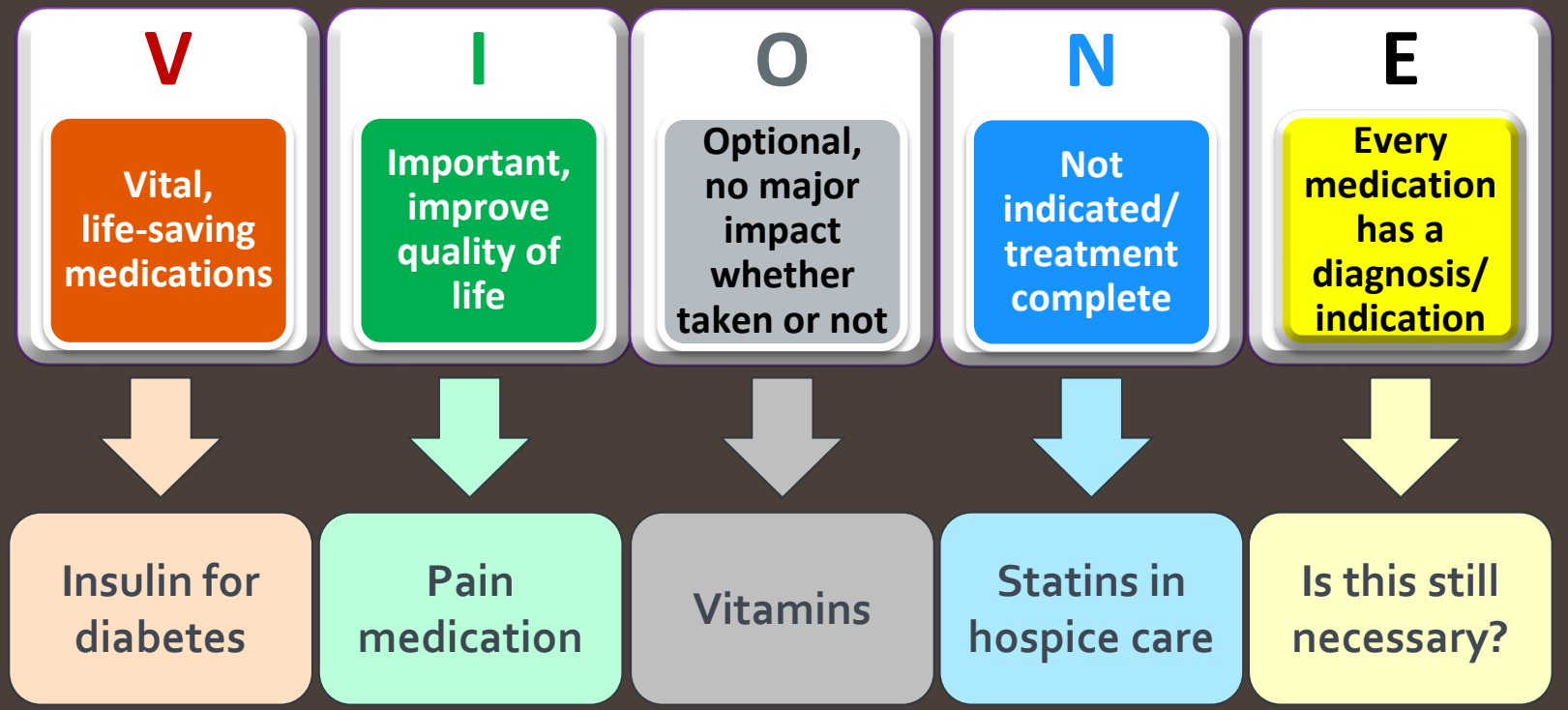
Medium-Leverage Risk Reduction Strategy: Medication reconciliation

Ask patients to bring in all Rx & OTC medications

For each medication determine:

Why are you taking? (**indication**)	How are you taking? (**adherence**)	Any adverse effects? (**tolerability**)

Scott IA et al JAMA 2015; 175 (5) 827-834


V
Vital, life-saving medications
I
Important, improve quality of life
O
Optional, no major impact whether taken or not
N
Not indicated/ treatment complete
E
Every medication has a diagnosis/ indication
Insulin for diabetes
Pain medication
Vitamins
Statins in hospice care
Is this still necessary?

VIONE

Medication reconciliation

Nana presents with:

- Losartan 25mg daily → hypertension
- Metoprolol succinate 50mg daily → hypertension
- Metformin-empagliflozin 1000mg-12.5mg daily → type II diabetes
- Glipizide 2.5mg daily → type II diabetes
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- Cholecalciferol
- Omeprazole
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Medication reconciliation

- **VITAL**
  - Losartan
  - Metoprolol succinate
  - Metformin-empagliflozin
  - Glipizide
  - Rosuvastatin
- **IMPORTANT**
  - Gabapentin
  - Hydroxyzine
- **OPTIONAL**
  - Cholecalciferol
  - Aspirin
  - Omeprazole

Medication reconciliation

- **VITAL**
  - Losartan
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  - Rosuvastatin
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  - Gabapentin
  - Hydroxyzine
- **OPTIONAL → INDICATED?**
  - Cholecalciferol → prevent falls / fractures
  - Aspirin → heart health (primary prevention)
  - Omeprazole → GERD

Medication reconciliation

- **VITAL**
  - Losartan
  - Metoprolol succinate* → hypertension ?
  - Metformin-empagliflozin
  - Glipizide
  - Rosuvastatin
- **IMPORTANT**
  - Gabapentin
  - Hydroxyzine
- **OPTIONAL → INDICATED?**
  - Cholecalciferol → prevent falls / fractures
  - Aspirin → heart health (primary prevention)
  - Omeprazole → GERD

Baseline risk assessment

Patient factors:

- Age > 80 years
- Cognitive impairment
- Comorbidities
- Substance use
- Multiple prescribers
- Nonadherence

Drug factors:

- Total number
- High-risk
- Past and/or current toxicity

Scott IA et al JAMA 2015; 175 (5) 827-834

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Scott IA et al JAMA 2015; 175 (5) 827-834

High Risk Medication Classes

- Psychotropics
- Opioids
- NSAIDs
- Cardiovascular drugs
- Hypoglycemic drugs
- Anticholinergic drugs

Scott IA et al JAMA 2015; 175 (5) 827-834

American Geriatrics Society 2023 updated AGS Beers Criteria® for potentially inappropriate medication use in older adults

The intention of the AGS Beers Criteria® is to:

(1) reduce older adults' exposure to potentially inappropriate medications (PIMs) by improving medication selection

(2) educate clinicians and patients

(3) serve as a tool for evaluating the quality of care, cost, and patterns of drug use in older adults

J Am Geriatr Soc. 2023;71(7):2052-2081. doi:10.1111/jgs.18372

American Geriatrics Society 2023 updated AGS Beers Criteria® for potentially inappropriate medication use in older adults

Organized into 5 general categories:

(1) Medications considered as **potentially inappropriate** (Table 2)

(2) Medications potentially inappropriate in patients with **certain diseases or syndromes** (Table 3)

(3) Medications to be **used with caution** (Table 4)

(4) Potentially inappropriate **drug–drug interactions** (Table 5)

(5) Medications whose dosages should be adjusted based on **renal function** (Table 6)

** List of drugs with **strong anticholinergic properties** (Table 7)

J Am Geriatr Soc. 2023;71(7):2052-2081. doi:10.1111/jgs.18372

TABLE 2 2023 American Geriatrics Society Beers Criteria® for potentially inappropriate medication use in older adults.

Organ system, therapeutic category, drug(s)[a]	Rationale	Recommendation	Quality of evidence[b]	Strength of recommendation[b]
Antihistamines				
First-generation antihistamines Brompheniramine Chlorpheniramine Cyproheptadine Dimenhydrinate Diphenhydramine (oral) Doxylamine Hydroxyzine Meclizine Promethazine Triprolidine	Highly anticholinergic; clearance reduced with advanced age, and tolerance develops when used as hypnotic; risk of confusion, dry mouth, constipation, and other anticholinergic effects or toxicity. Cumulative exposure to anticholinergic drugs is associated with an increased risk of falls, delirium, and dementia, even in younger adults. Consider total anticholinergic burden during regular medication reviews and be cautious in "young-old" as well as "old-old" adults. Use of diphenhydramine in situations such as acute treatment of severe allergic reactions may be appropriate.	Avoid	Moderate	Strong
Anti-infective				
Nitrofurantoin	Potential for pulmonary toxicity, hepatoxicity, and peripheral neuropathy, especially with long-term use; safer alternatives available.	Avoid in individuals with CrCl <30 mL/min or for long-term suppression.	Low	Strong
Cardiovascular and antithrombotics				
Aspirin for primary prevention of cardiovascular disease	Risk of major bleeding from aspirin increases markedly in older age. Studies suggest a lack of net benefit and potential for net harm when initiated for primary prevention in older adults. There is less evidence about stopping aspirin among long-term users, although similar principles for initiation may apply. *Note:* Aspirin is generally indicated for secondary prevention in older adults with established cardiovascular disease.	Avoid initiating aspirin for primary prevention of cardiovascular disease. Consider deprescribing aspirin in older adults already taking it for primary prevention.	High	Strong

J Am Geriatr Soc. 2023;71(7):2052-2081. doi:10.1111/jgs.18372

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Nana's risk assessment: drug factors

Total # medications: 10

High risk / PIMs:

- Metoprolol tartrate
- Glipizide
- Aspirin
- Omeprazole
- Gabapentin
- Hydroxyzine

Assess specific medications for eligibility

Valid indication?	Amendable to nonpharmacologic interventions?
Prescribing cascade?	Substitute culprit drug?
Harm vs benefit?	Time to benefit?
Adequate disease and/or symptom control?	Patient expectations?
Treatment burden?	Quality of life vs prolonging life?

Scott IA et al JAMA 2015; 175 (5) 827-834

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Scott IA et al JAMA 2015; 175 (5) 827-834

Categorization

Disease / symptom control

- Control active disease
- Maintain quality of life

Ex: levothyroxine, analgesics, chronic diseases

Preventive

- Prevent future morbid events

Ex: anticoagulants, statins, bisphosphonates

Scott IA et al JAMA 2015; 175 (5) 827-834

Medium-Leverage Risk Reduction Strategy: STOPP/START CRITERIA

STOPP

Appendix 1

Screening Tool of Older Persons' Prescriptions (STOPP) version 3.

The following prescriptions are potentially inappropriate to use in patients aged 65 years and older.

START

Screening Tool to Alert to Right Treatment (START), version 3.

Unless an elderly patient's clinical status is end-of-life and therefore requiring a more palliative focus of pharmacotherapy, the following drug therapies should be considered where omitted for no valid clinical reason(s). It is assumed that the prescriber observes all the specific contraindications to these drug therapies prior to recommending them to older patients.

Eur Geriatr Med. 2023;14(4):625-632.
doi:10.1007/s41999-023-00777-y

STOPP/START CRITERIA

STOPP	**Statins** for primary cardiovascular prevention in persons aged ≥ 85 and established frailty with expected **life expectancy likely less than 3 years**
START	**Bone anti-resorptive or anabolic therapy** (e.g., bisphosphonate, teriparatide, denosumab) in patients with osteoporosis and/or previous history of fragility fracture(s) – where no pharmacological or clinical status contraindication exists such as **poor 1 year life expectancy**

Eur Geriatr Med. 2023;14(4):625-632.
doi:10.1007/s41999-023-00777-y

Patient Safety Story question

What should we do about Nana's **rosuvastatin**?

1) Deprescribe

2) Continue unchanged

Patient Safety Story question

What should we do about Nana's **rosuvastatin**?

1) Deprescribe

2) **Continue unchanged**

Prioritize changes

Greatest harm, least benefit

Lowest likelihood of withdrawal reactions or disease rebound

Patient willingness to discontinue

Scott IA et al JAMA 2015; 175 (5) 827-834

Implement safety plan and monitoring

- One at a time*
- Taper if needed
- Discuss expectations & contingency plans
- Communicate changes to other providers, family, caregivers
- Documentation

Scott IA et al JAMA 2015; 175 (5) 827-834

Implement safety plan and monitoring

One at a time*

Taper if needed

Discuss expectations & contingency plans

Communicate changes to other providers, family, caregivers

Documentation

Scott IA et al JAMA 2015; 175 (5) 827-834

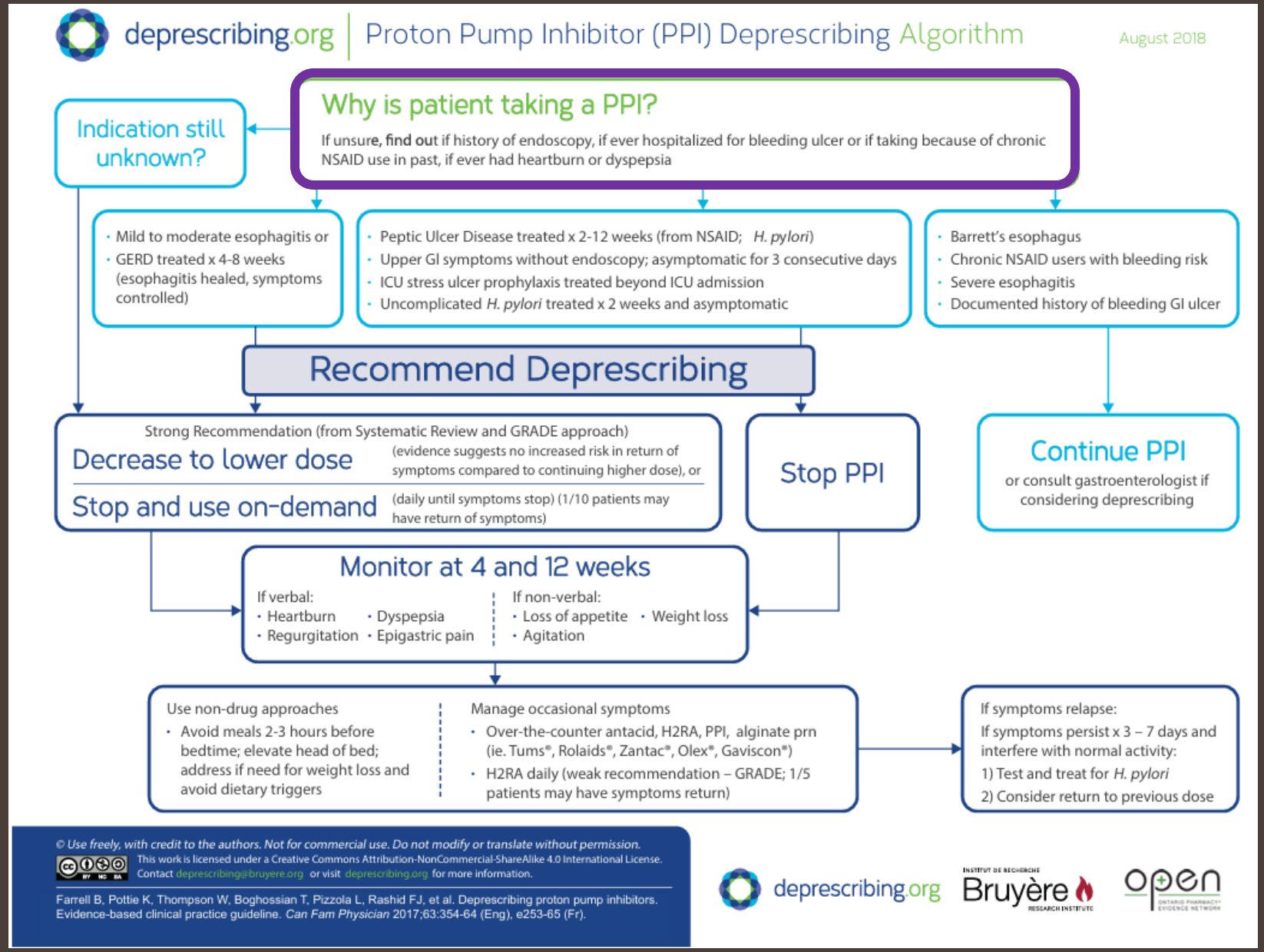
Very general
taper guidance

Dose 25 -50 %

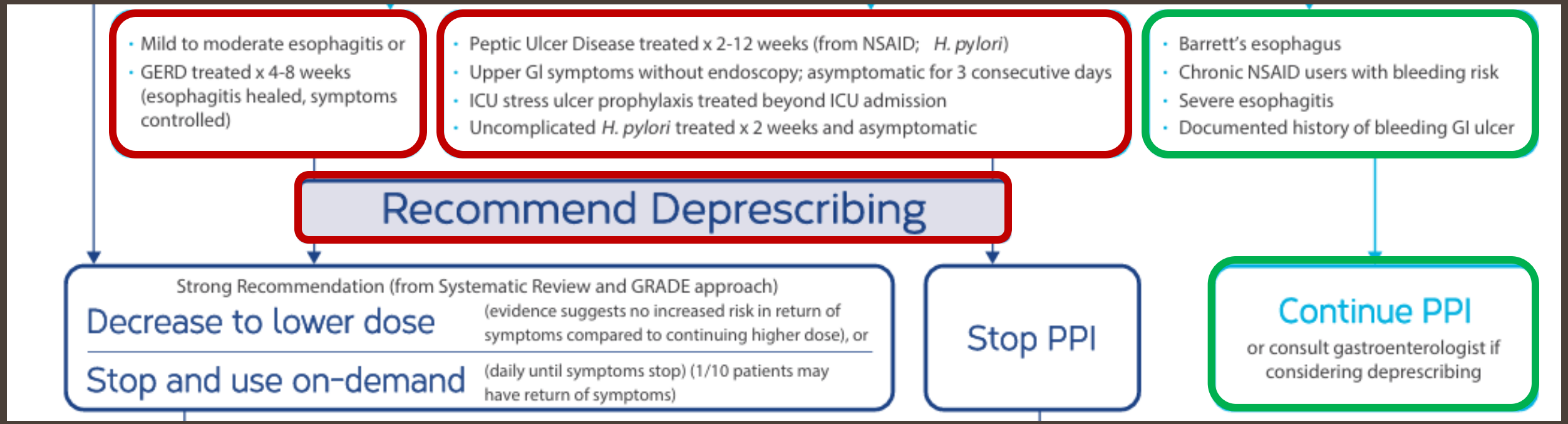
Duration Every 1-2 weeks

Clinical Resource, Common Oral Medications that May Need Tapering. Pharmacist's Letter/Prescriber's Letter. August 2021. [370817]

DEPRESCRIBING.ORG



Deprescribing.org



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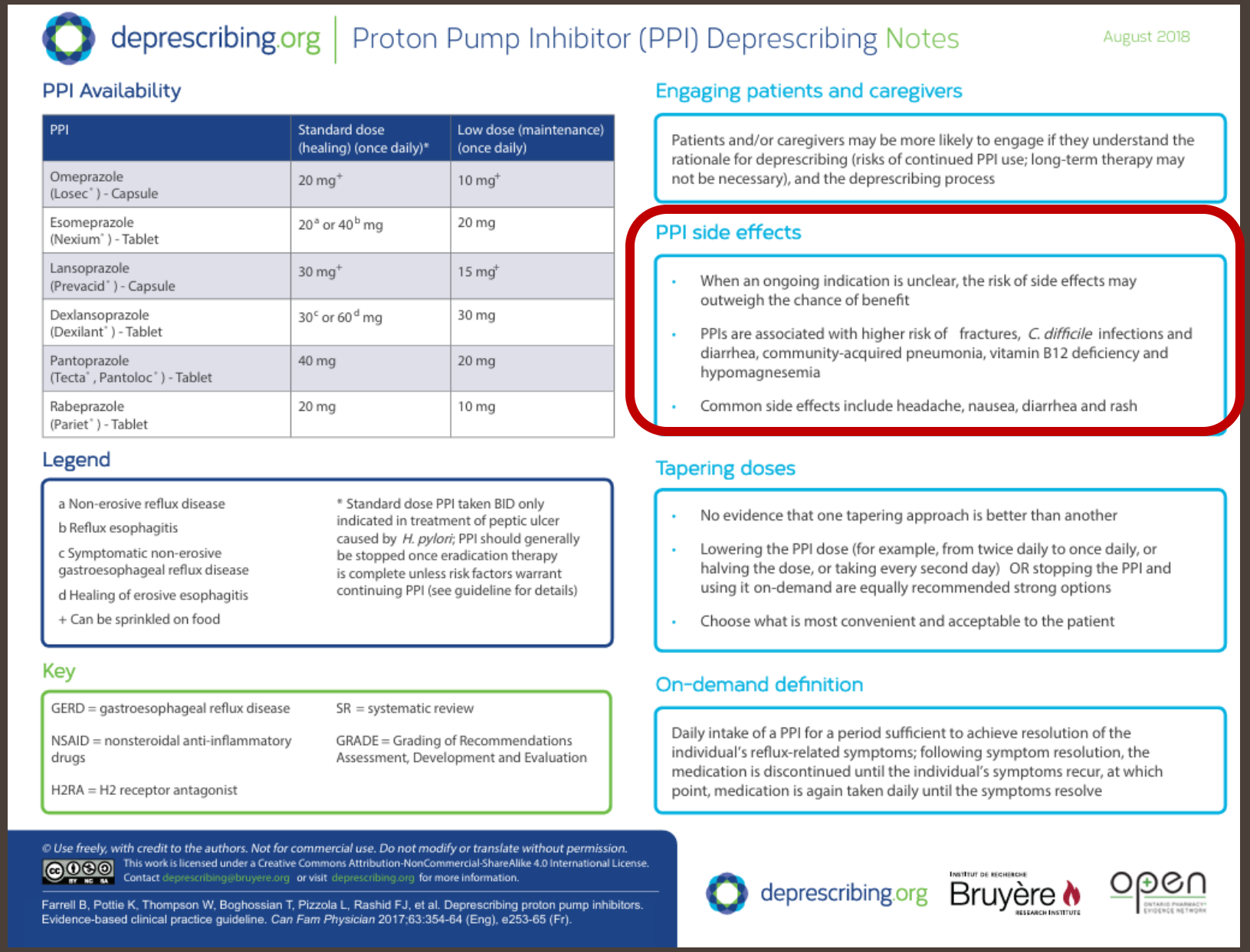


deprescribing.org | Proton Pump Inhibitor (PPI) Deprescribing Notes

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

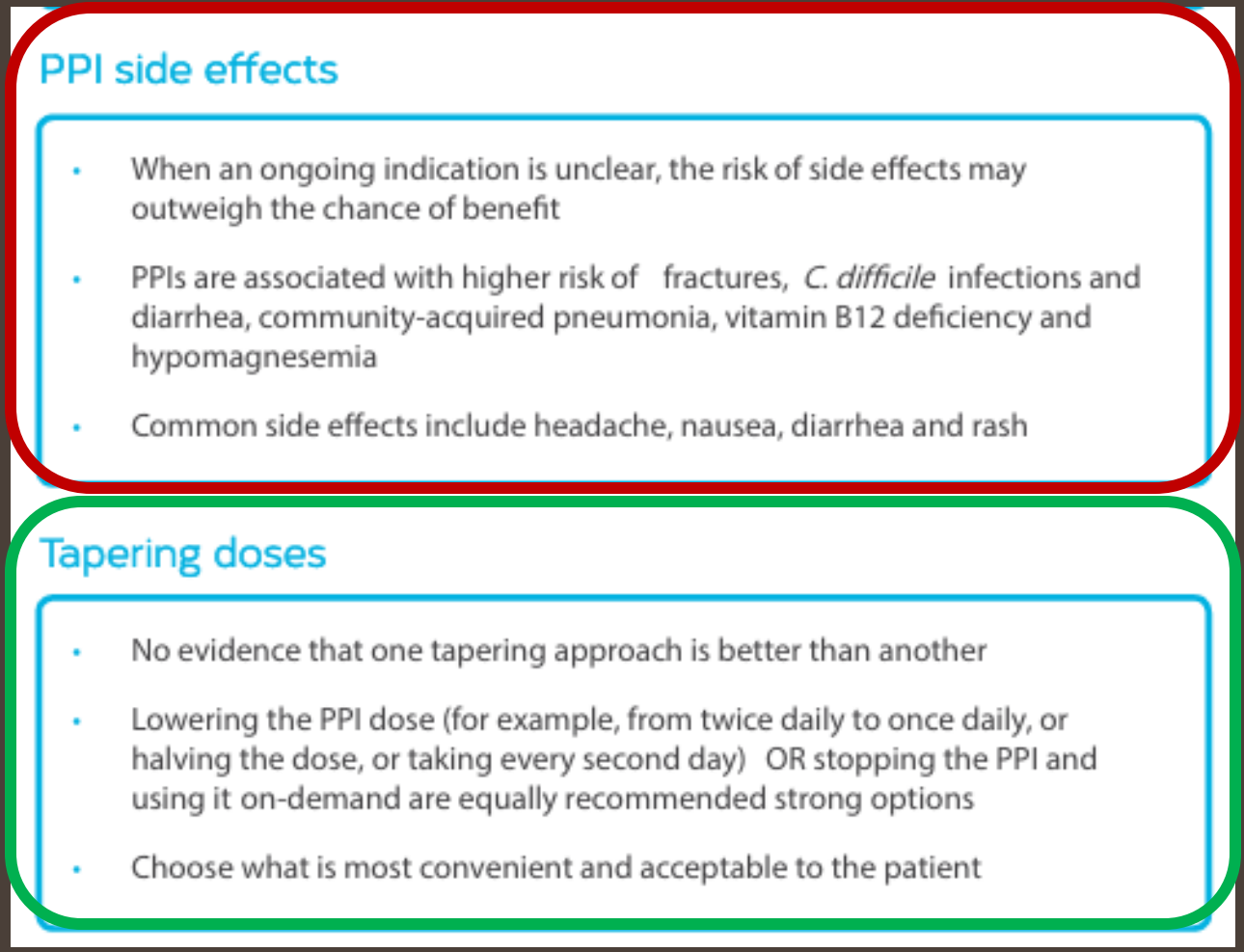
Daily intake of a PPI for a period sufficient to achieve resolution of the individual's reflux-related symptoms; following symptom resolution, the medication is discontinued until the individual's symptoms recur, at which point, medication is again taken daily until the symptoms resolve

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

Deprescribing.org

DEPRESCRIBING.ORG



Labs / Vitals:

BP: 110/67 mmHg

HR: 59 bpm

A1c: 7.2%

LDL: 98 mg/dL

SCr: 1.0 mg/dL

Nana presents with:

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Plan for Nana: Deprescribe

Stop

- Glipizide
- Aspirin
- Hydroxyzine
- Cholecalciferol

Taper (50% x 1 week, then stop)

- Metoprolol succinate
- Omeprazole

Final Med List

Losartan

Metformin-empagliflozin

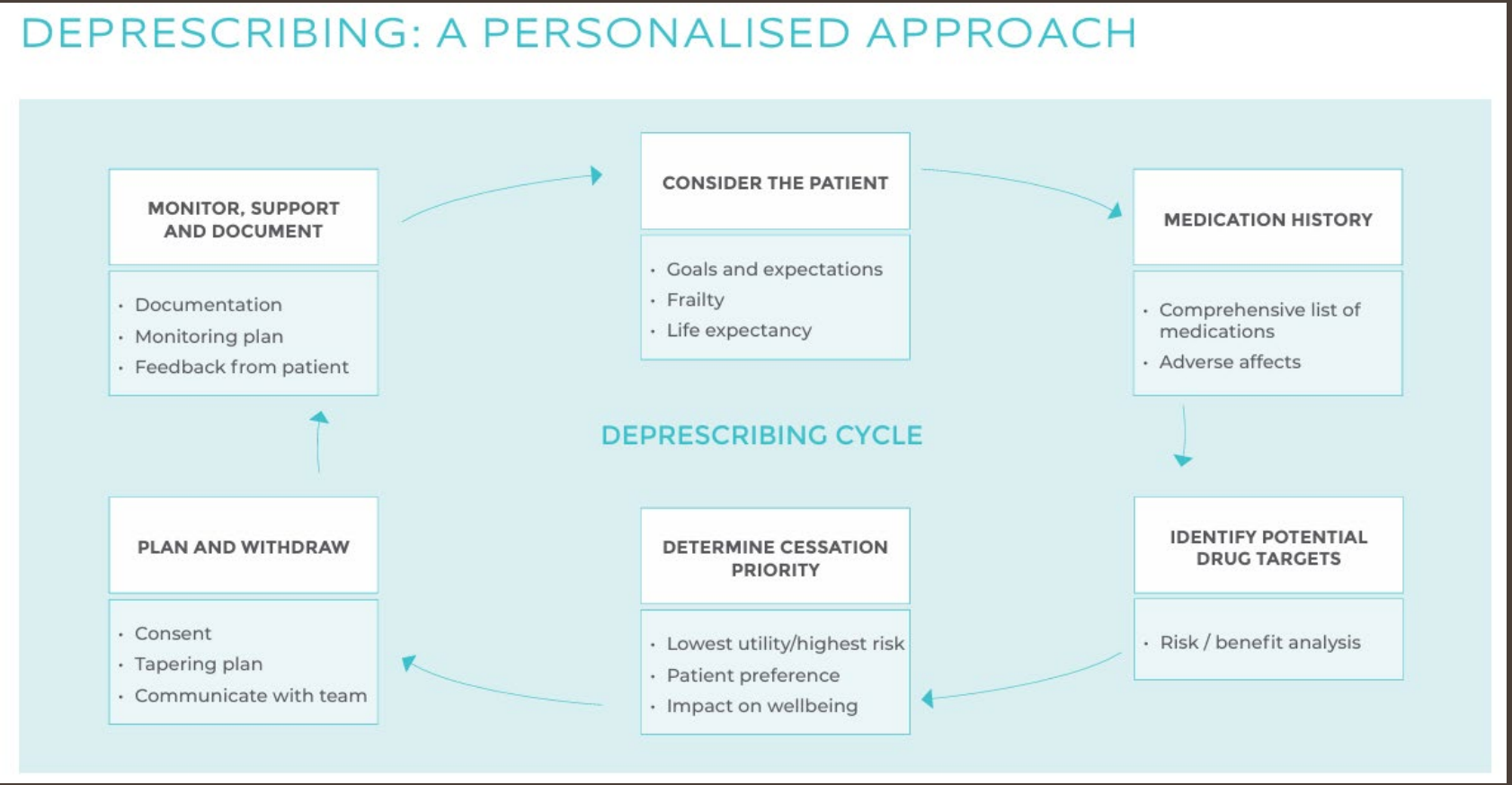
Rosuvastatin

Gabapentin

PRN famotidine

PRN melatonin

Summary



Deprescribing-fact-sheet.pdf (primaryhealthtas.com.au)

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- Clinical Resource, Common Oral Medications that May Need Tapering. Pharmacist's Letter/Prescriber's Letter. August 2021. [370817]

Additional resources

- GUIDELINES
  - AGS
  - AAFP
- Resources – TaperMD
- MedStopper
- NSW Deprescribing Tools
- ePrognosis (ucsf.edu)
- ACB Calculator
- STEADI - Older Adult Fall Prevention | STEADI - Older Adult Fall Prevention | CDC
- Medication management - deprescribing - Primary Health Tasmania
- Resources for Clinicians - US Deprescribing Research Network
- Canadian Deprescribing Network
- Resources for healthcare professionals | Australian Deprescribing Network
- Clinical Resource, Chronic Meds in the Elderly: Taking a "Less Is More" Approach. Pharmacist's Letter/Prescriber's Letter. August 2022. [380823]

Post-Test Questions

(select all that apply)

Which of the following medications is considered high risk or potentially inappropriate?

a) Glipizide

b) Rosuvastatin

c) Ibuprofen

d) Levothyroxine

For which of the following conditions would we consider recommending to taper or deprescribe omeprazole?

a) Mild to moderate esophagitis

b) History of peptic ulcer disease

c) History of bleeding GI ulcer

d) Barrett's esophagus

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Questions?

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Additional information and resources

Beers Criteria 2023 Key Updates

Anticoagulation

- Rivaroxaban: **AVOID** for long-term treatment of AFib and VTE
- Warfarin: **AVOID** starting as ***initial therapy*** for long-term treatment of AFib and VTE

Aspirin

- **AVOID** initiating for ***primary prevention*** of CVD
- If already taking for ***primary prevention***, consider **deprescribing**

Antidiabetic agents

- Sulfonylureas: **AVOID**
- SGLT2 inhibitors: ***use with caution***

J Am Geriatr Soc. 2023;71(7):2052-2081. doi:10.1111/jgs.18372

Time to benefit: STATINS

- **Question:** What is the time to benefit of statin therapy for primary prevention of cardiovascular events in adults aged 50 to 75 years?
- **Findings:** In this survival meta-analysis of 8 trials randomizing 65 383 adults, **2.5 years** (95% CI, 1.7-3.4) were needed to **avoid 1 cardiovascular event for 100 patients treated with a statin.**
- **Meaning:** These findings suggest that statin medications for the primary prevention of cardiovascular events may reduce cardiac events for some adults aged 50 to 75 years with a **life expectancy of at least 2.5 years**; no data suggest a mortality benefit.

Yourman LC, Cenzer IS, Boscardin WJ, et al. Evaluation of Time to Benefit of Statins for the Primary Prevention of Cardiovascular Events in Adults Aged 50 to 75 Years: A Meta-analysis. *JAMA Intern Med.* 2021;181(2):179–185. doi:10.1001/jamainternmed.2020.6084

Time to benefit: BISPHOSPHONATES

- **Question:** What is the time to benefit of bisphosphonate therapy to prevent a nonvertebral fracture among postmenopausal women with osteoporosis?
- **Findings**: In this meta-analysis of 10 randomized clinical trials involving 23 384 postmenopausal women with osteoporosis, **12.4 months** was needed to **avoid 1 nonvertebral fracture per 100 women who received bisphosphonate therapy**.
- **Meaning**: This study's results suggest that bisphosphonate therapy is most likely to benefit postmenopausal women with osteoporosis who have a **life expectancy greater than 12.4 months.**

Deardorff WJ, Cenzer I, Nguyen B, Lee SJ. Time to Benefit of Bisphosphonate Therapy for the Prevention of Fractures Among Postmenopausal Women With Osteoporosis: A Meta-analysis of Randomized Clinical Trials. *JAMA Intern Med.* 2022;182(1):33–41. doi:10.1001/jamainternmed.2021.6745

Time to benefit: additional data

- **Discontinuing alendronate** therapy after 5 years of treatment results in no increase in osteoporotic fracture risk **over the ensuing 5 years**
- **Ceasing use of statins** for **primary prevention** after some years results in no increase in cardiovascular events **8 years after discontinuation**

Black DM, Schwartz AV, Ensrud KE, et al; FLEX Research Group. Effects of continuing or stopping alendronate after 5 years of treatment: the Fracture Intervention Trial Long-term Extension (FLEX): a randomized trial. *JAMA*. 2006;296(24): 2927-2938.

Sever PS, Chang CL, Gupta AK, Whitehouse A, Poulter NR; ASCOT Investigators. The Anglo-Scandinavian Cardiac Outcomes Trial: 11-year mortality follow-up of the lipid-lowering arm in the UK. *Eur Heart J*. 2011;32(20):2525-2532.