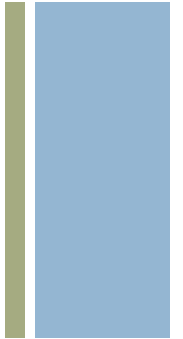# MTM, Transitions of Care, & Polypharmacy

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+ Objectives

- Understanding the problems that occur when you move from hospital to long-term-care, Assisted living, Home, etc.

- Understand the role transitions of care can cause medication errors.

- Identify medications that can increase the potential of medication errors in transitions of care

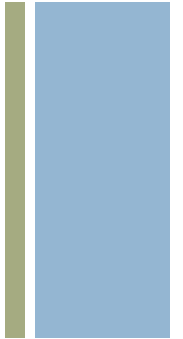- Recognize the ways that healthcare contributes to polypharmacy in our geriatric population

Background
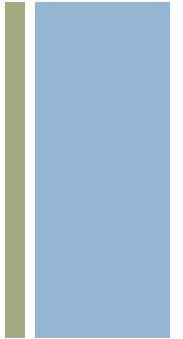
- **Transition of Care**: coordination and continuity of health care during a movement from one location to another or transitioning to a different levels of care within the same location.

- Examples of Care Transitions
  - Skilled Nursing Facility → Assisted Living Facility
  - Hospital → Rehab Facility
  - Rehab Facility → Home

Background

- In the US, approximately 35 million patients are discharged from the hospital each year. Majority are discharged home. Discharge planning is mandatory for hospital accreditation.

- Of hospitalized patients, ages 65 and older, 21 percent are discharged to a long-term care facility or other institution

- Approximately 25 percent of Medicare nursing home residents are readmitted to the hospital

- CMS penalizes hospitals for high readmission rates

- 1 in 5 elderly patients is readmitted within 30 days after hospital discharge

Background

- Adverse medication events (ADEs) are a large problem that leads to hospital readmissions. ADEs occur in 12-17% of patients after hospital discharge.
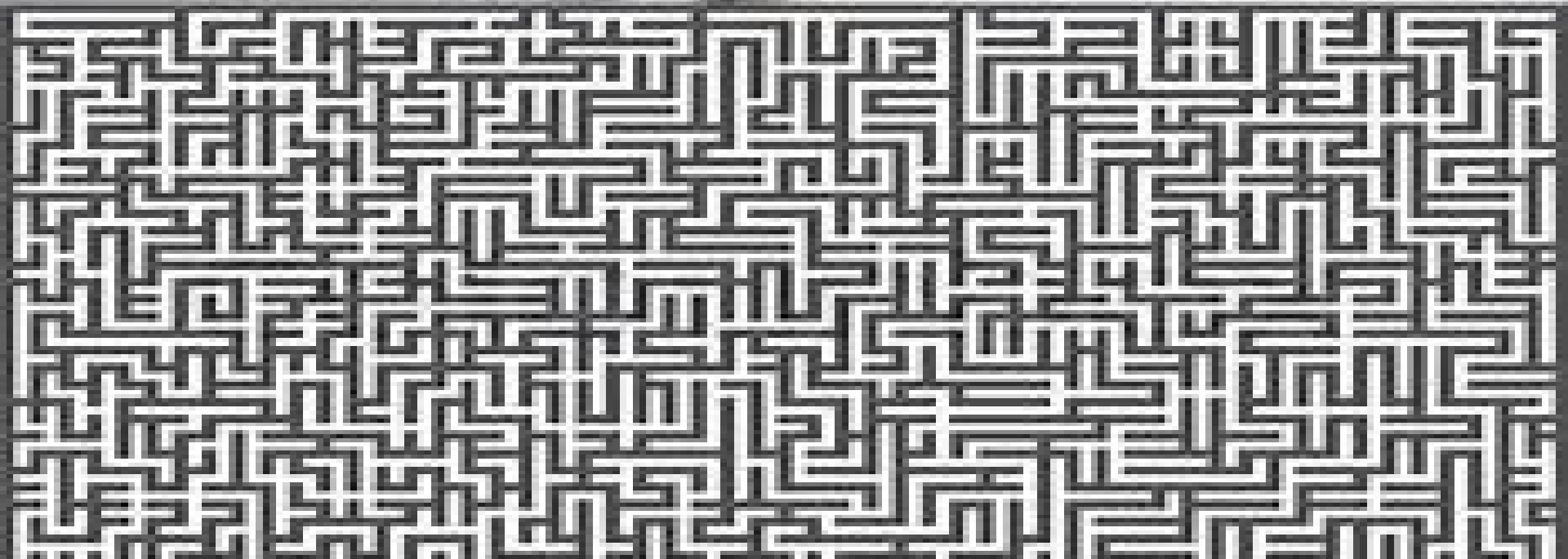
Mueller SK, et al. Arch Intern Med. 2012;172(14):1057-68.

- At least one medication discrepancy was discovered in 77.6% (n = 45/58) of SNF and 76.0% (n = 19/25) of LTC pharmacy medication lists. A total of 191 medication discrepancies were identified across all SNF and LTC pharmacy records.
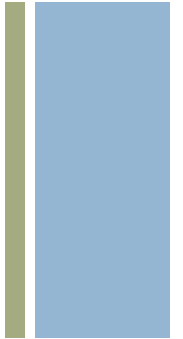
Res Social Adm Pharm. 2018 Feb;14(2):138-145

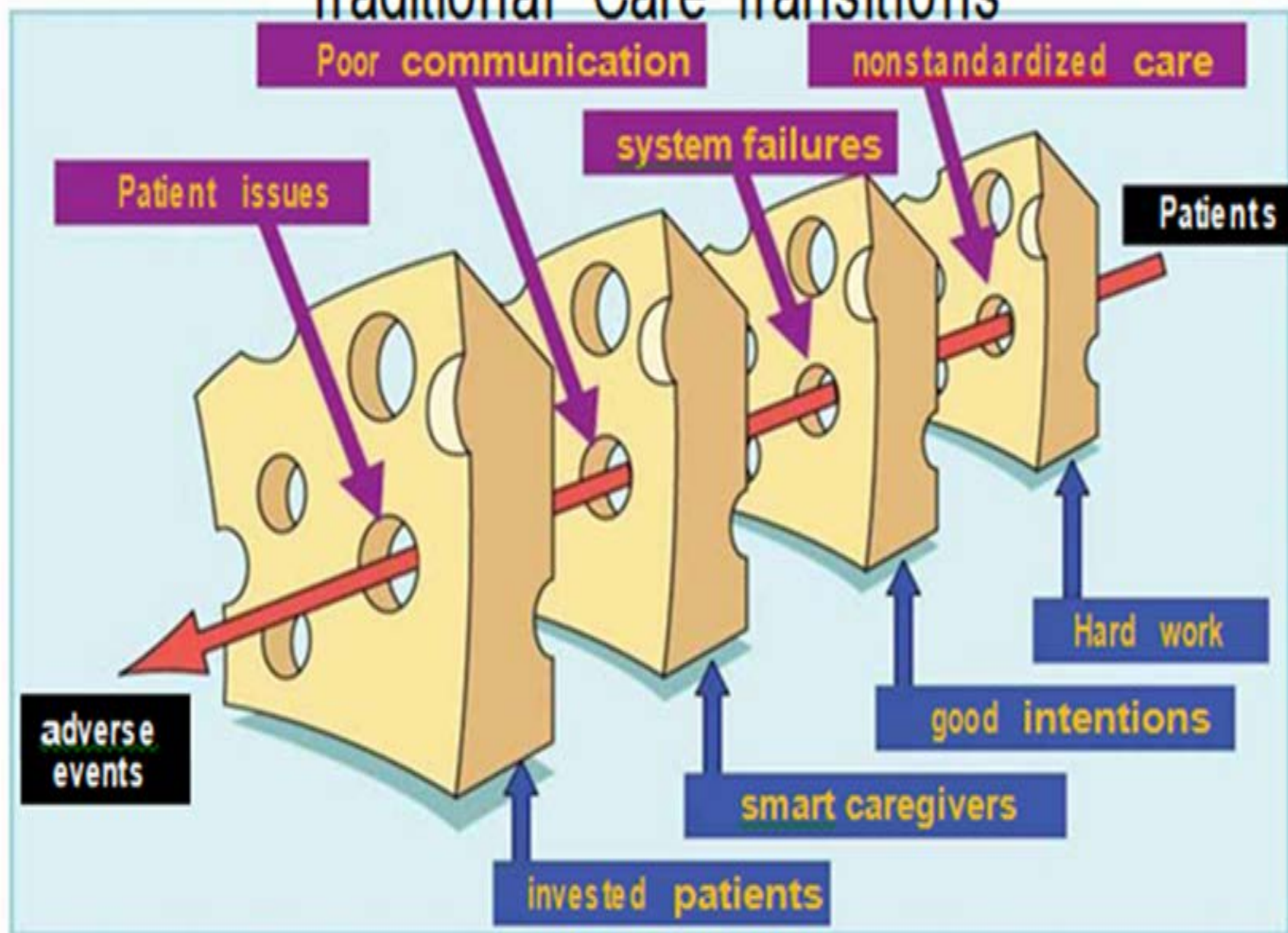CHECK OUT MY FLOOR PLAN FOR THE NEW HOSPITAL

Background

- Causes of Readmission
  - Analysis of 1000 readmitted patients found 269 readmissions to be potentially preventable
  - Of the medication-related risk factors that showed statistical significance:
    - Inadequate monitoring for ADEs or nonadherence
    - Patient/caregiver misunderstanding of discharge medications
    - Inadequate steps to ensure the patient can afford medications
    - Patient/caregiver unable to manage/monitor medications or drug level
    - Errors in discharge orders
    - Drug-drug or drug disease interactions

Traditional Care Transitions

Poor communication

nonstandardized care

system failures

Patient issues

Patients

adverse events

Hard work

good intentions

smart caregivers

invested patients

Modified from Reason J. Human error: models and management. BMJ. 2000;320:768-770.

Background

- Pharmacists' Various Roles in Transitional Care:
  - Bedside counseling and comprehensive medication review prior to patient discharge while in an inpatient facility
  - Medication Therapy Management (MTM) appointments post-discharge
  - Medication Reconciliation while the patient is in a transitional/rehabilitation facility via consultant pharmacists
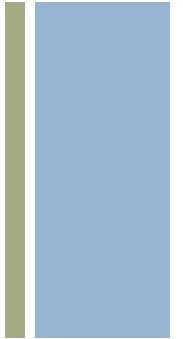
Improving Transitions of Care

- Expand the role of pharmacists in transitions of care. More team-based care in the future.

    Ex. CCM teams. AJHP Volume 75, Issue 10, 15 May 2018, Pages 598–601

- Improve communication between providers, patients, and caregivers

- Implement electronic medical records with standardized medication reconciliation features

- Establish accountability for sending and receiving care especially for hospitalists, skilled nursing facility physicians, and specialists

- Implement payment systems that provide incentives

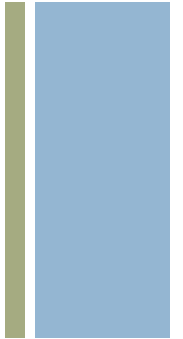- Develop performance standards that encourage improved transitions of care

Goals of Effective Care Transitions

- Preventing medical errors

- New or worsening condition

- Formulary differences

- Insurance Coverage

- OTC's/Herbals Often missed
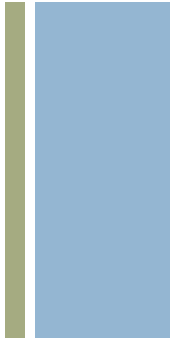
- Stop orders

- Patches

Goals of Effective Care Transitions

- KCl

- Unique Medication dosing

- High-risk High alert meds

- Identifying issues for early intervention

- Prevent unnecessary hospitalizations and readmissions

- Support your patient's preferences and choices

- Avoid duplication of processes and efforts to more effectively utilize resources

Seven key elements for effective transitions of care per NTOCC

- Medications Management

- Transition Planning

- Patient and Family Engagement/ Education

- Information Transfer

- Follow-Up Care

- Healthcare Providers Engagement

- Shared Accountability across Providers and Organizations

http://www.ntocc.org

Positive Outcomes in Pharmacist-led Transitions

Positive Outcomes in Pharmacist led Transitions

- Medication Reconciliation
  - 67% reduction in Adverse Drug Event related hospital visits
  - 28% reduction in all-cause emergency department visits

Mekonnen AB, McLachlan AJ, Brien JA. BMJ Open. 2016;6:e010003

Positive Outcomes in Pharmacist led Transitions

■ Discharge Counseling

   ■ Increased overall patient satisfaction with their hospital care based on survey results

   ■ Increase in medication adherence

Sarangarm P, London MS, Snowden SS, et al. Am J Med Qual. 2013;28:292-300

Positive Outcomes in Pharmacist led Transitions

- Reduction in Readmission Rates
  - 49% reduction in 30 day re-admission was seen in 2 studies with pharmacist lead transition of care programs that were insurer initiated

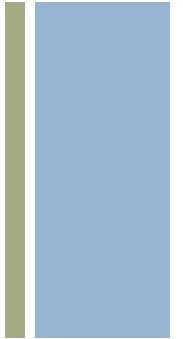Ni W, Colayco D, Hashimoto J, et al. Am J Health Syst Pharm. 2018;75:613-621

Ambulatory TOC program

- Among 830 patients referred to the TOC program, total health-care costs at 180 days after discharge were an average of $2,139 lower than costs in the control group, yielding estimated savings of nearly $1.8 million for the managed care plan.

Am J Health-Syst Pharm. 2018; 75:e273-81
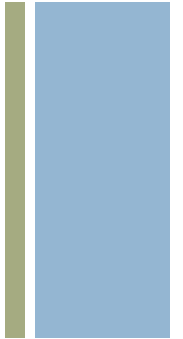
Pharmacists in Heart Failure TOC

- Optimizing the TOC for patients with HF from the hospital to the community/home is crucial for improving outcomes and decreasing high rates of hospital readmissions, which are associated with increased morbidity, mortality, and costs.

- Medication reconciliation, patient education, medication dosage titration and adjustment, patient monitoring, development of disease management pathways, promotion of medication adherence, and post-discharge follow-up.

- Cohesive multidisciplinary team approaches can improve medication adherence and provide a trusted resource for patients' questions

  - Anderson, S.L. & Marrs, J.C. Adv Ther (2018) 35: 311.

Community Pharmacy TOC

- A community pharmacist–led intervention delivered to higher-risk patients showed a significant decrease in readmission rate to the same hospital compared with lower-risk patients hospitalized in the same unit but not receiving the intervention

JAPhA January–February 2018, 58(1)36-43.

- Community pharmacists have the ability to identify drug-related problems and make recommendations for patients moving from the inpatient to an outpatient setting. In addition, the data suggest that when given adequate time, pharmacists performing service responsibilities may identify more drug-related problems, resulting in additional recommendations.

JAPhA November–December 2018,58(6)659-666

- Pharmacists can identify and resolve discrepancies when completing medication reconciliation after hospital discharge, but patient outcome or care workload improvements were not consistently seen.

McNab D. BMJ Qual Saf 2018;27:308-320.

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Questions?

References

1.Fixen D. Making Cents of Transitional Care Billing: ASCP Webinars; 2018.

2.Kern KA, Kalus JS, Bush C, Chen D, Szandzik EG, Haque NZ. Variations in pharmacy-based transition-of-care activities in the United States: a national survey. Am J Health Syst Pharm. 2014;71:648-656.

3.Manning DH, Kristeller JL. Pharmacy Transitions of Care and Culture. Hosp Pharm. Vol 52. United States2017:520-521.

4.Mekonnen AB, McLachlan AJ, Brien JA. Effectiveness of pharmacist-led medication reconciliation programmes on clinical outcomes at hospital transitions: a systematic review and meta-analysis. BMJ Open. 2016;6:e010003.

5.Ni W, Colayco D, Hashimoto J, et al. Reduction of healthcare costs through a transitions-of-care program. Am J Health Syst Pharm. 2018;75:613-621.

6.Reichard JS, Savage S, Eckel SF. Pharmacy-Initiated Transitions of Care Services: An Opportunity to Impact Patient Satisfaction. Hosp Pharm. 2015;50:911-917.

7.Sarangarm P, London MS, Snowden SS, et al. Impact of pharmacist discharge medication therapy counseling and disease state education: Pharmacist Assisting at Routine Medical Discharge (project PhARMD). Am J Med Qual. 2013;28:292-300.

+ POLYPHARMACY

A week's worth of medication for a 92–year old patient, before and after deprescribing.

Photo reprinted with permission from Dr. David Alldred

Defining Polypharmacy

Basic	Numeric
■ The simultaneous use of multiple drugs to treat a single patient for one or more conditions, prescribed by many separate physicians and perhaps filled at more than one pharmacy	■ No consensus
	■ Most common definition: 5 or more medications daily
■ DIFFERENT from polymedicine: multiple medications used to treat multiple diseases	■ Definitions range from 2 or more from 11 or more

Polypharmacy

Indicated and Beneficial Polypharmacy

Medication Overload

"Never Necessary" Prescribing

"Indicated but not Beneficial" Prescribing

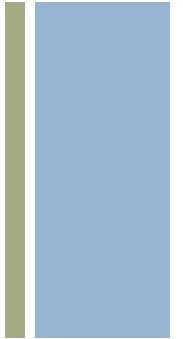Unnecessary OTC and Supplemental Use

"No Longer Necessary" Prescribing

Unnecessary Medications

- Multiple studies have shown older adults to be at risk of unnecessary medications due to lack of indication, lack of efficacy, and therapeutic duplication. Having an increased number of medications (polypharmacy) tends to increase the number of unnecessary medications.

- Interventions to reduce unnecessary drug use include incorporating a pharmacist into a care team, pharmacist-led medication reviews, academic detailing, feedback reporting, and physician medication review.

- Polypharmacy- Consequences: Non-adherence, Unnecessary drugs, ADRs, Medication errors, Drug Interactions, Increased health care costs, Prescribing Cascade

Polypharmacy Contributing Factors

- Age: ≥65 years (~53%-67% take more than 5 medications)

- ≥6 comorbid chronic conditions

- OTC and supplement use

- Long Term Care

Medication Overload: America's Other Drug Problem

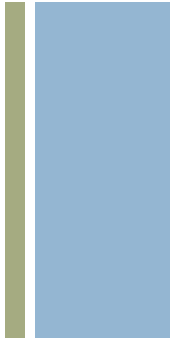How the drive to prescribe is harming older adults

April 2019

- https://lowninstitute.org/projects/medication-overload-how-the-drive-to-prescribe-is-harming-older-americans/

Polypharmacy Contributing Factors

- Prescribing is kind

- Prescribing is a quick fix

- DTC Advertising

- Patients are "primed" for Prescriptions

- Guidelines focus on disease states- not as much about patients age, health, disease trajectory, or overall drug burden

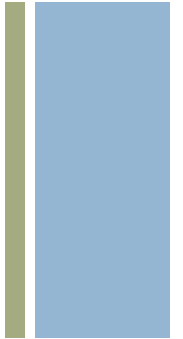- Industry influence- not as many places funding studies to stop medications

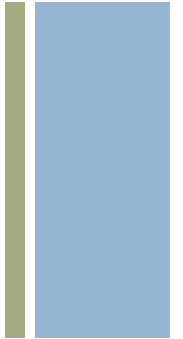"Each capsule contains your medication, plus a treatment for each of its side effects."

Polypharmacy Contributing Factors

- Lack of teamwork

- Care Transitions

- Poor EMR Design

- Prescribing Cascade

- Lack of awareness

- Lack of time and information

- Fear of causing harm or discomfort

Polypharmacy Dangers

- Accounts for nearly 30% of hospitalizations

- Fifth leading cause of death in US

- Falls and Fractures

- Unnecessary medications to treat side effects

- Complicated dosing and timing
  - Missed doses → uncontrolled disease, failed treatment
  - Accidental overdose → drug reactions

- Adverse Drug Events
  - Metabolic changes
  - Decreased clearance

- Prescribing Cascade: misinterpreted as a new medical condition

- Drug interaction
  - 50% chance when taking 5-9 medications
  - 100% chance when taking ≥20 medications

- Increase Health Care Costs

- For every $1.00 spent on drugs for nursing home patients, $1.33 is spent on treating the problems these drugs cause. ($4 billion/year)

Gurwitz, JH, et al. The incidence of adverse drug events in two large academic long term care facilities. AmJMed 2005:118:251-8.

Pharmacist Interventions

Strategies

- MTM

- Medication Reconciliation

- Counseling

- Match medications with conditions and goals of therapy

- Carefully consider medications to discontinue or substitute

- Assess therapy appropriateness

- Continuously assess efficacy

Tools

- Drug Burden Index
  - Cumulative exposure of anticholinergic and sedative medications on physical and cognitive functions in geriatrics

- Beers Criteria

- The Screening Tool of Older Person's Prescriptions (STOPP)

- Screening Tool to Alert doctors to the Right Treatment (START)

- Fit FOR The Aged (FORTA)

- Algorithms

- Mnemonics

Medications Most Likely to Cause Harm

Three classes of drugs contribute to 60 percent of emergency room visits for adverse drug reactions among older adults.[15]

Blood Thinners

Blood thinners such as aspirin or warfarin can cause severe bleeding, which can be life-threatening.

Diabetes Medications

Diabetes medications such as insulin or gliclazide can cause low blood sugar in older adults, increasing risk for falls, fractures, confusion, seizures, and hospitalization.

Opioids

Opioids prescribed to treat pain in older adults can be habit-forming and can lead to sedation, falls, cognitive impairment, and motor vehicle accidents.

Other classes of drugs have been shown to increase the potential for harmful side effects.

Sedative Hypnotics

Sedative hypnotics such as benzodiazepines (anti-anxiety medications) and many sleep medications, as well as antidepressants, increase the risk of falls, fracture, cognitive impairment, and other adverse effects.[18, 19]

Over-the-Counter Drugs

Many commonly used over-the-counter drugs, including bladder medications and antihistamines have anticholinergic properties. These medications can cause hallucinations, confusion, tachycardia, dry eyes, and other adverse effects, which become more pronounced at higher doses and in combination with each other.[20, 21]

Blood Pressure Medication

Blood pressure medications, especially when used at high doses or in combination, can lower blood pressure too much and lead to falls, cognitive impairment, and other adverse effects.[16]

Antipsychotic Drugs

Antipsychotic drugs can lead to delirium, cognitive impairment, drug-induced movement disorders, and metabolic disturbances.[17]

Medication Appropriateness Index
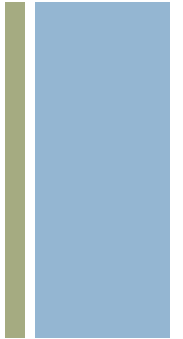
- Questions:

    1. Is there an indication for the medication?

    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 medications?

    9. Is the duration of therapy acceptable?

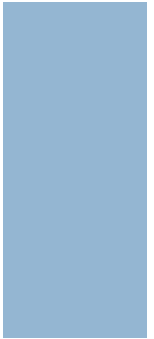   10. Is this medication the least expensive alterative compared to others of equal utility?
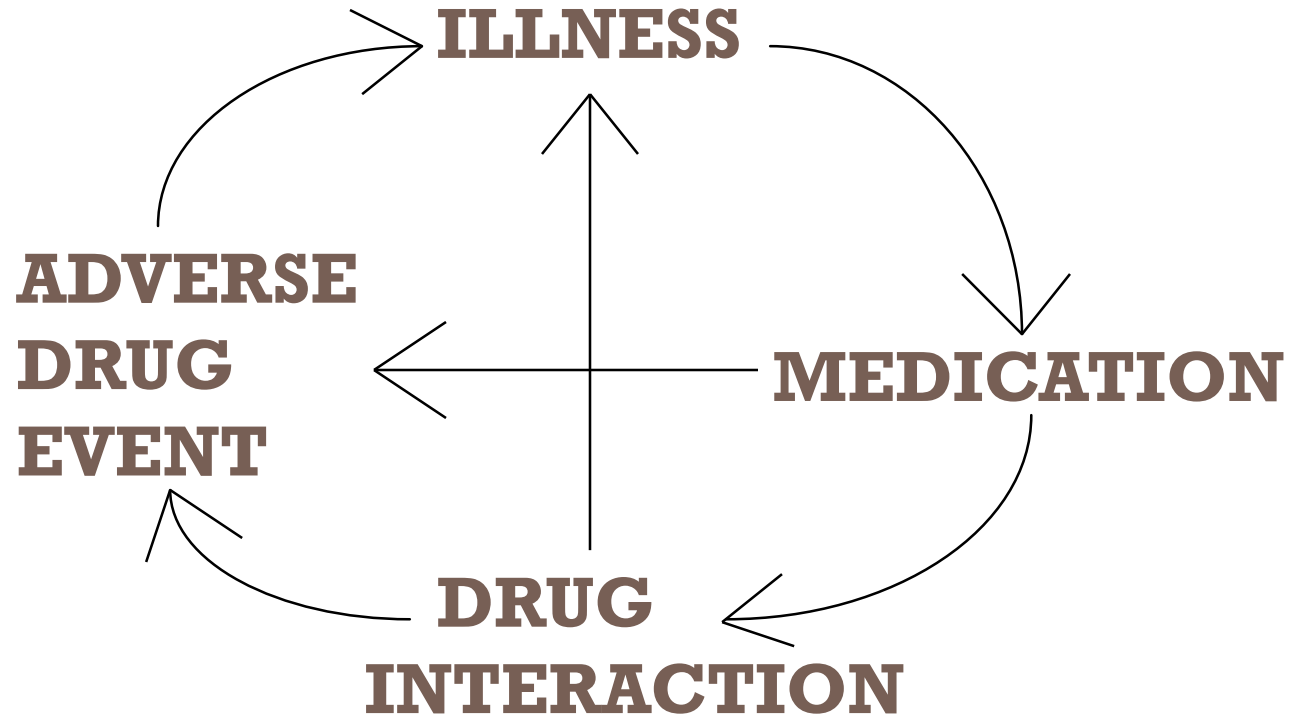
POLYPHARMACY

YOU GET DRUGS

AND YOU GET DRUGS

EVERYBODY GETS DRUGS

Disorders Precipitated or Exacerbated by Drugs

|	
Asthma:	Beta Blockers (systemic, ocular)
CHF:	NSAIDs, thiazolidinediones (glitazones)
Diabetes:	Furosemide, Thiazides, Steroids
Essential Tremor:	Beta Agonists, Lithium
Gout:	Loop & Thiazide Diuretics
Edema:	amlodipine, gabapentin, NSAIDS
Dementia:	Anticholinergics, Benzodiazepines
HTN:	NSAIDS
Parkinsonism:	Antipsychotics, metoclopramide
PUD:	NSAIDs
PVD:	Beta Blockers
Urinary Retention:	Anticholinergics

Common Manifestations of Adverse Drug Reactions in the Elderly That May Be Incorrectly Interpreted as Signs of Aging
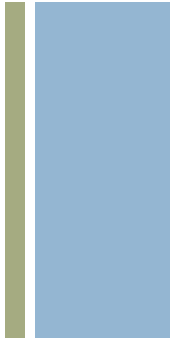
- Confusion

- Depression

- Lack of appetite

- Weakness

- Lethargy

- Ataxia

- Forgetfulness

- Tremor

- Constipation

- Dizziness
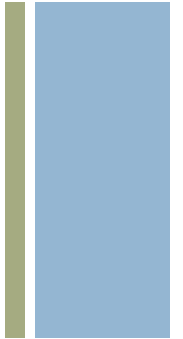
- Diarrhea

- Urinary retention

Reducing polypharmacy

- Improve information at the point of care

- Foster communication and coordination of care

- Shared Decision making

- Empower patients and families

- Consider non-pharmacologic approaches

- Avoid prescribing prior to diagnosis

- Avoid starting 2 drugs at the same time

- Reach therapeutic dose before switching or adding drugs

- Routine prescription checkups
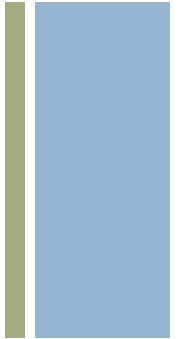
Reducing polypharmacy

- Determine therapeutic endpoints and plan for assessment

- Anticipate side effects

- Consider risk vs. benefit

- Avoid prescribing to treat side effects of another drug

- Use 1 medication to treat 2 conditions

- Consider drug-drug and drug-disease interactions

- Use simplest regimen possible

- Adjust doses for renal and hepatic impairment

- Avoid therapeutic duplication
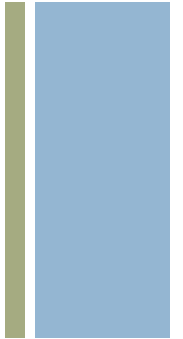
- Use least expensive alternative

References

- Masnoon, N., Shakib, S., Kalisch-Ellett, L., & Caughey, G. E. (2017). What is polypharmacy? A systematic review of definitions. *BMC Geriatrics*, 17(1). doi:10.1186/s12877-017-0621-2

- Polypharmacy. (2017). *US Pharm*. 2017 42(6), 13-14.

- Onder G, Marengoni A. Polypharmacy. *JAMA*. 2017;318(17):1728. doi:10.1001/jama.2017.15764

- Rochon, P. A. (2019, February 19). Drug prescribing for older adults. Retrieved March 18, 2019, from https://www.uptodate.com/contents/drug-prescribing-for-older-adults

- Addressing the polypharmacy conundrum. *US Pharm*. 2017;42(6):HS-14-HS-20.

- Molokhia, M., & Majeed, A. (2017). Current and future perspectives on the management of polypharmacy. *BMC Family Practice, 18*(1). doi:10.1186/s12875-017-0642-0

- Skinner, M. (2015). A literature review: Polypharmacy protocol for primary care. *Geriatric Nursing.* 2015; *36*(5). doi:10.1016/j.gerinurse.2015.05.003

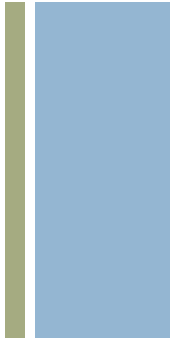- https://lowninstitute.org/projects/medication-overload-how-the-drive-to-prescribe-is-harming-older-americans/

+ Definition

- **Medication therapy management** (MTM) is medical care provided by pharmacists whose aim is to optimize drug **therapy** and improve **therapeutic** outcomes for patients.

Medication Management Program

- -History

- -Why it has been successful

- -Challenges of the program
  -Finding and setting up sites

    -Seniors understanding of the program

    -COVID

What Pharmacists Look For!

- Drug-drug interactions

- Drug-condition interactions

- Appropriate doses

- Unnecessary therapy

- Missing drug therapy

- Compliance issues

- Proper monitoring of drug therapy

- Therapeutic duplication

- Potential cost savings when appropriate

- Vaccines that are due

+So how do we set up a Medication Management visit for a senior?

1. Identify seniors or group of seniors at one location for the information session and one-on-one sessions

2. Contact Mark at Mark.Dewey@ndsu.edu or text/call 218-770-8588 to find date, time, and virtual format that will work for one-on-one medication session.

+

www.lrhc.org click on "virtual appointments"

+ Doxy.me secure virtual appointments

+ **Rehab Therapies Providers**

- **Medication Therapy Management - Pharmacists**

Mark Dewey

DeeAnna Hanson

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Jackson Nelson