SIMPLIFYING STOPPING:
Strategies & Resources for Successful Deprescribing

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Disclosures
• Kristin Zimmerman reports no actual or potential conflicts of interest associated with this presentation

Learning Objectives
• The attendee should be able to:
  1. Utilize tools to identify problematic prescribing
  2. Summarize examples of successful deprescribing strategies
  3. Apply existing deprescribing algorithms and materials
  4. Employ understanding of pharmacology and pharmacokinetics to guide successful deprescribing when evidence does not exist

Problematic Prescribing
Polypharmacy associated with:
  – Functional impairment
  – Hospitalization
  – Institutionalization
  – Mortality
Deprescribing proven to:
  – Be safe
  – Be successful
  – Reduce mortality
  – Reduce cost
  – Be desired by patients

Why Am I Here?

AWARENESS
Recognizing the problem
✔️

INERTIA
Avoiding actions out of fear, beliefs, or lack of responsibility

SELF-EFFICACY
Skill and knowledge gaps, lack of evidence or guidelines

FEASIBILITY
Presence of practical barriers

Where Do We Start?
Identify potentially inappropriate medications
• Explicit criteria
  – American Geriatrics Society 2015 Updated Beers Criteria for Potentially Inappropriate Medication Use in Older Adults (2015)
  – Drug Burden Index (2007)
Where Do We Start?

Identify potentially inappropriate medications

- Implicit criteria
  - Medication Appropriateness Index (MAI)*
  - Good Palliative-Geriatric Practice Algorithm*
  - Prescribing Optimization Method
  - ARMOR Algorithm

Mrs. Bean

Mrs. Bean is a 77 y/o W living in senior housing. She recently experienced her 3rd fall in 6 mo. with all falls occurring early AM. Her daughter notes she has been more confused over the past 6 mo. Her brand new PCP refers her to your service for a full med review.

Medical History
- Hypertension
- Hyperlipidemia
- Insomnia
- Osteoporosis (last DXA 2015 2.6)
- Constipation
- GERD

Medications
- Lisinopril 10mg daily
- Atorvastatin 10mg daily
- Omeprazole 20mg daily
- B12 1000mcg daily
- Iron sulfate 325mg once daily
- Senna 8.6mg once daily
- Lorazepam 1mg nightly
- Alendronate 70mg weekly (2010 start)
- Calcium carbonate 500mg once daily
- Vitamin D 1000units daily

Mrs. Bean

Upon speaking with her and reviewing her medications, you identify:
- Lorazepam is likely to be contributing to falls but she is worried about sleeping without it. She’s been taking it for “years”
- Can’t remember when the omeprazole was started, unsure if she’s ever missed a dose, and doesn’t remember recent symptoms
- Started alendronate in the spring (nocturia), unsure but thinks it might be helpful. Constipation has been ongoing, but recently worse
- Often forgets her alendronate
- Hesitant but open to med changes, motivated by reducing med burden as she self-manages her meds

...NOW WHAT???

Defining Deprescribing

What is it?
- “systematic process of identifying and discontinuing drugs in instances in which existing or potential harms outweigh existing or potential benefits within the context of an individual patient’s care goals, current level of functioning, life expectancy, values, and preferences.”

When do I do it?
- “spans therapy initiation, dose titration, changing or adding drugs, and switching or ceasing drug therapies”

What it is not:
- “not about denying effective treatment to eligible patients”

Who do I target?
- Limited life expectancy
- Cognitive impairment
- High medication burden
- High risk for ADR
- B+ medications
- 75 and older
- Taking high-risk meds
Myth-busting Barriers

“Deprescribing doesn’t actually improve patient outcomes”

“Deprescribing won’t be successful... the symptoms will just return”

“Deprescribing is too hard... it just isn’t feasible”

Psychotropic Deprescribing

MYTH-BUSTING BARRIERS

DART-AD Trial (2008, 2009)
• RDBPCT of AD patients in LTCF (UK) on antipsychotics for 3+mo.
  — Continue antipsychotic for 12 months vs switch to placebo
  — Cognitive and functional impact, mortality at 12 months

• Results (n=165 randomized, 128 started trial)
  — ~11% of those stopping, restarted w/in 12 mo.
  — No difference in cognitive, functional, or neuropsychiatric outcomes
  — Continuation reduced survival compared to placebo, further separation with time


✔️ Successful

Psychotropic Deprescribing

Cochrane Review (2013)
• Analysis comparing an antipsychotic DC vs. continuation in people with dementia
  — 9 trials (n=606) in nursing homes and outpatient settings
  — 8 of 9 trials reported no overall significant difference in success or symptoms between groups

✔️ Successful

Psychotropic Deprescribing

RedUSe Project (2014)
— Controlled trial of academic detailing/educational strategies provided by community pharmacists in Australian “aged-care” homes to reduce antipsychotic and BZD use
— Results (25 homes participated, n=1591)
  — Significantly ↓ BZD (31.8% to 26.9%) and antipsychotic (20.3% to 18.6%) use
  — Significantly ↓ new BZD (2.1% vs. 7.0%) and antipsychotic prescription (2.3% vs. 4.2%)

HALT Project (ongoing)
— Single-arm longitudinal study of academic detailing/educational strategies in LTCF to reduce antipsychotic use in dementia

✔️ Successful

Targeted Medication Classes

Psychotropic Deprescribing

GP-GP In LTCF (2007)
• Applied GP-GP criteria to Elderly disabled LTCF patients
• Results: (n=119) intervention patients; no change in (n=71) control patients
  — Failure rates: 18% of patients, 10% of medications
  — 1 year mortality, referral to acute care, and cost reduced in intervention arm

✔️ Successful

Targeted Medication Classes

GP-GP In Community (2010)
• GP-GP application (n=70) to elderly community-dwellers referred for geriatric evaluation
• SDM with patient, followed by letter to physician
  — Successful discontinuation in 81%
  — No significant ADRs or deaths
  — 2% of medications restarted for disease re-emergence
  — 88% of patients reported global improvement in health

✔️ Successful
HORIZON: The OPTI-MED Study

- A randomized controlled trial of deprescribing to optimize medical therapy for frail older people
  - DBRCT of up to 1,000 participants in “aged care facilities” in Australia
  - Protocol-driven medication reduction derived by trial pharmacists
- Outcomes assessed through 12 months
  - Cognitive & functional outcomes
  - Drug related (DBI, PIMs, medication number)
  - Falls & fractures
  - Resources use
  - Quality of life

Myth-busting Barriers

- Deprescribing doesn’t actually improve patient outcomes
- Deprescribing is too hard...it just isn’t feasible

Successful Strategies

**Direct Intervention**
- Interventions imbedded into our care processes
- Examples include GP-GP in LTCF, DART-AD, etc.

**Academic Detailing/Provider Education**
- Examples include RedUSe, HALT, GP-GP in community dwellers, etc.

**Patient Engagement/Empowerment**
- Examples include GP-GP in community dwellers, and the EMPOWER trial

EMPOWER Trial (2014)

- Empower older adults to drive “safe prescribing practices” through the validation and use of a theory-based tool
- Cluster randomized trial of (n=303) long-term users of BZD aged 65-95 years, recruited from 30 community pharmacies
  - N=261 participants (86%) completed the 6-month follow-up
  - 62% initiated conversation about cessation with a physician/pharmacist
  - 27% discontinued use compared with 5% of the control group
  - 11% experiences a dose reduction

EMPOWER Model

**THEORY-BASED TOOL**
- Self-assessment
- Evidence of harms
- Elicit cognitive dissonance
- Social comparison
- Recommendations

**AVAILABLE MATERIALS**
- Benzodiazepines*
- Z-drugs
- PPIs
- Antipsychotics
- Antidiabetics
- Antihistamines
- AChI/memantine

Cognitive Dissonance

[Image of a cognitive dissonance questionnaire]

**YOU MAY BE AT RISK**

You are being asked the following questions to determine if you may be at risk of developing late-life depression.

**QUIZ**

**1. FALSE**

If you have had previous episodes of depression, they may recur.

**2. FALSE**

As you age, your body and mind slow down, making it harder to think and perform everyday tasks.

**3. TRUE**

If you have a history of depression, you are more likely to have depression again.

**4. FALSE**

Depression can be treated with medications such as antidepressants and psychological therapy.

**SO ASK YOURSELF**

**YES OR NO?**

- Taking medication for anxiety, stress, or pain
- Having had lasting depression
- Not taking medication as prescribed
- Not maintaining physical activity
- Having had an injury or illness
**HORIZON: D-PRESCRIBE**

- Developing *Pharmacist-led* Research to Educate and Sensitize Community Residents to the Inappropriate prescription Burden in the Elderly
- Sequel to EMPOWER: failure to DC attributed to re-emerging symptoms, prescribing inertia, lack of knowledge/skill
- BZD, SU, antihistamine, NSAID tools in community-dwellers
- Employs pharmacists to send physicians deprescribing recommendations
- Follows patients for 1 year
- Results pending!

**“The Deprescribing Protocol”**

1. Ascertain all drugs the patient is currently taking and the reasons for each one (CONFIRM)
2. Consider overall risk of drug-induced harm in individual patients in determining the required intensity of deprescribing intervention (ESTIMATE)
3. Assess each drug for its eligibility to be discontinued (ASSESS)
4. Prioritize drugs for discontinuation (SORT)
5. Implement and monitor drug discontinuation regimen (ELIMINATE)

Prioritization

Scott, et al suggests 3 pragmatic criteria:
1. Those with the greatest harm and least benefit
2. Those easiest to discontinue
3. Those that the patient is most willing to discontinue first (buy-in)

Prioritization: Harm vs. Benefit

**Benefit?**
- Indication?
- Working?
- Goals of Care?
- Life Expectancy/Prognosis?

**Harm**
- DDI, Contraindication, ADR
- “Drug to avoid”
- Causing prescribing cascade
- Med burden/complexity
Prioritization: Harm vs. Benefit

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<th>Low</th>
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<td>Harm</td>
<td>2 (Oxybutynin)</td>
<td>1 (BZD)</td>
<td>3 (PPI)</td>
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<td>(low)</td>
<td>4 (Alendronate)</td>
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Mrs. Bean: Your Thoughts?

Categorize:
- Lorazepam
- Oxybutynin
- Omeprazole
- Alendronate

Harm vs. Benefit: Mrs. Bean

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Prioritization: Feasibility

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Prioritization: Feasibility

1: High priority
2: If dangerous
3: Trust-building
4: Lowest priority

Mrs. Bean: Your Thoughts?

Categorize:
- Lorazepam
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### Feasibility: Mrs. Bean

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<th>(easy)</th>
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<td>2</td>
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<td>(Lorazepam, Omeprazole)</td>
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1: High priority  
2: If dangerous  
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4: Lowest priority

### Prioritization: Resources

**MedStopper**  
- Online tool to “help clinicians and patients make decisions about reducing or stopping medications”  
- Input medications, indications to receive priority and implementation recommendations  
- Faces relate to potential symptom control, risk reduction, risk of harm  
- Recommendations based on expert opinion and tools such as the Beer's Criteria, STOPP criteria, and Edmonton Frail Scale

www.medstopper.com

### Goal Setting

**DC**  
- Harmful  
- Duplicates  
- Lack clear, meaningful use

**Reduce**  
- Questionable benefit  
- Too effective  
- Patient attachment

### Foundational Principles

**When can I expect the drug effect to be eliminated?**  
- When is my patient at risk for rebound, re-emergence or recurrence?  
- When will I observe ADR resolution?

**Governed by pharmacokinetic and pharmacologic principles!**

#### DRUG CONCENTRATION

- Depends ONLY on t½  
  - 4 x t½ = 93% eliminated  
  - 5 x t½ = 98% eliminated

#### DRUG EFFECT

- Depends on mechanism  
  - Concentration-dependent mechanism = see t½  
  - Irreversible binding, production or expression change = see lifespan of impacted site

### Application to Deprescribing

**With abrupt cessation of lorazepam (t½ = 12 hours), when would you expect Mrs. Bean’s ADR (risk of falls) to be completely resolved (e.g. elimination of drug effect)?**  
- 6 hours  
- 12 hours  
- 60 hours

**When can I expect the drug effect to be eliminated?**

- 6 hours  
- 12 hours  
- 60 hours

**When will I observe ADR resolution?**

- 6 hours  
- 12 hours  
- 60 hours

**Application to Deprescribing**

**With abrupt cessation of omeprazole (t½ = 1 hour), when would you expect Mrs. Bean’s risk for acid resurgence to begin (e.g. elimination of drug effect)?**  
- 1 hour  
- 5 hours  
- 72 hours  
- 360 hours
Kinetics Dictates...

1. Decrease dose first
   - Lowered steady state
   - Less level fluctuations (peak/trough)

2. Extend dosing beyond $t\frac{1}{2}$
   - Lowered steady state
   - More level fluctuations (peak/trough)

3. Slow-Release formulation?
   - Increased $t\frac{1}{2}$
   - No change in steady state
   - Less level fluctuations

Monitoring & Contingencies

Identify & monitor outcomes
- Withdrawal symptoms
- Rebound symptoms
- Disease re-emergence

Develop contingency plan
- PRN Medications
  - Short term BZD/melatonin for insomnia, buspirone for anxiety
  - Threshold to restart medication

Who is Responsible?

- The Captain steers the ship, the navigator charts the waters
  - Substantial agreement on the number of medicines to stop, but only moderate agreement in which medications
  - Physicians identified MORE, and more ambiguous, medications
  - Specialists have a high influence on general practitioner prescribing patterns (complex conditions)
  - Pharmacists can use their unique skills to help teams navigate the waters

Guidelines, Algorithms & Brochures

- Deprescribing Guidelines for the Elderly project
  - Included pharmacists, family medicine physicians, researchers, Cochrane Collaboration

- The Canadian Deprescribing Network (CaDeN)
  - “Share and exchange information about deprescribing approaches and deprescribing research with the public, health care providers and researchers”
    - Deprescribing.org

Mrs. Bean: Focus on PPI

Deprescribing.org | Proton Pump Inhibitor (PPI) Deprescribing Algorithm

- Why is patient taking a PPI?
  - Excessive, based on guideline recommendation from healthcare provider

- Measure continuation
  - Tapered PPIs (e.g., omeprazole, pantoprazole)

- Why give patient a PPI?
  - Improvement in symptoms (GERD, acid reflux, esophagitis)
  - Physical exam, laboratory, symptom improvement

- Recommend Deprescribing

Access to health information
- Unique skills, understanding & relationship

I’m just the pharmacist...
CAN I REALLY DO THIS?


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I’m just the pharmacist...
CAN I REALLY DO THIS?

Mrs. Bean: Focus on PPI

Using your PPI knowledge....

1. How would you implement the prescription changes? (reduce dose, extend interval, etc.)

1. What is your contingency plan?

PPI Deprescribing

Cochrane Review (2017)

- Analysis comparing deprescribing methods (abrupt or "on demand" therapy) vs continuation in adults
  - Of 6 trials (n=1758) included, 5 used "on demand"
  - Successful in most
    - Lack of symptom control significantly ↑ (but small) in "on-demand" (16.3% vs. 9.2%)
    - Up to 1/3 of patients tolerate abrupt DC
  - "Insufficient data to make a conclusion regarding long-term benefits and harms of PPI discontinuation"

Pharmacist Opportunities

Potential Targets | Algorithms | Skills-Based
---|---|---
Harmful | BZD, Z-drugs, Antipsychotics, Antihistamines | Antidepressants
Too Tight Control | Antidiabetics | Antihypertensives
Primary Prevention | Statins, Aspirin, Anticoagulants, Bisphosphonates | AChI/memantine, PPI
No Benefit | Supplements, Vitamins | Skill and knowledge gain, lack of evidence or guidelines

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