DEPRESCRIBING MEDICATIONS IN OLDER PATIENTS WITH POLYPHARMACY IN THE OUTPATIENT SETTING

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46TH ANNUAL EDUCATIONAL CONFERENCE

OBJECTIVES

- Identify the risk factors associated with the use of many medications for the older multi-morbid population.

- Learn techniques on de-prescribing medications (for new NPs and refresher for experienced NPs)

- Understand the pivotal role of the nurse practitioners in
- de-prescribing medications in the older patients in the outpatient setting

- Discuss case presentations and deprescribing

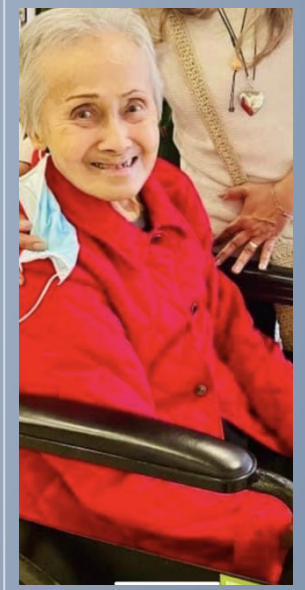
"Starting medications is like the bliss of marriage and stopping them is like the agony of divorce." - Doug Danforth

INTRODUCTION

•Polypharmacy: simultaneous use of multiple medicines by patients for their conditions. Regular use of five or more medicines

• Appropriate polypharmacy is defined as the practice of prescribing for a person who has multiple conditions or complex health needs by ensuring that medications prescribed are optimized and follow 'best evidence' practices. (wikepedia)

•An estimated 44% of men and 57% of women older than age 65 take five or more medications, a study published in J*AMA Internal Medicine* found that the number of older people taking five or more prescription drugs, over-the-counter medications, and supplements is about 67%



- The Lown Institute, in an April 2019 report, estimated that polypharmacy — which Lown essentially refers to as "medication overload" — would result in 150,000 premature American deaths and more than 4.6 million hospitalizations over the next decade.
- "[Medication overload] will reduce the quality of life for millions more.

- Use of herbal or dietary supplements by older adults increased from 14% percent in 1998 to 63% percent in 2010.
- As UpToDate, notes, "Often, clinicians do not question patients about use of herbal medicines, and patients do not routinely volunteer this information."

Asher, Cobett, Hawke.(2017) "Common Dietary Herbal Supplement: Drug Interactions. American Family Medicine

Risk of Drug Interactions

Herbal supplement	*Comments*
Black cohosh (*Actaea racemosa*)	May reduce effectiveness of statins[7]; single case report of elevated liver enzymes with atorvastatin (Lipitor)[8]
Cranberry (*Vaccinium* spp.)	—
Ginkgo (*Ginkgo biloba*)	Potential increased bleeding risk with warfarin (Coumadin)[9]
Ginseng, American (*Panax quinquefolius*)	May reduce international normalized ratio by 0.2[10]; may modestly reduce blood glucose level
Milk thistle (*Silybum marianum*)	May decrease concentrations of medications metabolized by CYP2C9, such as warfarin, phenytoin (Dilantin), and diazepam (Valium)[11]
Saw palmetto (*Serenoa repens*)	—
Valerian (*Valeriana officinalis*)	—

NOTE: *Interaction risks primarily based on human studies of major CYP enzymes (i.e., 1A2, 2C9, 2C19, 2D6, 2E1, and 3A4), P-glycoprotein, and uridine diphosphate-glucuronosyltransferase. Most, but not all, of these enzyme systems were evaluated for each herbal supplement listed.*

Valerian Root

Valerian might have additive therapeutic and adverse effects if taken with sedatives, other medications, or certain herbs and dietary supplements with sedative properties

These include the following:

Benzodiazepines such as Xanax®, Valium®, Ativan®, and Halcion®.

Barbiturates or central nervous system (CNS) depressants such as phenobarbital (Luminal®), morphine, and propofol (Diprivan®).

St Johns Wort

HIV protease inhibitors (CYP3A4), the immunosuppressants cyclosporin and tacrolimus, and the antineoplastic agents irinotecan and imatinib mesylate are contraindicated with St John's Wort

Efficacy of hormonal contraceptives may be impaired as reflected by case reports of irregular bleedings and unwanted pregnancies.

(Natural Medicine's Comprehensive Databaseexternal link disclaimer. Valerian. 2013.)

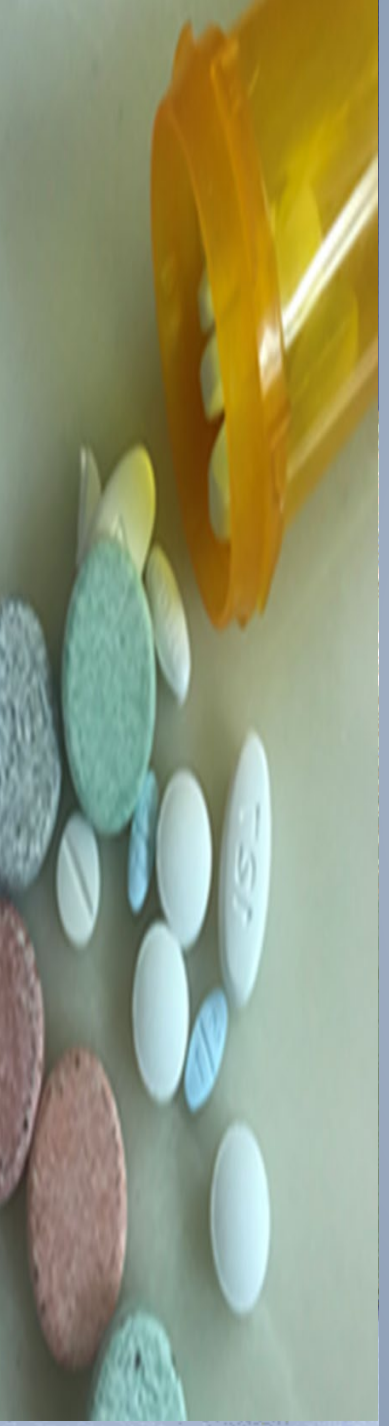
(Mannel M. Drug interactions with St John's wort : mechanisms and clinical implications. Drug Saf. 2004;27(11):773-97. doi: 10.2165/00002018-200427110-00003. PMID: 15350151.)

POLYPHARMACY Harmful Effects

1. Drug to drug Interaction and drug toxicity
2. Falls and potential injuries
3. Delirium
4. Potential for hospitalization → increase cost of care
5. Non-adherence
6. Iatrogenesis is the **causation of a disease**, a harmful complication, or other ill effect by any medical activity, including diagnosis, intervention, error, or negligence.

Common Signs of Over Medication

Fatigue
Weakness
Delusions & hallucinations
Anxiety
GI symptoms



How Is Polypharmacy Treated?

- Multi-step process aimed at simplifying your medication regimen.
- Begins by obtaining an accurate list of our medications.
- Include prescription and over-the-counter medication including supplements
- Consider:
- · Stopping medications
- · Modifying prescriptions
- · Change the treatment plan

- Hoel RW, Giddings Connolly RM, Takahashi PY. Polypharmacy Management in Older Patients. Mayo Clin Proc. 2021 Jan;96(1):242-256. doi: 10.1016/j.mayocp.2020.06.012. PMID: 33413822.

PHARMACOKINETICS

Pharmacokinetics or movements of drugs within the body refers to what happens to a medication from entrance into the body until the exit of all trace

Four processes :

absorption,

distribution,

metabolism,

excretion.

Each of these processes is influenced by the route of administration and the functioning of body organs

PHARMACODYNAMICS

Pharmacodynamics is the study of how drugs have effects on the body.

How the body reacts to the drugs

The most common mechanism is by the interaction of the drug with tissue receptors located either in cell membranes or in the intracellular fluid.

HALF LIFE: time it takes for the amount of a drug's active substance in the body to reduce by half

MEAN INHIBITORY CONCENTRATION (MIC)

Lowest concentration of an antimicrobial that will inhibit the visible growth of a microorganism after overnight incubation (in vitro).

Minimal inhibitory concentration (MIC) defines in vitro levels of susceptibility or resistance of specific bacterial strains to applied antibiotic.

Reliable assessment of MIC has a significant impact on the choice of a therapeutic strategy, which affects efficiency of an infection therapy.

Reeve E, Moriarty F, Nahas R, et al. A narrative review of the safety concerns of deprescribing in older adults and strategies to mitigate potential harms. Expert Opin Drug Saf. 2018;17:39-49

Scott IA, Hilmer SN, Reeve E, et al. Reducing inappropriate polypharmacy: the process of deprescribing. JAMA Intern Med. 2015:175:827-34

DEPRESCRIBING

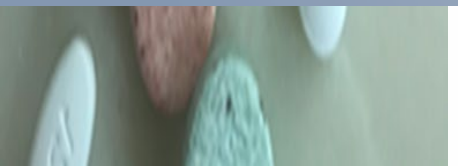
- Process of supervised medication discontinuation or dose reduction to reduce potentially inappropriate medication (PIM) use.

- Intervention that can be applied to reduce the risk for ADEs or medication errors associated with polypharmacy.

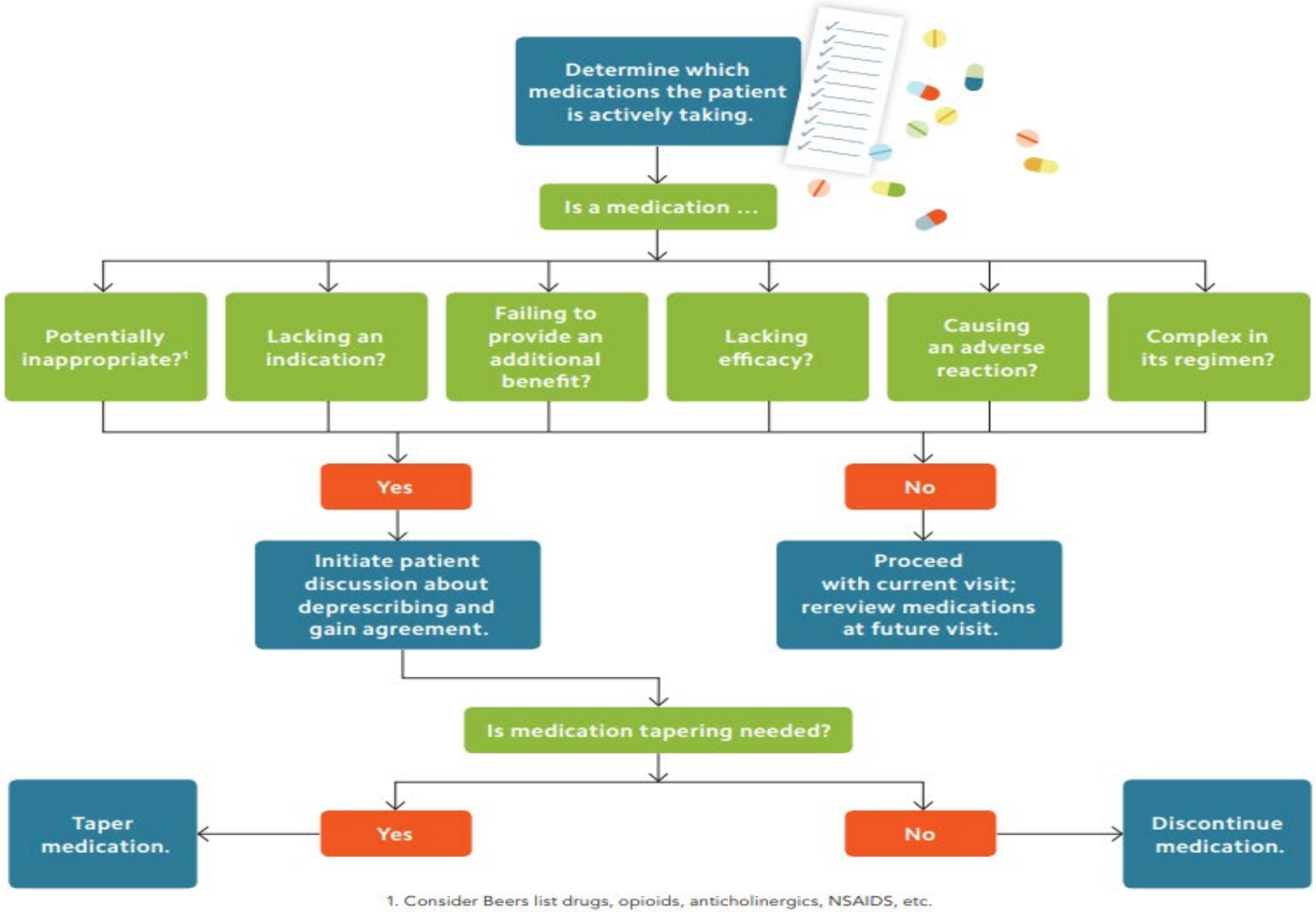
- Consider any time a patient is experiencing polypharmacy and should be implemented using a shared decision-making model.

- Shared decision-making comprises patients and clinicians collaborating to discuss the appropriateness of each of the medications as it relates to safety and efficacy; it empowers the patient to be engaged in decisions about their care.

- An ongoing process that requires monitoring and feedback



A DEPRESCRIBING ALGORITHM



1. Consider Beers list drugs, opioids, anticholinergics, NSAIDS, etc.

https://www.aafp.org/dam/brand/aafp/pubs/fpm/issues/2018/0500/p28-rt1.pdf

Deprescribing Process

- Obtain a complete medication list with indications for each medication
- Assess each medication for the risk of drug-induced harm

Evaluate the appropriateness of each medication

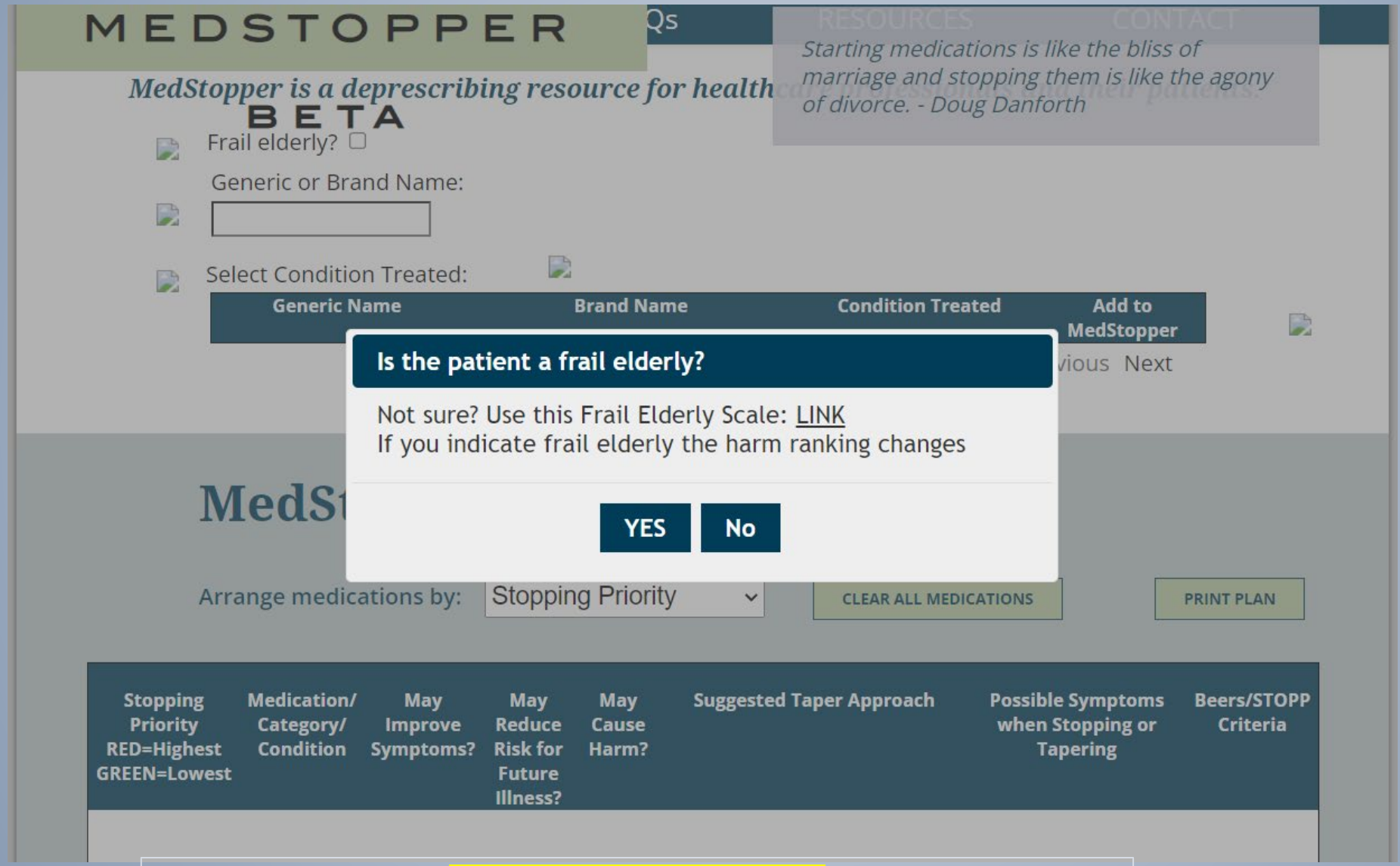
- Prioritize drugs for discontinuation
- Implement a discontinuation plan and monitor the patient's progress
- Consider pharmacokinetic and pharmacodynamic implications of drugs being discontinued
  - Enzyme inducers or inhibitors
  - Effects on drugs with narrow therapeutic indexes (opioids, benzos, aminoglycosides, cyclosporin, carbamazepine, digoxin, digitoxin, flecainide, lithium, phenytoin, phenobarbital, rifampicin, theophylline and warfarin)

Strategies for Deprescribing

1. Consider all medications currently being taken and the indications for each.
2. Evaluate the risk of harm to that individual patient associated with each medication.
3. Assess each medication for the potential to de-prescribe it.
4. Create a priority list of medications that should be de-prescribed before others.
5. it is important to consider the purpose of each medication (curative vs. palliative),
6. Consider how the patient is tolerating the medication, the patient's life expectancy and goals of care.
7. Implement and monitor the deprescribing regimen

Shannan Takhar, PharmD, BCACP and Noelle Nelson, PharmD, MSPH | October 27, 2021. Deprescribing as a Patient Safety Strategy

MedStopper is a deprescribing resource for healthcare providers and their patients



https://medstopper.com/

Languages: English (EN)

MEDSTOPPER

FAQs RESOURCES CONTACT

Starting medications is like the bliss of marriage and stopping them is like the agony of divorce. - Doug Danforth

MedStopper is a deprescribing resource for healthcare professionals and their patients.

BETA

Frail elderly? ☑

Generic or Brand Name:

lorazepam

Select Condition Treated:

Generic Name	Brand Name	Condition Treated	Add to MedStopper
lorazepam	Ativan	anxiety	ADD

Previous Next

MedStopper Plan

MedStopper Plan

Arrange medications by: Stopping Priority

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
X	lorazepam (Ativan) / Benzodiazepine / **anxiety**				If used daily for more than 3-4 weeks. Reduce dose by 25% every week (i.e. week 1-75%, week 2-50%, week 3-25%) and this can be extended or decreased (10% dose reductions) if needed. If intolerable withdrawal symptoms occur (usually 1-3 days after a dose change), go back to the previously tolerated dose until symptoms resolve and plan for a more gradual taper with the patient. Dose reduction may need to slow down as one gets to smaller doses (i.e. 25% of the original dose). Overall, the rate of discontinuation needs to be controlled by the person taking the medication.	rebound insomnia, tremor, anxiety, as well as more serious, rare manifestations including hallucinations, seizures, and delirium	Details

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
	digoxin (Lanoxin, Digitek) / Digoxin / **heart failure**				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.	worsening of symptoms, increase in heart rate	Details
	lisinopril (Prinivil, Zestril) / 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
	lorazepam (Ativan) / Benzodiazepine / **anxiety**				If used daily for more than 3-4 weeks. Reduce dose by 25% every week (i.e. week 1-75%, week 2-50%, week 3-25%) and this can be extended or decreased (10% dose reductions) if needed. If intolerable withdrawal symptoms occur (usually 1-3 days after a dose change), go back to the previously tolerated dose until symptoms resolve and plan for a more gradual	rebound insomnia, tremor, anxiety, as well as more serious, rare manifestations including hallucinations,	Details

BEERS CRITERIA for POTENTIALLY INAPPROPRIATE MEDICATION TOOL by AGS (Patient Specific reporting app)

Tool used to create a patient-specific report of medications from the BEERS criteria based on patient's current conditions and drug therapy

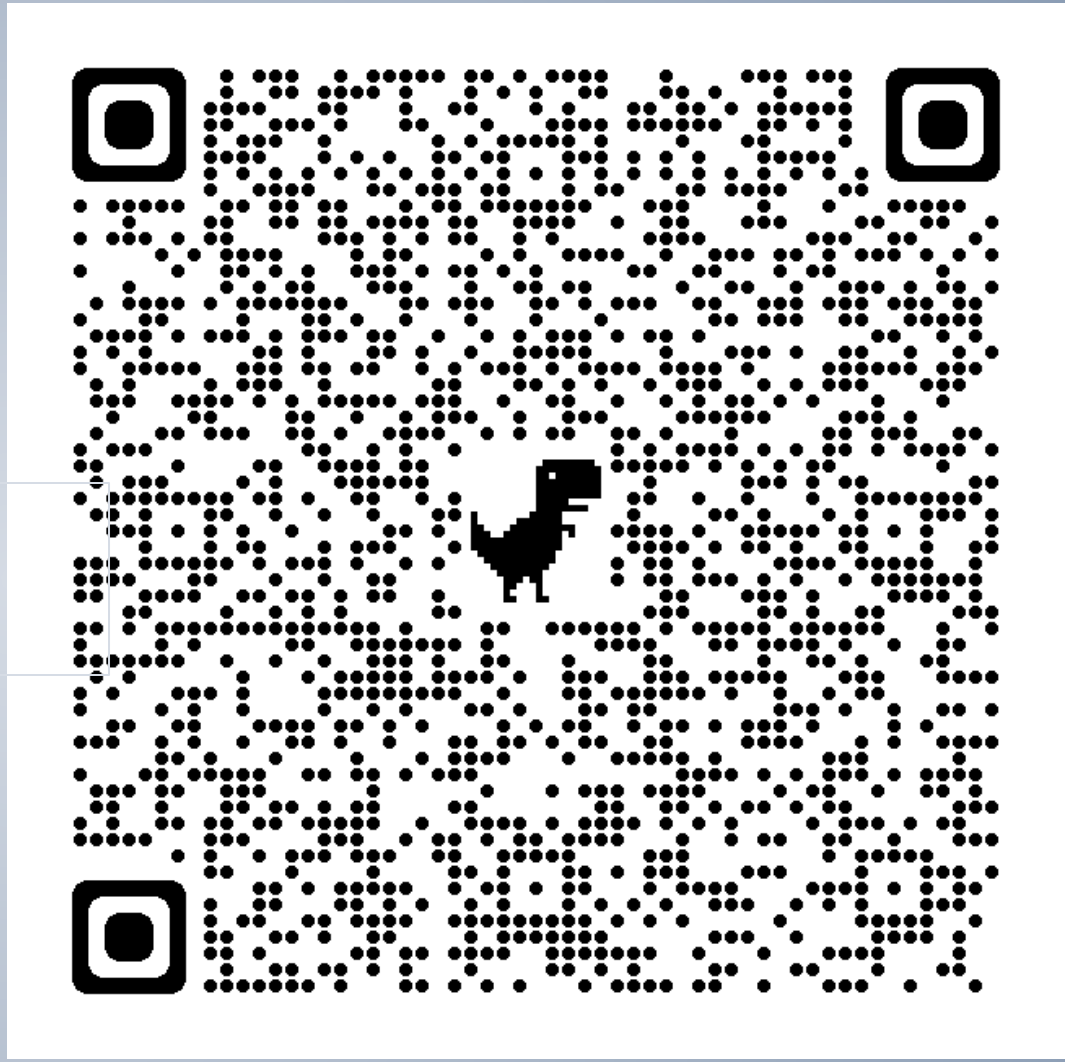
1.Shows checklist for CLASS of medications (antihistamines 1st generation, anti-thrombotics, anti-infective, cardiovascular, CNS, endocrine, GI, Pain meds, GU)

2. Checklist for patients' conditions

3.Checkbox for levels of Kidney Functions

4. Drugs with strong anticholinergic properties

5. Quality of Evidence(QE) / Strength of Recommendation (SR)



https://globalrph.com/medcalcs/beers-criteria-patient-specific-reporting-available/#:~:text=Beers%20Criteria%20Tool%20(Patient%2Dspecific,printable%20report%20is%20also%20available.

BEERS CRITERIA TOOL (PATIENT-SPECIFIC REPORTING)

This tool can be used to create a patient-specific report of medications from the Beers criteria based on a patient's current conditions and drug therapy. A printable report is also available.

Potentially Inappropriate Medication Use in Older Adults

Check all groups the patient is receiving: •

- ☐ 1st generation antihistamines
- ☐ Antiparkinsonian agents
- ☐ Antispasmodics
- ☐ **Antithrombotics** -Dipyridamole, Ticlopidine
- ☐ **Anti-infective** - Nitrofurantoin
- ☐ **Cardiovascular agents** - alpha-1 blockers, Central alpha agonists, amiodarone, digoxin, etc
- ☐ **Central nervous system drugs** - Antidepressants, Barbiturates, Benzodiazepines, Nonbenzodiazepine hypnotics, or Ergoloid mesylates
- ☐ **Endocrine drugs** - Androgens,Estrogens, GH, SS insulin, Long-acting Sulfonylureas
- ☐ **Gastrointestinal drugs**- Metoclopramide, Mineral oil, given orally, Proton-pump inhibitors
- ☐ **Pain medications** - NSAIDs , Pentazocine, Skeletal muscle relaxants
- ☐ **Genitourinary** - Desmopressin

Potentially Inappropriate Medication Use in Older Adults Due to Drug-Disease or Drug-Syndrome Interactions That May Exacerbate the Disease or Syndrome

CHECK ALL CONDITION(S) THAT ARE PRESENT IN THE PATIENT: •

- ☐ Heart failure
- ☐ Syncope

- ☐ Chronic seizures or epilepsy
- ☐ Delirium
- ☐ Dementia or cognitive impairment
- ☐ History of falls or fractures
- ☐ Insomnia
- ☐ History of gastric or duodenal ulcers

- ☐ Chronic kidney disease Stages IV or less (creatinine clearance <30 mL/min)
- ☐ Urinary incontinence (all types) in women
- ☐ Lower urinary tract symptoms, benign prostatic hyperplasia

Potentially Inappropriate Medications to Be Used with Caution in Older Adults

☐ Check box if you want this list added to the report

Renal Insufficiency - Medications That Should Be Avoided or Have Their Dosage Reduced with Varying Levels of Kidney Function in Older Adults

☐ Check box if you want this list added to the report

Drugs with Strong Anticholinergic Properties

☐ Check box if you want this list added to the report

Renal Insufficiency - Medications That Should Be Avoided or Have Their Dosage Reduced with Varying Levels of Kidney Function in Older Adults

☐ Check box if you want this list added to the report

Drugs with Strong Anticholinergic Properties

☐ Check box if you want this list added to the report

Display criteria based on selections

Reset

BACKGROUND INFO

CGA TOOLKIT

STRAIGHT FORWARD BUT PAINSTAKING
CREATED BY DR HANLON IN 1992

The Medication Appropriateness Index (MAI) is a method for assessing drug therapy appropriateness

1. It measures the appropriateness of prescribing for elderly patients, using 10 criteria for each medication prescribed

2. For each criterion, the evaluator rates whether the medication is appropriate, marginally appropriate, or inappropriate. Each criterion is assigned a score of 1-3, with a possible maximum total score of 18

MAI

Medication Appropriateness Index

(modified)

		Yes	+/-	No	Comment
1	Is there an indication for the drug ?				
2	Is the medication effective for the condition ?				
3	Is the dosage correct ?				
4	Are the directions correct ?				
5	Are the directions practical ?				
6	Are there clinically significant drug- drug interactions ?				
7	Are there clinically significant drug-disease/condition interactions ?				
8	Is there unnecessary duplication with other drug(s) ?				
9	Is the duration of therapy acceptable ?				
10	Is this drug the least expensive alternative compared to others of equal utility ?				

When completing the MAI, take into consideration other relevant information gathered in the Medication Review process (especially in Part 1).
see : https://www.cgakit.com/m-2-meds-review---more

https://globalrph.com/medcalcs/medication-appropriateness-index-calculator/

Patient: MK

Drug reviewed: norco

ANSWER THE FOLLOWING QUESTIONS - COMMENTS ARE OPTIONAL

1. Is there an indication for the drug? Yes

Indication Comments:

2. Is the medication effective for the condition? Yes

Condition Comments:

3. Is the dosage correct? Yes

Dosage Comments:

4. Are the directions correct? Yes

Directions Comments:

5. Are the directions practical or capable of being put into practice?

6. Are there clinically significant drug-drug interactions? Yes

Drug interactions Comments:

7. Are there clinically significant drug-disease/condition interactions? Yes

Drug-disease Comments:

8. Is there unnecessary duplication with other drug(s)? No

Duplication Comments:

9. Is the duration of therapy acceptable? No

Duration Comments:

10. Is this drug the least expensive alternative compared to others of equal utility? Yes

Expense Comments:

Determine Appropriateness | Reset

Medication Appropriateness Index Calculator

Medication Appropriateness Index Calculator

RESULTS:

Patient name: MK
Drug Reviewed: norco

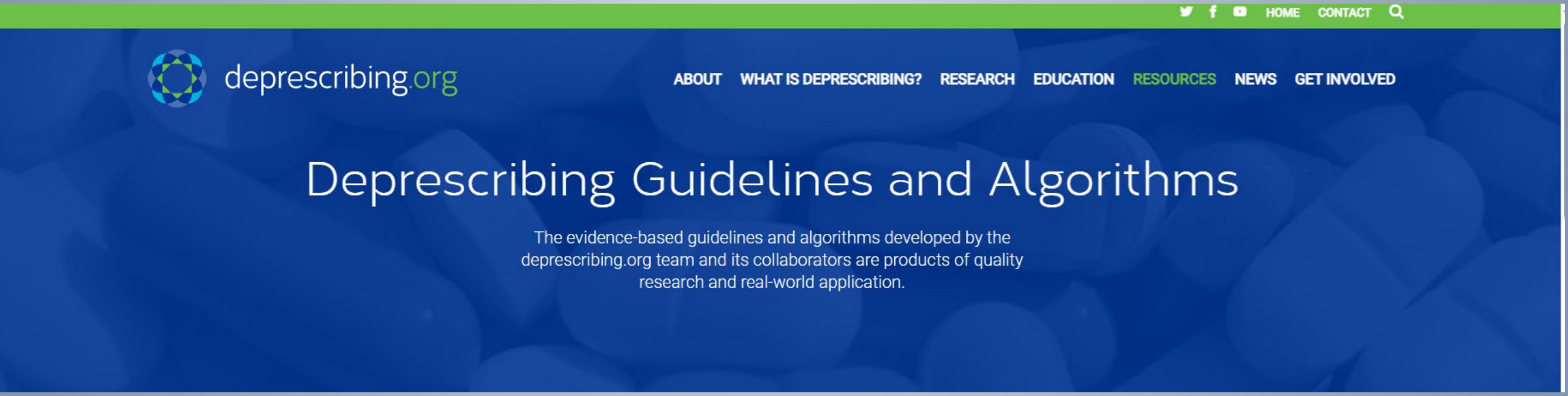
The total score is 4. Review the table below for the estimated appropriateness of the drug.

FINAL RESULTS

Inappropriate	Appropriate
	
Medication Inappropriateness	Medication Appropriateness

https://globalrph.com/medcalcs/medication-appropriateness-index-calculator/

https://deprescribing.org/resources/deprescribing-guidelines-algorithms/



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

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

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

Recommend Deprescribing

Taper and then stop BZRA

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

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

Monitor every 1-2 weeks for duration of tapering

Expected benefits:

- May improve alertness, cognition, daytime sedation and reduce falls

Withdrawal symptoms:

- Insomnia, anxiety, irritability, sweating, gastrointestinal symptoms (all usually mild and last for days to a few weeks)

Use non-drug approaches to manage insomnia

Use behavioral approaches and/or CBT (see reverse)

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.

- 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

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

https://www.deprescribingnetwork.ca/algorithms

The 2019 AGS Beers Criteria Pocket Guide Version

From THE AMERICAN GERIATRICS SOCIETY

A POCKET GUIDE TO THE 2019 AGS BEERS CRITERIA®

This guide has been developed as a tool to assist healthcare providers in improving medication safety in older adults. The role of this guide is to *inform* clinical decision-making, research, training, quality measures and regulations concerning the prescribing of medications for older adults to improve safety and quality of care. It is based on *The 2019 AGS Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults.*

Originally conceived of in 1991 by the late Mark Beers, MD, a geriatrician, the Beers Criteria catalogues medications that cause side effects in older adults due to the physiologic changes of aging. In 2011, the AGS sponsored its first update of the criteria, assembling a team of experts and using an enhanced, evidence-based methodology. Since 2011, the AGS has been the steward of the criteria and has produced updates using an evidence-based methodology and rating each Criterion [quality of evidence and strength of recommendation] using the American College of Physicians' Guideline Grading System, which is based on the GRADE scheme developed by Guyatt et al.

The full document, along with accompanying resources, can be found in its entirety online at geriatricscareonline.org.

INTENDED USE

The goal of this guide is to improve care of older adults by reducing their exposure to Potentially Inappropriate Medications (PIMs).

- This should be viewed as a guideline for identifying medications for which the risks of their use in older adults outweigh the benefits.
- These criteria are not meant to be applied in a punitive manner.
- This list is not meant to supersede clinical judgment or an individual patient's values and needs. Prescribing and managing disease conditions should be individualized and involve shared decision-making.
- These criteria also underscore the importance of using a team approach to prescribing and the use of non-pharmacological approaches and of having economic and organizational incentives for this type of model.
- A companion piece that addresses the best way for patients, providers, and health systems to use (and not use) the AGS Beers Criteria® was also developed. The document can be found on geriatricscareonline.org.

The criteria are not applicable in all circumstances (i.e. patients receiving palliative and hospice care). If a provider is not able to find an alternative and chooses to continue to use a drug on this list in an individual patient, designation of the medication as potentially inappropriate can serve as a reminder for close monitoring so that adverse drug effects can be incorporated into the electronic health record and prevented or detected early.

AGS

TABLE 1. 2019 American Geriatrics Society Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults

Organ System, Therapeutic Category, Drug(s)	*Recommendation, Rationale, Quality of Evidence (QE), Strength of Recommendation (SR)*
Anticholinergics*	
First-generation antihistamines: ■ Brompheniramine ■ Carbinoxamine ■ Chlorpheniramine ■ Clemastine ■ Cyproheptadine ■ Dexbrompheniramine ■ Dexchlorpheniramine ■ Dimenhydrinate ■ Diphenhydramine (oral) ■ Doxylamine ■ Hydroxyzine ■ Meclizine ■ Promethazine ■ Pyrilamine ■ Triprolidine	***Avoid*** Highly anticholinergic; clearance reduced with advanced age, and tolerance develops when used as hypnotic; risk of confusion, dry mouth, constipation, and other anticholinergic effects or toxicity Use of diphenhydramine in situations such as acute treatment of severe allergic reaction may be appropriate *QE = Moderate; SR = Strong*
Antiparkinsonian agents ■ Benztropine (oral) ■ Trihexyphenidyl	***Avoid*** Not recommended for prevention of extrapyramidal symptoms with antipsychotics; more effective agents available for treatment of Parkinson disease *QE = Moderate; SR = Strong*
Antispasmodics: ■ Atropine (excludes ophthalmic) ■ Belladonna alkaloids ■ Clidinium-Chlordiazepoxide ■ Dicyclomine ■ Homatropine (excludes ophthalmic) ■ Hyoscyamine ■ Methscopolamine ■ Propantheline ■ Scopolamine	***Avoid*** Highly anticholinergic, uncertain effectiveness *QE = Moderate; SR = Strong*
Antithrompotics	
■ Dipyridamole, oral short-acting (does not apply to the extended-release combination with aspirin)	***Avoid*** Rationale: May cause orthostatic hypotension; more effective alternatives available; IV form acceptable for use in cardiac stress testing *QE = Moderate; SR = Strong*

*See also criterion on highly anticholinergic antidepressants

CNS=central nervous system; NSAIDs=nonsteroidal anti-inflammatory drugs; SIADH, syndrome of inappropriate antidiuretic hormone.

Table 1 (continued on page 3)

16 pages of the pocket guide version

The 2023 update of the AGS Beers Criteria® includes modifications.

- Note worthy changes to PIMS for older adults
- The drugs and drug class criteria included in the 2023 AGS Beers
- Summarizes the criteria for anticoagulants (warfarin, rivaroxaban, and dabigatran) has been added(Box1).

BOX 1 Synthesis of anticoagulation recommendations.

Explanation	Recommendation
This criterion summarizes recommendations for warfarin (Table 2), rivaroxaban (Table 2), and dabigatran (Table 4)—anticoagulants to avoid or to use with caution. A "use with caution" recommendation reflects less concern and/or less clear evidence than an "avoid" recommendation. See individual criteria on these medications for more information about anticoagulant-related recommendations. When selecting among DOACs and choosing a dosage, pay special consideration to kidney function (see Table 6), indication, and body weight.	Warfarin: *Avoid* starting warfarin as initial therapy for the treatment of venous thromboembolism (VTE) or nonvalvular atrial fibrillation unless alternative options (e.g., DOACs) are contraindicated or there are substantial barriers to their use. For older adults who have been using warfarin long-term, it may be reasonable to continue this medication, particularly among those with well-controlled INRs (i.e., >70% time in the therapeutic range) and no adverse effects. Rivaroxaban: *Avoid* rivaroxaban for long-term treatment of nonvalvular atrial fibrillation or VTE in favor of safer anticoagulant alternatives. Dabigatran: *Use caution* in selecting dabigatran over other DOACs (e.g., apixaban) for long-term treatment of nonvalvular atrial fibrillation or VTE.

AGS 2023

TABLE 4 2023 American Geriatrics Society Beers Criteria® for potentially inappropriate medications: drugs to be used with caution in older adults[a].

Drug(s)[b]	Rationale	Recommendation	Quality of evidence[c]	Strength of recommendation[c]
Dabigatran for long-term treatment of nonvalvular atrial fibrillation or venous thromboembolism (VTE)	Increased risk of GI bleeding compared with warfarin (based on head-to-head clinical trials) and of GI bleeding and major bleeding compared with apixaban (based on observational studies and meta-analyses) in older adults when used for long-term treatment of nonvalvular atrial fibrillation or VTE.	Use caution in selecting dabigatran over other DOACs (e.g., apixaban) for long-term treatment of nonvalvular atrial fibrillation or VTE. See also criteria on warfarin and rivaroxaban (Table 2) and footnote[d] regarding choice among DOACs.	Moderate	Strong
Prasugrel Ticagrelor	Both increase the risk of major bleeding in older adults compared with clopidogrel, especially among those 75 years old and older. However, this risk may be offset by cardiovascular benefits in select patients.	Use with caution, particularly in adults 75 years old and older. If prasugrel is used, consider a lower dose (5 mg) for those 75 years old and older.	Moderate	Strong
Antidepressants (selected) Mirtazipine SNRIs SSRIs TCAs Antiepileptics (selected) Carbamazepine Oxcarbazepine Antipsychotics Diuretics Tramadol	May exacerbate or cause SIADH or hyponatremia; monitor sodium levels closely when starting or changing dosages in older adults.	Use with caution	Moderate	Strong
Dextromethorphan-quinidine	Limited efficacy in patients with behavioral symptoms of dementia (does not apply to the treatment of pseudobulbar affect). May increase the risk of falls and concerns with clinically significant drug interactions and with use in those with heart failure (see Table 3).	Use with caution	Moderate	Strong
Trimethoprim-sulfamethoxazole	Increased risk of hyperkalemia when used concurrently with an ACEI, ARB, or ARNI in presence of decreased CrCl.	Use with caution in patients on ACEI, ARB, or ARNI and decreased CrCl.	Low	Strong
Sodium-glucose co-transporter-2 (SGLT2) inhibitors Canigliflozin Dapagliflozin Emplaglifozin Ertuglifozin	Older adults may be at increased risk of urogenital infections, particularly women in the first month of treatment. An increased risk of euglycemic diabetic ketoacidosis has also been seen in older adults.	Use with caution. Monitor patients for urogenital infections and ketoacidosis.	Moderate	Weak

◄ DOACS

◄ Anti platelet

◄ Anti depressants / anti psychotics

SGLT2 Inhibitors

AmericanGeriatricsSociety2023updatedAGSBeers Criteria® forpotentiallyinappropriatemedicationuse inolderadults

American Geriatrics Society (AGS) Beers Criteria Potentially Inappropriate Medications for Older People
http://files.hgsitebuilder.com/hostgator257222/file/ags_2019_beers_pocket_printable_rh.pdf
Quality of Evidence (QE) Strength of Recommendation(SR)

Strong QE and SR

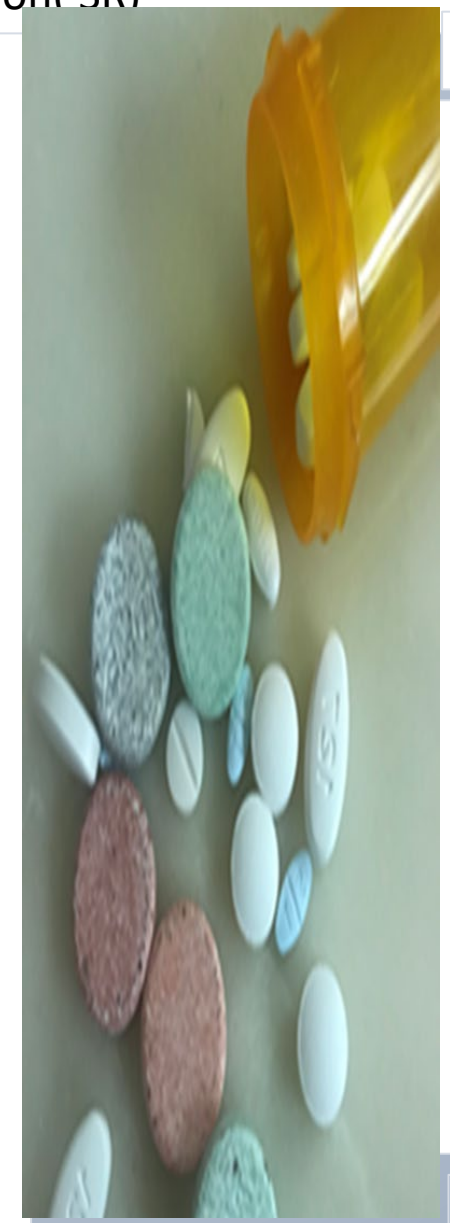
Alpha 1 blocker
(Doxazosin, prazosin, terazosin)

Antidepressants alone or in Combination
(amitriptyline, paroxetine)

Benzodiazepines in Combination with Opioids
(alprazolam, lorazepam , temazepam with hydrocodone)

Proton Pump Inhibitors
(omeprazole, pantoprazole)

Sulfonylureas
(glimepiride, glipizide)
Systemic hormone replacement therapy



Moderate QE and Strong SR

Antihistamines
(hydroxyzine, meclizine)

Benzodiazepines Alone
(alprazolam, diazepam, lorazepam, temazepam)

Nonbenzodiazepines
(zolpidem)

Nonsteroidal anti-inflammatory
(diclofenac, ibuprofen, meloxicam, naproxen)

Rapid -acting Insulin
(Humalog, lispro)

American Geriatrics Society Beers Criteria Update Expert Panel. (2019).

Appropriateness of Medications Assessment

1. Current conditions
2. Co morbidities
3. Current medications including OTC
4. Other physician visits / specialties
5. Recent ER or hospitalization
6. Adherence to medications and treatment plans
7. Ability for self care
8. Psychological issues
9. Use of substances

PATIENT BARRIERS IN DEPRESCRIBING

Fear of the condition worsening or returning ; Patient's fear of withdrawal

- Previous negative experience with deprescribing
- Influence from friends, family, etc. ; Negative social influences
- Hope of future effectiveness
- Insufficient resources
- Lack of co-ordination between healthcare settings
- Physician's illusion and fear of litigation
- Sociocultural factors which may emerge in the process of initiating a course of deprescribing
- Policy and finance issues in healthcare policy and finance, such as resource availability, performance metrics, and reimbursement

ADDRESSING BARRIERS

- Shared decision making
- Provide education about risks and benefits
- Provide a clear plan that includes managing withdrawal symptoms
- Provide ongoing support and monitoring to reassure the patient and caregivers

Gupta, Swapnil, and others, 'Barriers to Deprescribing: Origins and Solutions', Deprescribing in Psychiatry (New York, 2019; online edn, Oxford Academic, 1 July 2019), https://doi.org/10.1093/med/9780190654818.003.0003, accessed 25 Feb. 2024.

Deprescribing Through Shared Decision Making

- Step 1: Creating awareness that options exist
- Step 2: Discussing the options and their benefits and harms
- Step 3: Exploring patient preferences for the different options
- Step 4: Making the decision

Jansen J, Naganathan V, Carter SM, et al. Too much medicine in older people? Deprescribing through shared decision making. BMJ. 2016;353:i2893.

HOW CAN DE- PRESCRIBING BE SUSTAINABLE

- Recognition of the problem.
- Education.
- Interprofessional collaboration.
- Payment and reimbursement
- Health information technology
- Evidence.
- Patient engagement.

- System change. Health systems need to establish funding mechanisms for research and implementation, develop quality measures and consensus on desired clinical outcomes, incorporate deprescribing measures into quality initiatives, and enlist health care and physician organizations as allies.

WHAT CAN WE DO and HOW

Interdisciplinary Coordination

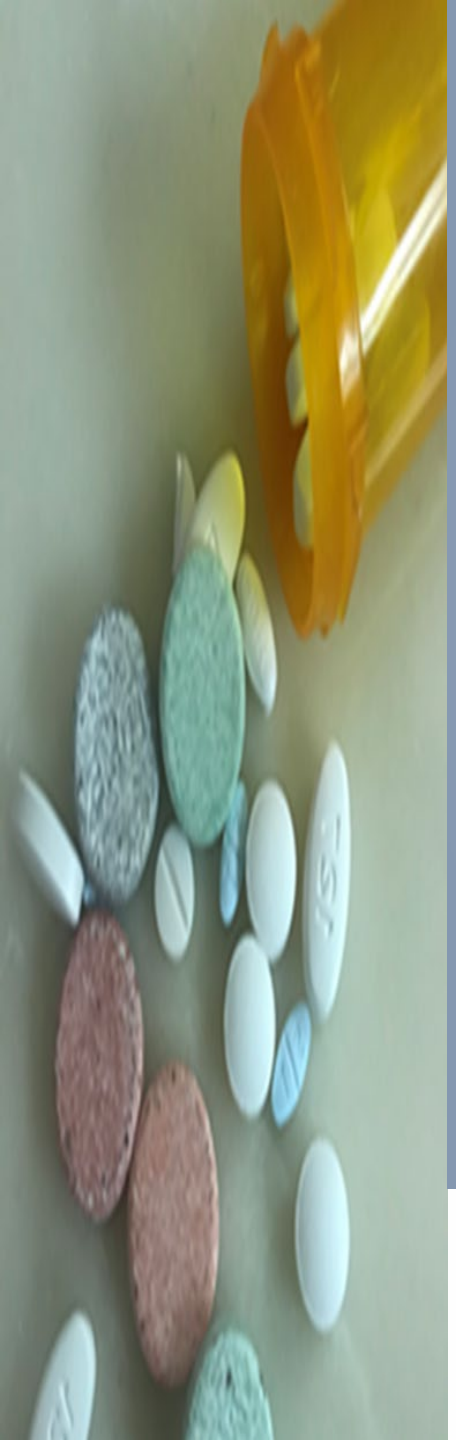
Stakeholders – physicians, nurses , pharmacists & other healthcare professionals

Quality Improvement

Educational intervention by NP to HCP

To improve knowledge, deprescribing , medication review & reconciliation

Deprescribing and Use of Screening Tools



Role of the Nurse Practitioners

► Nurse practitioners play an essential role as a checkpoint in implementing evidence-based practice and engagement of stakeholders to maintain the quality, safe patient care.

► Nurse practitioners, with their advanced education and knowledge, play significant roles in improving patient care.

►The knowledge and skills of healthcare professionals to work collaboratively is significant . NPs partnering with physicians, pharmacists, and other healthcare professionals will ease the complexities of providing evidence-based practice for the patients and the community . (AACN, 2006; Zaccagnini& White, 2017).

CASE STUDY 1

65-year-old female patient presented for her hospital follow up

hospitalized from 1/9-23/2024, sent to SNF and then was sent back to hospital for chest pains. Dx. STEMI Has prn NTG take home

Denies current chest pains, or SOB

Lives alone in a mobile home, will need HH services

Feels tired at times, able to eat canned foods, appetite poor,

Uses wheelchair & FWW.

Past Medical History:

- Diabetes - mellitus, with insulin pump, with neuropathy sees endocrinologist
- Hyperlipidemia
- Hypertension
- Pulmonary Sarcoidosis sees Pulmonary Med
- fibromyalgia, pelvic pain, sees rheumatologist
- spinal stenosis, left hemi-sided pain
- History of hyperlipidemia, she has statin intolerance
- on eliquis for PE
- Acute Infections - hx of osteomyelitis

Current medications:

Furosemide 40 mg PO qd
gabapentin 600 mg po qd
invokana 300 mg PO qd
losartan 50 mg po qd
eliquis 5 mg po BID
prednisone 20 mg po qd
Farxiga 10 mg PO qd
duloxetine 30 mg PO QD
hydrocodone 10/325 mg PO as needed TID
alprazolam 0.5 mg PO qd as needed
protonix 20 mg for gastric reflux
aspirin 81 mg PO qd\Ezetimibe 10 mg PO qd
Has Narcan nasal spray for emergency OD
promethazine as needed for cough
Diphenhydramine 25 mg PO as needed itching
pt has an insulin pump
ondansetron as needed for nausea

Allergies: Bactrim DS-Unknown
codeine sulfate-unspecified
Levaquin (levofloxacin)-unspecified
Reglan (metoclopramide hcl)-unspecified

Case Study 2

60 y/o F ,with underlying depression, on trazadone 150 mg PO q HS,
She also is a chronic long term smoker,

Chronic kidney disease, stage 3 unspecified
E78.5 - Hyperlipidemia, unspecified
E89.0 - Postprocedural hypothyroidism
F13.20 - Sedative, hypnotic or anxiolytic dependence, uncomplicated
F17.200 - Nicotine dependence, unspecified, uncomplicated
F41.9 - Anxiety disorder, unspecified
I10 - Essential (primary) hypertension
N95.2 - Postmenopausal atrophic vaginitis
Z68.20 - Body mass index [BMI] 20.0-20.9, adult
Osteoporosis
Arthropathy unspecified - back sees spine specialist, wedge fx
• COPD
• Hyperlipidemia - declines use of meds/ statin
• chronic pain syndrome(lumbo sacral wedge fx) sees pain management & orthopedics
• anxiety controlled with meds chronic insomnia
• migraine headaches sees neurologist
Insomnia

SURGICAL HISTORY:
• Back Fusion surgery performed on 2019
• RAI performed on Feb-2018 - I-131 tx due to Hyperthyroidism.
• appendectomy
• hysterectomy
• bilateral breast implants - 2009

• Cholecalciferol (vitamin D3)(2,000 unit) tablet
• Cyclobenzaprine 10 mg tablet QID s needed
• Estradiol 1 mg tablet QD
Ibuprofen 800 mg tablet TID PRN PAIN
• Levothyroxine 137 mcg tablet : qAM AC
• Meclizine 25 mg tablet : -TID PRN
• Prolia(Denosumab) 60 mg/mL syringe : SQ q 6 mos
• Restoril(Temazepam) 30 mg capsule HS
• Ventolin HFA(Albuterol sulfate) 90 mcg/actuation HFA aerosol inhaler :PRN
• Xanax(Alprazolam) 1 mg tablet : 1 tablet: by mouth twice a day
Oxycodone 7.5 / 325 1 tab PO q 8 hrs as needed for pain
Was taken off HCTZ r/t CKD
On losartan 50 mg po qd

CONCLUSION

Polypharmacy is the use of multiple medications that are unnecessary and have the potential to do more harm than good.

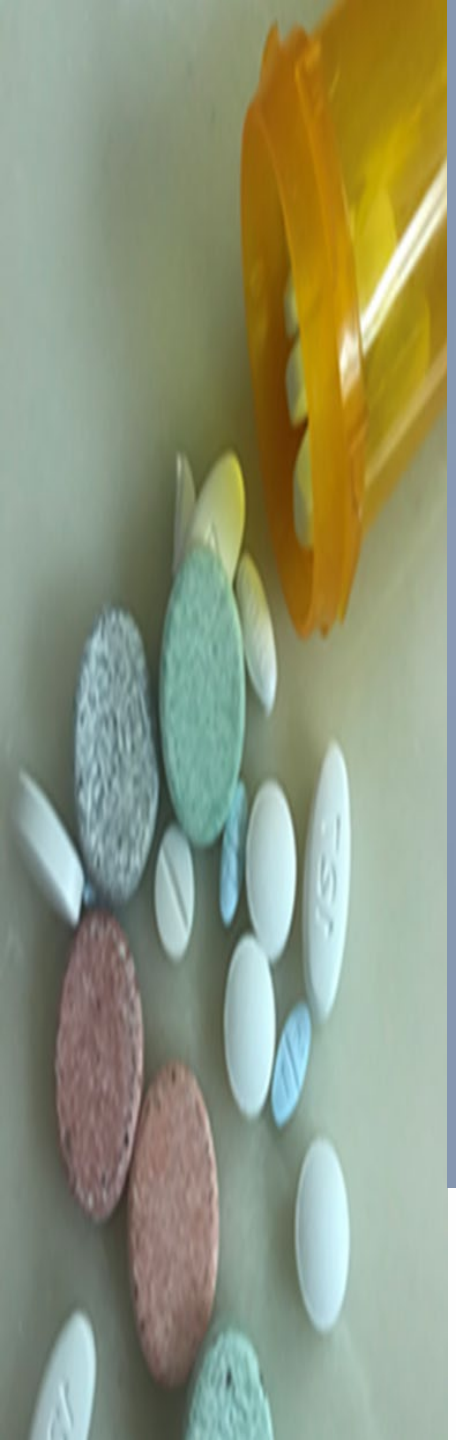
Patients at risk for polypharmacy are older than age 60, have comorbidities, have multiple prescribers or pharmacies, self-treat with over-the-counter medications, have a history of hospitalizations, and go to medical practices with poor medication tracking processes.

Medication reconciliation often begins with a “brown bag” review of the patient's medications.

To help patients buy into the deprescribing process, consider discontinuing one medication at a time or tapering medications.

Create a plan which patient can agree and comply , shared decision making

https://www.aafp.org/pubs/fpm/issues/2018/0500/p28.html



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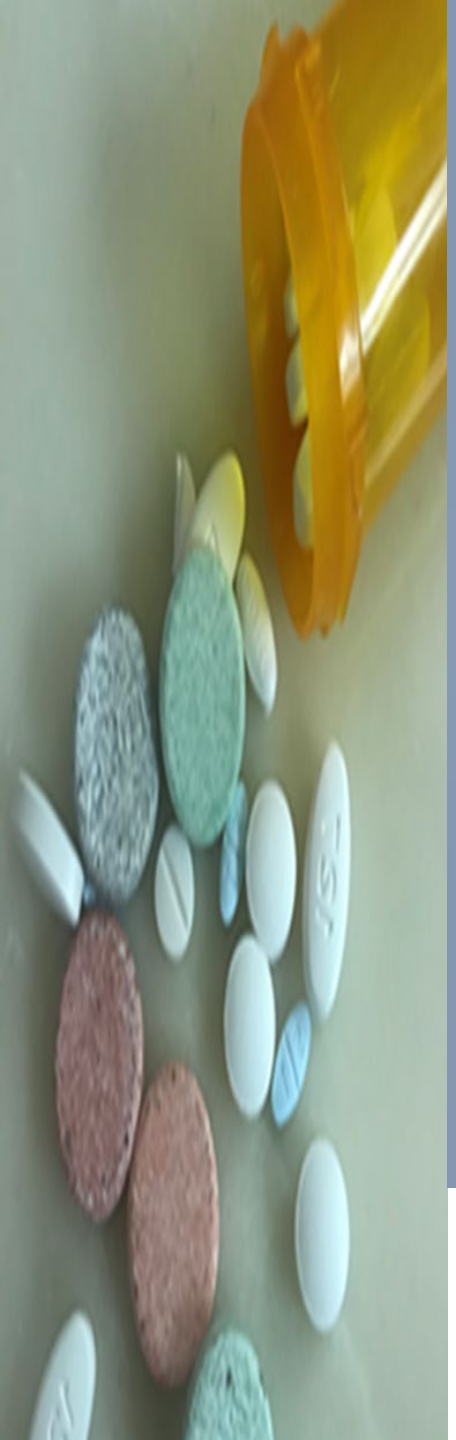

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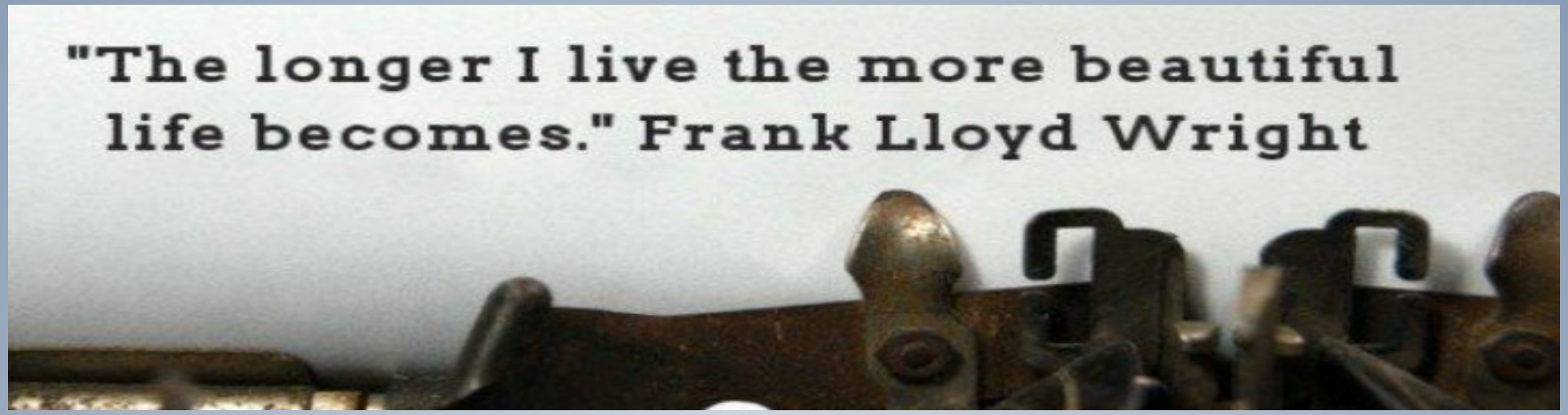
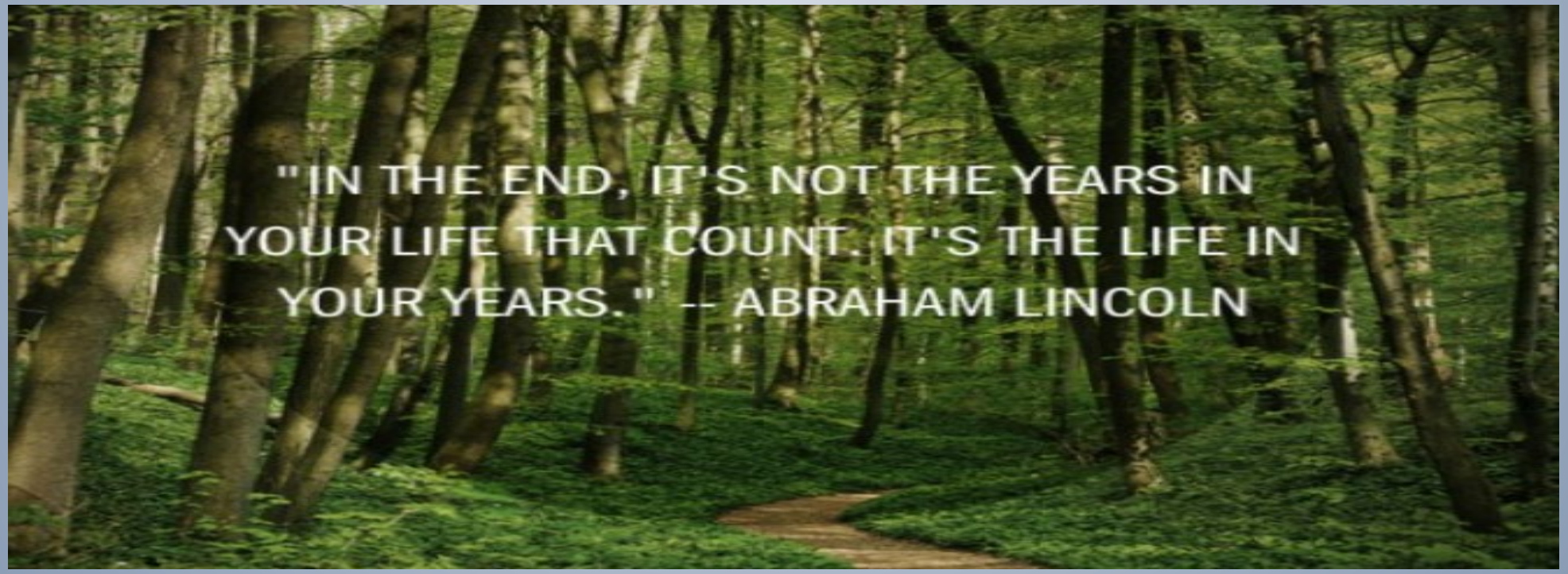

"The longer I live the more beautiful life becomes." Frank Lloyd Wright


"IN THE END, IT'S NOT THE YEARS IN YOUR LIFE THAT COUNT. IT'S THE LIFE IN YOUR YEARS." -- ABRAHAM LINCOLN