Improving Falls Care Coordination with Pharmacists

Kristin S. Meyer, PharmD, CGP, CACP, FASCP

Associate Professor, Pharmacy Practice

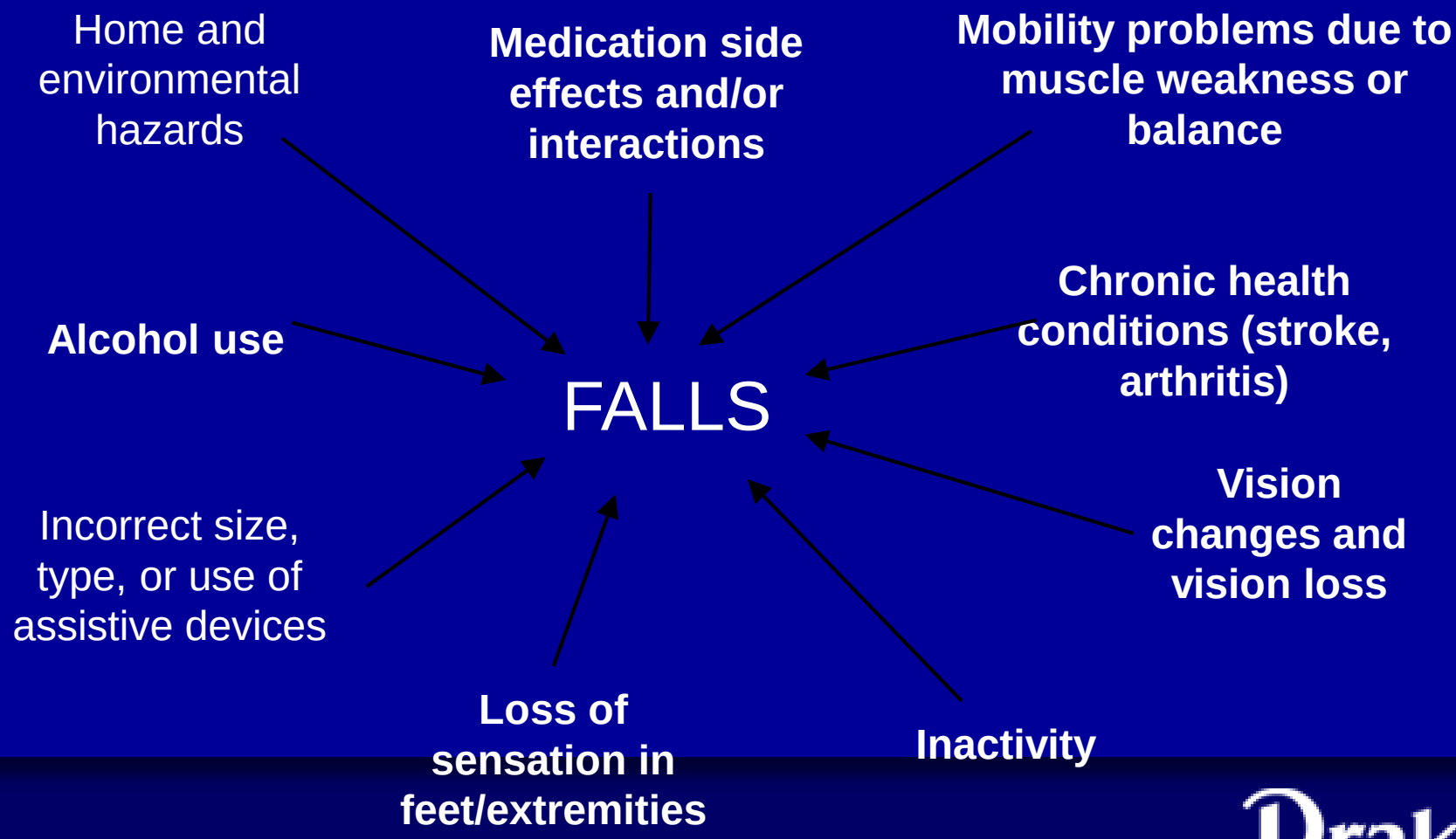
Drake University College Of Pharmacy and Health Sciences

Drake UNIVERSITY

Objectives

- Discuss chronic conditions that may predispose patients to falls and how proper medication management can minimize fall risk.
- Apply knowledge of medications to a patient case and demonstrate the role of your respective health profession in a team approach to falls reduction.

Causes and Risk Factors



CDC Preventing Falls. 2008.

Drake UNIVERSITY

Medical Conditions Associated with Falls

- Diseases affecting sensory input
  - Cataracts, glaucoma, macular degeneration
- Diseases affecting central processing
  - Stroke, Parkinson's, dementia, depression, orthostasis
- Diseases affecting affector response
  - Foot problems, arthritis

Adapted from: Lord, Stephen R.; Sherrington, Catherine; Menz, Hylton B.; Close, Jacqueline C. T. (2007). Falls in Older People : Risk Factors and Strategies for Prevention. Retrieved from http://www.eblib.com

Drake UNIVERSITY

Falls Assessments

- T/F? Half of older adults who fall don't discuss it with a provider, because of fear of losing independence.
- Those reporting at least one fall should be assessed

- CDC STEADI toolkit
- www.cdc.gov/steadi/index.html

Literature Review

Article	Conclusions	Clinical Relevance
Are triage questions sufficient to assign fall risk precautions in the ED?	Using the 4BST in addition to asking pertinent triage questions increased identification of high fall-risk patients.	Consider the use of balance testing when admitting patients.
Concordance with a STOPP (Screening Tool of Older Person's Potentially Inappropriate Prescriptions)…	The use of benzodiazepine and zopiclone in patients who have experienced falls has not decreased despite guidelines suggesting otherwise.	Knowing that medications increase fall risk is not enough; healthcare providers must evaluate each patient for proper medication use.
Potentially inappropriate medications (PIMs) in older hospital in-patients…	PIMs were the most common cause of preventable falls, and often were associated with serious injury.	Evaluate each patient's medical record for potentially inappropriate medication and determine their necessity.

Am J Emerg Med 2017. J PopulTher Clin Phamacol. 2016.
Austalasian J Ageing 2016.

Drake UNIVERSITY

Literature Review

Article	Conclusions	Clinical Relevance
Evaluating the use of targeted multiple intervention strategy in reduction of patient falls…	Asking patients who have suffered falls why they think they fell and adjusting accordingly can reduce future falls.	Involving the patient in the discussion of fall prevention can decrease risk of future falls.
Incidence of In-Hospital Falls in Geriatric Patients Before and After the Introduction of an Interdisciplinary Team…	An interdisciplinary team-based approach to fall prevention significantly reduced the number of patient falls. The structure of the interdisciplinary team was one physician, two nurses, a physical therapist and an occupational therapist.	All members of the healthcare team are responsible for doing their part to prevent patient falls.

J Adv Nurs. 2011. JAGS 2007.

Drake UNIVERSITY

Multidisciplinary Approach: Falls Reduction

Drake UNIVERSITY

Assess carefully…

"Any symptom in an elderly patient should be considered a drug side effect until proved otherwise."

J Gurwitz, M Monane, J Avorn. Brown University Long-Term Care Quality Letter 1995

Drake UNIVERSITY

The Prescribing Cascade

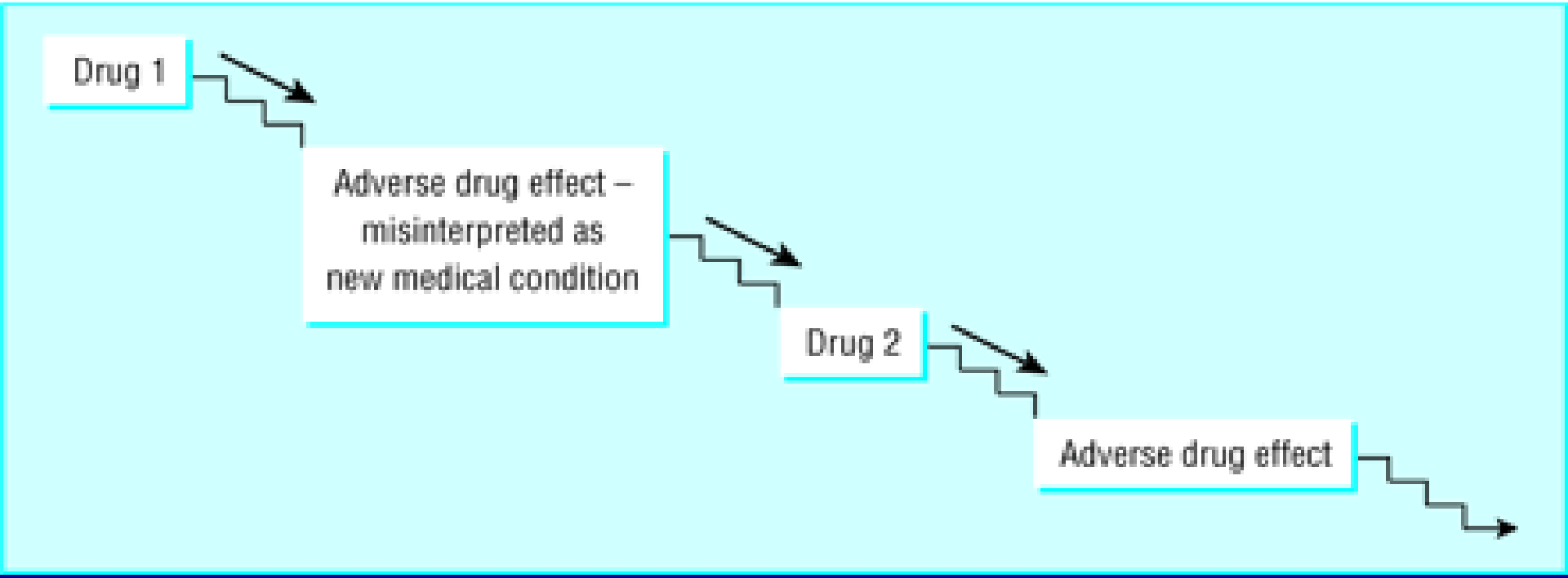


Image available: Rochon PA, Gurwitz JH. Optimising drug treatment for elderly people: the prescribing cascade. BMJ. 1997;315(7115):1096-9.

Polypharmacy

- Definition: taking multiple medications concurrently
- Primary cause of adverse drug reactions in older adults

Community-dwelling elderly:
50% take 5+ medications
12% take 10+ medications

Chisholm-Burns M. Pharmacotherapy Principles & Practice. 2010.

Drake UNIVERSITY

Most Common Medications Associated with Falls in the Elderly

- Anticonvulsants
- Antidepressants
- Antipsychotics
- Benzodiazepines
- Opioids
- Sedatives

- Discontinue use or reduce doses when possible

MMWR 2016;65:993-8.

Drake UNIVERSITY

Other Meds Possibly Associated with Falls

- Anticholinergics
- Antihistamines
- Antihypertensives
- Antiarrhythmics
- Muscle relaxants

Perm J 2013;17:37-39.

Drake UNIVERSITY

2015 Beers Criteria

Table 7. Drugs with Strong Anticholinergic Properties

Antihistamines Brompheniramine Carbinoxamine Chlorpheniramine Clemastine Cyproheptadine Dexbrompheniramine Dexchlorpheniramine Dimenhydrinate Diphenhydramine (oral) Doxylamine Hydroxyzine Meclizine Triprolidine	Antiparkinsonian agents Benztropine Trihexyphenidyl	Skeletal muscle relaxants Cyclobenzaprine Orphenadrine
Antidepressants Amitriptyline Amoxapine Clomipramine Desipramine Doxepin (>6 mg) Imipramine Nortriptyline Paroxetine Protriptyline Trimipramine	Antipsychotics Chlorpromazine Clozapine Loxapine Olanzapine Perphenazine Thioridazine Trifluoperazine	Antiarrhythmic Disopyramide
Antimuscarinics (urinary incontinence) Darifenacin Fesoterodine Flavoxate Oxybutynin Solifenacin Tolterodine Trospium	Antispasmodics Atropine (excludes ophthalmic) Belladonna alkaloids Clidinium-chlordiazepoxide Dicyclomine Homatropine (excludes ophthalmic) Hyoscyamine Propantheline Scopolamine (excludes ophthalmic)	Antiemetic Prochlorperazine Promethazine

J Am Geriatr Soc 63:2227–2246, 2015.

Drake UNIVERSITY

Alternatives to Fall-Inducing Drugs

Medication	Alternative
Anticonvulsants	Decrease dose Newer agents (lamotrigine, levitiracetam) In neuropathic pain, try gabapentin, pregabablin, or topical agent
Tricyclic Antidepressants	Switch to a different antidepressant (SSRI, bupropion) If TCA necessary, nortriptyline may be better Bedtime dose Topical agent if used for neuropathic pain

Alternatives to Fall-Inducing Drugs

Medication	Alternative
Antipsychotics	Avoid in dementia Decrease dose if possible Divide dose
Benzodiazepines	Lorazepam has short t 1/2 Promote non-drug approaches to sleep Buspirone or SSRI for anxiety
Narcotic Analgesics	Non-pharm measures preferred Tramadol Oxycodone with APAP Morphine SNRIs (duloxetine, venlafaxine)

Alternatives to Fall-Inducing Drugs

Medication	Alternative
Sedative/Hypnotics	No recommended drug alternative Address root cause of insomnia Sleep hygiene If necessary, limit use to shortest duration possible Use lowest possible dose Melatonin may be a safe and effective option
Antimuscarinics	Avoid use, use some of the least anticholinergic meds in the class Incontinence products Surgical intervention, physical therapy

Drake UNIVERSITY

Alternatives to Fall-Inducing Drugs

Medication	Alternative
Antihistamines	Avoid use Use loratadine, fexofenadine, or cetirizine instead Consider topical agents (saline, nasal steroid)
Antihypertensives	Decrease dose if at blood pressure goal 150/90 if >60 years old 140/90 if CKD, diabetes

Alternatives to Fall-Inducing Drugs

Medication	Alternative
Antiarrhythmics	Beta blockers (metoprolol) Calcium channel blockers (diltiazem or verapamil) Decrease dose
Skeletal Muscle Relaxants	Avoid use Focus on non-drug management

The "Do's" of Fall Prevention

- AGS recommends at least 1,000 units/day vitamin D plus calcium supplementation (1,000 – 1,200 mg /day) for >65 yrs old

- Treatment of orthostatic hypotension
  - Medication reduction
  - Fludrocortisone, midodrine

www.americangeriatrics.org
MMWR 2016;65:993-8.

Drake UNIVERSITY

Team Approach to Falls Reduction

- Encourage regular exercise (walking, water workout, Tai Chi)
- Sturdy, proper fitting shoes
- Avoid multifocal lenses while walking
- Physical therapy, occupational therapy
- Home safety
  - Grab bars, adequate lighting, no throw rugs or clutter, necessities within reach, alert device or cell phone

65 year-old white man admitted to nursing facility due to increasing inability to care for self at home…

- CKD, stage IV
- DJD shoulders
- Hematoma
- Hearing loss
- Vitamin D deficiency
- HTN
- Hyperglycemic
- Cystoid macular edema, right eye

- Amlodipine 10 mg
- Aspirin 81 mg
- Atorvastatin 10 mg
- Calcium antacid
- Cholecalciferol 2,000 units PO daily
- Latanoprost 0.005%
- Timolol 0.5%
- Metoprolol tart 50 mg

Drake UNIVERSITY

Questions

kristin.meyer@drake.edu

Drake UNIVERSITY