Geriatric Polypharmacy: Stop the Pill Mill!

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Learning Objectives

1. Use evidence-based criteria (e.g. BEERS, STOPP, START) to evaluate for potentially adverse drug events among elderly patients receiving multiple medications.
2. Develop a systematic approach, including applicable REMS, to managing elderly patients with multiple chronic conditions that focus on the quality-of-life outcomes most valued by the patient.
3. Develop collaborative care plans to address the needs of patients who have poor health literacy or reduced cognitive function, or those patients who have language barriers, in order to foster appropriate self-administration of medications.
4. Counsel elderly patients and caregivers about tools, resources, and strategies to aid in the self-administration of medications.

What is polypharmacy?

• Polypharmacy
  – Defined as current use of 4 or more medications
    • Hyperpolypharmacy: defined as current use of 10 or more medications
  – Does not address appropriateness or inappropriateness of medications used

History of Beers

• First list developed & published in 1991 by Mark H. Beers, MD (geriatrician)
  • Potentially Inappropriate Medications (PIMS)
  • Numerous published revisions since inception

Current Intent:
• Improve care by ↓ exposure to PIMS
• Educational tool
• Quality measure
• Research tool

Comparison of Tools for Potentially Inappropriate Medications (PIMS)

<table>
<thead>
<tr>
<th>Tool</th>
<th>Pros</th>
<th>Cons</th>
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</thead>
<tbody>
<tr>
<td>Beers Last updated 2015</td>
<td>• Identify potentially inappropriate medications</td>
<td>• Does not identify potentially missing appropriate medications</td>
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<tr>
<td></td>
<td>• Developed specifically for use in the US</td>
<td>• Could be time consuming to complete full review with criteria</td>
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<tr>
<td></td>
<td>• Companion document Alternatives to Beers, published 2015</td>
<td>• Limited published studies in geriatric population for evidence-based outcomes</td>
</tr>
<tr>
<td>START Last updated 2015</td>
<td>• 22 evidence initiatives of medications commonly prescribed</td>
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<tr>
<td></td>
<td>• High inter-rater reliability between MD/DO and RPh</td>
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<tr>
<td></td>
<td>• Inclusion of medications in US</td>
<td>• Limited outcomes in US studies</td>
</tr>
<tr>
<td></td>
<td>• 3 minutes to complete</td>
<td>• Limited outcomes in diverse ethnicities</td>
</tr>
<tr>
<td>STOPP Last updated 2015</td>
<td>• 60 evidence initiatives of medications</td>
<td></td>
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<tr>
<td></td>
<td>• Focuses on drug-drug and drug-disease interactions that influence fall risks and duplications of common medication classes</td>
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<tr>
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<td>• High inter-rater reliability</td>
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Audience Engagement System
No one strategy proven to be most effective in reducing polypharmacy in the elderly

Case 1: Patient AR

- 75yo female presents to geriatrics clinic: chief complaint, "I'm falling all the time and I fall asleep everywhere."
- Husband reports patient has multiple MDs, doesn't share med lists with them, and takes every medicine prescribed from all.
- Patient has fallen asleep driving, while writing checks at the bank, and falls asleep during the interview.

Case 1: Patient AR

- PMH: B/L hip fractures with replacement, prosthesis infection, CVA (no residual), breast CA s/p mastectomy, hypothyroidism, peripheral neuropathy, OA, chronic pain, and insomnia
- Specialists: Cardiology, Oncology, Pain Management, Neurology, Endocrine, Ortho, Rheumatology, Psychiatry
- Does not want to stop ANY meds prescribed: did not bring med bottles to visit
- Med list from five years prior (multiple handwritten edits) presented

AR Handwritten Medication List

- Baclofen 20mg TID
- Vitamin E 400 units daily
- Librax 2.5-5mg daily
- Centrum Silver daily
- Ambien CR 12.5mg QHS
- Aspirin 650mg daily
- Elavil 10mg TID
- Selenium 2 daily
- Vakaim 5mg daily
- Lovaza 1gm 4 a day
- Vitamin B1 200mg daily
- Valium 5mg daily
- Lovaza patch 4.6mg daily
- Folic Acid 800mcg daily
- Echinacea 500mg daily
- Estrace 0.5mg daily
- Ativan 1mg 3QHS, 1daily prn
- Atenolol 50mg daily
- Acai daily
- Caltrate + D 600/125 4 daily
- Niacin CR 1000mg BID
- Vitamin C 2000mg daily
- Pomegranate 1000mg daily
- Exelon patch 4.6mg daily

AES Poll Question #1

Given this patient presentation, what would your next best step be in evaluation of falls and falling asleep?
A. MRI/imaging of brain
B. Records request from specialists for accurate med lists
C. Referral for sleep apnea evaluation
D. Bloodwork for electrolyte abnormalities
E. Other

AES Poll Question #2

According to the Beers criteria, which oral medication taken by our patient is inappropriate due to its carcinogenic effect?
A. Librax
B. Elavil
C. Estrace
D. Valium
Medication Taking Ability:
What does it involve?

- "Ability to accurately follow a prescribed regimen"
  - Know what medication to take
  - Know when to take the medication
  - Can correctly administer medication

Complexity of Managing Medications Associated with Aging

- Decline in cognitive abilities
  - Manage # times per day administration
  - Manage # medications
  - Manage administration devices (inhalers, injections, etc.)
- Decline in physical abilities
  - Physically opening medication packaging & administering medications
    - Visual impairment
    - Dexterity limitations

Medication Non-Adherence:
What does it involve?

- "Extent to which a person's medication taking behavior corresponds with agreed treatment recommendations from a healthcare provider."
- Generally considered adherent with taking 80 to 120% of prescribed therapies over time.

Medication Non-Adherence

Unintentional

- Forgetfulness
- Lack of understanding
- Physical problems
- Complexity of the regimen

Intentional

- Decision to not take medications as directed/prescribed

Risk Factors for Poor Medication Taking Ability or Non-Adherence

- Polypharmacy
- Medication regimen complexity
- Cognitive decline
- Functional decline
- Inadequate contact with healthcare providers
- Depressive symptoms
- Poor social support
- Absence of assistance with medication administration

***Age alone is NOT an independent predictor or risk factor***

Consequences of Medication Non-Adherence

- Suboptimal treatment response
- Recurrence of illness
- Adverse drug events
- Increased healthcare utilization
- Unplanned hospitalizations
- Increased morbidity & mortality
- Increased healthcare costs
Consequences of Medication Non-Adherence in the US

- ~25% of preventable adverse drug events in older adults are attributable to consumer errors
- 100-300 billion dollars in avoidable healthcare costs have been attributed to medication non-adherence

Strategies to Improve Medication Taking Abilities & Adherence in Older Adults

Behavioral Strategies

- Alarm/beeper
- Calendar/diary
- Reminder chart/medication list
- Large print labels
- Packaging change
- Pillbox/calendar pack
- Contracting (verbal or written)
- Adherence monitoring w/ feedback
- Reminders (mail, phone, email)
- Inpatient self-administration programs
- Simplification of medication regimens
- Skill building (supervised, group)
- Tailoring (routinization)
- Follow up (home visit, scheduled clinic visit, telemedicine)

Educational Strategies

- Group education
  - Inpatient (patients)
  - Outpatient (patients)
  - Family
- Individual education
  - Verbal
  - Audiovisual
  - Visual
  - Written
- Delivered via:
  - Person
  - Telemedicine
  - Handout
  - Videos
  - Social Media

Case 2: Patient CS

- 88yo female with PMH of hypothyroidism, Vitamin D deficiency, frequent UTIs and mild dementia (recent SLUMS 20/30)
- Lives alone; local daughter checks in daily and out of town daughter calls twice a day
- Medications:
  - Aricept 10mg
  - Namenda 10mg daily
  - Vitamin D 2000 units daily
  - Levothyroxine 100mcg daily
- Patient has pill box with medications but keeps levothyroxine bottle by the bedside to take in am
- Patient presents to the ER with symptoms of dizziness, jitteriness, palpitations, and tachycardia
- Daughter finds 90-day bottle of levothyroxine empty (50 days early): TSH <0.01
- Determined that patient was taking med repeatedly during the day when seeing the bottle
AES Poll Question #3
Ms. CS would benefit from which of the following interventions?
A. Written reminder of when to take meds  
B. Change other meds to pm: have am/pm pill box  
C. Recruit daughters to remind patient when to take meds  
D. All of the above

How Do I Do This in 15 Minutes?

Tools and Resources
• Medicare Annual Wellness Visit  
• Geriatric Supplemental Assessment  
• Chronic Care Management  
• Patient-Centered Care Plans  
• Medication Reconciliation Forms

Choosing Wisely Campaign - AGS 2015
Pertaining to medications….
#2. Don’t use antipsychotics as the first choice to treat behavioral and psychological symptoms of dementia.
#3. Avoid using medications other than metformin to achieve A1c <7.5% in most older adults; moderate control is generally better.
#4. Don’t use benzodiazepines or other sedative hypnotics in older adults as first choice for insomnia, agitation or delirium.
#5. Don’t use antimicrobials to treat bacteriuria in older adults unless specific urinary tract symptoms are present.
#6. Don’t prescribe cholinesterase inhibitors for dementia without periodic assessment for perceived cognitive benefits and adverse gastrointestinal effects.

Choosing Wisely Campaign - AGS 2015
Pertaining to medications continued….
#8. Avoid using prescription appetite stimulants or high calorie supplements for treatment of anorexia or cachexia in older adults; instead, optimize social supports, discontinue medications that may interfere with eating, provide appealing food and feeding assistance, and clarify patient goals and expectations.
#9. Don’t prescribe a medication without conducting a drug regimen review.
Case 3: Patient AW
- 86yo female with PMH Alzheimer’s (SLUMS 10/30), DM type 2, hypertension
- Lives with son, who is caregiver and who works during the day
- Medications:
  - Aricept 10mg daily
  - Lisinopril 40mg daily
  - Metformin 1000mg in am, 500 in pm
  - Levemir insulin 10 units in evening, 70/30 insulin on sliding scale for sugars over 200
- Recent labs: A1c 7.9, other labs wnl (GFR 60)
- At a recent sick visit patient noted some hypoglycemic episodes but notes inconsistent blood sugar reporting.
- Administers own 70/30 insulin when alone during day.
- When asked what she would do if diaphoretic, shaky, etc., she replies, “That means my sugar is low! I’d take my insulin right away!”

AES Poll Question #4
What would be the safest immediate plan of care for this patient?
A. Stop 70/30 sliding scale insulin
B. Stop all insulins: consider increasing metformin to 1000 BID
C. Stop all insulins: consider adding glipizide
D. Stop metformin due to age and consider changing to glipizide

AES Poll Question #5
According to Choosing Wisely, what is the best plan for AW’s regimen for Alzheimer’s (AD)?
A. Add memantine (Namenda) to her medication regimen
B. Plan to follow her memory function over time to determine need for donepezil (Aricept)
C. Stop Aricept
D. Add diphenoxylate/atropine to regimen to counter any adverse GI side effects from Aricept

Case 4: Patient BG
- 86yo female with recent hospitalization for saddle PTE. Three months ago, she fell and broke her hip and was discharged to a local rehab facility. The orthopedist placed BG on Xarelto 10 mg once daily for 1 month and held warfarin. The patient did not understand to resume warfarin when she finished the 1 month course of Xarelto and has been without any anticoagulation for 2 months prior to presentation to ER for saddle PTE.
- PMH: Alzheimer’s (SLUMS 13/30), depression, recurrent VTE, hypertension, ulcerative colitis, HTN, restless leg syndrome, and bilateral hearing loss
- Lives independently in home, daughter lives nearby and checks in regularly
- Vitals today:
  - BP 138/65 HR 74 Weight 146 lbs
Case 4: Patient BG

- **Allergies:** NKDA
- **Medications:**
  - Aricept 10 mg daily
  - Lisinopril 20 mg twice daily
  - Amlodipine 10 mg daily
  - Asacol 800 mg 2 in morning and 1 at bedtime
  - Clonidine 0.1 mg as needed for elevated BP
  - Warfarin 7.5 mg MWFSat and 10 mg TuThSun
  - Multivitamin 1 tablet daily
  - Probiotic 10 billion colony forming units once daily
  - Sertraline 50 mg daily

Case 4: Patient BG

- **Labs:**
  - Hgb/Hct 38.8/13.0
  - Platelets 272
  - AST/ALT 26/27
  - SCr 0.75 (CrCl ~42mL/min)
  - K 4.9
  - Na 142

- **INR last year (monthly-bimonthly checks):**
  - 3.7 (today)
  - 3.1 (4 months ago)
  - 2.0
  - 4.0
  - 2.9
  - 3.1
  - 2.9
  - 2.3
  - 1.4
  - 1.3

Case 4: Patient BG

- **CC today:** insomnia
- **Reason for visit:** hospital f/u for saddle PTE
- **Today we need to address the CC, complete medication reconciliation and update her care plan

Questions to Discuss

- **What is the best approach to medication reconciliation in BG?**
- **What would be the best plan to address BG’s insomnia complaint?**
- **What is your assessment of BG’s HTN regimen?**
- **What is your assessment of BG’s anticoagulation regimen?**
- **How would you update her care plan based upon the given data?**

Practice Recommendations

- Utilize evidence-based criteria to evaluate for potentially inappropriate medications. (SORT B)
- Counsel patients on strategies to increase accurate patient/caregiver medication administration in community-dwelling older adult patients. (SORT C)
- Develop collaborative care plans for elderly patients taking into consideration chronic & acute comorbidities, quality of life outcomes, health literacy and cognitive function of patient/caregiver, barriers to understanding, self-care abilities, financial challenges for care, and medication-related factors. (SORT C)

Questions
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