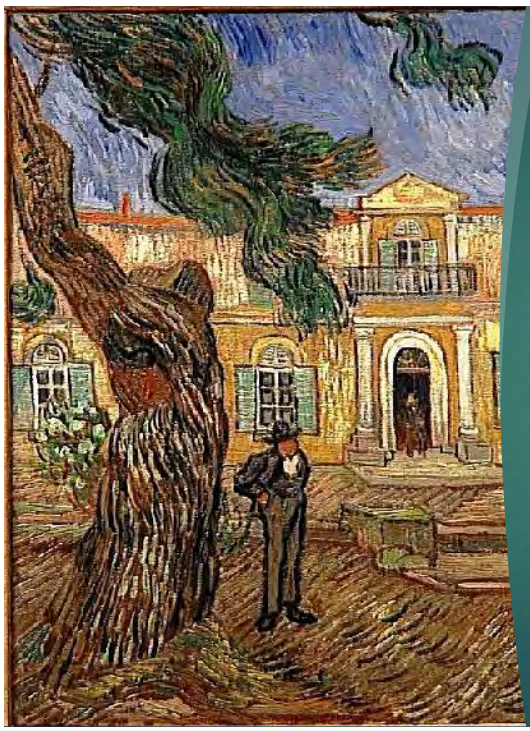
Medication Management in Older Adults



Inappropriate prescriptions pose health risks for older adults, leading to unnecessary hospitalizations and cost

- Emergency hospitalizations for adverse drug events in older Americans. NEJM 2011;365(21):2002-12

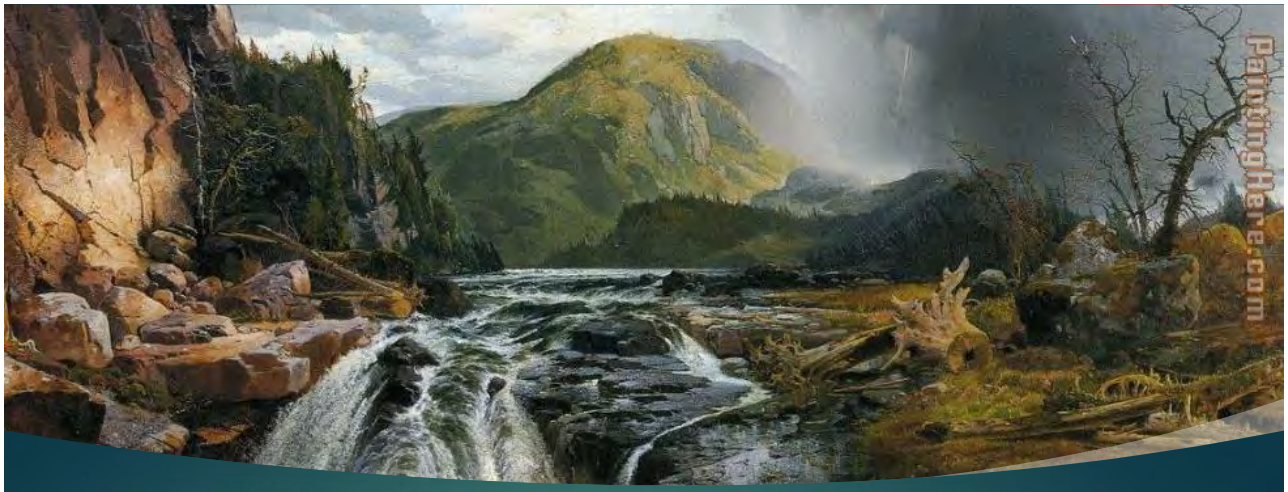
Van Gogh, St Paul Asylum

Goals

- Identify unsafe medications
- Report opportunities to deprescribe
- Enhance medication adherence
- Use screening tools

Why does polypharmacy occur in older adults ?

- Medications started in middle age
- Multiple prescribers
  - Average 5 specialty visits and 2.4 primary care visits annually
- Multiple Chronic Conditions & guidelines
  - Example: heart failure B block, ACE, spironolactone, statin



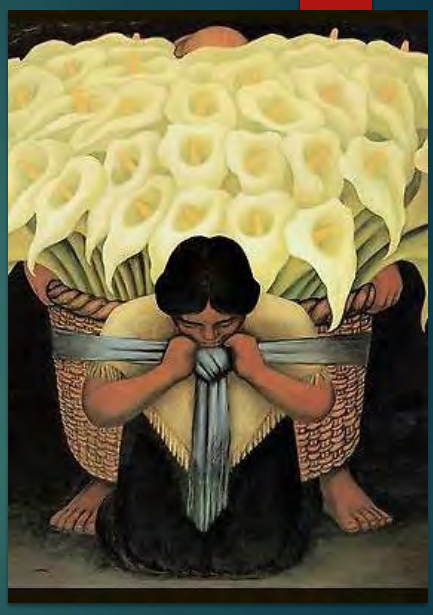
The Wilds of Lake Superior
Thomas Moran, 1871

Prescribing cascade

USE ANOTHER MEDICATION TO TREAT SIDE EFFECTS OF A PREVIOUS PRECRIPTION

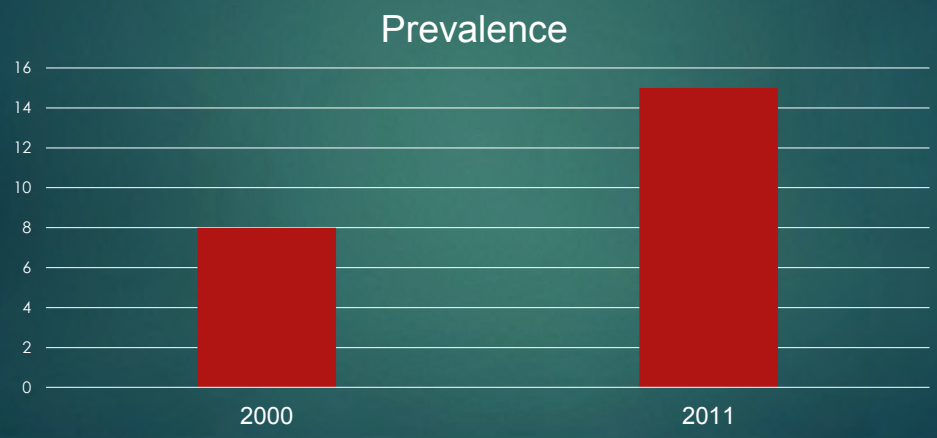
Why reduce medication burden ?

- Drugs may become unsafe with aging
  - Change in kidney function
  - Drug – drug interactions
  - Metabolic changes
- Changes in priorities: What Matters
- Primary prevention is no longer a goal
- Reduce costs

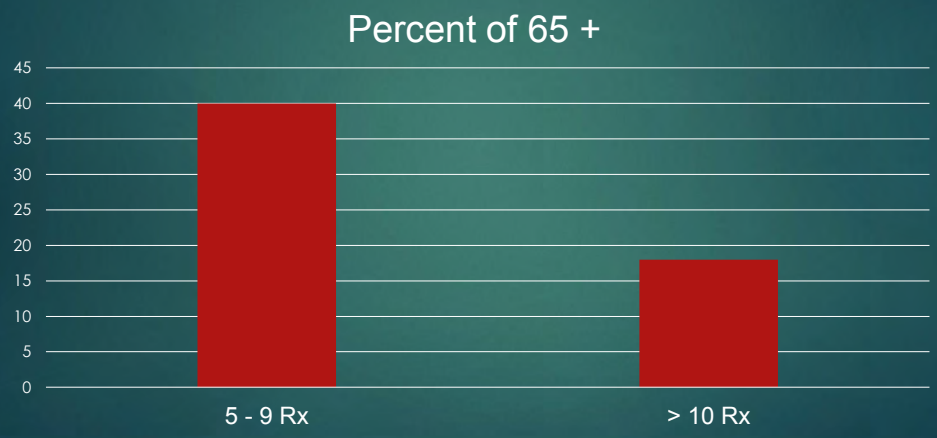


Diego Rivera

NHANES study: polypharmacy doubles each decade



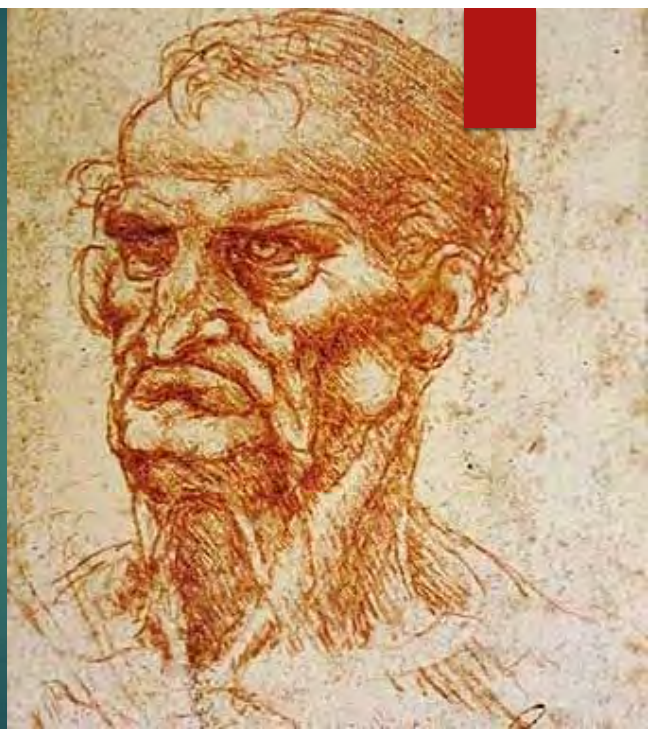
Polypharmacy = 5 or more medications



Polypharmacy

- OTC and supplementals
  - 50% of patients do not tell their provider
- Example: ginseng lowers FBS by 21 mg / dL and HA1c by 0.5% in diabetics with potential for hypoglycemia

Few medication studies for chronic conditions in older adults



Opportunities for deprescribing

The Alchemist by Jacob Toorenvliet. fec 1684.

Statins

- Good for secondary prevention
  - CVD: heart disease and stroke
- Uncertain for primary prevention
  - 23 % older adults given statin for primary prevention
- 10 year risk for 75+ does not meeting guideline thresholds
- ALLHAT trial of statins found no efficacy

ANTICHOLINERGICS

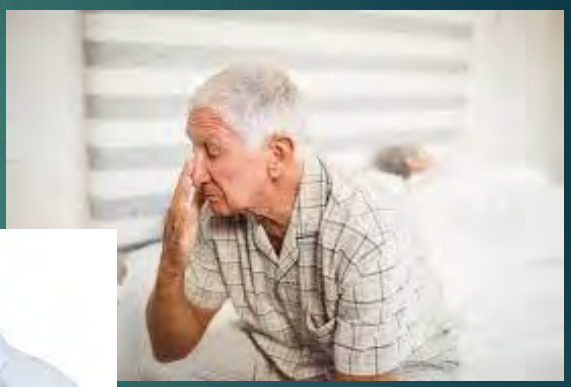
Class	Example
Antihistamines	Diphenhydramine, hydroxyzine, meclizine
Anti parkinsons	Benztropine
Muscle relaxants	Cyclobenzaprine, methocarbamol
Anti depressants	Amitryiptyline, imipramine, paroxetine
Antipsychotics	Abilify, haldol
Antimuscarinics	Oxybutynin, tolterodine, trospium
Antiemetics	Prochlorperzaine, promethazine
Antispasmodics	Hyoscamine, scopalamine

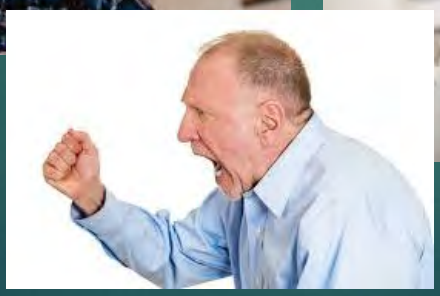
High anti-cholinergic burden

- Confusion
- Delirium
- Poor physical function
- Loss of independence
- Brain atrophy
- Memory loss
- Impulsivity

Antagonistic therapy with Incontinence meds at odds with anticholinesterase dementia treatment

The notorious benzo's





Benzos

- Mostly primary care prescribers
- 8% of population
- Anxiety, agitation, insomnia

Too Many Sheep to Sleep - Hiroko Sakai, San Francisco

List 3 bad things that happen with benzodiazepines

Jacob Peter Gowy *The Flight of Icarus* (1635–1637)

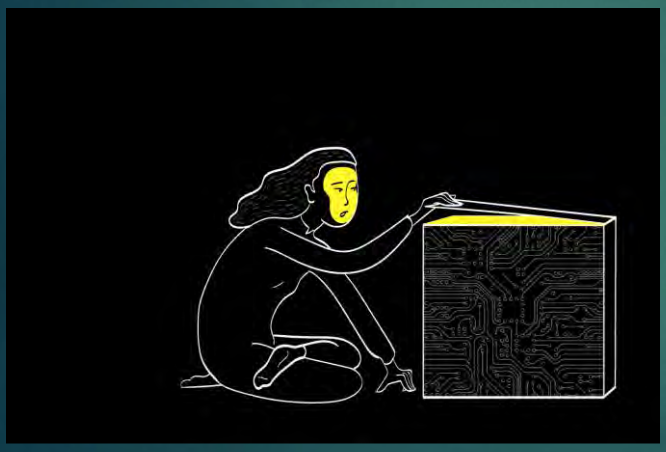
List 3 bad things that can happen with benzodiazepines

- Falls
- Amnesia
- Dementia
- Impaired driving
- Hip fractures
- Dependency
- Loss of REM sleep

Antipsychotics

Théodore Géricault, "The Hyena of la Salpêtrière," 1819

Antipsychotics



- Increasing off label use
- Only 11% effective in managing dementia – related agitation
- Increase mortality risk
- 50% higher risk of serious fall and non vertebral fracture
- Tardive dyskinesia

Alternatives to anti-psychotics

- Mirror imaging: Go with the flow
- Distract and Divert
- Treat empirically for pain
- Positive body language
- Do not argue or reprimand
- Do not rationalize

Girl Before a Mirror,
Pablo Picasso 1932

PPI

- Up to 70 % prescriptions with no apparent indication
- Up to 50 % of hospitalized patients sent out with PPIs
- Long term use only for
  - Erosive esophagitis
  - Barrett's esophagitis
  - Gastrinoma / hypersecretion
  - Refractory reflux

Ghost of a Genius, Pall Klee, 1922

Adverse effects of PPIs

- C. difficile colitis
- Community acquired pneumonia
- Hip fractures
- Vitamin B12 deficiency
- Atrophic gastritis
- CKD
- Dementia

Alberto Giacometti

Watch Out !

Drugs	Rationale for avoidance
ASA, dabigatran, rivaroxaban, prasugrel	Risk of bleeding increases with older age
SSRI, SNRI, TCAs, diuretics, antipsychotics, carbamazepine, tramadol	SIADH and hyponatremia
Trimethoprim - sulfamethoxazole	Hyperkalemia with ACE or ARB and low eGFR

Approach to polypharmacy

HPI or ROS: Consider patient symptoms as drug – related

- Fatigue / Tiredness
- Falls
- Poor sleep
- Decreased alertness
- Constipation
- Diarrhea
- Incontinence
- Loss of appetite / weight loss
- Confusion
- Depression / interest in usual activities

John Henry Fuseli, "The Nightmare," 1781

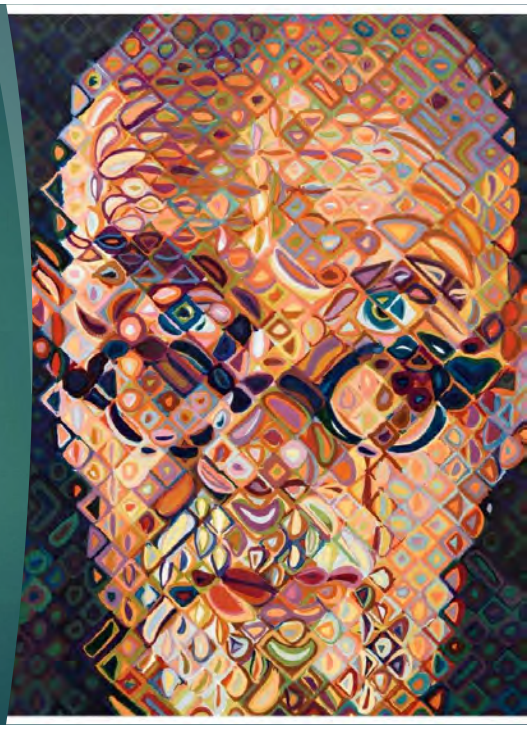
Strategies to prevent polypharmacy

- Medication list with diagnosis
- Brown bag visit
- Pharmacist consult, including One Rx referral
- Check list: Beer's criteria
- Transition of care reconciliation
- Align medication regimen to What Matters

Carol Josefiak

Deprescribing

- 90% of patients willing to stop medication if physician says it is possible
  - Reeve E, et al. (2018) “Assessment of attitudes toward deprescribing in older Medicare beneficiaries in the United States.” JAMA Internal Medicine



Chuck Close

DEPRESCRIBING: REDUCING MEDICATIONS SAFELY TO MEET LIFE'S CHANGES

FOCUS ON PROTON PUMP INHIBITORS (PPIs)

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

Deprescribing is a way for health care providers to help you safe… back on medications.

WHAT ARE PROTON PUMP INHIBITORS?

- Drugs used to treat problems like heartburn or stomach ulcers
- Examples include:
  - Lansoprazole (Prevacid®)
  - Omeprazole (Losec®, Olex®)
  - Pantoprazole (Tecta®, Pantoloc®)
  - Rabeprazole (Pariet®)
  - Esomeprazole (Nexium…
  - Dexlansoprazole (Dexila…

WHY CONSIDER REDUCING OR STOPPING A PPI?

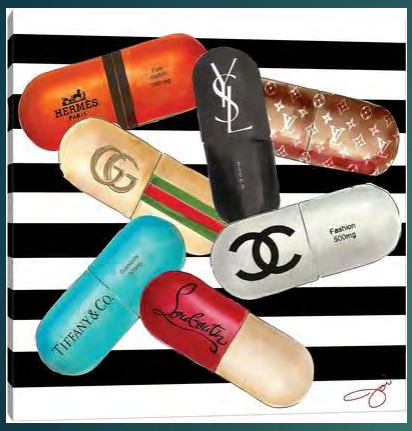
- PPIs can cause nausea, headaches, diarrhea and increase risk for more serious health issues
- Many could take them … periods but remain on … years
- **40-65%** of hospitalized people taking PPIs have no documented reason for taking the drug
- For some people, the d… be reduced, or the PPI … and taken only if sympt…

HOW TO SAFELY REDUCE OR STOP A PPI

- Ask your health care provider to find out if deprescribing is for you; *some people… long-term*
- Tell your health care provider about the PPI deprescribing algorithm, available on… http://deprescribing.org/resources/deprescribing-guidelines-algorithms/
- Download the PPI patient information pamphlet, available online: http://deprescribing.org/resources/deprescribing-information-pamphlets/

Tools for deprescribing

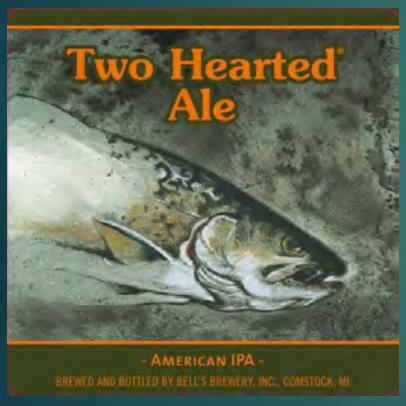
- Pamphlets
- Checklists
- Research



Tools for deprescribing

deprescribing.org

Beers List: framework



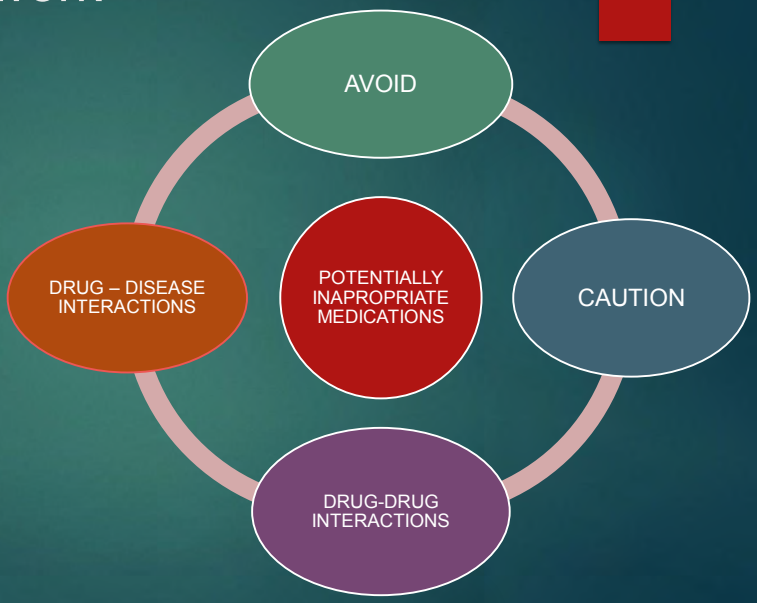


Table 2. Incorporated changes of potentially inappropriate medications in older adults

Medication or medication class	Recommendation; rationale *(changes to the 2015 criteria)*
Anticholinergics	
First-generation antihistamines	Avoid; clearance reduced with advanced age, and tolerance develops when used as hypnotic; risk of confusion, dry mouth, constipation, and other anticholinergic effects or toxicity
Antiparkinsonian agents (benztropine, trihexyphenidyl)	Avoid; not recommended for prevention of extrapyramidal symptoms with antipsychotics
Antispasmodics	Avoid; high anticholinergic and uncertain effectiveness
Antithrombotics	
Dipyridamole, oral short-acting	Avoid; may cause orthostatic hypotension, and more effective alternatives available; I.V. form acceptable to use in cardiac stress testing

Potentially Inappropriate Medications (PIMs)

CNS	
Delirium (anticholinergics, antipsychotics, benzodiazepines, corticosteroids, H2-receptor antagonists, meperidine, Z drugs	Avoid; potential of inducing or worsening delirium; avoid antipsychotics for behavioral problems of dementia and/or delirium unless nonpharmacological options have failed or are not possible and the older adult is threatening substantial harm to self or others; antipsychotics are associated with greater risk of cerebrovascular accident and mortality in patients with dementia
Dementia or cognitive impairment (anticholinergics, benzodiazepines, Z drugs, antipsychotics used chronically and "as needed")	Avoid; adverse CNS effects; avoid antipsychotics for behavioral problems of dementia and/or delirium unless nonpharmacological options have failed or are not possible and the older adults is threatening substantial harm to self or others; antipsychotics are associated with greater risk of cerebrovascular accident and mortality in patients with dementia
History of falls or fractures (antiepileptics, antipsychotics, benzodiazepines, Z drugs, antidepressants [TCAs, SSRIs, SNRIs], opioids)	Avoid unless safer alternatives are not available; avoid antiepileptics except for seizure and mood disorders; avoid opioids except for pain management in setting of acute pain; may cause ataxia, impaired psychomotor function, syncope, additional falls

Drug – disease list

Beers List: 30 drugs to avoid in general / 40 to use cautiously

- SNRIs → falls
- Metoclopramide
- Sliding scale insulin → hypoglycemia
- SulfonOureas → hypoglycemia
- NSAIDs, especially with diuretics or HF

Beers Lis: Combos to avoid

- Opioids with benzodiazepines or gabapentinoids
- More than 3 CNS active Rxs
- Macrolides & Cipro with warfarin (bleeding)
- SMx – TMP and phenytoin (Dilantin toxicity)
- SMX – TMP with ACE / ARB and CKD (hyperkalemia)

Beers List: medications to avoid or reduce with CKD

Medication	Side effect	Recommendation
Ciprofloxacin	CNS changes, tendon rupture	Reduce dose
Nitrofurantoin	Organ toxicity, neuropathy	Avoid, especially long term use
TMP - SMX	Hyperkalemia, kidney faiure	Reduce dose CrCL 15 -29 mL / min Avoid if < 15 mL / min
H2 blockers	Mental status changes	Reduce dose
Gabapentin / Pregabalin	CNS changes	Reduce dose
Duloxetine	CNS changes	Reduce dose
Colchicine	GI side effects, BM toxicity, Neuromuscular effects	Reduce dose

STOPP/START List

Physiological System	Number of criteria
Cardiovascular system	17
Central nervous system	13
Gastro-intestinal system	5
Musculoskeletal system	8
Respiratory system	3
Urogenital system	6
Endocrine system	4
Drugs that adversely affect fallers	5
Analgesics	3
Duplicate drug classes	1

Examples of STOPP / START

Cardiovascular System

1. Digoxin at a long-term dose > 125µg/day with impaired renal function
2. Loop diuretic for dependent ankle oedema only i.e. no clinical signs of heart failure
3. Loop diuretic as first-line monotherapy for hypertension
4. Thiazide diuretic with a history of gout
5. Non cardioselective Beta-blocker with Chronic Obstructive Pulmonary Disease

Central Nervous System and Psychotropic Drugs.

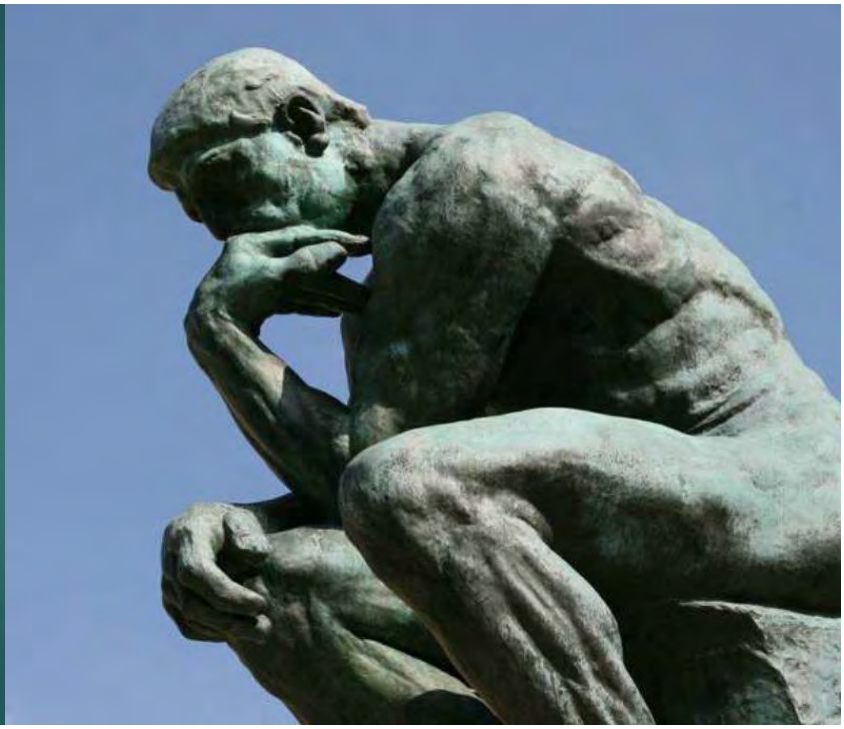
1. Tricyclic antidepressants (TCAs) with dementia
2. TCAs with glaucoma
3. TCAs with cardiac conductive abnormalities
4. TCAs with constipation
5. TCAs with an opiate or calcium channel blocker

STOPP / START protocol

- 41 – 67 % hospitalized patients with Potentially Inappropriate Medication (4 RCTs)
- Protocol impact
  - Fall reduction
  - Reduced drug costs
  - Reduced adverse drug events from 24 to 12.5 %

Consider

- What Matters to the patient
- Functional status
- Life expectancy



4Ms Framework

High-quality Geriatrics healthcare with 4Ms

Need to be delivered reliably with every older adult encounter across the continuum.