

OPTIMIZING DRUG THERAPY IN THE ELDERLY

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SHAMELESS PLUGS



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WEST VIRGINIA
GERIATRIC
EDUCATION CENTER

- Geriatrics Lunchtime Learning (monthly)
- AGES 2019
- Listserv - delliott@hsc.wvu.edu

<http://wvgec.org>

OPTIMIZING DRUG THERAPY IN THE ELDERLY

Objectives

1. Describe the medication use process and its components for a patient who is living in a home environment.
2. Develop a personal definition of polypharmacy and implement a strategy to minimize its occurrence.
3. Identify causes of nonadherence with medication regimens and develop techniques to address it.
4. Describe approaches to reduce out-of-pocket drug expenses for clients and develop a personal approach to assisting clients with this issue.
5. Recognize why some medications are potentially inappropriate for use in the elderly.

What is one thing that you will do as a result of participating in this session?

Optimizing Drug Therapy in the Elderly

- Prevent medication errors
- Eliminate unnecessary drug therapy
- Reduce non-adherence
- Minimize out-of-pocket expenses
- Avoid potentially inappropriate drugs

Optimizing Drug Therapy in the Elderly

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What is a medication error?

- Any error occurring in the medication use process

Medication Errors and ADEs

- Medication errors are the leading cause of preventable ADEs.
- A hospitalized patient is exposed to at least one medication error per day.

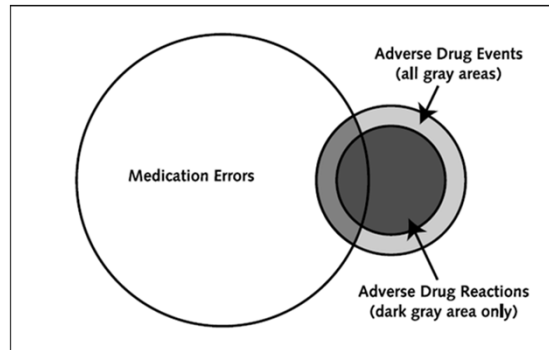
Aspden P, Wolcott J, Bootman JL, Cronenwett LR, eds. Preventing Medication Errors: Quality Chasm Series: National Academies Press; 2007.

Preventable ADEs Are Very Common

- Hospitals 450,000/year
- Long-term care 800,000/year
- Ambulatory care 530,000/year
- Does not include errors of omission

Aspden P, Wolcott J, Bootman JL, Cronenwett LR, eds. Preventing Medication Errors: Quality Chasm Series: National Academies Press; 2007.

Med Errors, ADEs, and ADRs



Nebeker JR, et al. Ann Intern Med 2004;140:795-801.

Preventable ADEs are Costly

- Inpatient Care
 - \$3.5 billion per year
- Ambulatory Care of 65+
 - \$887 million per year
- What is not included in estimates?
 - Drug use without an indication
 - Failure to receive indicated therapy
 - Consequences of nonadherence

Aspden P, Wolcott J, Bootman JL, Cronenwett LR, eds. Preventing Medication Errors: Quality Chasm Series: National Academies Press; 2007.

ADEs, ADRs, and Medication Errors

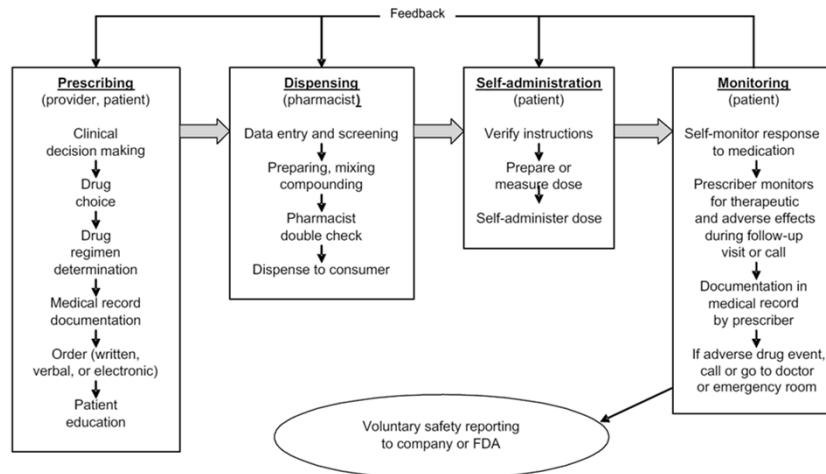
- Adverse Drug Event (ADE)
 - Any negative outcome related to drug therapy
- Adverse Drug Reaction (ADR)
 - A correctly administered drug caused a negative outcome
- Medication Error (Med Error)
 - Any error occurring in the medication use process
 - May or may not cause a negative outcome

What is the medication use process?

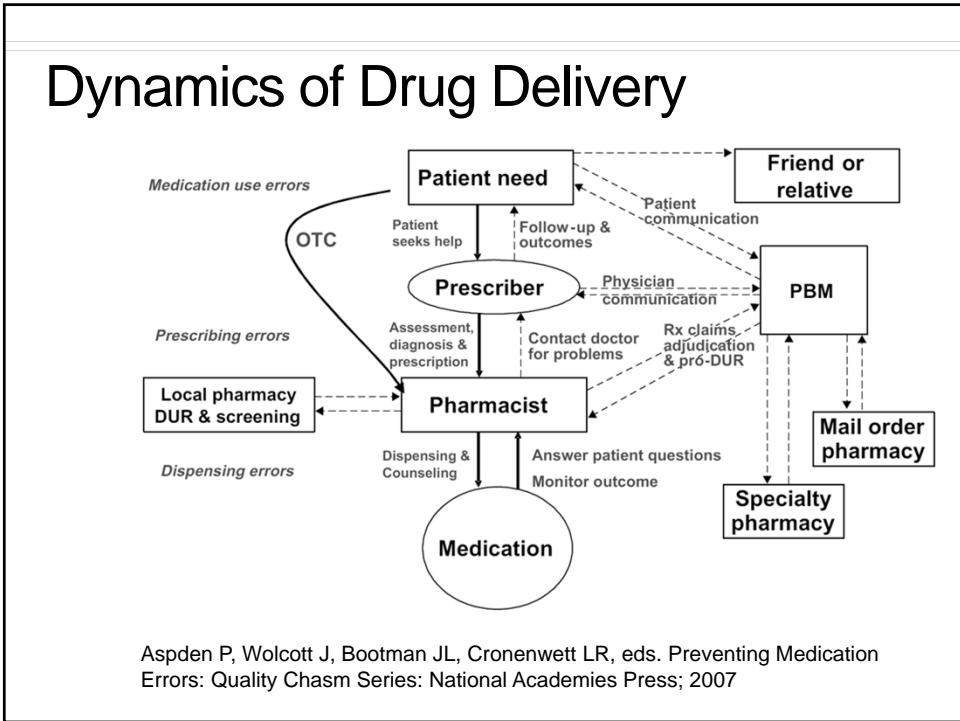
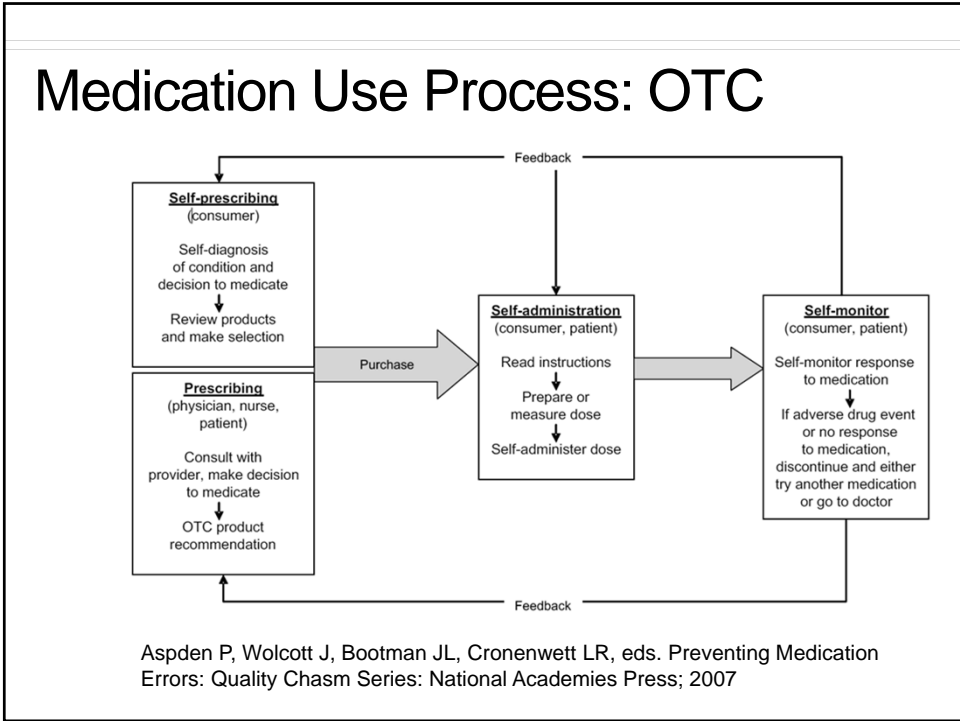
Medication Use Process

- Prescribing
- Dispensing
- Administering
- Monitoring

Medication Use Process: Community



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Medication Use Process:
The Bottom Line

- KISS

Medication Use Process:
The Bottom Line

- The KISS principle
- Keep It Simple Stupid

http://en.wikipedia.org/wiki/KISS_principle

Simplifying Medication Use

- Prescribing
 - Choose a PCP who likes geriatrics
 - Minimize the use of subspecialists
- Dispensing
 - Use one pharmacy
 - Request 90 day supplies
- Administration
 - One person in charge
 - Pill box

Medication Use Process

- What is your patient's med use process?
- What is your role in reducing your patient's med errors?

Optimizing Drug Therapy in the Elderly

- Prevent medication errors
- Eliminate unnecessary drug therapy
- Reduce non-adherence
- Minimize out-of-pocket expenses
- Avoid potentially inappropriate drugs

Polypharmacy

- What is polypharmacy?

Polypharmacy

- How many are too many?
 - 5 or more?
 - 9 or more?
 - 15 or more?

Polypharmacy

- How many are too many?
 - 5 or more?
 - 9 or more?
 - 15 or more?
 - 1 more than is really needed?

Eliminate Unnecessary Drugs

- Ensure that providers know what is being used
 - Bring the bottles, all of them
- Know the expected duration of use for each drug
- Ask questions

What can you do to reduce unnecessary drug therapy?

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Nonadherence

- What is nonadherence?

Why don't people do as they are told?

A Hypothetical Patient

- 79-year-old woman
- Diagnoses
 - Osteoporosis
 - Osteoarthritis
 - Type 2 diabetes mellitus
 - Hypertension
 - COPD

Boyd CM, Darer J, Boult C, Fried LP, Boult L, Wu AW. Clinical practice guidelines and quality of care for older patients with multiple comorbid diseases: implications for pay for performance. JAMA 2005;294:716-24.

A Hypothetical Patient

- Drug therapy
 - 12 different drugs
 - 19 doses per day
 - Drugs taken 5 different times each day
 - Plus weekly alendronate
- Non-drug therapy
 - 14 activities
 - Nutritional interventions count as one

Why don't people do as they are told?

Adherence strategies

- KISS
 - Regimen
 - Medication use system
- Patient-centered communications
 - (e.g. Motivational Interviewing)
- Teach-back

We don't KISS

- Prescriptions are written inconsistently
- Prescriptions bottles are labeled inconsistently
- Patients tend to make things more difficult than necessary

Universal Medication Schedule

- Morning
- Noon
- Evening
- Bedtime

Standardizing Medication Labels: Confusing Patients Less, Workshop Summary: The National Academies Press; 2008.

Universal Medication Schedule

- Methods
 - Structured interviews
 - 464 volunteers (age range, 55-74)
 - Provided a hypothetical 7-drug medication regimen
 - Subjects demonstrated how and when to take the drugs using a pill box
- Outcome
 - Number of medication administration times

Wolf MS, et al. Arch Intern Med 2011;171:300-5.

Universal Medication Schedule

Table 1. Drug Names and Instructions

Drug Name	Instruction
A Pimvampicillin, 700 mg	Take 1 tablet by mouth twice daily for 10 d
B Disopyramide, 400 mg	Take 2 tablets by mouth every 12 h
C Zopiclone, 7.5 mg	Take 1 tablet by mouth at bedtime
D Colesevelam, 1875 mg	Take 1 tablet twice daily with meals and liquid
E Trimipramine, 100 mg	Take 1 tablet by mouth 3 times daily
F Cephalothin, 500 mg	Take 1 tablet by mouth 3 times daily
G Pinaverium, 50 mg	Take 2 tablets by mouth 3 times daily with food and water

Wolf MS, et al. Arch Intern Med 2011;171:300-5.

Universal Medication Schedule

Hour	UMS Regimen	Patient 1	Patient 2	Patient 3	Patient 4
5 AM		○●●○	●●		
6 AM			○●●	○	○
7 AM		○●		●●	●●
8 AM	○●●●○●○	●●	●○	○●○	○
9 AM				○	○
10 AM					○
11 AM				○	○
12 PM	○●○		○	●○	○
1 PM		○			○
2 PM			○	○	○
3 PM		○●	○●		○
4 PM				○	
5 PM		○●●●	●●		○●
6 PM	○●○	○●●●	●○	○●○	○
7 PM				●●●	○
8 PM			○●	○	○
9 PM	○●●○	○		○	○
10 PM					
11 PM		○			
Doses	4	8	10	12	14

○ Drug A ● Drug B ○ Drug C ● Drug D ○ Drug E ○ Drug F ○ Drug G

Wolf MS, et al. Arch Intern Med 2011;171:300-5.

Universal Medication Schedule

- Number of dosing times
 - Mean: 6
 - SD: 1.8
 - Range: 3-14

Wolf MS, et al. Arch Intern Med 2011;171:300-5.

Universal Medication Schedule Conclusion

- Tell patients what to do
- Adopt the UMS
 - Morning
 - Noon
 - Evening
 - Bedtime

Wolf MS, et al. Arch Intern Med 2011;171:300-5.

Patient Centered Label

TABLE 1. Prescription Label Instructions by Study Arm

Instruction	Standard	PCL	PCL + Graphic								
1	Take 1 pill by mouth once daily	Take 1 pill at bedtime	Take 1 pill at bedtime <table border="1"> <thead> <tr> <th>Morning</th> <th>Noon</th> <th>Evening</th> <th>Bedtime</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td>1</td> </tr> </tbody> </table>	Morning	Noon	Evening	Bedtime				1
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Morning	Noon	Evening	Bedtime								
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PCL indicates patient-centered label.

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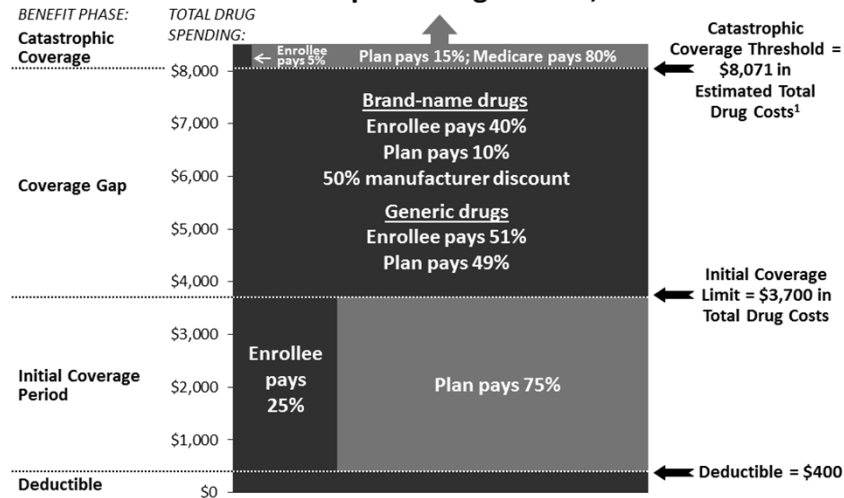
Minimize Out of Pocket Expenses

- KISS
- Combination products?
- Pharmacy discount programs?
- Medicare Part D

Medicare Part D

- Re-evaluate the best plan each year
- Pay attention to the formulary
 - Formulary Tiers
 - 1 preferred generic
 - 2 preferred brand
 - 3 non-preferred brand
- Avoid the donut hole

Figure 5
Standard Medicare Prescription Drug Benefit, 2017



NOTE: Some amounts rounded to nearest dollar. ¹Amount corresponds to the estimated catastrophic coverage limit for non-low-income subsidy (LIS) enrollees (\$7,425 for LIS enrollees), which corresponds to True Out-of-Pocket (TrOOP) spending of \$4,950, the amount used to determine when an enrollee reaches the catastrophic coverage threshold in 2017.
 SOURCE: Kaiser Family Foundation illustration of standard Medicare drug benefit for 2017.



<http://kff.org/medicare/fact-sheet/the-medicare-prescription-drug-benefit-fact-sheet/>

Minimize Out-of-Pocket Expenses

- Eliminate unnecessary drug therapy (KISS)
- Combination therapy (sometimes)
- Use generics
- Follow formularies when feasible
- Patients should complain
- Pharmacists can help with cost estimates

Optimizing Drug Therapy in the Elderly

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Drugs with Low Benefit and High Risk

- 2015 AGS Beers Criteria
- AGS Choosing Wisely List
- NCQA HEDIS High-Risk Medications in the Elderly

Original Beers Criteria

- Potentially inappropriate medications
- Originally developed in the 1991 for nursing homes
 - 4 tables, 30 disease independent criteria
- “Adopted” by the American Geriatrics Society in 2012

2015 AGS Beers Criteria

- Disease independent criteria: 38
- Disease/syndrome dependent criteria: 12
- Drugs to be used with caution: 5
- Drug-Drug interactions: 13
- Renal impairment dosing: 14
- Anticholinergic drugs
 - Categories: 7
 - Drugs: 51

Guide to Safer Drug Use for Older Adults

- Avoid drug therapy whenever possible
- Cautiously use drugs that
 - Lower blood pressure
 - Lower blood glucose
 - Promote bleeding
- Avoid drugs that
 - Cause sedation
 - Have strong anticholinergic properties

Strong Anticholinergic Drugs

Drug Type	Example
Older antihistamines	Diphenhydramine hydroxyzine
Skeletal muscle relaxants	Cyclobenzaprine
Tricyclic antidepressants	Amitriptyline
Some antipsychotics	Olanzapine
Drugs for overactive bladder	Oxybutynin tolterodine
GI antispasmodics	dicyclomine

2015 AGS Beers Criteria

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QUESTIONS?

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