DEPRESCRIBING:

GOAL-CONCORDANT PRESCRIBING IN SERIOUS ILLNESS

Maryland
DEPARTMENT OF HEALTH
OFFICE OF PHARMACY SERVICES

Continuing Education Seminar

Saturday, October 15, 2022

Continuing Medical Education (CME) & Pharmacy Continuing Education (ACPE) Seminar

Deprescribing: Goal-Concordant Prescribing in Serious Illness

Saturday, October 15, 2022

8:30 am – Registration	
8:55 am – Introductions	Maryland Department of Health Office of Pharmacy Services
9:00 am – Deprescribing: Goal-Concordant Prescribing in Serious Illness	Mary Lynn McPherson, PharmD, MA, MDE, BCPS University of Maryland School of Pharmacy
11:00 am – Closing Remarks	Maryland Department of Health Office of Pharmacy Services
11:15 pm - Adjourn	

The views and opinions expressed by the speakers are not necessarily the views and opinions of the State of Maryland Department of Health.

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Support provided by Kepro.

Activity Type:
Knowledge-Based.

Deprescribing: Goal-Concordant Prescribing in Serious Illness

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Disclosures

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LEARNING OBJECTIVES

At the conclusion of this presentation, participants will be able to:

- Describe three approaches to deprescribing (framework, medication list, individual medications).
- Evaluate the benefits and burdens of anticoagulation for a patient with a serious illness.
- Describe best practices for metabolic syndrome for a patient with a serious illness.
- Describe benefits and burdens of medication therapy for Alzheimer's disease.

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What is polypharmacy and why should we care about it?

A. Taking two or more medications concurrently
B. Taking five or more medications concurrently
C. Taking nine or more medications concurrently
D. A patient who uses two or more different pharmacies

Prevalence of polypharmacy in the US:
Approximately 8.2% in 1999-2000
Approximately 15% in 2011-2012

Polypharmacy in long-term care:
91% of residents ≥ 5 medications
74% of residents ≥ 9 medications
65% of residents ≥ 10 medications

Consequences of polypharmacy:
Frailty
Dementia
Cognitive decline
Disability
Hospitalization
Mortality

Consequences of polypharmacy at EOL:
As above, plus:
Anticholinergic burden
Sedation burden
Disease-associated and age-associated pharmacokinetic and pharmacodynamic changes

JAMA 2015;314:1818-1831; J Am Med Dir Assoc 2015;16:e1-12; J Am med Dir Assoc 2018;19:919-22; JAMA Intern Med 2015;175:827-34; Arch Intern Med 2007;167:781-7; Clin Pharm Ther 2009;85:103-7

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Polypharmacy at the end of life

- How does the number of medications patients take as they near the end of life, compare with patients in a similar age bracket?
  A. The same
  B. More
  C. Less

Morin et al reconstructed the medication regimens for the previous 12 months of over 500,000 older adults who died in Sweden between 2007 and 2013.

- Average results showed during the year before death, the percentage of patients taking ≥ 10 medications increased from 30.3 to 47.2%

Retrospective study of > 500 older nursing home residents in Sydney, Australia evaluated changes in the prescribing of symptomatic and preventative medications in last year of life.

Overall medication use changed little:

- Symptom management medications increased slightly
- Disease-prevention medication use decreased slightly
- At the time of death, ~ 1/3 of patients had actively prescribed antithrombotic agents, antihypertensive medications and osteoporosis medications

179 patients in last week of life in hospital, hospice, or home in Netherlands

- Mean number of medications used per patient was nine on day 7 before death.
- 30% of patients received a preventative medication on the day of death.

Am J Med 2017;130(8):927-36;
Front Pharmacol 2018;8:990;
J Palliat Med 2018;21(2):149-55.

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If polypharmacy is the problem, what's the solution?

The geriatrician's salute!
De-intensification!
Deprescribing!

- "Deprescribing" – defined as "the process of withdrawal of an inappropriate medication, supervised by a health care professional with the goal of managing polypharmacy and improving outcomes."

Goal-concordant care!

J Pharm Pract Res 2003;33:323-8; Br J Pharm Soc 2015;80:1254-68

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Who's with me??

Survey says…
Survey of community-dwelling older adults living in Canada • "I am comfortable with the number of medications that I am taking" - > 80% strong agreed/agreed • Half thought they were taking a large number of medications • Half stated they would like to reduce the number of medications they were taking • ~ 75% said they would be willing to stop ≥ 1 medications if their doctor said it was possible • ~80% said they would also they would take more medications if necessary
Survey in Australia in aged care facilities • 40% said they wished to stop taking ≥ 1 of their medications • This number increased to 80% if their doctor said this was appropriate
Survey of older adults admitted to a teaching hospital in Sydney, Australia • 90% said they would be willing to stop ≥ 1 medications if their doctor was this was possible • 95% were willing to discontinue their statin, and a similar number were concerned about statin side effects
Medicare beneficiaries in the USA surveyed about deprescribing (~ 2,000 respondents) • "If my doctor said it was possible, I would be willing to stop one or more of my regular medicines" – 92% SA/agreed • "I would like to reduce the number of medicines I am taking" – 2/3 SA/agreed

Res Soc Adm Pharm 2017;13:864-70; Res Soc Admin Pharm 2016;12:784-8;
Int J Clin Pharm 2015;37:949-57; JAMA Intern Med 2018;178(12)1673-80.

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So what do the prescribers think about this?

Survey says…
160 physicians in Parma surveyed • 75% reported general confidence in their ability to deprescribe, including preventative medications • 53% were comfortable stopping guideline-recommended medications • 40% were reluctant to discontinue a medication prescribed by another physician • 45% felt uncomfortable stopping a medication in cases where patient/caregiver thought it was important to continue
General practitioners in Australia • Comfortable with deprescribing and felt they had the skills to communicate this information to their patients

Primary care physicians
• Deprescribing feels like "swimming against the tide" due to:
  • The medical culture of prescribing (deprescribing not taught to physicians)
  • Patient expectations (prescriptions fix things, not stopping prescriptions)
  • Organizational constraints (lack of time, fragmentation of care, lack of access to expert guidance, etc.)

16 general practitioners in Denmark • Themes of barriers to deprescribing include lack of interprofessional communication, patients not on board, culture encouraged continuing medications and not deprescribing

J Clin Pharm Ther 2018;43:550-5; Aust J Prim Health 2019;24:463; Res Soc Adm Pharm 2018;14:18-25;
Res Soc Adm Pharm 2016;12:438-49; Ann Fam Med 2017;15(341):346; Health Serv Res Man Epidem 2014;5:1-7

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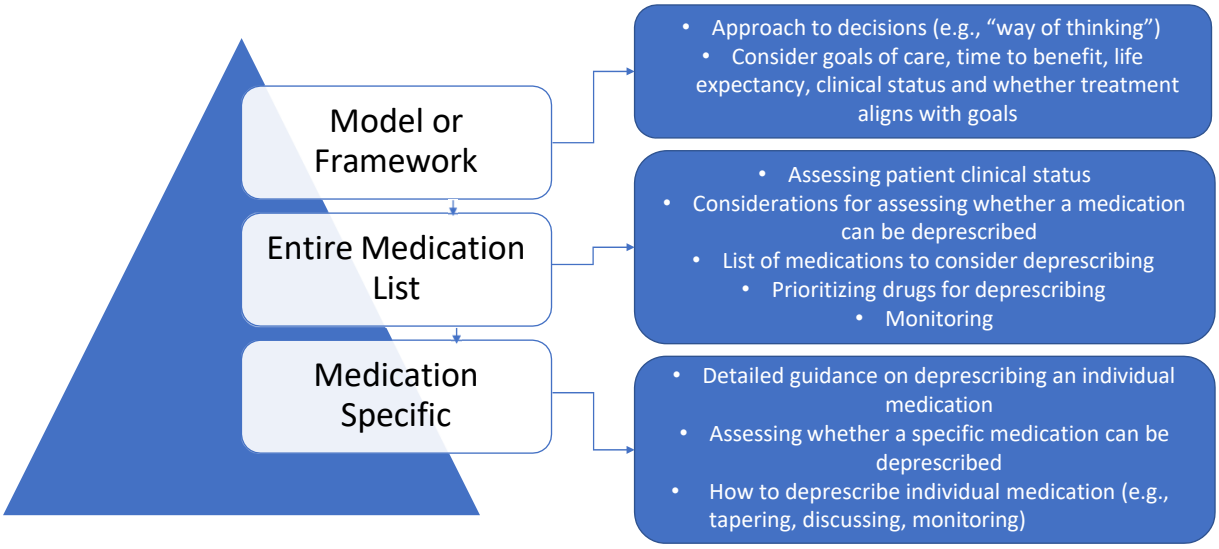
Let's DO this! Ok….how exactly do I DO this??



JAGS 2018;67(1):172-180

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LR's Medication List

94 year old man with end-stage COPD recently admitted to hospice.

1. Coenzyme Q-10 Supplement, 1 capsule PO daily
2. PreserVision AREDS2, 1 tablet PO daily
3. Azithromycin 200mg/5mL, 6 mL PO daily on M/W/F
4. Levothyroxine 75mcg, 1tab PO daily in the morning
5. Ramipril 10mg, 1 capsule by mouth daily in the morning
6. Omeprazole DR 20mg, 1 capsule PO daily in the morning
7. Furosemide 20mg, 1 tablet PO daily in the morning
8. Famotidine 20mg, 1 tablet PO twice daily
9. Rosuvastatin 20mg, 1 tablet PO daily with dinner
10. Finasteride 5mg, 1 tablet PO daily with dinner
11. Amlodipine 5mg, Take 1 tablet PO with dinner
12. Warfarin 3mg, Take 1 tablet PO daily
13. Duoneb, Inhale 3 mL vial nebulizer 4 times per day as needed

Slides courtesy of Dr. Ryan Costantino

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Approaching a patients medication list

STEP 1: Comprehensive Medication Review or Targeted Deprescribing

STEP 2: Identify decision support tools to inform deprescribing

STEP 3: Apply the tools and prepare for deprescribing conversation

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MedStopper (http://medstopper.com/)

- MedStopper is a web application, decision tool that supports deprescribing
- What evidence informs the application?
  - Beers Criteria
  - STOPP criteria
  - Edmonton Frail Scale
  - https://www.thennt.com/
- Limitations
  - Vitamins/supplements
  - Antibiotics
  - Combination products

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Stopping Priority RED=Highest GREEN=Lowest	Medication/ Category/ Condition	May Improve Symptoms?	May Reduce Risk for Future Illness?	May Cause Harm?	Suggested Taper Approach	Possible Symptoms when Stopping or Tapering	Beers/STOPP Criteria
	levothyroxine (Synthroid, Levoxyl , Levothroid) / Thyroid / **prevention but no symptoms (High TSH)**				Taper based on TSH and symptoms	return of hypothyroid symptoms (tiredness, weakness, weight gain, hair loss, constipation, depression, coarse dry hair, hair loss)	None
	warfarin (Coumadin) / Warfarin / **afib/valve**		CALC / NNT		Taper to INR targets		None
	ramipril (Altace) / ACE inhibitor / **blood pressure**		CALC / NNT		If used daily for more than 3-4 weeks. Reduce dose by 50% every 1 to 2 weeks. Once at 25% of the original dose and no withdrawal symptoms have been seen, stop the drug. If any withdrawal symptoms occur, go back to approximately 75% of the previously tolerated dose.	chest pain, pounding heart, heart rate, blood pressure (re-measure for up to 6 months), anxiety, tremor	None
	finasteride (Proscar) / 5-alpha reductase inhibitor / **benign prostatic hyperplasia**				Tapering not required		None
	amlodipine (Norvasc) / Calcium antagonist dihydropyridine / **blood pressure**		CALC / NNT		If used daily for more than 3-4 weeks. Reduce dose by 50% every 1 to 2 weeks. Once at 25% of the original dose and no withdrawal symptoms have been seen, stop the drug. If any withdrawal symptoms occur, go back to approximately 75% of the previously tolerated dose.	chest pain, pounding heart, heart rate, blood pressure (re-measure for up to 6 months), anxiety, tremor	Details
	omeprazole (Prilosec, Losec) / Proton pump inhibitor / **heartburn/GERD**				If used daily for more than 3-4 weeks. Reduce dose by 50% every 1 to 2 weeks. Once at 25% of the original dose and no withdrawal symptoms have been seen, stop the drug. If any withdrawal symptoms occur, go back to approximately 75% of the previously tolerated dose.	return of symptoms, heartburn, reflux	Details
	famotidine (Pepcid) / H2 antagonist / **heartburn/GERD**				If used daily for more than 3-4 weeks. Reduce dose by 50% every 1 to 2 weeks. Once at 25% of the original dose and no withdrawal symptoms have been seen, stop the drug. If any withdrawal symptoms occur, go back to approximately 75% of the previously tolerated dose.	return of symptoms, heartburn, reflux	None
	rosuvastatin (Crestor) / statin / **previous heart attack or stroke**		NNT		Tapering not required		None
	ipratropium (Atrovent) / Anticholinergic / **chronic obstructive lung disease**				Tapering not required		Details
	salbutamol/albuterol (ventolin) / beta agonist / **chronic obstructive lung disease**				Tapering not required		None
	furosemide (Lasix) / Diuretic / **other**	?	?		If used daily for more than 3-4 weeks. Reduce dose by 50% every 1 to 2 weeks. Once at 25% of the original dose and no withdrawal symptoms have been seen, stop the drug. If any withdrawal symptoms occur, go back to approximately 75% of the previously tolerated dose.	weight gain, swelling, shortness of breath	Details

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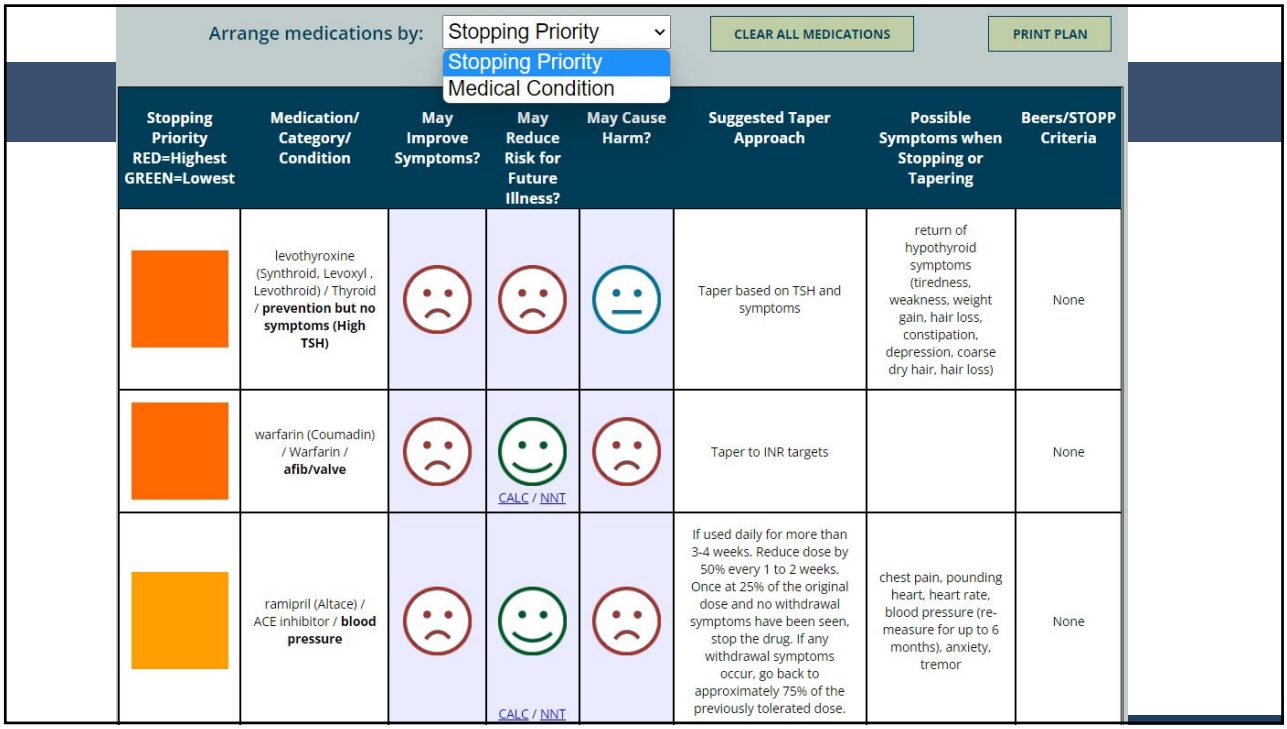

Arrange medications by: Stopping Priority ▾ (Stopping Priority / Medical Condition) CLEAR ALL MEDICATIONS PRINT PLAN

Stopping Priority RED=Highest GREEN=Lowest	Medication/ Category/ Condition	May Improve Symptoms?	May Reduce Risk for Future Illness?	May Cause Harm?	Suggested Taper Approach	Possible Symptoms when Stopping or Tapering	Beers/STOPP Criteria
	levothyroxine (Synthroid, Levoxyl , Levothroid) / Thyroid / **prevention but no symptoms (High TSH)**				Taper based on TSH and symptoms	return of hypothyroid symptoms (tiredness, weakness, weight gain, hair loss, constipation, depression, coarse dry hair, hair loss)	None
	warfarin (Coumadin) / Warfarin / **afib/valve**		CALC / NNT		Taper to INR targets		None
	ramipril (Altace) / ACE inhibitor / **blood pressure**		CALC / NNT		If used daily for more than 3-4 weeks. Reduce dose by 50% every 1 to 2 weeks. Once at 25% of the original dose and no withdrawal symptoms have been seen, stop the drug. If any withdrawal symptoms occur, go back to approximately 75% of the previously tolerated dose.	chest pain, pounding heart, heart rate, blood pressure (re-measure for up to 6 months), anxiety, tremor	None

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STOPPFrail

- **S**creening **T**ool of **O**lder **P**ersons Prescriptions in **Frail** adults with limited life expectancy
- STOPPFrail is a list of potentially inappropriate prescribing indicators designed to assist physicians with deprescribing decisions. It is intended for older people with limited life expectancy for whom the goal of care is to optimize quality of life and minimize the risk of drug-related morbidity. Goals of care should be clearly defined, and, where possible, medication changes should be discussed and agreed with patient and/or family.

Appropriate candidates for STOPPFrail-guided deprescribing typically meet ALL of the following criteria:

1.Activities of daily living dependency (i.e. assistance with dressing, washing, transferring, walking) and/or severe chronic disease and/or terminal illness.

2. Severe irreversible frailty, i.e. high risk of acute medical complications and clinical deterioration.

3. Physician overseeing care of patient would not be surprised if the patient died in the next 12 months.

Curtin D. Age Ageing. 2021 Feb 26;50(2):465-471.

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STOPPFrail

Section A: General	• Any drug that the patient persistently fails to take or tolerate despite adequate education and consideration of all appropriate formulations. • Any drug without a clear clinical indication. • Any drug for symptoms which have now resolved (e.g. pain, nausea, vertigo, pruritus)
Section B: Cardiology system	• Lipid-lowering therapies (statins, ezetimibe, bile acid sequestrants, fibrates, nicotinic acid, lomitapide and acipimox). • Antihypertensive therapies: Carefully reduce or discontinue these drugs in patients with systolic blood pressure (SBP) persistently <130 mmHg. An appropriate SBP target in frail older people is 130–160 mmHg. Before stopping, consider whether the drug is treating additional conditions (e.g. beta-blocker for rate control in atrial fibrillation, diuretics for symptomatic heart failure). • Anti-anginal therapy (specifically nitrates, nicorandil, ranolazine): None of these anti-anginal drugs have been proven to reduce cardiovascular mortality or the rate of myocardial infarction. Aim to carefully reduce and discontinue these drugs in patients who have had no reported anginal symptoms in the previous 12 months AND who have no proven or objective evidence of coronary artery disease.
Section C: Coagulation system	• Anti-platelets: No evidence of benefit for primary (as distinct from secondary) cardiovascular prevention. • Aspirin for stroke prevention in atrial fibrillation: Aspirin has little or no role for stroke prevention in frail older people who are not candidates for anticoagulation therapy and may significantly increase bleeding risk.
Section D: Central nervous system	• Neuroleptic antipsychotics in patients with dementia: Aim to reduce dose and discontinue these drugs in patients taking them for longer than 12 weeks if there are no current clinical features of behavioural and psychiatric symptoms of dementia (BPSD). • Memantine: Discontinue and monitor in patients with moderate to severe dementia, unless memantine has clearly improved BPSD.
Section E: Gastrointestinal system	• Proton pump Inhibitors: Reduce dose of proton pump inhibitors when used at full therapeutic dose ≥8 weeks, unless persistent dyspeptic symptoms at lower maintenance dose. • H2 receptor antagonist: Reduce dose of H2 receptor antagonists when used at full therapeutic dose for ≥8 weeks, unless persistent dyspeptic symptoms at lower maintenance dose.
Section F: Respiratory	• Theophylline and aminophylline: These drugs have a narrow therapeutic index, have doubtful therapeutic benefit and require monitoring of

Curtin D. Age Ageing. 2021 Feb 26;50(2):465-471.

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STOPP/START

- STOPP/START criteria for potentially inappropriate prescribing in older people: version 2
  - Screening tool of older people's prescriptions (STOPP) and screening tool to alert to right treatment (START) criteria
- Aims to address potentially inappropriate medications and potential prescribing omissions

O'Mahony D et al. *Age and Ageing*, Volume 44, Issue 2, March 2015, Pages 213–218.

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STOPP/START

STOPP Criteria References

- Section B: Cardiovascular System criteria
  - Loop diuretic as first-line treatment for hypertension (lack of outcome data for this indication; safer, more effective alternatives available)

START Criteria References

- Section A: Cardiovascular System criteria.
  - Angiotensin Converting Enzyme (ACE) inhibitor with systolic heart failure and/or documented coronary artery disease.

Denis O'Mahony et al. *Age and Ageing*, Volume 44, Issue 2, March 2015, Pages 213–218.

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AGS Beers Criteria

- The AGS Beers Criteria® is a list of medications worth discussing with health professionals because they may not be the safest or most appropriate options for older adults.
  - NOTE: AGS Beers Criteria are intended for older adults outside of hospice & palliative care settings but can still be useful in deprescribing conversations

Curtin D. Age Ageing. 2021 Feb 26;50(2):465-471.

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AGS Beers Criteria

Organ System, Therapeutic Category, Drug(s)	Rationale	Recommendation	Quality of Evidence	Strength of Recommendation
Benzodiazepines	Older adults have increased sensitivity to benzodiazepines and decreased metabolism of long-acting agents; in general, all benzodiazepines increase risk of cognitive impairment, delirium, falls, fractures, and motor vehicle crashes in older adults. May be appropriate for seizure disorders, rapid eye movement sleep behavior disorder, benzodiazepine withdrawal, ethanol withdrawal, severe generalized anxiety disorder, and periprocedural anesthesia	Avoid	Moderate	Strong

Curtin D et al. Age Ageing. 2021 Feb 26;50(2):465-471.

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Deprescribing.org

- Evidence-based deprescribing guidelines and algorithms

Proton Pump Inhibitor

Antihyperglycemics

Antipsychotics

Benzodiazepine Receptor Agonist

Cholinesterase Inhibitors and Memantine

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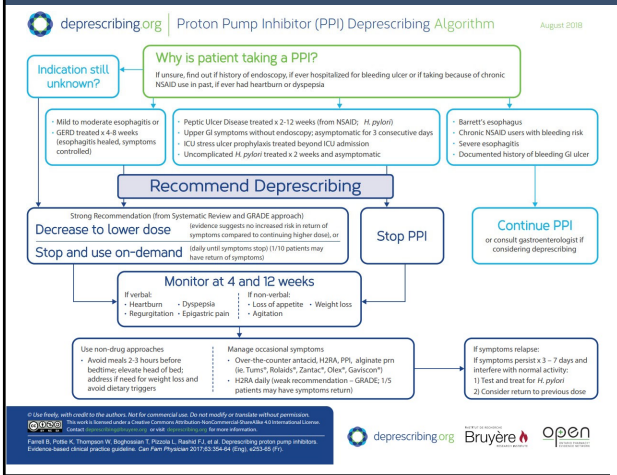
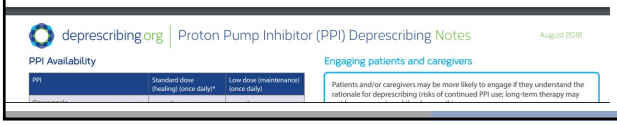
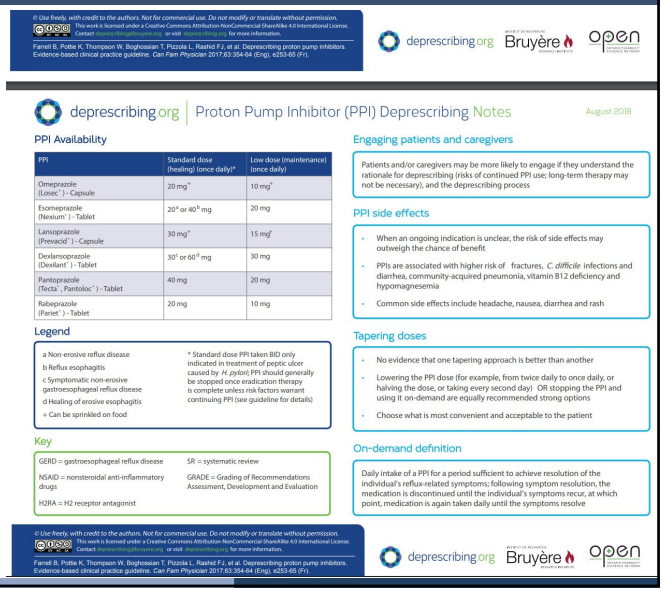
Deprescribing.org







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LESS-CHRON

- List of Evidence-Based Deprescribing for Chronic Patients criteria
- Focuses on deprescribing in patients with multimorbidity
- 27 criteria organized by anatomical group
- Each criterion contains
  - Drug indication for which it is prescribed
  - Clinical situation that offers an opportunity to deprescribe
  - Clinical variable to be monitored
  - Minimum time to follow up the patient after deprescribing

Rodríguez-Pérez A et al. *Eur J Hosp Pharm*. 2019;26(6):334-338
Rodríguez-Pérez A et al. Geriatr Gerontol Int. 2017 Nov;17(11):2200-2207

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LESS-CHRON

Drug	Indication for which it is prescribed	Deprescribing condition	Health variables to monitor	Follow up
Oral anticoagulants	Atrial fibrillation	• Pfeiffer questionnaire ≥8 points and PROFUND index ≥11 points • High risk of falls	• Not applicable • Not applicable	• Not applicable • Not applicable
Anticholinergics	Urinary incontinence	• Use of nappy. • Worsening of dementia symptoms in patients under anticholinesterase treatment.	• Urine control	1 month

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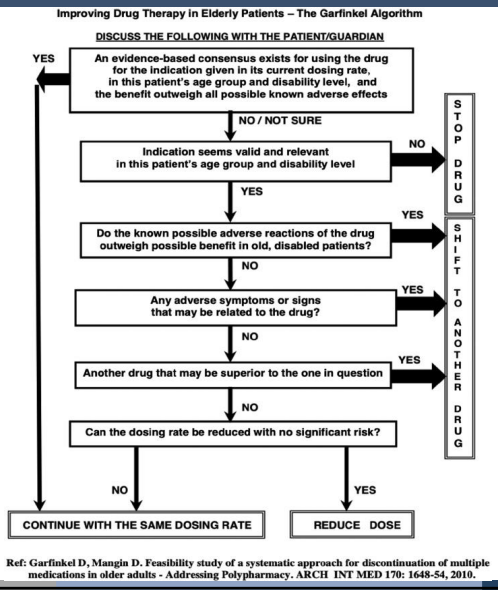
The Garfinkel Good Palliative-Geriatric Practice algorithm (GPA)



Ref: Garfinkel D, Mangin D. Feasibility study of a systematic approach for discontinuation of multiple medications in older adults - Addressing Polypharmacy. ARCH INT MED 170: 1648-54, 2010.

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The Garfinkel Good Palliative-Geriatric Practice algorithm (GPGP)

- Implicit judgment-based tool
  - Beer's Criteria or STOPP/START would be considered explicit tools
- Applicability to any drug in any clinical context

Study design

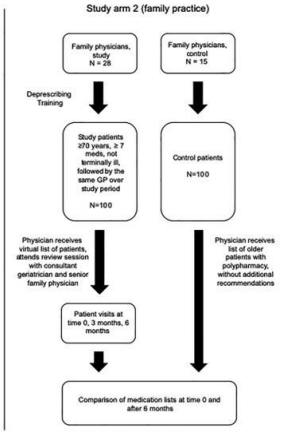

Table 3. Number of medications prescribed before and 6 months after the intervention.

	Study group ($n = 100$)	Control group ($n = 100$)	p value
Drugs at baseline (mean ± SD)	10.5 ± 2.2	10.97 ± 2.7	0.149
Drugs at 6 months (mean ± SD)	10.04 ± 2.16	11.21 ± 2.9	0.001
p value	0.005	0.062	

Bilek AJ et al. *Ther Adv Drug Saf*. 2019.

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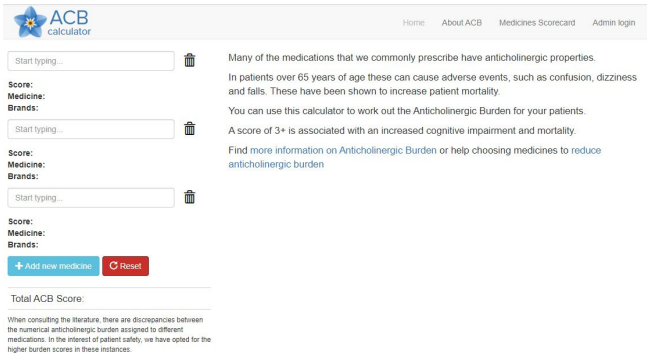
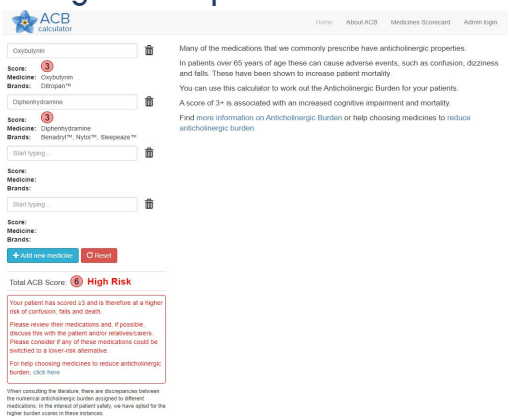
Anticholinergic Burden Calculator (http://www.acbcalc.com/)

- Can be used to work out the Anticholinergic Burden for your patients
- A score of 3+ is associated with an increased cognitive impairment and mortality.





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NSW TAG Deprescribing Tools

- Deprescribing resources developed by a translational research project team led by Prof Sarah Hilmer
- Deprescribing guides
- Consumer Information Leaflets

https://www.nswtag.org.au/deprescribing-tools/

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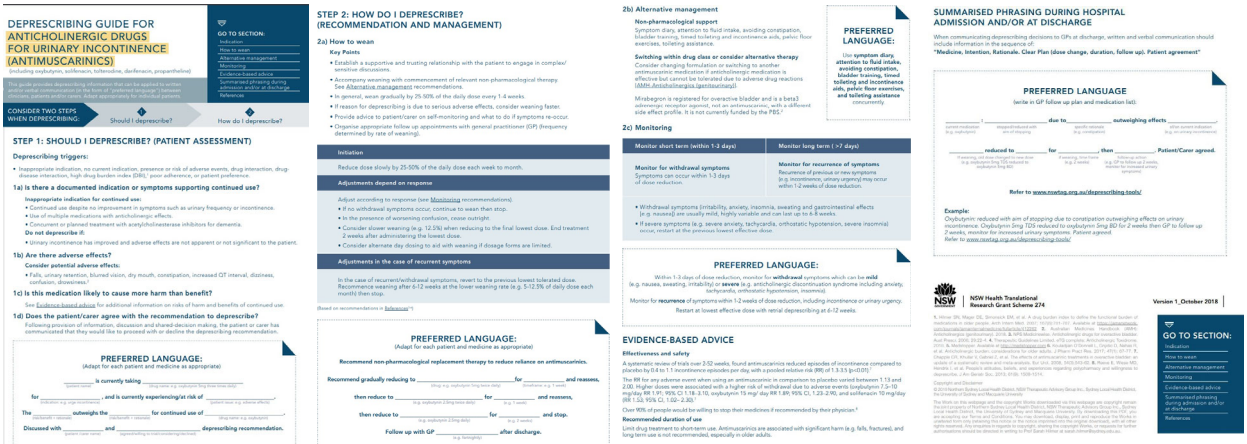
Deprescribing Guide for Anticholinergic Drugs for Urinary Incontinence



DEPRESCRIBING GUIDE FOR ANTICHOLINERGIC DRUGS FOR URINARY INCONTINENCE (ANTIMUSCARINICS)

GO TO SECTION:
Indication
How to wean
Alternative management
Monitoring
Evidence-based advice
Summarised phrasing during admission and/or at discharge
References

CONSIDER TWO STEPS WHEN DEPRESCRIBING: Should I deprescribe? How do I deprescribe?

STEP 1: SHOULD I DEPRESCRIBE? (PATIENT ASSESSMENT)

Deprescribing triggers:

- Inappropriate indication, no current indication, presence or risk of adverse events, drug interaction, drug-disease interaction, high drug burden index (DBI),[1] poor adherence, or patient preference.

1a) Is there a documented indication or symptoms supporting continued use?

Inappropriate indication for continued use:

- Continued use despite no improvement in symptoms such as urinary frequency or incontinence.
- Use of multiple medications with anticholinergic effects.
- Concurrent or planned treatment with acetylcholinesterase inhibitors for dementia.

Do not deprescribe if:

- Urinary incontinence has improved and adverse effects are not apparent or not significant to the patient.

1b) Are there adverse effects?

Consider potential adverse effects:

- Falls, urinary retention, blurred vision, dry mouth, constipation, increased QT interval, dizziness, confusion, drowsiness?

1c) Is this medication likely to cause more harm than benefit?

See Evidence-based advice for additional information on risks of harm and benefits of continued use.

1d) Does the patient/carer agree with the recommendation to deprescribe?

Following provision of information, discussion and shared-decision making, the patient or carer has communicated that they would like to proceed with or decline the deprescribing recommendation.

PREFERRED LANGUAGE:
(Adapt for each patient and medicine as appropriate)

_____ is currently taking _____ (patient name) (e.g. name of drug, dose, how often)

for _____ (indication, e.g. urge incontinence), and is currently experiencing/at risk of _____ (patient issue, e.g. adverse effects).

The _____ (risk/benefit + rationale) outweighs the _____ (risk/benefit + rationale) for continued use of _____ (drug name, e.g. oxybutynin).

Discussed with _____ (patient name/ carer name) and _____ (required/willing to cease/change/reduce), deprescribing recommendation.

STEP 2: HOW DO I DEPRESCRIBE? (RECOMMENDATION AND MANAGEMENT)

2a) How to wean

Key Points

- Establish a supportive and trusting relationship with the patient to engage in complex/sensitive discussions.
- Accompany weaning with commencement of relevant non-pharmacological therapy. See Alternative management recommendations.
- In general, wean gradually by 25-50% of the daily dose every 1-4 weeks.
- If reason for deprescribing is due to serious adverse effects, consider weaning faster.
- Provide advice to patient/carer on self-monitoring and what to do if symptoms re-occur.
- Organise appropriate follow up appointments with general practitioner (GP) (frequency determined by rate of weaning).

Initiation

Reduce dose slowly by 25-50% of the daily dose each week to month.

Adjustments depend on response

Adjust according to response (see Monitoring recommendations).

- If no withdrawal symptoms occur, continue to wean then stop.
- In the presence of worsening confusion, cease outright.
- Consider slower weaning (e.g. 12.5%) when reducing to the final lowest dose. End treatment 2 weeks after administering the lowest dose.
- Consider alternate day dosing to aid with weaning if dosage forms are limited.

Adjustments in the case of recurrent symptoms

In the case of recurrent/withdrawal symptoms, revert to the previous lowest tolerated dose. Recommence weaning after 6-12 weeks at the lower weaning rate (e.g. 5-12.5% of daily dose each month) then stop.

(Based on recommendations in References[*])

PREFERRED LANGUAGE:
(Adapt for each patient and medicine as appropriate)

Recommend non-pharmacological replacement therapy to reduce reliance on antimuscarinics.

Recommend gradually reducing to _____ (drug, e.g. oxybutynin 3.5mg twice daily) for _____ (timeframe, e.g. 1 week) and reassess,

then reduce to _____ (e.g. oxybutynin 2.5mg twice daily) for _____ (e.g. 1 week) and reassess,

then reduce to _____ (e.g. oxybutynin 2.5mg daily) for _____ (e.g. 2 weeks) and stop.

Follow up with GP _____ (e.g. fortnightly) after discharge.

2b) Alternative management

Non-pharmacological support

Symptom diary, attention to fluid intake, avoiding constipation, bladder training, timed toileting and incontinence aids, pelvic floor exercises, toileting assistance.

Switching within drug class or consider alternative therapy

Consider changing formulation or switching to another antimuscarinic medication if anticholinergic medication is effective but cannot be tolerated due to adverse drug reactions (AMM: Anticholinergics (genitourinary)).

Mirabegron is registered for overactive bladder and is a beta3 adrenergic receptor agonist, not an antimuscarinic, with a different side effect profile. It is not currently funded by the PBS.[*]

PREFERRED LANGUAGE:
Use symptom diary, attention to fluid intake, avoiding constipation, bladder training, timed toileting and incontinence aids, pelvic floor exercises, and toileting assistance concurrently.

2c) Monitoring

Monitor short term (within 1-3 days)	Monitor long term (>7 days)
Monitor for withdrawal symptoms Symptoms can occur within 1-3 days of dose reduction.	**Monitor for recurrence of symptoms** Recurrence of previous or new symptoms (e.g. incontinence, urinary urgency) may occur within 1-2 weeks of dose reduction.

- Withdrawal symptoms (irritability, anxiety, insomnia, sweating and gastrointestinal effects (e.g. nausea)) are usually mild, highly variable and can last up to 6-8 weeks.
- If severe symptoms (e.g. severe anxiety, tachycardia, orthostatic hypotension, severe insomnia) occur, restart at the previous lowest effective dose.

PREFERRED LANGUAGE:

Within 1-3 days of dose reduction, monitor for **withdrawal** symptoms which can be **mild** (e.g. nausea, sweating, irritability) or **severe** (e.g. anticholinergic discontinuation syndrome including anxiety, tachycardia, orthostatic hypotension, insomnia).

Monitor for **recurrence** of symptoms within 1-2 weeks of dose reduction, including incontinence or urinary urgency.

Restart at lowest effective dose with retrial deprescribing at 6-12 weeks.

EVIDENCE-BASED ADVICE

Effectiveness and safety

A systematic review of trials over 2-52 weeks, found antimuscarinics reduced episodes of incontinence compared to placebo by 0.4 to 1.1 incontinence episodes per day, with a pooled relative risk (RR) of 1.3 (95 p<0.01)[*]

The RR for any adverse event when using an antimuscarinic in comparison to placebo varied between 1.13 and 2.00. Higher doses were associated with a higher risk of withdrawal due to adverse events (oxybutynin 7.5–10 mg/day RR 1.91, 95% CI 1.18–3.10, oxybutynin 15 mg/ day RR 1.89, 95% CI, 1.23–2.90, and solifenacin 10 mg/day (RR 1.53, 95% CI, 1.02– 2.30).[*]

Over 90% of people would be willing to stop their medicines if recommended by their physician.[*]

Recommended duration of use

Limit drug treatment to short-term use. Antimuscarinics are associated with significant harm (e.g. falls, fractures), and long-term use is not recommended, especially in older adults.

SUMMARISED PHRASING DURING HOSPITAL ADMISSION AND/OR AT DISCHARGE

When communicating deprescribing decisions to GPs at discharge, written and verbal communication should include information in the sequence of:
Medicine, Intention, Rationale. Clear Plan (dose change, duration, follow up). Patient agreement

PREFERRED LANGUAGE
(write in GP follow up plan and medication list).

_____ (current medication (e.g. oxybutynin)) due to _____ (reason/reduced with aim of stopping) outweighing effects _____ (specific rationale (e.g. constipation)).

_____ (current indication (e.g. urge incontinence)) reduced to _____ (if waning, eg slow change/10 mins dose (e.g. oxybutynin 5mg TDS reduced to oxybutynin 5mg BD)) for _____ (if waning, slow trend (e.g. 2 weeks)) then _____ (follow-up action (e.g. GP to follow up 2 weeks, monitor for increased urinary symptoms)). Patient/Carer agreed.

Refer to www.nswtag.org.au/deprescribing-tools/

Example:
Oxybutynin reduced with aim of stopping due to constipation outweighing effects on urinary incontinence. Oxybutynin 5mg TDS reduced to oxybutynin 5mg BD for 2 weeks then GP to follow up 2 weeks, monitor for increased urinary symptoms. Patient agreed.
Refer to www.nswtag.org.au/deprescribing-tools/

NSW | NSW Health Translational Research Grant Scheme 274

Version 1, October 2018

GO TO SECTION:
Indication
How to wean
Alternative management
Monitoring
Evidence-based advice
Summarised phrasing during admission and/or at discharge
References

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NHPCO Hospice Medication Deprescribing Toolkit

- A companion resource
- Decision trees in the flow chart describe opportunities for deprescribing
- medications at the end of life

Table of Contents

https://www.nhpco.org/wp-content/uploads/NHPCO_Deprescribing_Toolkit.pdf

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Antiplatelet & Anticoagulant Medications

Antiplatelet & Anticoagulant Medications

DEPRESCRIBING GUIDANCE

NHPCO Leading Person-Centered Care

Background

Many patients are admitted to hospice services already taking an antiplatelet or anticoagulant medication, especially if they have cardiovascular disease or a history of blood clots due to cancer. A recent study reported the prevalence of antithrombotic therapy at the time of hospice enrollment at nearly 7% of patients, with about 57% of those patients on aspirin therapy and over 18% on multiple antithrombotic medications.[1]

Antiplatelet medications prevent blood clots by inhibiting platelet aggregation and are used to decrease the risk of death from cardiovascular events such as myocardial infarction (MI), ischemic stroke, angina, or peripheral arterial disease.[2] Aspirin is the original antiplatelet medication, and is available over-the-counter (OTC); patients may choose to take aspirin without prescriber advice. Non-aspirin antiplatelet medications are also used off-label for secondary prevention of cardiovascular disease in patients with diabetes or aspirin allergy, and in some patients with atrial fibrillation to prevent thromboembolism.[3] Additionally, clopidogrel or prasugrel may be used in dual-antiplatelet therapy (DAPT) in combination with aspirin for patients with acute coronary syndrome (ACS) or following stent placement.[2]

Anticoagulant medications also prevent blood clots but instead of inhibiting platelets, they prevent blood coagulation by reducing the action of clotting factors directly or indirectly. Anticoagulants are also used to prevent clotting in patients with atrial fibrillation, thromboembolic disease, and artificial heart valves.[3]

TABLE 1 - ANTIPLATELET AND ANTICOAGULANT MEDICATIONS

Antiplatelet Medications					
Aspirin	Clopidogrel (Plavix®)	Ticagrelor (Brilinta®)	Prasugrel (Effient®)	Aspirin-Dipyridamole (Aggrenox®)	
Anticoagulant Medications					
Warfarin (Coumadin®)	Apixaban (Eliquis®)	Rivaroxaban (Xarelto®)	Dabigatran (Pradaxa®)	Enoxaparin (Lovenox®)	Edoxaban (Savaysa®)

The decision to discontinue antiplatelet and anticoagulant medications should always be an individualized approach, weighing the risks vs benefits, and the patient and family's goals of care. Discontinuing these medications is generally considered acceptable in any patient with a life-limiting illness, especially when adverse effects are possible.[3] The information below is based on literature review in the primary care and hospitalized patient population; there are no studies determining risk vs benefit of aspirin, other anti-platelet therapies, or anticoagulants for patients in hospice or palliative care. Due to the likelihood of drug interactions, consulting with a pharmacist when adding or discontinuing any medication is recommended.

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Why Deprescribe?

CONSIDER DEPRESCRIBING IF ANY OF THE FOLLOWING FACTORS IS PRESENT:

❒ Patient at risk for bleeding	▮ Increased risk for major hemorrhage or bleeding complications present in patients on anticoagulation therapy with advanced age, CHF, CVD, hypertension, liver or renal disease, diabetes, history of or recent GI bleed, anemia, concomitant use of antiplatelets or NSAIDs.[4,5,7,8] ▮ HAS-BLED score tool can be used to assist clinicians in identifying patients at high risk for bleeding.[7] ▮ When bleeding does occur, lack of access to reversal agents other than vitamin K (phytonadione) can be difficult. Hospitalization is required for patients to use the reversal agents for dabigatran, apixaban, and rivaroxaban to manage bleeding.[2]
❒ Medication may no longer be indicated	▮ No palliative benefit present or clinical signs of impending death ▮ Antiplatelet or anticoagulant medications may have been started with time-limited intent after a procedure or event. Evaluate continued need and potential to de-escalate to aspirin monotherapy or deprescribe entirely. ▮ Benefits of multiple antiplatelet or anticoagulation combination therapy is generally limited to 3-12 months of therapy; likely no additional benefit to longer therapy, only increased risk of bleeding, especially in the hospice population.[4]
❒ Patient at risk for falls	▮ Hospice patients, young and old, have an increased risk of falling, and potential for internal or external bleeds. ▮ Risk of an intracranial hemorrhage in a debilitated ambulatory patient who may fall is greater than the benefit in preventing a stroke.[5]
❒ Patient at risk for drug-drug interactions	▮ Drug interactions are common with these classes of medications (especially warfarin) increasing bleeding risk or increased clot formation.[7] ▮ Review medication profile with a pharmacist when adding or discontinuing any medications.
❒ Decreased renal or hepatic function	▮ Many of antiplatelet and anticoagulant medications rely on liver metabolism and renal clearance.[7] Bleeding increases with kidney or liver impairment, especially in elderly patients. ▮ Avoid warfarin in patients with liver failure.[2]
❒ Decreased nutritional intake	▮ Hospice patients may have fluctuating nutritional intake, impacting vitamin K intake and affecting the therapeutic risk/benefit associated with warfarin. ▮ Warfarin, rivaroxaban, and apixaban are highly protein bound anticoagulants. Malnourished patients with low albumin are at an increased risk of bleeding due to higher than usual exposure to circulating active drug.[7]
❒ Difficulty swallowing	▮ Dabigatran must be swallowed whole; crushing results in excessive absorption and toxicity.[7] Deprescribe if patient cannot swallow intact tablets.
❒ Increase in pill burden and frequent monitoring	▮ Antiplatelet and anticoagulant medications contribute to polypharmacy and pill burden. ▮ Warfarin requires routine PT/INR testing. Patients may wish to avoid finger sticks or blood draws. If routine bloodwork or INR testing is refused by patient/family, discontinue warfarin.[7]
❒ Continued use is outside the goals of care	▮ Continuing medications that are not relieving any symptoms (i.e. not palliative), may be outside the goals of care (exception may be treatment of DVT).

Patient & Caregiver Talking Points

The BUILD Model provides a structured process to discuss deprescribing with patients, family, and caregivers.[9] The basics of the BUILD mnemonic and sample conversational phrases for family and caregiver discussions are below.

BUILD	UNDERSTAND	INFORM	LISTEN	DEVELOP
A foundation of trust and respect	What the family knows about the device	The family about clinical evidence	To the family's goals and expectations	A plan of care in collaboration with family

▮ Acknowledge that patient and family concern about medication changes, especially stopping medications is common response.

▮ Provide reassurance that all medication changes are made in consultation with the patient's doctors. The decision to stop antiplatelet and anticoagulant medications is always an individualized approach.

▮ Ask the patient and family questions to bring them into the shared decision-making process. Use open ended questions that lead into conversations about stopping medications.

— "Do you know why you are taking this medication? Is it hard to take all these pills every day? Do you ever feel worse after taking this pill? Have you noticed your wife is eating less than she used to? Have you felt unsteady when walking lately? Are you worried about your mom falling? What are your goals now that your dad is on hospice?"

▮ Explain that as patients age or diseases progress, certain medications that were once helpful can become harmful. The hospice team's role is to enhance comfort and quality of life by providing effective and safe medications, treating physical and emotional symptoms, and minimizing adverse events.

— "Dr. Jones would like to discuss stopping your wife's warfarin. Since you shared that she is no longer eating much and has fallen a few times over the past month, he is concerned the medication is no longer safe for her to take. The risk of her developing a bleed in her brain or stomach is greater than the risk of her having a stroke over that same time frame.

▮ Remind the patient and family that the hospice team will regularly reassess the patient's condition and medications

— If the patient has a relatively good prognosis, has a symptomatic DVT or is at high risk for thromboembolism, is still ambulatory, adherent to their prescribed medication regimen, and at low risk for bleeding, the patient may benefit from continued anticoagulation. Reassess at each visit, change in condition, or change in location of care to determine continued need for the medication.

— For some patients following ischemic stroke, MI, stents, or other cardiovascular event, the risk of a second event may outweigh the risk of a GI bleed, indicating that continuing the medication is reasonable.

▮ Sometimes changing to an alternative, potentially safer medication is an option to meet the patient and family halfway

— For example, aspirin seems to be similar in effectiveness to clopidogrel for patients with a history of cardiovascular or stroke; for patients wanting to continue some antiplatelet therapy, a change to aspirin can be considered. DAPT does not have significant benefit over aspirin alone for secondary prevention of MI or stroke.[6]

How to Deprescribe

▮ Once the decision has been made to discontinue antiplatelet or anticoagulant medications, they may be stopped without a taper.

▮ If family or patient is hesitant to discontinue, consider a trial discontinuation for a limited period of time (e.g., 2 weeks or 1 month) and offer to re-evaluate once that trial is completed. Often, the family or patient needs this time as an "adjustment period" to accept the possibility of discontinuation, understand the medication is not helping, and realize that continuation is not necessary.

References & Additional Resources

Additional Resources

▮ Primary Health Tasmania. A guide to deprescribing aspirin. May 2019. https://www.primaryhealthtas.com.au/wp-content/uploads/2018/09/A-Guide-to-Deprescribing-Aspirin-2019.pdf

References

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The Process of Deprescribing

- It's as easy as: "123-ABC"

1. **Purpose** of each medication
2. How is the patient **using** medication
3. **"How's that working for you?"**

A. Adverse effects
B. Benefits/burdens of drug therapy
C. Conversations

Lynn McPherson

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LR's Medication List

94 year old man with end-stage COPD recently admitted to hospice. McPherson Method GPGP

1. Coenzyme Q-10 Supplement, 1 capsule PO daily
2. PreserVision AREDS2, 1 tablet PO daily
3. Azithromycin 200mg/5mL, 6 mL PO daily on M/W/F
4. Levothyroxine 75mcg, 1tab PO daily in the morning — Medstopper
5. Ramipril 10mg, 1 capsule by mouth daily in the morning — LESS-CHRON, Medstopper
6. Omeprazole DR 20mg, 1 capsule PO daily in the morning — Deprescribing.org, Medstopper
7. Furosemide 20mg, 1 tablet PO daily in the morning — Medstopper
8. Famotidine 20mg, 1 tablet PO twice daily — Medstopper
9. Rosuvastatin 20mg, 1 tablet PO daily with dinner — LESS-CHRON, Deprescribing.org, Medstopper
10. Finasteride 5mg, 1 tablet PO daily with dinner — Medstopper, LESS-CHRON
11. Amlodipine 5mg, Take 1 tablet PO with dinner — LESS-CHRON, Medstopper
12. Warfarin 3mg, Take 1 tablet PO daily — NHPCO Toolkit, LESS-CHRON, Medstopper
13. Duoneb, Inhale 3 mL vial nebulizer 4 times per day as needed
14. Oxybutynin ER 10mg, Take 1 tablet PO daily — NSW TAG, LESS-CHRON, Medstopper

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Summary Points

1. There are several different deprescribing tools that can support evidence based deprescribing
2. Beer's lists and START/STOPP criteria represent **explicit** tools whereas the Garfinkel Good Palliative-Geriatric Practice algorithm and McPherson Method represent an **implicit** approach
3. Deprescribing.org or NHPCO's Deprescribing toolkit can be useful resources when a specific class or medication is identified for deprescribing

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Metabolic Syndrome

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Metabolic Syndrome?

- A cluster of risk factors that raise the risk of heart disease, diabetes, stroke, and other health problems
- According to the American Heart Association, about 1/3 of all adults have metabolic syndrome

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Diagnosed with 3 of 5 Risk Factors

- National Cholesterol Education Program Adult Treatment Panel (NCEP ATP) III
- Metabolic syndrome is defined as:
  - Central obesity (defined by waist circumference)
  - Plus 2 of the following 4 factors:
    - Increased triglycerides, or treatment thereof
    - Reduced HDL cholesterol, or treatment thereof
    - Increased blood pressure or treatment thereof
    - Raised fasting plasma glucose or previously diagnosed diabetes

Circulation 2004;109:433-438.

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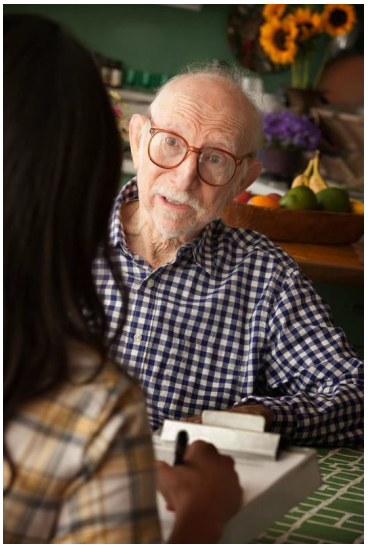
Mr. Herndon



- 76-year-old man admitted to hospice with stage 4 non-small cell lung cancer
- Prognosis is 4-6 weeks according to his oncologist
- He has comorbid conditions of:
  - Type 2 diabetes mellitus
  - Hypertension
  - Chronic kidney disease stage 4
  - Dyslipidemia
  - 80 pack-year history of smoking; stopped 1 year ago when diagnosed with lung CA

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Medication History

Medication	Directions for Use/Indication	Date Started
Atorvastatin 40 mg (Lipitor)	Once a day for dyslipidemia	2010
Metformin ER 1,000 mg	2 tablets diabetes for T2DM	2009
Lantus insulin	20 units at bedtime daily for T2DM	2014
NovoLog insulin	Sliding scale 4 times daily for T2DM	2019
Lisinopril 10 mg	Once daily for hypertension	2015
Amlodipine 5 mg	Once daily for hypertension	2016
Multivitamin with iron	Once daily for general health	2000
Acetaminophen XR 650 mg	2 capsules every 8 hours for pain	2020
MS Contin 30 mg	Every 12 hours for pain	2021
Roxanol 10 mg	Every 2 hours as needed for pain	2021
Senna	2 tablets daily	2021

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Mr. Herndon

- 5’10”
- Weighs 165 pounds at present (lost 100 pounds since diagnosis)
- Waist circumference 34
- Rarely, if ever, uses sliding scale NovoLog insulin
- Complaints of hypoglycemia symptoms occasionally
- Last A1c 6.9% six months ago
- BP about 120/70 seated, gets “woozy” when he stands

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Mr. Herndon

- When you suggest slimming down his medication regimen, he gets VERY upset and cries:

"WHAT? My heart doctor and regular doctor said I had to stay on these medications 'til the day I die! Are you saying I'm going to die tomorrow? You young whipper-snappers always want to upset the apple cart!"

- So, young whipper-snapper, how do you respond?

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Multivitamin with Iron

- If Mr. Herndon feels strongly about keeping this medication, that's fine
- The iron and vitamins/minerals are probably increasing his risk of constipation and may cause a little nausea
- The iron may also turn his stools dark, making it hard for us to determine if he's bleeding internally, but that's unlikely
- Let's throw him a bone with the MVI!

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Analgesics and Laxative

- Once someone is taking 60-70 mg a day of oral morphine, they can't tell the difference with or without acetaminophen
  - Patient's wishes? Liver disease? Alcoholism?
- Is morphine controlling the pain?
- Is Senna maintaining normal bowel function?

Image from pixabay.com

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Words of the day…

TIME TO BENEFIT!

- "Time to benefit" is defined as the time to significant benefit observed in trials of people treated with a drug compared with controls

LEGACY EFFECT!

- "Legacy effects" are treatment effects that persist or emerge at some time after trial treatment ends.

Nayak A, et. al. BMJ Open. 2018; UpToDate 2022
Image purchased from canstockphoto

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Hypertension – the "silent killer"

- So what's a goal BP? Well…..
  - ACC/AHA 2017 guidelines say < 130/80 mmHg
    - Including > 65 yo who are ambulatory and community-dwelling
  - European Soc of Cardiology and UK NICE guidelines say < 140/90 mmHg
  - UK/NICE guidelines recommend < 150/90 mmHg for fit patients ≥ 80 yo
  - ACP/AAFP recommend SBP < 150 mmHg for adults > 60 yo (or < 140 mmHg with h/o CVA/CV risk)
- Time to benefit ranges from 2-5 years
- Legacy effect – 37% of patients remain normotensive 6 months after withdrawing therapy; effect persists in 26% of patients at 2 years
  - BP trajectories in the last 14 years of life continually decline regardless of treatment

- Orthostasis
- Hypotension
- Syncope
- Falls

J Hyperten 2017;35(9):1742-1749; JAMA Intern med 2018;178(1):93-99.

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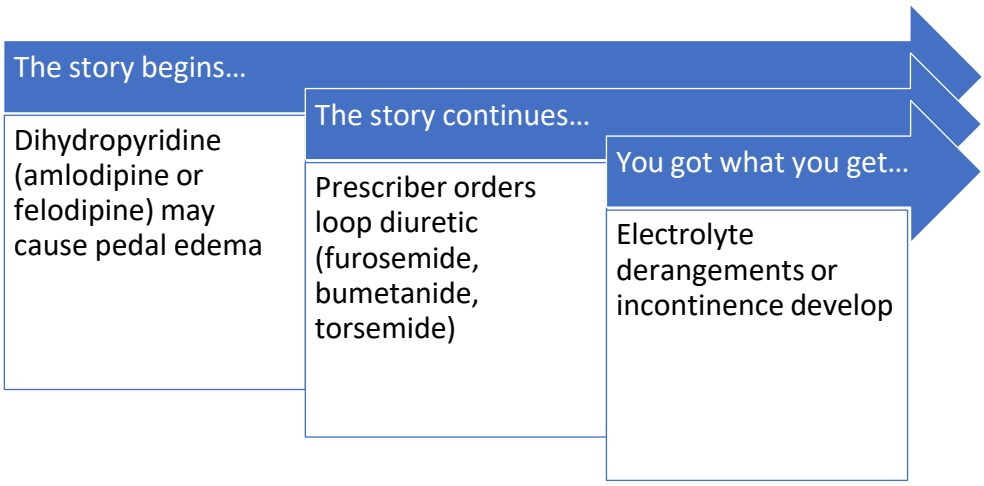
Be careful of prescribing cascades



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And the guidelines say…

Group	Recommendation
AGS/Beers Criteria	• Recommend against use of alpha-1 blockers (doxazosin, prazosin, terazosin) • Centrally acting alpha-agonists (guanfacine, methyldopa) should be avoided • Clonidine should be avoided • Avoid immediate-release nifedipine

European Consensus	• Adults ≥ 75 yo with anticipated life expectancy ≤ 3 mo
	  • Diuretics of questionable value (excluding torsemide and furosemide)
	  • Inappropriate to initiative ACEi, ARB, peripheral vasodilator, verapamil
	  • Questionable value to continuing alpha-agonist, ACEi, ARB, CCB, non-selective BB, diuretic (except loop diuretics and spironolactone)
	  • Inappropriate to continue peripheral vasodilator
	  • No consensus re: continuing loop diuretics, spironolactone, selective BB, carvedilol, labetalol

STOPPFrail	• Recommended to carefully reduce or discontinue antihypertensive therapies with SBP persistently < 130 mmHg
Choosing Wisely/AMDA	• Do not initiate antihypertensive therapy in patients ≥ 60 for SBP < 150 mmHg or DBP < 90 mmHg

Age Ageing 2020;1-7; Choosing Wisely AMDA; JAGS 2019;67(4):674-694; Eur J Clin Pharmacol 2018;74(10):1333-1342

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Pulling the trigger…

- Evaluate co-morbid conditions
  - Atrial fibrillation – beta blocker or nondihydropyridine may be beneficial for both
  - Heart failure – ACEi or loop diuretic may be beneficial for both
- Gradually withdraw beta-blockers and centrally-acting alpha-agonists
- Monitor for withdrawal effects
  - Beta-blockers – angina, anxiety, MI, palpitations
  - Centrally acting alpha-agonists – agitation, headache, palpitations
  - BP – target , 150/90 mmHg, but symptoms unlikely with BP < 180/110 mmHg (risk for target organ damage)

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Antihypertensives

- "HELLO" – Mr. Herndon is experiencing side effects from his antihypertensive regimen right NOW!
- His BP is low-normal and he is complaining of orthostasis
- Minimally we should stop one (lisinopril or amlodipine) now
- He's lost 100 pounds, so his BP has naturally declined
- Let's stop the amlodipine and re-evaluate
- Chances are good we can reduce the lisinopril to 5 mg for a few days, then stop that as well
- Reassure the patient……

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Image from pixabay.com

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Dyslipidemia

- Increases risk for ASCVD → cardiovascular events, cerebrovascular events, peripheral vascular disease
- Statin therapy/other medications can slow or prevent atherosclerotic disease by reducing progression or formation of atherosclerotic lesions in artery walls
- Goal of therapy is to prevent morbidity/mortality associated with ASCVD
  - MI, ischemic stroke, angina, need for revascularization procedures, peripheral artery disease, arrhythmias, heart failure, sudden death
- Time to benefit – one year or longer (much shorter following an acute coronary event)
  - Usually 2-5 years for MI protection; 2 years to impact all-cause mortality; 4-5 years for CVA/TIA protection
- A recent meta-analysis showed a legacy effect on all-cause mortality and CVD mortality in those taking a statin for **primary prevention**.

Nayak A, et. al. BMJ Open. 2018.

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Atorvastatin

- Kutner, et al. evaluated 381 patients within 1 year of death, taking a statin
  - Randomized to continue or stop statin therapy
  - Primary outcome – rate of death at 60 days
  - No statistically significant difference

Discontinued Statin	20.3% died by 60 days	Median time to death 229 days
Continued Statin	23.8% died by 60 days	Median time to death 190 days

8 years AFTER study completed evaluating atorvastatin impact, patients who HAD been taking atorvastatin had fewer deaths from CV and non-CV disease!

Sever, Dahlöf, Poulter, et al. *Lancet*. 2003;361(9364):1149-1158. doi:10.1016/S0140-6736(03)12948-0.
Kutner J, et al. JAMA Int Med 2015;175(5):691-700.

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Guidelines say what…

Organization	Recommendation
STOPP/START Criteria	• No recommendation for primary prevention • START statin for patients with h/o coronary, cerebral or PVD, unless patient's status is EOL and age is > 85 yo
STOPPFrail	• Risks > benefits for patients with life-expectancy < 1 year • No differentiation between primary and secondary prevention
ACC/AHA 2018 Cholesterol Guidelines	• Primary prevention in patients > 75 yo WITH diabetes – may be reasonable to continue statin • Primary prevention in patients > 75 yo WITHOUT diabetes and LDL-C ≥ 70 mg/dl, may be reasonable to start statin therapy • In patients > 75 yo may be reasonable to stop statin with functional decline, multimorbidity, frailty, reduced life expectancy
Nat'l Lipid Association	• Patients 65-79 yo who are statin eligible should be managed similarly to younger patients • Older patients – have discussion with provider re: primary prevention • For patients 65-80 yo with clinical ASCVD or diabetes, consider statin (evaluate risk/benefit) • For patients ≥ 80 yo statins for secondary prevention should be considered after discussion with provider

J Am Coll Cardiol 2019;73(24):e285-e350; J Clin Lipiol 2015;9(65):S1-S122; Age Ageing 2015;44:213-218; Age and Ageing 2017;46:600-607.

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Bring it on home…

- Primary prevention
  - Conflicting information for patients ≥ 75 yo
  - Generally speaking, ok to discontinue lipid-lowering therapy in patients with life expectancy < 1-2 years
- Secondary prevention
  - Evidence supports time to benefit is earlier in lipid-lowering therapy
  - Continue statin therapy if recent acute coronary syndrome, recent stroke or TIA, or if patient has unstable, symptomatic disease (e.g., recurrent angina)
- Statins/lipid-lowering therapies may be stopped abruptly!

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Statin Chat…

- "Mr. Herndon, kudos to you for taking atorvastatin all these years.
- Clearly, it's been providing you benefit because you've not had a heart attack or stroke.
- But the good news is that research has shown that the benefit you accrued from taking atorvastatin all those years was like putting money in the bank, and even if we discontinue the atorvastatin now, you will continue to reap the benefits.
- Research has further shown there is not an increased risk of a heart attack or stroke for people clinically similar to you.
- While statins do not cause major side effects, it would be one less tablet you have to take, and you'd have less risk of side effects such as muscle weakness."

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Go get the donuts and sweet tea!

- Prevalence of diabetes mellitus
  - 2019 – 37.3 million Americans (11.3% of population)
  - Of these, 28.7 million were diagnosed, 8.5 million were undiagnosed
- Prevalence in seniors
  - The percentage of Americans aged 65 and older remains high, at 29.2%, or 15.9 million seniors (diagnosed and undiagnosed)

Image from pixabay.com

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Image from pixabay.com

DCCT Trial – Early 1990s

- Patients with T1DM divided into 2 groups – tight BG control and usual BG control
  - Half had no complications of DM; half had early complications
- Those who achieved tight BG control had a 40%-60% reduction in development of complications; and those with complications had much slower progression.
- Fast forward to 17 years after STARTING the DCCT trial
  - Those who had been in the tight glycemic arm had:
    - 42% risk reduction in any cardiovascular event
    - 57% risk reduction in risk of nonfatal MI, stroke, or death from CV disease

Mazze, Bergenstal, Ginsberg. *Int J Clin Pharmacol Ther*. 1995;33(1):43-51.

57

American Diabetes Association

- Healthy (few coexisting chronic illnesses, intact cognitive and functional status)
  - A1c <7.0-7.5%; FBG 80-130 mg/dl
- Complex/intermediate (multiple coexisting chronic illnesses or 2+ instrumental ADL impairments or mild-to-moderate cognitive impairment)
  - A1c < 8.0%; FBG 90-150 mg/dl
- Very complex/poor health (LTC or end-stage chronic illnesses, or moderate-to-severe cognitive impairment or 2+ ADL impairments)
  - Avoid reliance on A1c; base decisions on avoiding hypoglycemia and symptomatic hyperglycemia
  - FBG 100-180 mg/dl

Diabetes Care 2022;45(Supplement 1):S195-S207.

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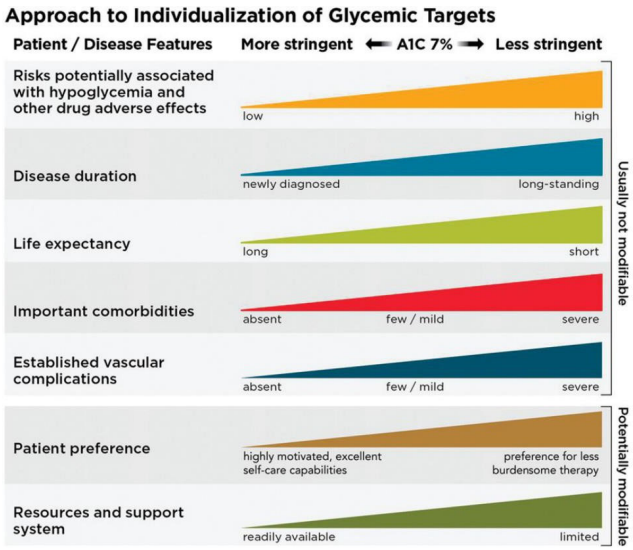

Figure 6.2—Patient and disease factors used to determine optimal glycemic targets. Characteristics and predicaments toward the left justify more stringent efforts to lower A1C; those toward the right suggest less stringent efforts. A1C 7% = 53 mmol/mol. Adapted with permission from Inzucchi et al. (68).

American Diabetes Association; Diabetes Care 2022; 45(Supplement 1):S83-S96.

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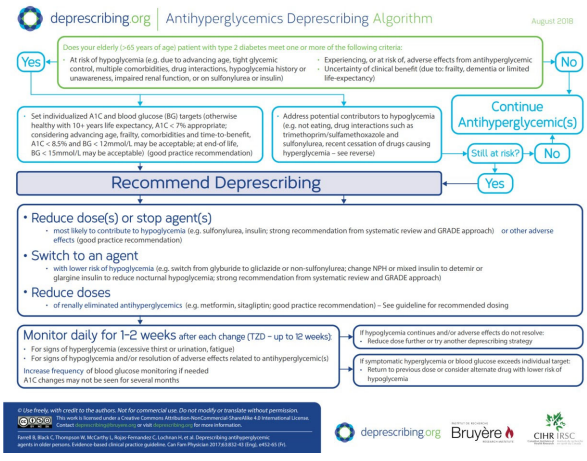
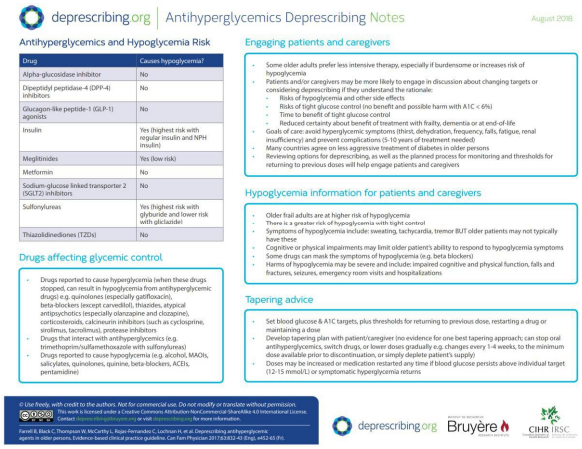
Deprescribing.org





60

Antihyperglycemics

Mr. Herndon has had diabetes for many years and is on:	Metformin	NovoLog sliding scale insulin	Lantus? First…
• Metformin XR 1000 mg, 2 tablets per day • Lantus insulin 20 units at bedtime • NovoLog insulin sliding scale 4 times daily	• Patient has chronic kidney disease, stage 4, CLcr 15-30 ml/min; contraindicated	• Not requiring; increases risk of hypoglycemia	• Let's consider what we know about diabetes and glucose control first before we address the Lantus

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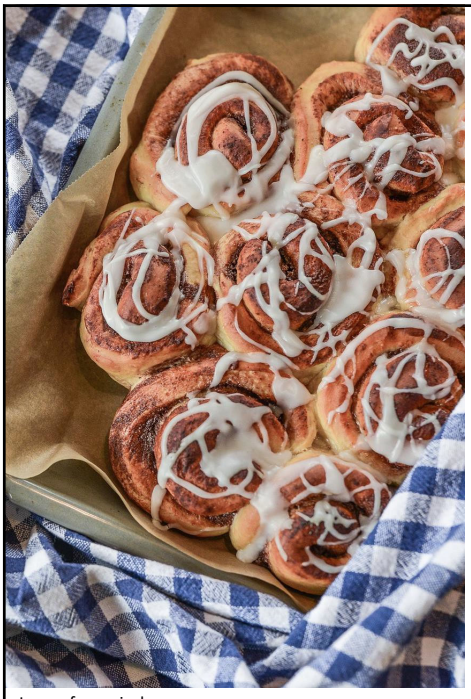

Image from pixabay.com

What does this mean for Mr. Herndon?

- All those years he watched his diet, took his medications, monitored his BG – it was like putting money in the bank!
- Now we can loosen the reins a bit and he can "draw his dividends," secure in the knowledge that his risk of diabetes-related complications is extremely low
- We will monitor him for symptoms suggestive of hyperglycemia

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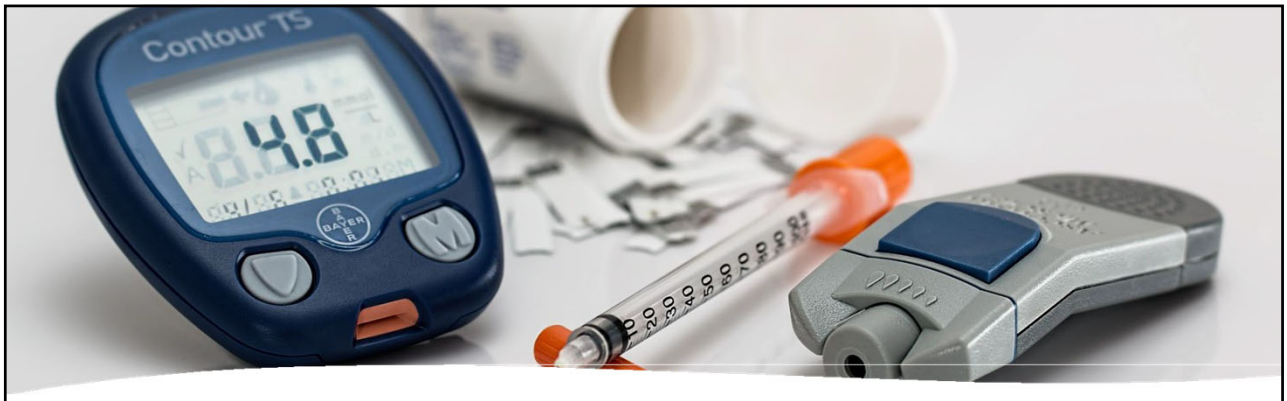

So, what about the Lantus?

- Let's stop the metformin and NovoLog insulin now
- Let's check the fasting BG 3 times in the next week
- Even if his BG is up to 200 mg/dl, it's probably ok
- We may be able to reduce the Lantus, or even stop it at some point
- STOP checking his BG 4 times a day – that's NOT very palliative!

Image from pixabay.com

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Diabetes Convo…

- "Mr. Herndon, you deserve an ENORMOUS amount of credit for following your diet and your diabetes medication regimen for all these years.
- And like the statins, research has shown that tighter blood glucose control starting at the time of diabetes diagnosis leads to an accrued benefit in reduction of complications later in life.
- You're not even using the NovoLog insulin because your blood glucose isn't getting high enough to warrant it.
- You've lost a lot of weight and you're not eating like you used to.

Image from pixabay.com

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Diabetes Convo…

- "Given your kidney disease, we really should stop the metformin so you won't have any side effects.
- Let's stop the metformin and the NovoLog insulin.
- Let's follow your blood glucose over the next week or so and make a decision about whether or not to continue the Lantus at your current dose, or to reduce it.
- In the meantime, we can liberalize your meal plan, and stop checking your blood glucose so frequently, you've earned it!"

Image from pixabay.com

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Mr. Herndon

A. Sir, you are a few weeks away from death; does it really matter what your cholesterol, blood pressure, and blood glucose are?

B. You aren't dying TODAY but within a month or so, and it's really unlikely you'll have a heart attack or stroke, so I feel lucky!

C. Clearly you aren't dying today, but all medications have risks and benefits, and no medication is meant to be continued FOREVER (and you start humming "Let It Go" under your breath)

D. We'll take a look at each of your medications, and you and I and your family will discuss this with your doctor and make decisions that give you the most benefit from your medications and cause the least harm. Sound good?

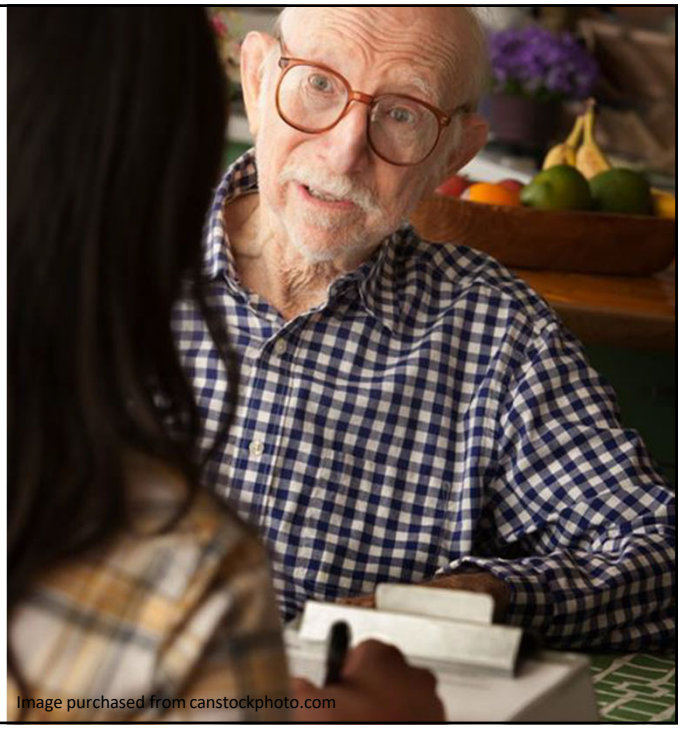

Image purchased from canstockphoto.com

66

Alzheimer's Disease

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Alzheimer's Disease

- Most common cause of dementia (60-70% of 50 million affected worldwide)
- Relentlessly progressive neurodegenerative disease; average age > 75 years old
- Worsening memory; declines in language, visuospatial, and executive functioning
- Behavioral and psychological symptoms (depression, anxiety, agitation, psychosis, wandering)
- Survival after diagnosis is approximately 4-8 years on average
- Goals of care – slow functional and cognitive decline; maximize symptom control and QOL

WHO 2020l Dementia Facts; Continuum 2019;25(1):14-33
Alzheimers Dement 2016;12(3):216-224; Alzheimers Dement 2011;7(5):532-539

68

Treatment of Alzheimer's Disease

- **Non-pharmacologic**
  - Physical activity
  - Cognitive training/rehabilitation
- **Management of co-morbid conditions**

5	3			7				
6			1	9	5			
	9	8					6	
8				6				3
4			8		3			1
7				2				6
	6					2	8	
			4	1	9			5
				8			7	9

- **Cholinesterase Inhibitors**
  - Donepezil (Aricept)
  - Rivastigmine (Exelon)
  - Galantamine (Razadyne)
- **NMDA Antagonist**
  - Memantine (Namenda)
- **Combination**
  - Donepezil/memantine (Namzaric)
- **Aducanumab (Aduhelm)**

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The Case of Miss Judy

Judy is a 78-year-old female

- **CC:** Repeated falls in the past 3 months
- **PMH:** Breast cancer, hypertension, dyslipidemia, nonvalvular atrial fibrillation (no h/o CVA), Alzheimer's disease (FAST 7C - > 10% weight loss, recent UTI)
- Lives with daughter, Laura, in Maryland
- Son, Frederick, is a lawyer who lives in California

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The Case of Miss Judy

Judy is a 78-year-old female

Current Medication Regimen

- Donepezil (Aricept®)
- Memantine (Namenda®)
- Lisinopril
- Atorvastatin (Lipitor®)
- Warfarin
- MVI
- Ferrex
- Calcium and vitamin D3

- When you suggest slimming down on the medications, Laura is agreeable.
- Frederick, on the other hand, goes ballistic and angrily says, **"What's WRONG with you people – are you TRYING to kill her off?"**
- So…..any issues here?

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"Cognitive Enhancers"

Drug Category	Drug Name(s)	Indication(s)
Cholinesterase Inhibitors ($10-100/month)	Donepezil	Treatment of dementia of the Alzheimer's type. Efficacy has been demonstrated in patients with mild, moderate and severe Alzheimer's dementia.
	Galantamine	Treatment of mild and moderate dementia of the Alzheimer's type.
	Rivastigmine	Treatment of mild, moderate and severe dementia of the Alzheimer's type. Treatment of mild to moderate dementia associated with Parkinson's disease.
NMDA Antagonist ($15/month)	Memantine	Treatment of moderate to severe dementia of the Alzheimer's type.

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FAST Criteria

1. Normal adult
2. Normal older adult
3. Early dementia
4. Mild dementia
5. Moderate dementia
6. Moderately severe dementia
7. Severe dementia

- 7a. Ability to speak limited to approximately a half dozen different words or fewer, in the course of an average day or in the course of an intensive interview.
- 7b. Speech ability limited to the use of a single intelligent word in an average day or in the course of an interview (the person may repeat the word over and over).
- 7c. Ambulatory ability lost (cannot walk without personal assistance)
- 7d. Ability to sit up without assistance lost (e.g., the individual will fall over if there are no lateral rests [arms] on the chair)
- 7e. Loss of the ability to smile

avalonmemorycare.com/the-seven-stages-of-dementia-understanding-the-fast-scale/.

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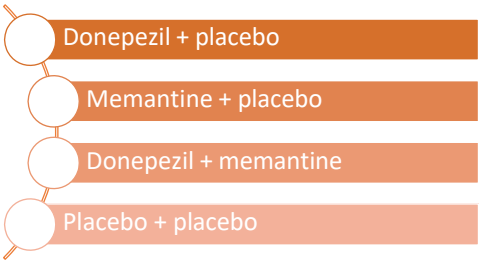
Donepezil and Memantine for Moderate-to-Severe AD

- 295 community-dwelling moderate-to-severe AD patients treated with donepezil for at least 3 months (MMSE 5-13); 52 weeks
- Stratified by
  - Study center
  - Duration of donepezil treatment before entry (3-6 mo vs ≥ 6 mo)
  - Baseline MMSE (5-9 vs 10-13)
  - Age (< 60; 60-74; ≥75)



Howard, McShane, Lindesay, et al. *N Engl J Med*. 2012;366(10):893-903.

74

Donepezil and Memantine for Moderate-to-Severe AD

- Outcomes:
  - Score on MMSE - Clinically important difference:
    - **Scoring 1.4 points or greater higher than comparator**
  - Caregiver-rated Bristol activities of Daily Living Scale (BADLS): Clinically important difference:
    - **Scoring 3.5 points or greater lower than comparator**
- Baseline MMSE 9.1-9.2 in all groups
- Baseline BADLS 26.9-28.6

Howard, McShane, Lindesay, et al. *N Engl J Med*. 2012;366(10):893-903.

75

Donepezil and Memantine for Moderate-to-Severe AD

- Clinically important difference:
  - MMSE ≥ 1.4 point increase or greater
  - BADLS ≥ 3.5 point decrease or greater

Treatment group	MMSE	BADLS
All donepezil vs no donepezil	**+1.9**	-3.0
All memantine vs no memantine	+1.2	-1.5

- Effect of donepezil and memantine did not differ significantly in the presence or absence of either
- Donepezil plus memantine showed no difference vs donepezil alone

Howard, McShane, Lindesay, et al. *N Engl J Med*. 2012;366(10):893-903.

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Donepezil and Memantine for Moderate-to-Severe AD

Baseline MMSE	Impact of donepezil therapy on MMSE
MMSE 10-13	**+2.6**
MMSE 5-9	+1.3

Donepezil only showed clinical significance in patients with baseline MMSE ≥ 10

Howard, McShane, Lindesay, et al. *N Engl J Med*. 2012;366(10):893-903.

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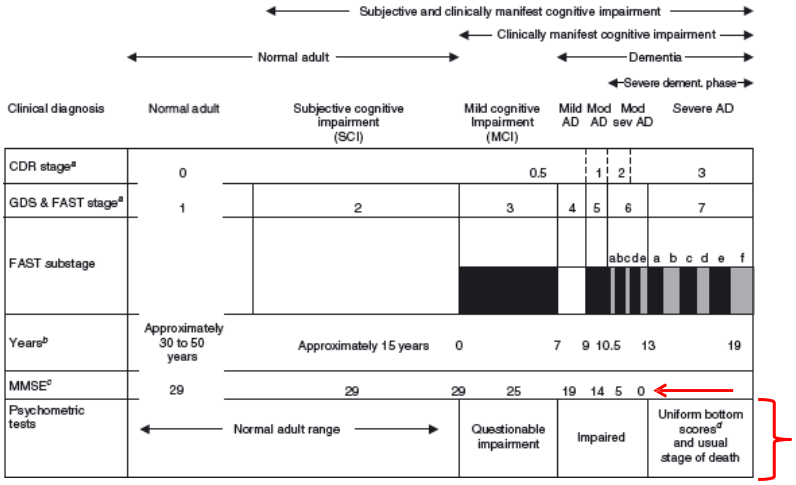
FAST and MMSE



Reisberg. *Prin Prac Ger* Psy, 3rd ed. Used with permission, John Wiley and Sons.

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Adverse Effects

- Memantine
  - Dizziness, headache, confusion, constipation
- ChEIs
  - Nausea, vomiting, diarrhea, anorexia, insomnia, fatigue, muscle cramps
  - Warning: "Cholinesterase inhibitors may have vagotonic effects on the sinoatrial and atrioventricular nodes manifesting as bradycardia or heart block"

Outcome Measure	ChEI recipients	Controls
Hospital visits for syncope	31.5/1000 person-years (HR 1.76)	18.6/1000 person-years
Hospital visits for bradycardia	6.9/1000 person years (HR 1.69)	4.4/1000 person-years
Permanent pacemaker insertion	4.7/1000 person-years (HR 1.49)	3.3/1000 person-years
Hip fracture	22/4.1000 person-years (HR 1.18)	19.8/1000 person-years

Prescribing information; Arch Intern Med 2009;169(9):867-873

79

Bottom Line: Dementia Drugs

- Dementia medications are LESS HELPFUL and MORE HARMFUL in advanced disease (see adverse effects)
- NOT indicated or provided with FAST 7 without clear and ongoing benefit in managing identifiable and distressing behaviors
- MAY be covered with FAST 6; discuss goals/outcomes with hospice team leadership
- 2 week tapering supply should be provided if medication discontinued

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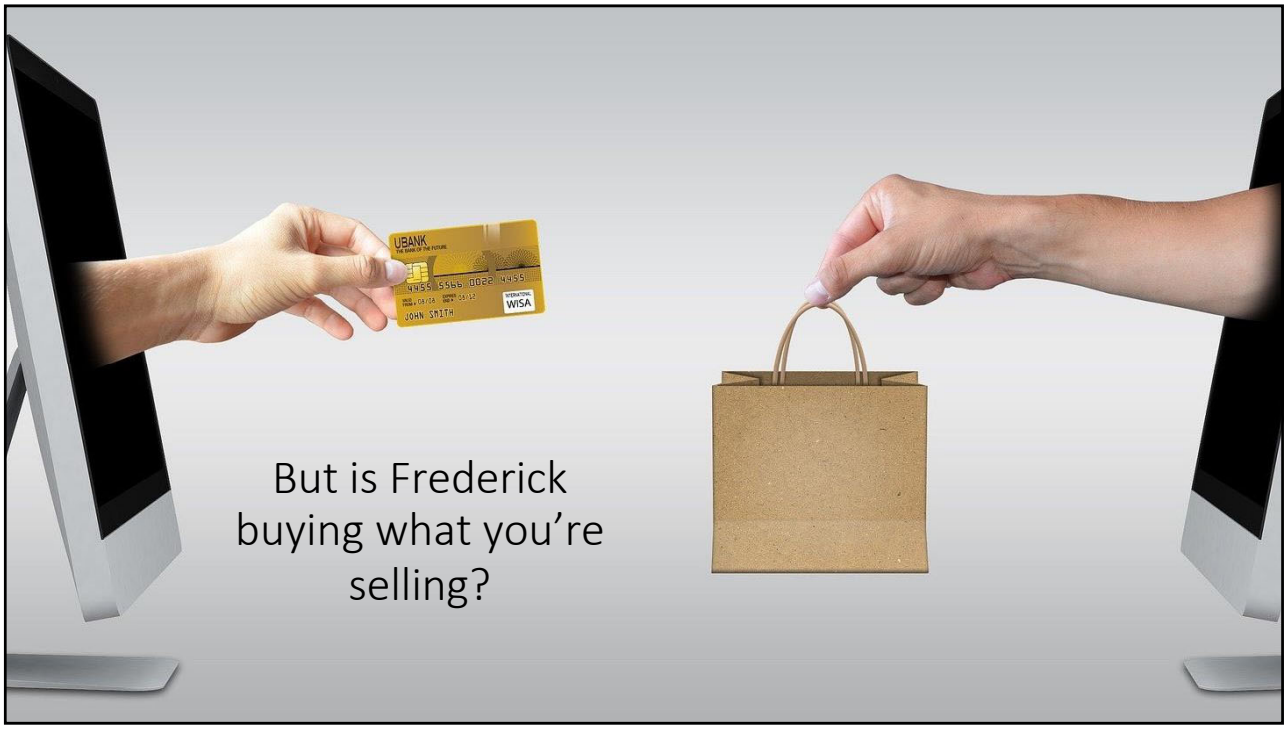

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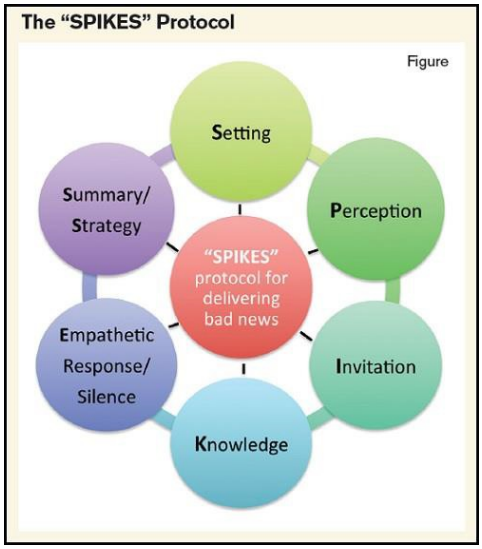
SPIKES – Having those Conversations

- S – setting
- P – perception
- I – invitation
- K – knowledge
- E – emotion
- S – summarize recommendation

Slide from McPherson, Walker, Pruskowski, Talebreza. "Right Sizing Medication Regimens in Serious Illness: Doing the Prescribing and Deprescribing Dance"



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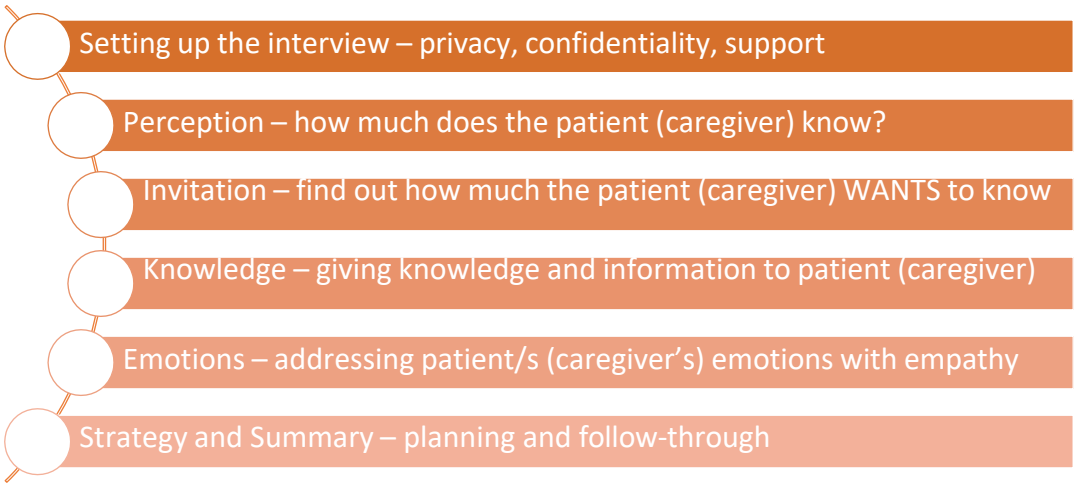
Having the Conversation: Breaking "Bad" News: SPIKES



www.cetl.org.uk/learning/feedback_opportunities/data/downloads/breaking_bad_news.pdf.

83

Guideline Consensus

Guideline	Opinion
Beers List	ChEIs cause bradycardia; avoid in older adults with syncope due to bradycardia
STOPPFrail*	ChEIs – no consensus Memantine – recommended to discontinue with moderate to severe dementia, unless clearly shows improvement of BPSD
European Consensus 2018	Prognosis ≤ 3 months – use of drugs for AD "inadequate"; "special circumstances" may warrant consideration
Australian Guidelines	Recommend a trial of discontinuation of ChEIs and memantine if receiving ≥ 12 months and have worsening of disease, or no benefit noted, or have end-stage disease. Can resume if behavior worsens with discontinuation
Deprescribing.org	Trial discontinuation if taking > 12 months and significant cognitive/functional decline over past 6 months, or no benefit seen, or severe disease
Choosing Wisely/AGS	ChEIs – long term use > 1 year not studied sufficiently; if improvement not seen within 12 weeks, consider discontinuing

* - STOPPFrail criteria include end-stage irreversible pathology, poor 1 year survival prognosis, severe functional or cognitive impairment, symptom control is priority)

JAGS 2019;67(4):674-694; Age Ageing 2017;46(4):600-607; Eur J Clin Pharmacol 2018;74:1333-1342
Deprescribing.org; AAFG online

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Deprescribing Cholinesterase Inhibitors/Memantine

- Developing organizations:
  - The University of Sydney
  - NHMPRC Partnership Centre: Dealing with Cognitive and Related Functional Decline in Older People (Cognitive Decline Partnership Centre)
  - Bruyere Research Institute, Deprescribing Guidelines in the Elderly Project
- sydney.edu.au/medicine/cdpc/resources/deprescribing-guidelines.php
- EBR – evidence-based recommendations
- CBR – consensus-based recommendations
- PP – practice points

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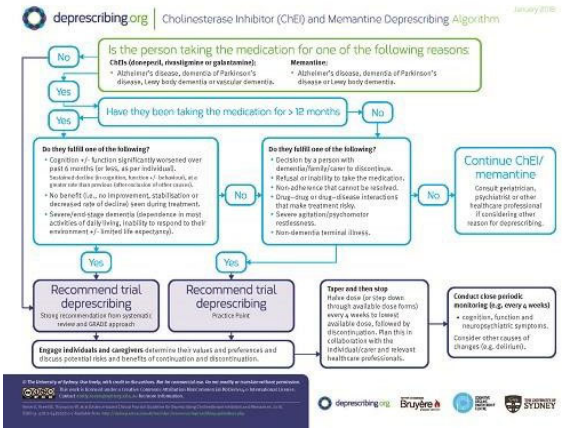
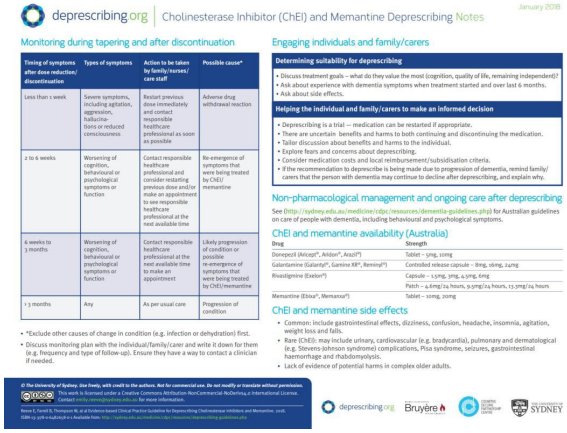




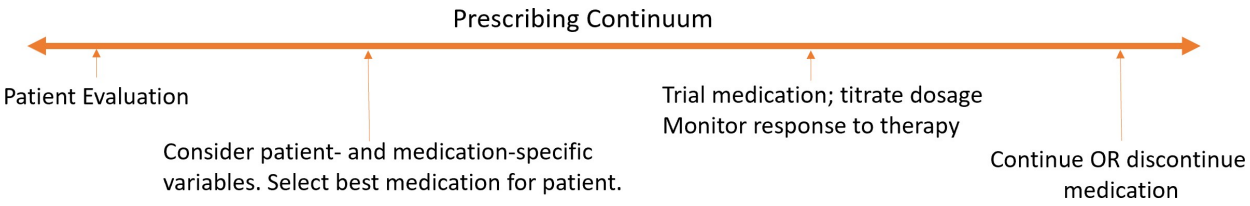
Proton pump inhibitors; antihyperglycemics; antipsychotics; benzodiazepine receptor antagonists

Deprescribing.org; specifically: cdpc.sydney.edu.au/wp-content/uploads/2019/06/algorithm-for-deprescribing.pdf.

86

Conclusion

- Deprescribing is part of the prescribing continuum



- Practitioners must weigh the benefits and burdens of drug therapy in all patients, but especially in advanced or serious illness
- Conversations with patients, families and other healthcare providers are VERY important

87

Anticoagulation

88

Why do we anticoagulate hospice patients?

- *Venous thromboembolism*
- *Atrial fibrillation*
- Acute coronary syndrome / percutaneous coronary intervention
- Atherosclerotic cardiovascular disease
- Valvular heart disease

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What are these anticoagulants/antiplatelets of which you speak?

Pharmacologic Category	Examples
Vitamin K antagonists	Warfarin (Coumadin, Jantoven)
Direct acting oral anticoagulants (DOACs) Direct thrombin inhibitor Factor Xa inhibitors	Dagibatran (Pradaxa) Apixaban (Eliquis) Edoxaban (Savaysa) Rivaroxaban (Xarelto)
Other anticoagulants	Heparin (IV and SQ) Low molecular weight heparins (e.g., daltaparin, enoxaparin, etc.) Fondaparinux (Arixtra)
Antiplatelets Aspirin P2Y12 inhibitors Other	Aspirin; aspirin + dipyridamole Clopidogrel (Plavix), prasugrel (Effient), ticagrelor (Brilinta) Cilostazol, dipyridamole, vorapaxar (cangrelor, eptifibatide, tirofiban)

90

How common is antithrombotic use at the end of life?

- Antithrombotics are frequently prescribed for patients with limited life expectancy
- Chart review of 180 patients who died of malignant or non-malignant disease in the Netherlands
  - At home, in hospice, or hospital; reviewed last three months of life
- 108/180 (60%) of patients had used antithrombotics in the last three months of life
  - 33% died at home; 21.3% died in a hospice; 45.4% died in a hospital
- 157 antithrombotic prescriptions among the 108 patients
  - 30/157 warfarin; 60/157 heparin; 66/157 platelet aggregation inhibitors
  - Of 51 patients using heparins, 32 only received a prophylactic dose
  - 75.9% of antithrombotics were continued until the last week before death

Huisman et al. BMC Palliative Care 2021;20:110.

91

Venous Thromboembolism

- VTE – deep vein thrombosis (DVT) and pulmonary embolus (PE) – occurs in 1 in 1,000 adults
- Increases with age, reduced mobility and concurrent chronic illness including cancer
- Treatment approach has changed from a nihilistic point of view, to more individualized care
- "*a large PE might be a nice way to go*" - **NOT!**
  - Asymptomatic in about 10% of patients. Majority suffer a prolonged symptomatic death averaging 2 hours (dyspnea, tachycardia, distress)
- Likely underdiagnosed in hospice and palliative care
  - PE - Dyspnea, anemia, pulmonary edema, infection, pleural effusion – seen in advanced illness
  - DVT – Swollen legs (r/t hypoalbuminemia), left ventricular failure or pelvic lymphadenopathy - seen in advanced illness

Noble S. Clinical Medicine 2019;19(4):315-8.

92

Venous Thromboembolism

- Treatment for CAT (cancer-associated thrombosis) is low-molecular weight heparin
  - Superior to warfarin in preventing recurrent VTE, without an increase in bleeding complications
  - LMWH has fewer drug-drug interactions and rarely requires monitoring
    - Trials excluded patients with < 3 mo prognosis, poor performance status, increased bleeding risk, renal impairment, weight < 40 kg, thrombocytopenia, other comorbidities associated with palliative patients
    - Daily SQ injection(s) may reduce QOL and be less acceptable than an oral equivalent
- Guidelines recommend indefinite anticoagulation for patients with ongoing active cancer
  - None address management of anticoagulation at the end of life

Noble S. Clinical Medicine 2019;19(4):315-8.

93

Venous Thromboembolism

- Recent study of 1,199 patients admitted to 22 hospices/palliative care units (90% cancer patients) (Tardy)
  - Low incidence VTE, but a high incidence of clinically relevant bleeding (9.8%)
  - Analysis showed bleeding was associated with thromboprophylaxis
  - Concluded risks of bleeding may outweigh benefits in this population
- Hospice inpatient Deep Vein Thrombosis Detection study (White)
  - Prospective, longitudinal observational study
  - 343 cancer patients underwent bilateral femoral vein ultrasonography on admission and weekly until death or discharge (prognosis > 5 days)
  - Patients had an AKPS of 49 and survival of 44 days
  - Femoral DVT observed in 28% of participants with minimal symptoms; no difference in survival with/without DVT

Tardy B, et al. J Thromb Haemost 2017;15:420-428.
White C, et al. Lancet Haematol 2019;6:e79-88.

94

This is a tough one…

- No clear clinical guidance…limited outcomes data
- Risks vs. benefits
  - Shared decision-making
  - Symptoms, morbidity, mortality
  - Monitoring
- Location of VTE
  - Proximal vs. distal
  - Upper vs. lower
- Any risk factors or reversible causes?
- Patient's prognosis?
- Adherence? History of INR values?

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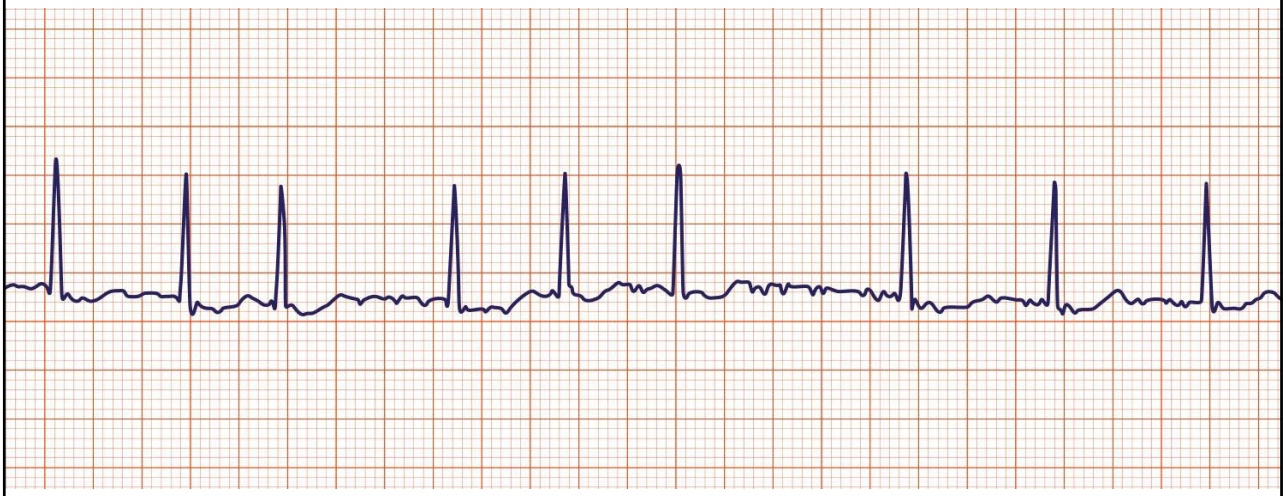
What about…



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CHA_2-DS_2-VASc Risk Stratification Score for Stroke Risk for Nonvalvular Atrial Fibrillation

Criteria		Poss. Point
Congestive heart failure Signs/symptoms of heart failure confirmed with objective evidence of cardiac dysfunction	Yes / No	+1
Hypertension Resting BP > 140/90 mmHg on at least 2 occasions or current antihypertensive pharmacologic treatment	Yes / No	+1
Age 75 years or older	Yes / No	+2
Diabetes mellitus Fasting glucose > 125 mg/dL or treatment with oral hypoglycemic agent and/or insulin	Yes / No	+1
Stroke, TIA, or TE Includes any history of cerebral ischemia	Yes / No	+2
Vascular disease Prior MI, peripheral arterial disease, or aortic plaque	Yes / No	+1
Age 65 to 74 years	Yes / No	+1
Sex **C**ategory (female) Female gender confers higher risk	Yes / No	+1

Points	Absolute Risk per Year
0	0.2%
1	0.6%
2	2.2%
3	3.2%
4	4.8%
5	7.2%
6	9.7%
7	11.2%
8	10.8%
9	12.2%

Ref: https://clincalc.com/Cardiology/Stroke/CHADSVASC.aspx

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CHA_2-DS_2-VASc Risk Stratification

Points	Absolute Risk per Year	Risk While Anticoagulated per year	Absolute Risk for Mean Hospice LOS (92.6 days)	Risk While Anticoagulated for Mean Hospice LOS (92.6 days)	Absolute Risk for Median Hospice LOS (18 days)	Risk While Anticoagulated for Median Hospice LOS (18 days)
0	0.2%	0.07%	0.05%	0.02%	0.01%	0.0035%
1	0.6%	0.20%	0.15%	0.05%	0.03%	0.01%
2	2.2%	0.73%	0.55%	0.18%	0.11%	0.04%
3	3.2%	1.06%	0.8%	0.27%	0.16%	0.05%
4	4.8%	1.58%	1.20%	0.40%	0.24%	0.08%
5	7.2%	2.38%	1.80%	0.60%	0.36%	0.12%
6	9.7%	3.20%	2.43%	0.8%	0.485%	0.16%
7	11.2%	3.70%	2.80%	0.93%	0.56%	0.19%
8	10.8%	3.56%	2.70%	0.89%	0.54%	0.18%
9	12.2%	4.03%	3.05%	1.01%	0.61%	0.20%

NHPCO Facts and Figures, file:///C:/Users/MLM/Downloads/NHPCO-Facts-Figures-2021.pdf

98

Risk of Bleeding – HAS-BLED

- HAS-BLED stands for hypertension, abnormal renal and liver function, stroke, bleeding, labile INR, elderly, drugs or alcohol

Criteria	Points
Hypertension (uncontrolled hypertension (SBP > 160 mmHg))	+1
Abnormal renal function (chronic dialysis, renal transplant, serum creatinine ≥ 2.3 mg/dl)	+1
Abnormal liver function (cirrhosis, bilirubin > 2 x UNL with AST/ALT/AP > 3 x UNL)	+1
Stroke	+1
Bleeding (bleeding history or predisposition (anemia))	+1
Labile INR (therapeutic time in range < 60%)	+1
Elderly (greater than 65 years old)	+1
Drugs (receiving other antiplatelet agents or NSAIDs)	+1
Alcohol (more than 8 drinks per week)	+1
TOTAL	

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HAS-BLED Score and Recommended Action

HAS-BLED Score	Risk Group	Risk of Major Bleeding	Bleeds/100 patient-years	Recommendation
0	Relatively low	0.9%	1.13	Anticoagulation should be considered
1		3.4%	1.02	
2	Moderate	4.1%	1.88	Anticoagulation can be considered
3		5.8%	3.72	Alternatives to anticoagulation should be considered
4	High	8.9%	8.70	
5		9.1%	12.50	
> 5	Very high	-	-	

https://www.mdcalc.com/has-bled-score-major-bleeding-risk#evidence

Scores greater than 5 were too rare to determine risk, but are likely over 10%

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Let's consider a case…

- Mr. Jones is a 76-year-old man admitted to hospice with a diagnosis of advanced Alzheimer's disease.
- He lives in an assisted living facility, although his medical needs are becoming more complicated and he may need to be transferred to a long-term care facility.
- He has comorbidities of hypertension (BP usually 140/90 – 150/95 mmHg), type 2 diabetes, nonvalvular atrial fibrillation, and a stroke 3 years ago.
- Medications include:
  - Metoprolol 50 mg po twice daily
  - Metformin 1000 mg po twice daily
  - Glipizide 10 mg po once daily
  - Warfarin 5 mg po once daily
  - Clopidogrel 75 mg once daily
  - Aspirin 81 mg once daily

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CHA_2-DS_2-VASc Risk Stratification Score for Stroke Risk for Nonvalvular Atrial Fibrillation

Criteria		Poss. Point
Congestive heart failure Signs/symptoms of heart failure confirmed with objective evidence of cardiac dysfunction	Yes / No	+1
Hypertension Resting BP > 140/90 mmHg on at least 2 occasions or current antihypertensive pharmacologic treatment	Yes / No	+1
Age 75 years or older	Yes / No	+2
Diabetes mellitus Fasting glucose > 125 mg/dL or treatment with oral hypoglycemic agent and/or insulin	Yes / No	+1
Stroke, TIA, or TE Includes any history of cerebral ischemia	Yes / No	+2
Vascular disease Prior MI, peripheral arterial disease, or aortic plaque	Yes / No	+1
Age 65 to 74 years	Yes / No	+1
Sex **C**ategory (female) Female gender confers higher risk	Yes / No	+1

Points	Absolute Risk per Year
0	0.2%
1	0.6%
2	2.2%
3	3.2%
4	4.8%
5	7.2%
6	9.7%
7	11.2%
8	10.8%
9	12.2%

Ref: https://clincalc.com/Cardiology/Stroke/CHADSVASC.aspx

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HAS-BLED

Criteria	Points
Hypertension (uncontrolled hypertension (SBP > 160 mmHg))	+1
Abnormal renal function (chronic dialysis, renal transplant, serum creatinine ≥ 2.3 mg/dl)	+1
Abnormal liver function (cirrhosis, bilirubin > 2 x UNL with AST/ALT/AP > 3 x UNL)	+1
Stroke	+1
Bleeding (bleeding history or predisposition (anemia))	+1
Labile INR (therapeutic time in range < 60%)	+1
Elderly (greater than 65 years old)	+1
Drugs (receiving other antiplatelet agents or NSAIDs)	+1
Alcohol (more than 8 drinks per week)	+1
TOTAL	

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HAS-BLED Score and Recommended Action

HAS-BLED Score	Risk Group	Risk of Major Bleeding	Bleeds/100 patient-years	Recommendation
0	Relatively low	0.9%	1.13	Anticoagulation should be considered
1		3.4%	1.02	
2	Moderate	4.1%	1.88	Anticoagulation can be considered
3		5.8%	3.72	Alternatives to anticoagulation should be considered
4	High	8.9%	8.70	
5		9.1%	12.50	
> 5	Very high	-	-	

Ref: https://www.mdcalc.com/has-bled-score-major-bleeding-risk#evidence

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Mr. Jones…

- Annual risk of having a stroke is a little less than 10% (9.7%)
  - Assume length of stay of 18 days, risk is about 0.485%
- Annual risk of major bleeding is 8.9%
- Alternatives to anticoagulation recommended
- Attending physician agrees to discontinue warfarin therapy

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Shared Decision Making

- Shared decision making!

https://uxdesign.cc/decision-making-for-product-managers-7fef3292cb65

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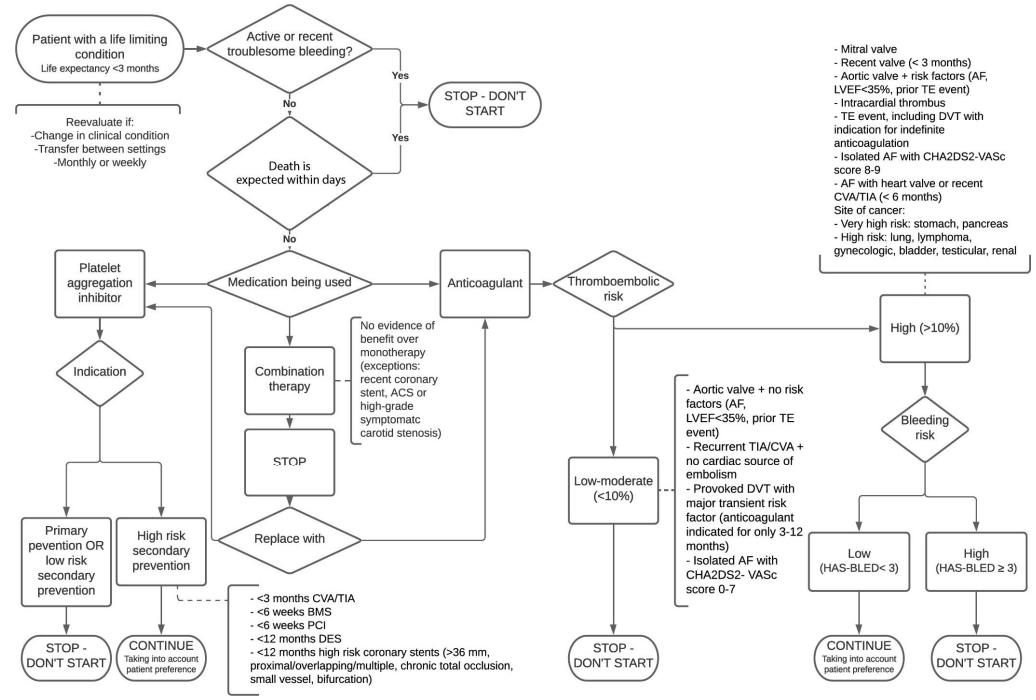
Huisman BAA, et al. Use of antithrombotics at the end of life: an in-depth chart review study. BMC Palliative Care 2021:20:110. Open Access, no permission required; Creative Commons Attribution 4.0 International License. https://bmcpalliatcare.biomedcentral.com/articles/10.1186/s12904-021-00786-3



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Huisman BAA, et al. Use of antithrombotics at the end of life: an in-depth chart review study. BMC Palliative Care 2021:20:110.

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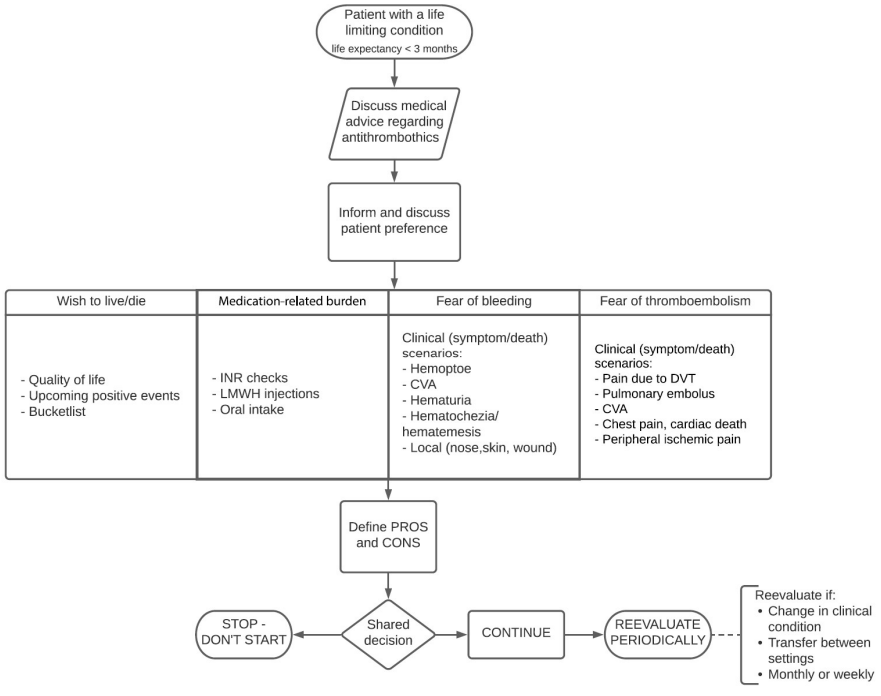

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