Medications & the Older Adult

APPROACH WITH CAUTION?

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RGPEO – Geriatric Refresher Mar. 4, 2015

Disclosures:

Presenter: Debbie Kwan

- Relationships with commercial interests: None
- Commercial support: None
- Potential for conflict of interest: None

Outline

- Older adults and polypharmacy
- Impact of medication-related problems
- What can we do

Seniors and ER visits

- Medication-related causes?

Medication-related Emergency Room visits:

- Common culprits
  - Insulin
  - Opioids
  - Anticoagulants
  - Digoxin
  - Antihistamine/cold products
- Many are preventable

Budnitz et al., JAMA 2006

Zed et al, CMAJ 2008; 178: 1568-9

Common drug therapy problems:

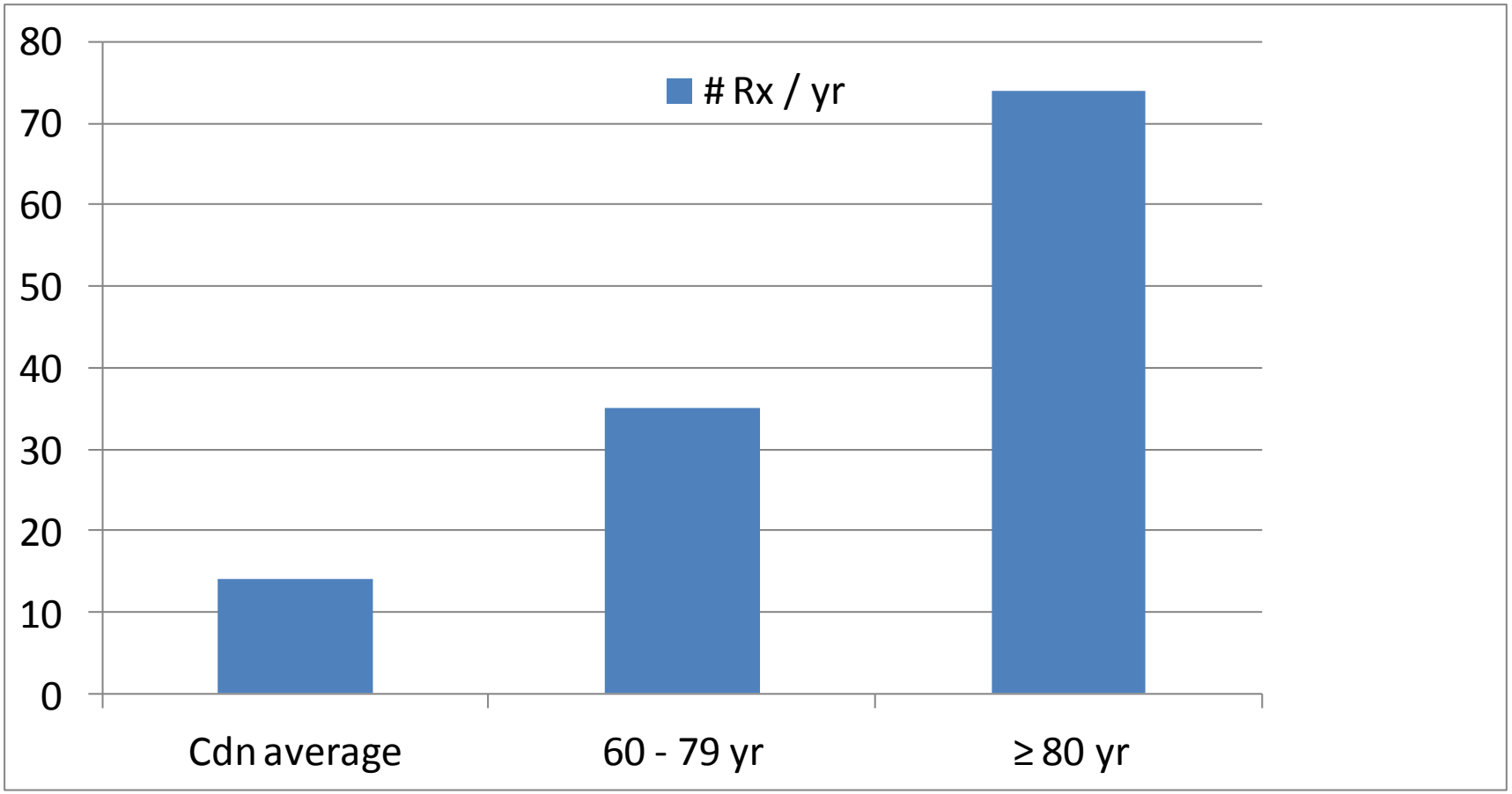
Problem	Implication / Example
Overuse	Acetaminophen
Underuse	Warfarin (subtherapeutic INR)
Not following instructions	Side effects; Lack of effect
Drug interactions	+++

What is polypharmacy?

Using more drugs than is medically necessary

Maher, Exp Opin Drug Saf 2014

Prescriptions dispensed:



Ramage-Morin, Stats Canada, Health reports 20(1); Mar 2009

Why are seniors at risk?

- Age-related changes:
  - Pharmacokinetic
  - Pharmacodynamic
- Lack of guidelines:
  - Underrepresented group
  - Time to benefit

Comorbidity & lack of evidence

- Comorbidity:
  - dementia –> delirium
  - poor renal function –> CHF
  - poor balance –> falls etc.
- Underrepresented in clinical trials:
  - 3/155 RCTs - exclusively elderly
  - Proportion of patients > 65 similar to clinical practice: 4/37 pioglitazone, 4/22 risedronate, 3/29 rosuvastatin, 9/67 valsartan
- Study populations skewed towards healthy, older subjects

Plos ONE 7(3):e33559.doi:10.1371/journal.pone.0033559

Medication Discrepancies

Prescribed regimen ≠ Actual use

- 51% - taking meds not recorded
- 29% - no longer taking a recorded medication
- 20% - different dose

Predictors of discrepancies:

- ✓ advanced age
- ✓ polypharmacy

Bedell, Arch Intern Med 2000; 160: 2129 - 2134

What can WE do?

Improving the quality of medication use:

What works:

- ✓ Pharmacist review of medications
- ✓ Multidisciplinary team review of medications

It all starts with a good history!

Maher et al., Expert Opin Drug Saf 2014

Gathering the Best Possible Medication History (BPMH)

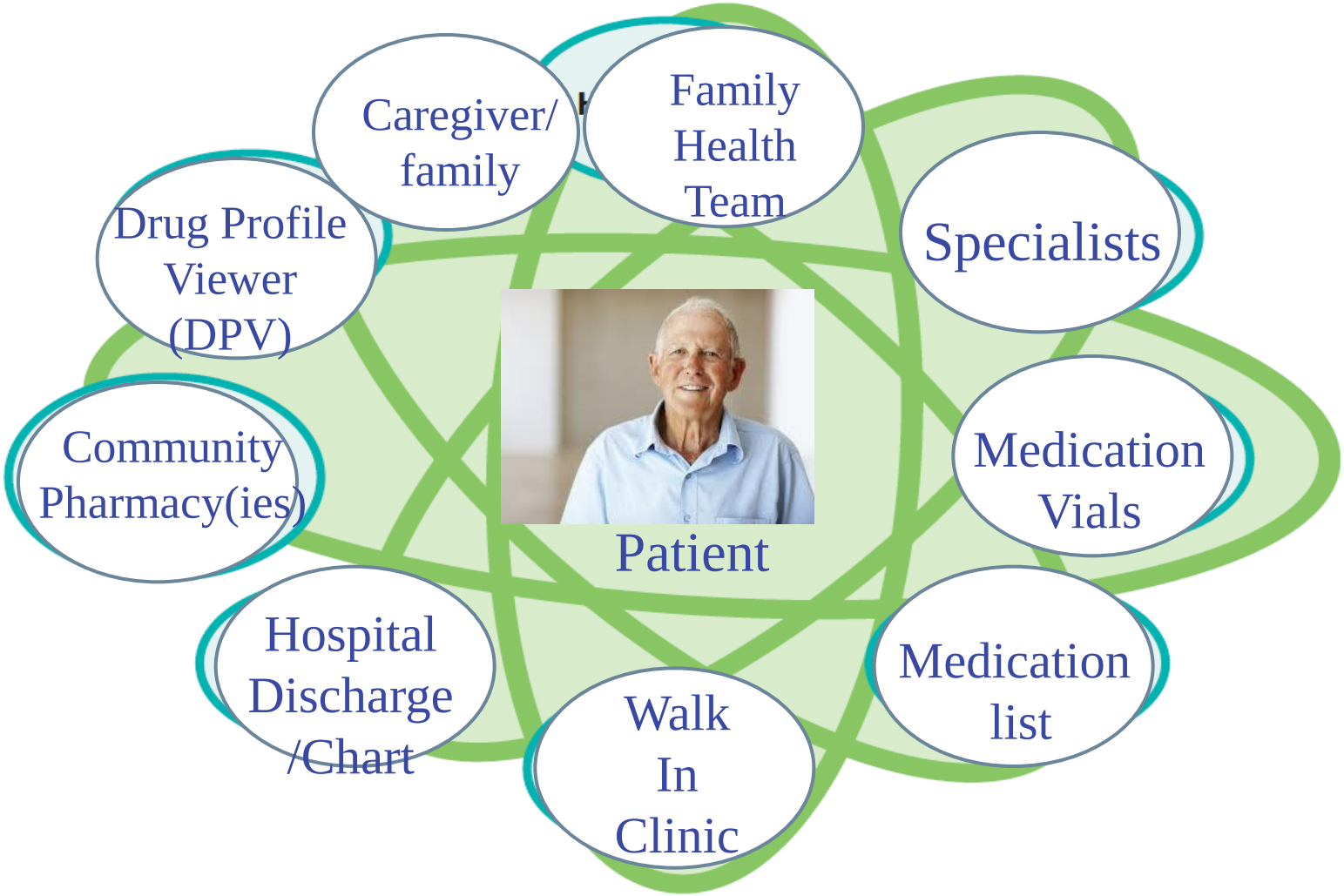
- Use multiple sources of information
- Ask the right questions
- Record information

What conditions should prompt a medication review?

- Confusion
- Delirium
- Falls
- Heart failure
- Orthostatic hypotension

- Frequent ER visits!

Sources of Information



Adapted with permission from Dr. Olavo Fernandes

ASK the right questions

- Prescription
- Non-prescription
- Herbals, Vitamins, Supplements
- Topicals
- Samples
- Illicit
- “Borrowed”

Record and share information:

http://www.knowledgeisthebestmedicine.org/index.php/en/medication_record

Medication Record

Medication Schedule

Name: _____

Last Updated: _____

	What medication am I taking?	Why am I taking this medication?	What does the medication look like?	How and when am I taking this medication?	Who prescribed the medication?	Notes
Morning (breakfast)						
Midday (lunch)						
Evening (dinner)						
Bedtime						

Optimizing Medication Use

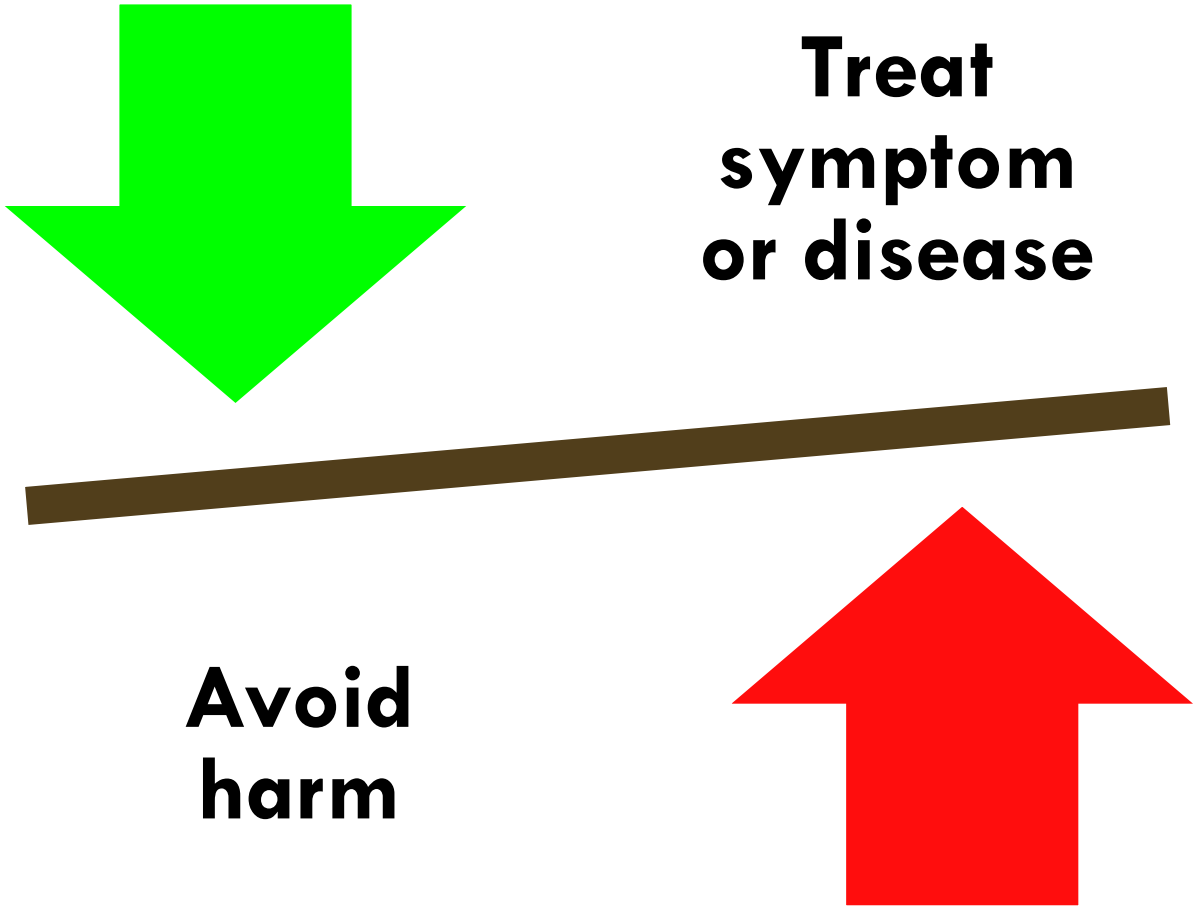
Customizing

Mildred

- 82 yr, T2 diabetes, Hypertension

- 2 blister packs - 17 medications
- Doesn't like to take meds (per son)
- c/o dizzy, confused
- Worsening nausea
  - poor appetite
- Several falls
  - Afraid to go out

Finding the balance



Goals of therapy:

- Maintain and/or improve:

Us:	Patients:
Physical functioning	ADLs ("bathing")
Psychological function	Cognition, depression ("think clearly")
Social functioning	Social activities; Support systems ("see my family")
Overall health	General health perception ("not feel tired")

Strategies for reducing Polypharmacy:

1. Can this be caused by a drug?
2. Which drugs are still providing benefit?
3. Deprescribe
4. Reduce pill burden

Kwan, Farrell. Pharmacy Practice Apr/May 2013

1. Can this be caused by a drug?

Screening Tools:

	BEERS 2012	STOPP
Origin	• consensus list (Dr. M.Beers 1991) – nursing home •2012 update – evidence-based	• consensus list (2004) • address gaps in earlier Beers versions
Format	Medications divided into tables: 1. Avoid 2. Inappropriate 3. Caution	• 65 criteria for inappropriate prescribing divided by physiological system
Access	http://geriatricscareonline.org/ProductAbstract/beers-pocket-card/PC001 (accessed Feb 2015).	http://www.biomedcentral.com/imedia/3973756062468072/supp1.doc (accessed Feb 2015)

Geriatric presentations that can be caused by drugs:

Presentation:	Examples of Drug-related causes:
Falls	Sedatives, hypnotics, anticholinergics, antihypertensives
Cognitive impairment	Anticholinergics, benzodiazepines, antihistamines, tricyclic antidepressants
Incontinence	Alpha blockers, Sedatives (e.g. benzodiazepines), Diuretics
Constipation	Anticholinergics, opioids, calcium channel blockers, Ca supplements
Delirium	Antidepressants, antipsychotics, antiepileptics
Diarrhea	Antibiotics, proton pump inhibitors, SSRIs
GI bleeding	NSAIDs, oral anticoagulants

Dangerous drug interactions:

Digoxin + azithromycin	Dig toxicity
ACEI, ARB, spironolactone + TMP-SMX	Hyperkalemia
Glyburide + TMP-SMX	Hypoglycemia
Warfarin + ciprofloxacin	Hemorrhage

Check all antibiotics for Drug Interactions -> monitor and follow-up!

http://www.ismp-canada.org/beers_list/downloads/Drug-DrugInteractions.pdf

Back to Mildred:

- Compare medications with BEERS and STOPP criteria
- Potentially inappropriate medications:
  - **Lorazepam** – falls, dizziness, cognitive impariment
  - **Metformin** (recent dose increase) - nausea
  - **Omeprazole** – risks of long term therapy

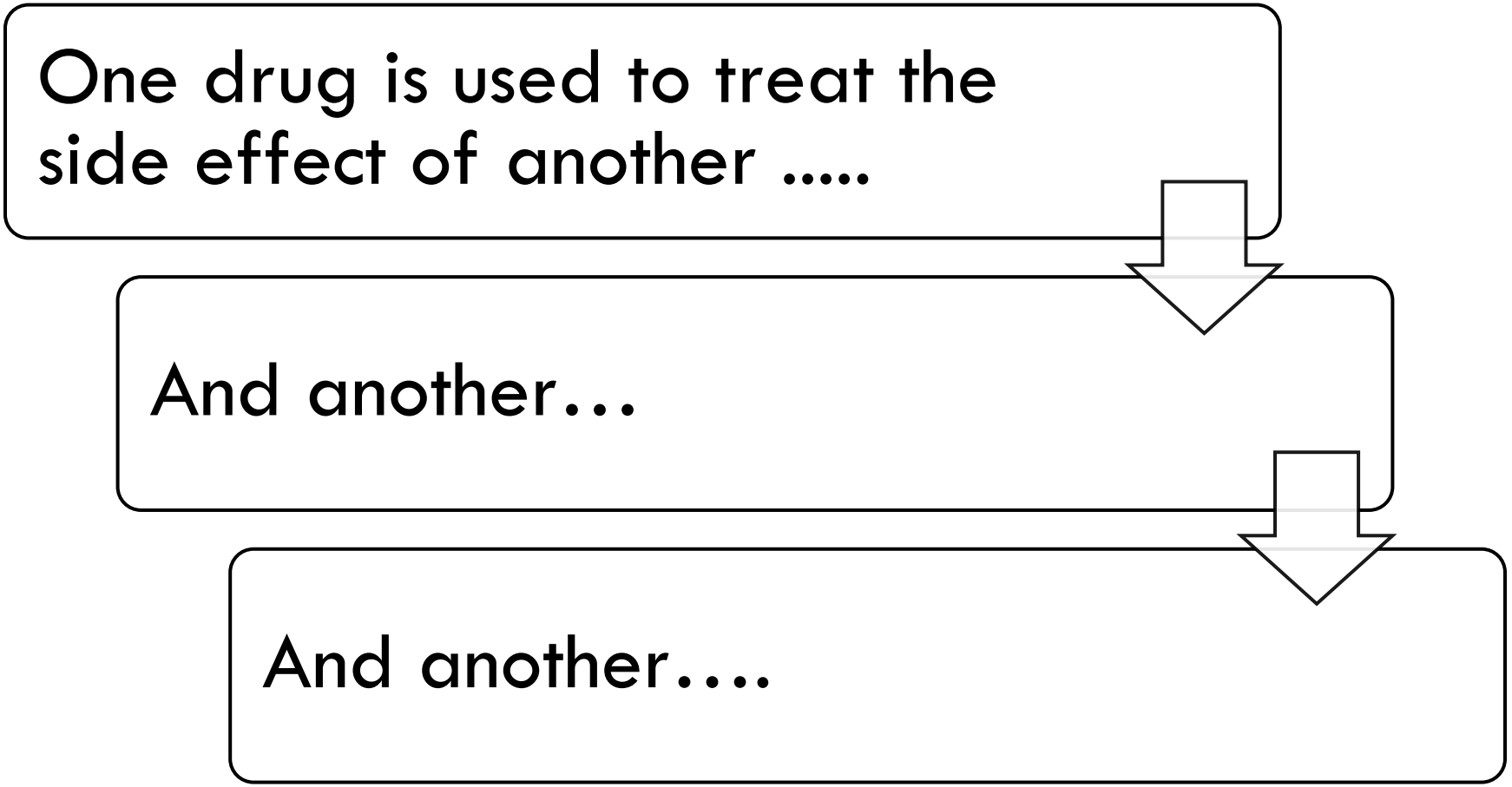
A closer look at Mildred's medication history:

- ↑ Metformin -> nausea -> metoclopramide
- Ibuprofen -> GI upset -> omeprazole

Could these be prescribing cascades?

Prescribing Cascades

What is a prescribing cascade?



Examples of Prescribing cascades

- NSAIDs → hypertension → antihypertensive
- NSAIDS → heartburn → H2RA or PPI
- PPI → low B12 → B12 supplement
- Risperidone → parkinsonism → benztropine
- Amlodipine → edema → furosemide
- Gabapentin → edema → furosemide
- Furosemide → hypokalemia → Slow K
- Buproprion → insomnia → lorazepam
- Donepezil → urinary incontinence → oxybutynin
- Oxybutynin → decreased cognition → donepezil

www.bpac.org.nz

Rochon et al BMJ 1997; 315: 1096

Risks of unrecognized prescribing cascades

Self-management:

- Narcotic → constipation → senna
- Senna → diarrhea → loperamide (e.g. Imodium™)
- Lorazepam → morning drowsiness → caffeine
- ACEI (e.g. ramipril, enalapril) → cough → dextromethorphan

2. Which drugs are still providing benefit?

- Medication history (symptom onset in relation to medication starts or changes):
  - MedsCheck
- Interprofessional approach:
  - Symptom improvement? (e.g. Pain):
    - Efficacy of drug vs. non-drug therapy
  - Signs?
    - Consider therapeutic goals in the elderly (e.g. BP, A1C)
    - Be prepared for uncertainty/lack of evidence
  - Problem "resolved"
    - E.g. PPI for NSAID induced GERD

3. "Deprescribe"

- Prioritize drugs for tapering and stopping unnecessary medications
- Develop a plan
- Coordinate and communicate with prescriber and patient

Stopping medications – "Rocking the boat" or "Fixing a leak"?

- Medications can be stopped without causing harm
  - 81% successful discontinuation (Garfinkel et al, 2010)
- But, adverse drug withdrawal events or reactions can happen (ADWE)
- Start with medications where there is:
  - Risk of harm with no known benefit
  - Little chance ADWE
  - Unclear or no indication
  - Indication but unknown or minimal benefit
  - Benefit but side effect or safety issues

Arch Intern Med 2010; 170: 1648-54

Adverse drug withdrawal events (ADWE)

- "A clinically significant set of symptoms or signs caused by the removal of a drug"

- Can be:
  1. Physiological - tachycardia (beta-blocker); rebound hyperacidity (PPI)
  2. Symptoms of underlying condition - arthritis pain after stopping an NSAID
  3. New symptoms - excessive sweating with stopping SSRI

- Increased risk with:
  - Longer duration, higher doses, short half-life
  - History of dependence/abuse
  - Lack of patient 'buy-in'

Getting buy in

- Ask:
  - What questions do you have about your medications?
  - What medications do you feel most strongly about keeping?
  - What medications do you wonder about how well they're working for you?

- One at a time
  - Involve the patient

Quick wins:
Drugs that rarely have ADWEs

- ASA
- bisphosphonates
- calcium
- docusate
- fibrates
- glucosamine
- iron
- statins
- vitamins (E, B12, multiple vitamins, folic acid)

Examples of drugs that can have ADWEs:

DRUG	MONITORING
ß-Blockers	↑ HR, ↑ BP, angina, anxiety
Diuretics -furosemide , -HCTZ	↑ pedal edema, chest sounds, SOBOE, ↑ weight
Hypnotics -lorazepam, zopiclone	poor sleep, ↑ anxiety, agitation, tremor
PPIs, domperidone	rebound heartburn, indigestion
Narcotics	↑ pain, ↑ PRN use, mobility changes, insomnia, anxiety, diarrhea
NSAIDs	↑ pain, ↑ PRN use, mobility changes
Anti-depressants -e.g citalopram, -venlafaxine ,	Early: chills, malaise , sweating, irritability, insomnia, headache Late: depression recurrence
Antipsychotics	Insomnia, restlessness, hallucinations, nausea

Graves et al., Arch Intern Med 1997; Bain et al., JAGS 2008

Deprescribing: Steps to consider

- Stop vs. taper
- Patient buy-in
- Offer safer alternatives
- Involve patient/family / interprofessional team with coordination and monitoring
- Emphasize non-pharmacological approaches
- Follow-up and provide reinforcement

4. Reduce pill burden

Medication Non-Adherence

- 50% prevalence in the elderly
- Adherence ↓ as # of medications ↑
- Barriers:
  - Too many pills
  - Complex schedules
  - Cost
- Intentional non-adherence

Hajjar ER, Am J Ger Pharm 2007; 5(4): 345-51

Improving Medication Adherence:

- Multi factorial
- Reduce pill burden
  - Combination products
  - Engage in “deprescribing”
    - tapering vs. stopping
- Simplify medication schedules (timing, tablet splitting, alternate strengths)

Mildred

- **Metformin** dose reduced -> metoclopramide stopped
- **Omeprazole** tapered and discontinued
- **Lorazepam** – gradual taper x several months

- 1 pill pack
- BID dosing

Tips:

- Obtain an accurate medication history
- Ask can it be caused by a drug?
  - Geriatric presentations
  - Prescribing cascades
- Involve and inform patient and circle of care about changes to therapy
- Monitor for adverse drug withdrawal events
- Simplify medication schedules

Free online resources:

- Drug interactions: www.Medscape.com
- Clinical search engine: www.TRIPdatabase.com
- Drugs and the elderly:
  - BEERS: www.americangeriatrics.org
  - Therapeutics Initiative – UBC
    - www.ti.ubc.ca
  - Rx Files (selected info free): www.rxfiles.ca
- Medication Reconciliation toolkit

http://www.saferhealthcarenow.ca/EN/Interventions/medrec/Pages/default.aspx

THANK YOU!

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Acknowledgement: Dr. Barbara Farrell, Bruyere Research Institute, Ottawa

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