Polypharmacy 101
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I have no actual or potential conflict of interest in relation to this educational program.
Objectives

- Understand the meaning of polypharmacy
- Discuss the impact of polypharmacy
- Review common issues that lead to polypharmacy
- Determine ways in which to reduce polypharmacy

What is Polypharmacy?

- Definition: Taking multiple medications concurrently to manage coexisting health problems
  - In the nursing home setting, polypharmacy used to be defined as a resident taking 9 or more routine medications
  - Often defined as more than 4-5 medications
  - Taking more medications than are clinically necessary

- "Bohemian Polypharmacy"
Impact of Polypharmacy

- Average nursing home resident takes 7 medications daily
  - Residents who take 7 or more medications have an 82% risk of experiencing an adverse side effect
- It is estimated that at least 40% of nursing home residents are affected by polypharmacy

Impact of Polypharmacy

- Polypharmacy increases the potential for adverse drug interactions and costs
  - In the United States, the incremental cost of potentially inappropriate medication use in the elderly is estimated to be $7.2 billion.

Adverse Drug Event

- An adverse drug event (ADE) refers to any injury occurring at the time a drug is used, whether or not it is identified as a cause of the injury. An adverse drug reaction (ADR) is a special type of ADE in which a causative relationship can be shown.
Impact of Polypharmacy

- Medication non-adherence
  - Increased refusals
  - Increased waste
  - Increased nursing time
  - Decreased control of diseases
    - Wash, rinse, repeat

- Cognitive Impairment
  - In a prospective cohort study of 294 elders, 22% percent of patients taking 5 or fewer medications were found to have impaired cognition as opposed to 33% of patients taking 6-9 medications and 54% in patients taking 10 or more medications.**


- Falls
  - In a study of institutionalized older adults, the risk of experiencing a fall within the previous 30 days was increased by 7% for each additional medication.**

Impact of Polypharmacy

• F-329: Unnecessary Medications

• General guidance: Each resident’s drug regimen must be free from unnecessary drugs. An unnecessary drug is any drug when used: (i) In excessive dose (including duplicate therapy); or (ii) For excessive duration; or (iii) Without adequate monitoring; or (iv) Without adequate indications for its use; or (v) In the presence of adverse consequences which indicate the dose should be reduced or discontinued; or (vi) Any combinations of the reasons above.

Impact of Polypharmacy

• F-329 continued:

For the Surveyor: The Assessment of Drug Therapies is a review of the medications the resident is receiving to evaluate whether the effectiveness of the therapeutic regimen, including all drugs that may play a significant role in the resident’s everyday life, is being monitored and assessed.
Causes of Polypharmacy

- The "Prescribing Cascade" Trap
  - Using one medication to treat an adverse effect of another medication
    - Laxative use with narcotic analgesics
    - Hyperlipidemia and diabetic medications with antipsychotic use
    - Cogentin for extrapyramidal symptoms associated with antipsychotic and/or Reglan use
    - Phenergan/Zofran for nausea associated with narcotic analgesics
    - Stimulant (Ritalin) for over-sedation
    - Megace and/or Remeron for appetite

- "Reactive" prescribing
  - Adding on maintenance medications for conditions that MAY be acute
    - PPIs for indigestion (vs GERD)
    - Antipsychotics for behaviors (UTI??)
    - Hypnotics (Loud roommate? Outside lights/noise?)
    - Antianxiety medications for grief-related issues (loss of loved one)
    - Appetite stimulants (has resident been sick?)
Causes of Polypharmacy

Lack of stop dates for treatment of acute conditions
- Treatment should be for a defined number of days
- Antibiotics (IV and Oral)
- Probiotics
- Cough/Cold/Allergy medicines, Breathing treatments
- Anti-nausea medications
- DVT prophylaxis (Lovenox)
- Wound Care orders
  - Creams/lotions/cleansers/etc. are often D/C’d once the wound has healed but Vitamin C and Zinc orders are never stopped

Causes of Polypharmacy

Medications prescribed for a disease state that are not revisited
- Medications for anemia that may have resolved
- PPIs for treatment of GERD
- PPIs for GI protection during hospital stay
- Sedative-hypnotics for insomnia
- Antipsychotics for acute delirium
- Megace for weight gain
- Alzheimer’s medications for end-stage dementia
- Overactive bladder medications

Causes of Polypharmacy

Duplication of therapy
- More than one medication from the same therapeutic class OR multiple medications used to treat a single condition
  - 3 or more laxatives or stimulants to treat constipation
  - PPI (Protonix) and H2A (Zantac) for GERD symptoms
  - Antidepressant and/or Sedative and/or Antianxiety for sleep
  - Breathing treatments
  - Glaucoma drops
  - “Dry eye” drops
  - NSAIDs
Causes of Polypharmacy

• Not optimizing dosages
  • Instead of increasing dose of current med (if max dose has not been reached) another med is added to regimen
  • HTN meds
  • Laxatives
  • Antidepressants
  • Hyperlipidemia meds
  • Psychoactives
  • Sliding scale insulin

Causes of Inherited Polypharmacy

• Media
  • Advertisement OVERLOAD!
    • Television, Radio, Google ads, Pamphlets in physicians' offices
    • "I Love Lucy"

Causes of Inherited Polypharmacy

• Easy access
  • OTC OVERLOAD!

• General Public, MD, RN, RPh
  • "Seinfeld"
**Causes of Inherited Polypharmacy**

- Medication non-adherence in community/at home
  - May have led to “reactive prescribing”
  - Now admitted to hospital
    - Medications added for new, acute problem
    - Medications added per hospital protocol (i.e. PPI for GI protection)
    - Medications changed per hospital formulary
    - Discharged to LTC facility with orders for all of the above

**How Can We Reduce Polypharmacy?**

- Unused PRN medications
  - Discontinue medications that are not used for an extended period of time
  - Most facilities have a standing order for discontinuation after 60 or 90 days of non-use
  - Be careful not to discontinue orders for emergency items such as Glucagon, Nitro-Stat, Seizure meds

**How Can We Reduce Polypharmacy?**

- Stop dates for acute conditions
  - Ensure orders for things such as antibiotics, wound care, seasonal allergies, breathing treatments for respiratory infections, cough and cold treatments are prescribed for a defined period of time
  - Can be a set number of days or when issue is resolved
    - i.e. “give for 10 days” or “until wound is healed”
## How Can We Reduce Polypharmacy?

- **Discontinue duplications of therapy**
  - Look for medications from the same therapeutic class and review multiple medications being used for the same condition to ensure doses have been maximized
  - Perform an admission reconciliation of meds
    - Compare discharge orders with discharge summary/hospital medication reconciliation form
    - Obtain diagnoses/indications for ALL medications

## How Can We Reduce Polypharmacy?

- **Review medications for efficacy and side effects**
  - Risk vs Benefit:
    - Review to ensure new conditions are not a side effect of a current medication before adding a new medication
    - Discontinue or change medications when no benefit is obtained
      - Antipsychotics for “behaviors”

## How Can We Reduce Polypharmacy?

- **Psychoactive dose reductions**
  - Antipsychotics
  - Anxiolytics
  - Sedative Hypnotics
How Can We Reduce Polypharmacy?

Antipsychotic and Anxiolytic GDR Requirements
- Within the first year in which a resident is admitted on an antipsychotic medication or after the facility has initiated an antipsychotic medication, the facility must attempt a GDR in two separate quarters (with at least one month between the attempts), unless clinically contraindicated.
- After the first year, a GDR must be attempted annually, unless clinically contraindicated.

Sedative Hypnotics GDR Requirements
- Should be done quarterly unless contraindicated

How Can We Reduce Polypharmacy?

- “Kill 2 birds with 1 stone…”
  - Consider combination therapy
    - Someone with depression, insomnia, and weight loss may benefit from Remeron - instead of Zoloft, Restoril, and Megace

How Can We Reduce Polypharmacy?

- The “Low Hanging Fruit”
  - Discontinue Fosamax, Actonel, etc. with new/worsening GERD symptoms
  - Discontinue Megace for DVT/PE or vaginal bleeding
  - Discontinue PPIs if Cdiff positive
  - Discontinue Statins for increased liver enzymes
How Can We Reduce Polypharmacy?

Beers List Medications
- First Generation Antihistamines
  - Common examples include Diphenhydramine (Benadryl), Promethazine (Phenergan), Hydroxyzine (Atarax)
  - Reasoning: greater risk of confusion, dry mouth, constipation, and other anticholinergic effects

How Can We Reduce Polypharmacy?

Beers List Medications
- Nitrofurantoin (Macrobid)
  - Reasoning: Potential for pulmonary toxicity; lack of efficacy in patients with CrCl < 60 mL/min due to inadequate drug concentration in the urine

How Can We Reduce Polypharmacy?

Beers List Medications
- Antiarrhythmic Drugs
  - Common Example: Amiodarone
  - Reasoning: Amiodarone is associated with multiple toxicities, including thyroid disease, pulmonary disorders, and QT-interval prolongation
How Can We Reduce Polypharmacy?

Beers List Medications

- Tricyclic Antidepressants (TCA's)
  - Common examples include Amitriptyline (Elavil), Doxepin (Sinequan), Imipramine (Tofranil)
  - Reasoning: Highly anticholinergic, sedating, and cause orthostatic hypotension

- Benzodiazepines
  - Common examples include Alprazolam (Xanax), Lorazepam (Ativan), Clonazepam (Klonopin), Diazepam (Valium)
  - Reasoning: increased risk of cognitive impairment, delirium, falls, fractures
    - Recommended to avoid benzodiazepines (any type) for treatment of insomnia, agitation, or delirium

- Sliding Scale Insulin
  - Higher risk of hypoglycemia without improvement in hyperglycemia management

- Megesterol (Megace)
  - Minimal effect on weight; increases risk of thrombotic events and possibly death in older adults
How Can We Reduce Polypharmacy?

Beers List Medications

– Metoclopramide (Reglan)
  – Reasoning: Can cause extrapyramidal effects including tardive dyskinesia
  – Not recommended unless for gastroparesis

– NSAIDs
  – Common examples include Ibuprofen (Motrin/Advil), Naproxen (Aleve), Meloxicam (Mobic)
  – Reasoning: Increases risk of GI bleeding and peptic ulcer disease, increased cardiovascular risk

Difficulties

• Guidelines Galore!!
  • Often takes 3 meds to control HTN
  • Should be on cardioprotective agent
  • Should be on renal protective agent

• Environmental
  • There are only so many lifestyle accommodations available in a LTC facility

• TIME!!!
• Demanding resident and/or sponsor/family
Who Can Help???

- Admission coordinator (before resident is admitted) and/or DON when approving
- Supervisors/Clinical Coordinators (when creating new admission MAR)
- MDS nurses (care plans)
- Nurses on med pass (can provide a list of meds that may no longer be needed to RN for MD to review during rounds)
- Social Services (behavior evaluation, past history, etc.)
- Dietary (attempting diet changes/allowing time before adding appetite stimulants)
- Dispensing pharmacy (drug-drug interactions)
- Consultant pharmacist
- Physicians (get input during QA meetings)

When Can They Help???

- Morning meeting when the new admit chart is reviewed
- Clinical meetings (weight/wounds/behaviors)
- Whenever there is a change of condition
- Whenever there is a personal or environmental change

Case Study #1

RH is an 80 yom with Type 2 DM, HTN, OAB, Dementia, Anxiety, and Insomnia. He has lived in the LTC facility for 3 years (admitted with these diagnoses).

Medications:
- ASA 81mg QD
- Lisinopril 5mg QD
- Ditropan 5mg BID
- Aricept 5mg HS
- Lipitor 10mg HS
- Namenda XR 28mg QD
- Glucophage 500mg BID
- Ativan 0.5mg TID
- Restoril 15mg HS PRN
- Omeprazole 20mg QD
Case Study #1

What information do you need to fully evaluate potential polypharmacy?

• A: What are the indications for ASA, Lipitor, and Omeprazole?
• B: Is resident continent?
• C: Does resident take Restoril? How often?
• D: When was a GDR last attempted for Ativan?
• E: All of the above

Case Study #1

What if resident has been identified as end-stage dementia?

• True or False: Aricept and Namenda may no longer be beneficial. Risk vs benefit should be evaluated.

What if blood pressure is not controlled?

• True or False: Add Coreg 6.25mg BID

Case Study #2

CF is a 76 yof that was just admitted to the LTC facility status-post hospitalization for left hip fracture due to a fall. While in the hospital, she was treated for UTI and acute delirium.

Medications:

Lovenox 40mg SC QD   Norco 5mg q4h PRN
Risperdal 0.5mg BID   MOM 30mL QD
Haldol 1mg q6h PRN    Miralax 17grams QD
Case Study #2

Assume other medications not listed are appropriate. Looking at this list only, what should be evaluated now that the resident is stable in the nursing home?

• A: Stop date for Lovenox?
• B: Can Haldol PRN be D/C’d?
• C: Can Risperdal be reduced?
• D: Can we D/C either MOM or Miralax?
• E: All of the above

CHALLENGE!!!!!

• Pick ONE resident this week and IMPROVE his/her life!!!
• Pick ONE “common practice” in your facility that could be modified to help reduce polypharmacy (i.e. add stop dates to standing orders).
• Use the incredible team that you already have!! Rotate responsibilities in looking for ways to reduce polypharmacy.