Polypharmacy and Deprescribing in the Older Adult

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Objectives

- By the end of this session, the learner should be able to
  - Discuss the definitions of polypharmacy
  - Describe the prevalence polypharmacy an older adult and the associated consequences
  - Identify deprescribing strategies in older adults

Polypharmacy?

- 80 yo male with
  - HTN
  - PAD
  - Hyperlipidemia
  - Depression
  - DM
  - Peripheral neuropathy
  - COPD
  - Vit D deficiency

- Meds:
  - Lisinopril 20mg PO daily
  - HCTZ 25mg PO daily
  - Rosuvastatin 5mg PO daily
  - Sertraline 100mg PO daily
  - Pantoprazole 40mg PO daily
  - Tiotropium 2 inhalations PO daily
  - ASA 81mg PO daily
  - Gabapentin 300mg PO TID
  - Insulin glargine 45 units subcut daily
  - Metformin 1000mg PO BID
  - Ergocalciferol 50,000 units PO Q week X 8 doses
  - Vitamin C 1000mg PO daily
  - MVI PO daily

Most Common Definition

- Multiple medications
  - Polypharmacy
    - Cut points range from 2-11
    - Most common 5 or 9
    - ≥10: excessive polypharmacy
- Positives
  - Easy to implement
    - Used in 80% of the literature
- Negatives
  - Result of multi-morbidity and clinical practice guidelines
  - Appropriateness of medications is not taken into consideration

Alternative Definition

- Unnecessary medication
  - Lack of indication
  - Lack of efficacy
  - Therapeutic duplication
- Positives
  - Takes multi-morbidity and medication appropriateness into account
- Negatives
  - Necessitates clinical review
  - Harder to use for research or metrics

So How Common is Polypharmacy?

- Common!

Outpatient Prevalence

- Design: Cross-sectional analysis of the National Health & Nutrition Examination Survey (1988–2010)

	1988-1991	2009-2010
Average no. of meds	2	4
≥5 meds	12.8%	39%
CV meds	41.5%	52.4%
Antidepressant meds	3.2%	16.5%
PPIs	0.09%	18.8%
Thyroid meds	6.5%	16.5%
Potentially Inappropriate Meds	15.1%	22.5%

Charlesworth CJ, et al. *J Gerontolog A Biol Sci Med Sci*. 2015;70:989-95.

Outpatient Prevalence

- Medication use associated with:
  - Older age
  - Former smoker
  - More sedentary lifestyle
  - ↑ BMI
  - ↑ health care visits
  - Greater number of chronic conditions
  - Greater functional limitation
  - Confusion/memory problems

Charlesworth CJ, et al. *J Gerontolog A Biol Sci Med Sci*. 2015;70:989-95.

Outpatient Prevalence

- Design: Longitudinal in-home survey conducted in 2005-2006 and 2010-2011

	2005-2006	2010-2011
Rx	84.1%	87.7%
OTC	44.4%	37.9%
Dietary Supplement	51.8%	63.7%
Polypharmacy ≥5 Rx	30.6%	35.8%
Polypharmacy ≥5 substances	53.4%	67.1%
> 2 Dietary supplements	31.6%	47.0%

Qato DM, et al. *JAMA*. 2016;176:473-82.

Outpatient Prevalence

	2005-2006	2010-2011
Antihyperlipidemics	37.3%	50.1%
Antihypertensives	60.9%	65.1%
Antidiabetic agents	16.6%	17.8%
Coagulation modifiers	36.9%	47.6%
Analgesics	44.3%	54.3%
Respiratory agents	15.3%	19.6%
Proton pump inhibitors (PPIs)	15.7%	18.5%
Thyroid medications	14.8%	15.8%
Anxiolytics, sedatives, hypnotics	8.5%	12.5%

Qato DM, et al. *JAMA*. 2016;176:473-82.

Inpatient Prevalence

- Design: Prospective, cohort study

	Admission (n=1332)	Discharge (n=1155)
Average no. diagnoses	5.2 ± 2.3	5.9 ± 2.5
Common diagnoses	HTN (57.8%) DM (24%) CHD (23%) Afib (20.6%) COPD (20%) CVD (19.5%)	
Average no. of meds	4.9 ± 2.9	6 ± 2.9
> 5 meds	51%	67%

- Predictors of polypharmacy
  - Age >85
  - Number of diagnoses
  - Charlson index score
  - Diagnoses of
    - HTN, IHD, DM, A fib, CHF, COPD/asthma, CRF

Nobili A, et al. *Eur J Clin Pharmacol*. 2011;67:507-19.

NH Prevalence

- Design: Retrospective, cross-sectional study
- Polypharmacy (≥9 meds): 40%
  - Associated with female gender, Caucasian, Medicaid as primary payer, >3 co-morbidities, assistance with <4 ADLs, length of stay (LOS) of 3-6 months
  - Most common medications
    - Laxatives (47.5%), acid reducers (43.3%), antidepressants (46.3%), antipsychotics/mood stabilizers (25.9%), non-narcotic analgesics (43.6%), antipyretics (41.2%), antiarthritics (31.2%)

Dwyer LL, et al. *Am J Geriatr Pharmacother*. 2010;8:63-72.

Unnecessary Medication Use Prevalence

- Design: Cross-sectional study

	%
0-4 meds	22
5-8 meds	41
>9 med	37
Unnecessary medication at DC	44
Lack of indication	32.8
Lack of efficacy	18.5
Therapeutic duplication	7.6
GI	27%
CNS	13%

Hajjar ER, et al. *J Am Geriatr Soc*. 2005;53:1518-23.

Consequences of Polypharmacy

- Adverse drug reactions (ADRs)
- Inappropriate prescribing
- Nonadherence
- Drug interactions
- Functional decline
- Increase heath services utilization
- Geriatric syndromes
  - Falls
  - Cognitive Impairment

Wastesson JW, et al. *Expert Opin Drug Saf*. 2018;17:1185-96.
Maher RL, et al. *Expert Opin Drug Saf*. 2014;13:57-65.

Deprescribing

- Deprescribing
  - Dose reduction
  - Medication discontinuation
- Indication:
  - Lack of indication
  - Inappropriate medication choice in the older adult
    - Risk
    - Life expectancy/time to benefit
  - Adverse effects
  - Drug-drug interaction
  - Drug-disease interaction
  - Change in goals of care
  - Patient choice

Farrell. Can Fam Physician. 2017.; Frank. CMAJ. 2014.; Lai. BCMJ. 2017

What is the Process of Deprescribing?

- Collect a comprehensive medication list
  - Prescription (Rx)
  - Over-the-counter (OTC)
  - Supplements

  - Is the patient taking all substances? If not, how are they taking them? What conditions do the meds treat? Why are they taking them differently?

Reeve E, at al. *Eur J Inter Med*. 2017;38:3-11.

What is the Process of Deprescribing?

- Assess risks and benefits of each medications
  - Patient beliefs and goals
  - Medication regimen complexity
  - Comorbidities
  - Life expectancy
  - Time to benefit

Reeve E, at al. *Eur J Inter Med*. 2017;38:3-11.

What is the Process of Deprescribing?

- Identify potentially inappropriate medications
  - Lack of indication
  - Lack of benefit
  - Therapeutic duplication
  - High risk medication
    - Beer's list

Reeve E, at al. *Eur J Inter Med*. 2017;38:3-11.

What is the Process of Deprescribing?

- Identify medications for deprescribing
  - Shared decision making with patient/caregiver
  - Communicate why and how medications are being deprescribed
  - Address any concerns or fears
- Plan withdrawal process
  - Timing and tapering process

Reeve E, at al. *Eur J Inter Med*. 2017;38:3-11.

What is the Process of Deprescribing?

- Monitor
  - Return of symptoms
  - Withdrawal symptoms
- Document
  - Reasons for deprescribing
  - Process (taper or DC)
  - Clinical response

Reeve E, at al. *Eur J Inter Med*. 2017;38:3-11.

Adverse Drug Withdrawal Events (ADWEs)

- Clinically significant set of symptoms or signs caused by the removal of a drug'
  - Return of the medical condition being treated
  - Physiological withdrawal reaction
- Taken into consideration when deciding if a medication must be tapered or can be discontinued

Bain KT, et al. *J Am Geriatr Soc*. 20018;56:1946-52.

When Might You Abruptly DC a Medication?

- Presence of serious side effects
- Lack of withdrawal effects
- Lower doses/shorter duration of use

When Would You Taper?

- Known withdrawal symptoms
- Risk of return of medical condition
- Higher doses/longer duration of use
- High risk of ADWE

Medication	Withdrawal Reaction/Monitoring
Anticonvulsants	Anxiety, depression, seizures
Antidepressants	Akathisia, anxiety, chills, coryza, gastrointestinal distress, headache, insomnia, irritability, malaise, myalgia, recurrence of depression
Antiparkinson agents	Hypotension, psychosis, pulmonary embolism, rigidity, tremor
Antipsychotics	Dyskinesias, insomnia, nausea, restlessness
Benzodiazepines	Agitation, anxiety, confusion, delirium, insomnia, seizures
Opioids	Abdominal cramping, anger, anxiety, chills, diaphoresis, diarrhea, insomnia, restlessness
Sedative/hypnotics	Anxiety, insomnia, dizziness, tremor, twitches
Corticosteroids	Hypotension, nausea, weakness, anorexia

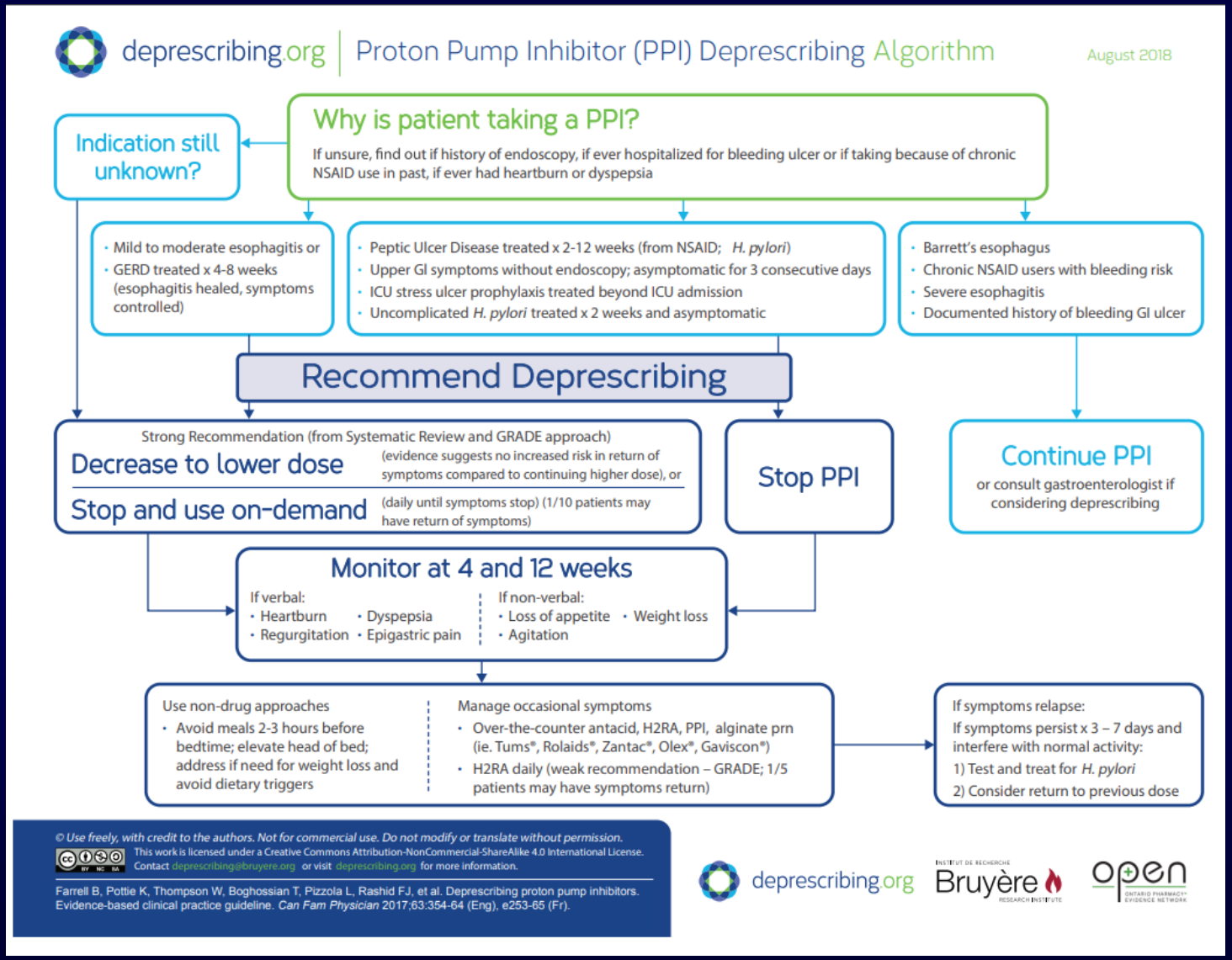
Bain KT, et al. *J Am Geriatr Soc*. 20018;56:1946-52.

Deprescribing.org

- Evidence-based deprescribing guidelines and algorithms
  - PPIs
  - Antihyperglycemics
  - Antipsychotics
  - Benzodiazepine receptor agonist
  - Cholinesterase inhibitors and memantine

Guidelines and Algorithms. https://deprescribing.org/resources/deprescribing-guidelines-algorithms/; Accessed 10/15/19.

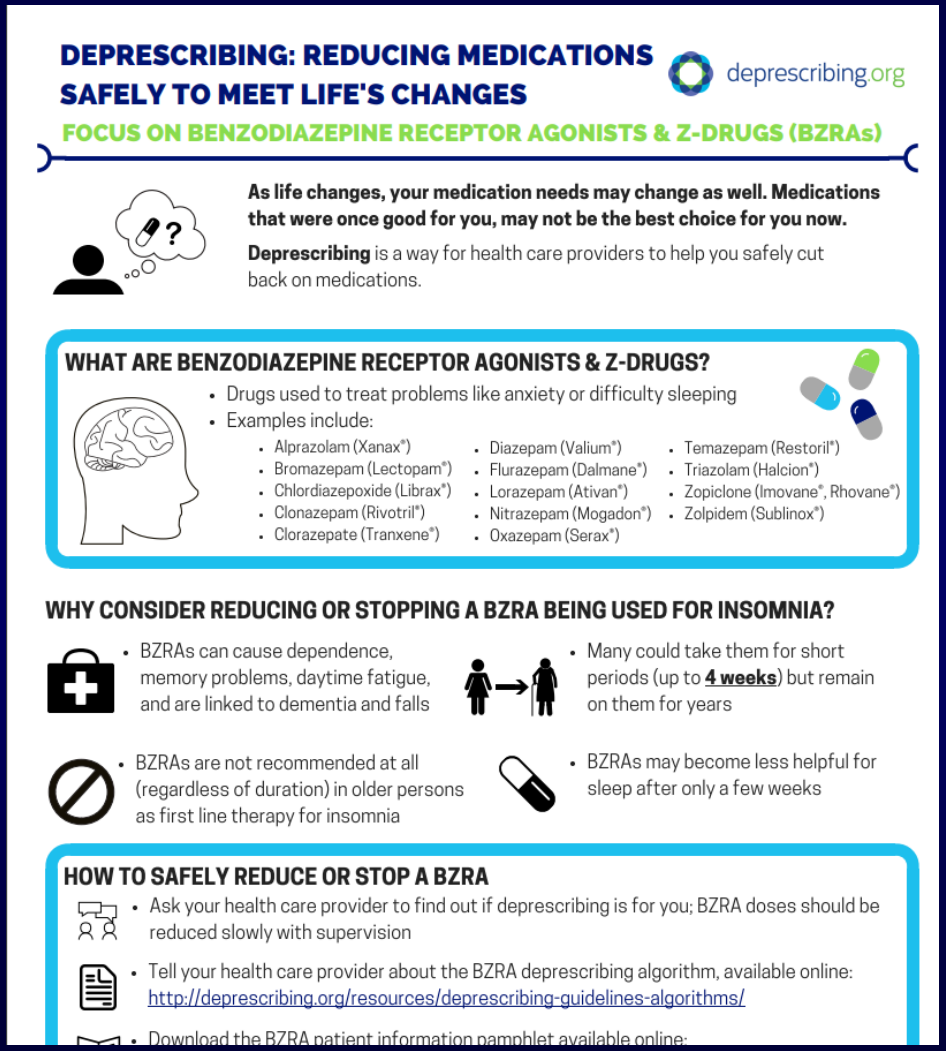
Deprescribing.org



Guidelines and Algorithms. https://deprescribing.org/resources/deprescribing-guidelines-algorithms/; Accessed 10/15/19.

Deprescribing.org

- Patient materials
  - Pamphlets
  - Infographics



DEPRESCRIBING: REDUCING MEDICATIONS SAFELY TO MEET LIFE'S CHANGES

deprescribing.org

FOCUS ON BENZODIAZEPINE RECEPTOR AGONISTS & Z-DRUGS (BZRAs)

As life changes, your medication needs may change as well. Medications that were once good for you, may not be the best choice for you now.

Deprescribing is a way for health care providers to help you safely cut back on medications.

WHAT ARE BENZODIAZEPINE RECEPTOR AGONISTS & Z-DRUGS?

- Drugs used to treat problems like anxiety or difficulty sleeping
- Examples include:
  - Alprazolam (Xanax®)
  - Bromazepam (Lectopam®)
  - Chlordiazepoxide (Librax®)
  - Clonazepam (Rivotril®)
  - Clorazepate (Tranxene®)
  - Diazepam (Valium®)
  - Flurazepam (Dalmane®)
  - Lorazepam (Ativan®)
  - Nitrazepam (Mogadon®)
  - Oxazepam (Serax®)
  - Temazepam (Restoril®)
  - Triazolam (Halcion®)
  - Zopiclone (Imovane®, Rhovane®)
  - Zolpidem (Sublinox®)

WHY CONSIDER REDUCING OR STOPPING A BZRA BEING USED FOR INSOMNIA?

- BZRAs can cause dependence, memory problems, daytime fatigue, and are linked to dementia and falls
- Many could take them for short periods (up to **4 weeks**) but remain on them for years
- BZRAs are not recommended at all (regardless of duration) in older persons as first line therapy for insomnia
- BZRAs may become less helpful for sleep after only a few weeks

HOW TO SAFELY REDUCE OR STOP A BZRA

- Ask your health care provider to find out if deprescribing is for you; BZRA doses should be reduced slowly with supervision
- Tell your health care provider about the BZRA deprescribing algorithm, available online: http://deprescribing.org/resources/deprescribing-guidelines-algorithms/
- Download the BZRA patient information pamphlet available online:

Deprescribing Guideline Pamphlets. https://deprescribing.org/resources/deprescribing-information-pamphlets/; accessed 10/15/19.

Case

- HG is a 74 yo male that presents for a 6 month follow-up. He states he is just there for refills, but his daughter brings up the fact that he has fallen twice over the past month.
- PHM: HTN, hyperlipidemia, insomnia, hypothyroidism, allergic rhinitis, BPH, OA, anxiety
- VS: 134/78 (sit), 130/72 (stand), HR 79, RR 13, 5’8”, 164 lbs

Case

- Meds:
  - Escitalopram 10mg PO daily
  - Amlodipine 10mg PO daily
  - Chlorthalidone 25mg PO daily
  - Zolpidem 10mg PO daily at bedtime
  - Fexofenadine 180mg PO daily
  - Levothyroxine 88mcg PO daily
  - Tamsulosin 0.4mg PO daily
  - Acetaminophen 500mg 2 tabs PO TID

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

February 2019

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.

- Insomnia on its own OR insomnia where underlying comorbidities managed
  For those ≥ 65 years of age: taking BZRA regardless of duration (avoid as first line therapy in older people)
  For those 18-64 years of age: taking BZRA > 4 weeks

- Other sleeping disorders (e.g. restless legs)
- Unmanaged anxiety, depression, physical or mental condition that may be causing or aggravating insomnia
- Benzodiazepine effective specifically for anxiety
- Alcohol withdrawal

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

Recommend Deprescribing

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

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)

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.

Pottie K, Thompson W, Davies S, Grenier J, Sadowski C, Welch V, Holbrook A, Boyd C, Swenson JR, Ma A, Farrell B. Evidence-based clinical practice guideline for deprescribing benzodiazepine receptor agonists. Can Fam Physician 2018;64:339-51 (Eng), e209-24 (Fr)

This algorithm and accompanying advice support recommendations in the NICE guidance on the use of zaleplon, zolpidem and zopiclone for the short-term management of insomnia, and medicines optimisation. National Institute for Health and Care Excellence, February 2019

deprescribing.org | Bruyère Research Institute | open

Considerations for Prescribing for Older Adults

- Think drugs" before making a new diagnosis
  - Avoid prescribing cascade
- Simplify regimens as much as possible
- Use caution with Beers Criteria medications
- Start one medication at a time
- Start low and go slow, but go all the way
- Titrate or deprescribe slowly

Questions?

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