Deprescribing in Geriatrics and at End-of-Life

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Objectives

- A case
- Polypharmacy
- Define & Understand Deprescribing
- Screening Tools
- Guidelines?
- Appropriateness at end-of-life
  - Nova Scotia Data
- Barriers
Disclosures

- No formal disclosures but…
Grace

• 87F with mild AD dementia (FAST 4)
• Lives alone at home, help from daughter

Main concerns:
• Falling
• Dizzy
• Diarrhea
• Swollen legs
<table>
<thead>
<tr>
<th>Medical History</th>
<th>Medication</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTN</td>
<td>Perindopril 8mg daily</td>
</tr>
<tr>
<td></td>
<td>Amlodipine 10mg daily</td>
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<tr>
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<td>Furosemide 40mg daily</td>
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<td>DLP</td>
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</tr>
<tr>
<td>OA</td>
<td>Acetaminophen 500mg TID PRN</td>
</tr>
<tr>
<td></td>
<td>Ibuprofen 200-400mg TID PRN</td>
</tr>
<tr>
<td>Dementia, mild stage</td>
<td>Donepezil 10mg daily</td>
</tr>
<tr>
<td></td>
<td>Citalopram 40mg daily</td>
</tr>
<tr>
<td>Rt hemicolecotomy for bowel CA (curative, 1993)</td>
<td></td>
</tr>
<tr>
<td>Additional medications:</td>
<td>Potassium 16mEq daily</td>
</tr>
<tr>
<td></td>
<td>Magnesium Oxide 320mg daily</td>
</tr>
<tr>
<td></td>
<td>B12 1000mcg daily</td>
</tr>
<tr>
<td></td>
<td>Loperamide 2mg QID PRN</td>
</tr>
</tbody>
</table>
Polypharmacy

- Multiple definitions
- Generally agreed ≥ 5 medications
  - Includes over the counter and naturopathic/supplements
- Multiple meds w/o evidence-based reasoning
- A lot of guidelines to start meds...
- Very few resources to help stop meds
- Prescription cascades

Tamura et al. 2012

By Edwin Tan (c) 2015
www.facebook.com/edsrant
Polypharmacy

- Medications in **frail older adults**
  - Changes in absorption, distribution, metabolism and excretion
  - Change in receptors, homeostatic mechanisms
  - Increasing frailty, **decreasing reserve**

- Iatrogenic harm from drug interactions
- Adverse drug effects
- Increases in morbidity and mortality
- Compliance and medication errors

Reviewed in Tamura et al. 2012
SO many pills - Compliance

- non-adherence > 65yo ranges 40-75%
- 63% non-adherence intentional

- Pill Burden, $$$
- Complexity
- Swallowing
- Arthritis, fine-finger
- Unintentional

Dore et al. 2011
Risks

• Potentially inappropriate medication (PIM)
  • Risk of adverse event >> clinical benefits

• Polypharmacy (≥ 5) = higher risk PIMs, ADR, DI
  • If > 8 meds, 2.33x more likely to experience ADR (Nguyen et al. 2006)

• ADRs are responsible for 5% - 28% of acute geriatric hospital admissions
• 30-50% felt to be predictable/preventable
Polypharmacy, cont’d

- Falls
  - > 80% injury-related admissions for geriatric pts
  - 5th leading cause of death
  - 25% result in fracture, loss of independence, etc

- Eg. LTC Massachusetts (Lipsitz et al. 1991):
  - >6 meds: 75% fell
  - 1-3 meds: 40% fell
  - Controlled for amb status!
Impact on cognitive impairment

- Analgesics
- Antipsychotics
- Antidepressants
- Anticonvulsants
- H2 blockers
- Anticholinergics
- Benzodiazepines
- Cardiac
- Antihypertensives

Cognitive impairment
Deprescribing
Deprescribing...optimizing!

- A process
- Tapering & discontinuing medications
- Goal = managing polypharmacy, improving outcomes
- **The best kind of medicine**
  - Consider evidence, social & physical function, comorbidity/frailty, quality of life, patient & family preferences

Thompson et al. 2013, Farrell 2015
How to find it: Screening Tools

- Screening for PIMs & polypharmacy
  - **Explicit**: General lists of potentially inappropriate medications for the elderly
    - BEERS
    - STOPP
  - **Implicit**: Patient specific medication assessments – time intensive/trained
    - Good Palliative-Geriatric Practice Algorithm
    - MAI (Medication Appropriateness Index)
BEERS Criteria for Potentially Inappropriate Medication Use in Older Adults

- Developed by consensus panel 1991

- **How?** Helps practitioners identify medications with risks > benefits
  - Eg: AVOID if possible:
    - first generation antihistamines
    - muscle relaxants
    - benzodiazepines
    - digoxin > 0.125 mg
    - tertiary tricyclic antidepressants

Updated Beers criteria 2015
STOFP/START

- First 2008, updated 2015 (now 80 STOPP criteria)
- Organized by organ system (eg, CV, CNS)
- Applied within 72h of admission significantly reduced ADRs & average length of stay by 3 days
- Also reduces falls, delirium, care visits and costs (Hill-Taylor et al. 2016)
- Validated, good inter-rater reliability

Gallagher et al. 2008; O'Mahoney et al. 2015; Hill-Taylor et al. 2016
Cardiovascular System  BNF Section 2

STOOPP

Digoxin
- at a long-term dose >125 microgram/day with impaired renal function (eGFR <50 mL/minute)
  - increased risk of toxicity (e.g. nausea, diarrhoea, arrhythmias)
    - levels can be taken (must be > 6 hours post dose) if there is a risk of toxicity and/or toxicity suspected

Loop diuretic (e.g. furosemide, bumetanide)
- for dependent ankle oedema only i.e. no clinical signs of heart failure
  - no evidence of efficacy
    - compression hosiery usually more appropriate
- as first-line monotherapy for hypertension
  - safer, more effective alternatives available

Thiazide diuretic (e.g. bendroflumethiazide)
- with a history of gout
  - risk of exacerbating gout

Antihypertensive
- therapy where systolic blood pressure consistently >160 mmHg
MAI (Medication Appropriateness Index)

- List of implicit criteria – 10 questions
- Goal: identify potentially inappropriate elements of prescribing

  1) Indication?
  2) Effective for the condition?
  3) Dosage correct?
  4) Directions correct?
  5) Directions practical?
  6) Clinically significant drug-drug interactions?
  7) Clinically significant drug-disease interactions?
  8) Unnecessary duplication?
  9) Duration acceptable?
 10) Least expensive that works?
How to deprescribe safely:

- Start low, go SLOW…but GO!
- Monitor, monitor, monitor
  - Withdrawal (tachy, rebound hyperacidity, tremor/anxiety)
  - Pain, symptoms of condition, HTN crisis
  - New symptoms (cholinesterase inh)
- Highest risk for problems:
  - High dose, long duration, short half-life
  - Hx of drug abuse/dependence
  - Lack of patient or family buy-in
Guidelines!

- Deprescribing.org: Dr. Barbara Farrell (pharm) & Dr. Cara Tannenbaum (MD)
  - Bruyere Institute in Ottawa
  - Evidence based, systematic reviews, multi-year project
- E.g. PPI guideline recently published

Clinical Practice Guidelines

Deprescribing proton pump inhibitors
Evidence-based clinical practice guideline

Barbara Farrell PharmD ACPR FCSP / Kevin Pottie MD CCSP MSc FCFP / Wade Thompson / Taline Boghossian ACPR / Lisa Pizzola MSc / Farah Joy Rashid ACPR / Carlos Rojas-Fernandez PharmD / Kate Walsh ACPR / Vivian Welch PhD / Paul Moayyedi MB CHB PHD MPh

Canadian Family Physician 2017
Cholinesterase Inhibitor (ChEI) and Memantine Deprescribing Algorithm

Is the person taking the medication for one of the following reasons:

- **ChEIs (donepezil, rivastigmine or galantamine):**
  - Alzheimer’s disease, dementia of Parkinson’s disease, Lewy body dementia or vascular dementia.

- **Memantine:**
  - Alzheimer’s disease, dementia of Parkinson’s disease or Lewy body dementia.

**Have they been taking the medication for > 12 months**

- **No**

  **Do they fulfill one of the following?**
  - Cognition +/- function significantly worsened over past 6 months (or less, as per individual).
  - Sustained decline (in cognition, function +/- behaviour), at a greater rate than previous (after exclusion of other causes).
  - No benefit (i.e., no improvement, stabilisation or decreased rate of decline) seen during treatment.
  - Severe/end-stage dementia (dependence in most activities of daily living, inability to respond to their environment +/- limited life expectancy).

  - **Yes**
    - **Recommend trial deprescribing**
      - Strong recommendation from systematic review and GRADE approach
      - Engage individuals and caregivers determine their values and preferences and discuss potential risks and benefits of continuation and discontinuation.

  - **No**

  **Do they fulfill one of the following?**
  - Decision by a person with dementia/family/carer to discontinue.
  - Refusal or inability to take the medication.
  - Non-adherence that cannot be resolved.
  - Drug–drug or drug–disease interactions that make treatment risky.
  - Severe agitation/psychomotor restlessness.
  - Non-dementia terminal illness.

  - **Yes**
    - **Recommend trial deprescribing**
      - Practice Point
      - Taper and then stop
      - Halve dose (or step down through available dose forms) every 4 weeks to lowest available dose, followed by discontinuation. Plan this in collaboration with the individual/carer and relevant healthcare professionals.
      - Conduct close periodic monitoring (e.g. every 4 weeks)
        - cognition, function and neuropsychiatric symptoms.
        - Consider other causes of changes (e.g. delirium).

  - **No**

- **Yes**
  - **Continue ChEI/ memantine**
    - Consult geriatrician, psychiatrist or other healthcare professional if considering other reason for deprescribing.
### Monitoring during tapering and after discontinuation

<table>
<thead>
<tr>
<th>Timing of symptoms after dose reduction/discontinuation</th>
<th>Types of symptoms</th>
<th>Action to be taken by family/nurses/care staff</th>
<th>Possible cause*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 week</td>
<td>Severe symptoms, including agitation, aggression, hallucinations or reduced consciousness</td>
<td>Restart previous dose immediately and contact responsible healthcare professional as soon as possible</td>
<td>Adverse drug withdrawal reaction</td>
</tr>
<tr>
<td>2 to 6 weeks</td>
<td>Worsening of cognition, behavioural or psychological symptoms or function</td>
<td>Contact responsible healthcare professional and consider restarting previous dose and/or make an appointment to see responsible healthcare professional at the next available time</td>
<td>Re-emergence of symptoms that were being treated by ChEI/memantine</td>
</tr>
<tr>
<td>6 weeks to 3 months</td>
<td>Worsening of cognition, behavioural or psychological symptoms or function</td>
<td>Contact responsible healthcare professional at the next available time to make an appointment</td>
<td>Likely progression of condition or possible re-emergence of symptoms that were being treated by ChEI/memantine</td>
</tr>
<tr>
<td>&gt; 3 months</td>
<td>Any</td>
<td>As per usual care</td>
<td>Progression of condition</td>
</tr>
</tbody>
</table>

*Exclude other causes of change in condition (e.g., infection or dehydration) first.

Discuss monitoring plan with the individual/family/carer and write it down for them (e.g., frequency and type of follow-up). Ensure they have a way to contact a clinician if needed.

### Engaging individuals and family/carers

#### Determining suitability for deprescribing
- Discuss treatment goals – what do they value the most (cognition, quality of life, remaining independent)?
- Ask about experience with dementia symptoms when treatment started and over last 6 months.
- Ask about side effects.

#### Helping the individual and family/carers to make an informed decision
- Deprescribing is a trial — medication can be restarted if appropriate.
- There are uncertain benefits and harms to both continuing and discontinuing the medication.
- Tailor discussion about benefits and harms to the individual.
- Explore fears and concerns about deprescribing.
- Consider medication costs and local reimbursement/subsidisation criteria.
- If the recommendation to deprescribe is being made due to progression of dementia, remind family/carers that the person with dementia may continue to decline after deprescribing, and explain why.

### Non-pharmacological management and ongoing care after deprescribing


### ChEI and memantine availability (Australia)

<table>
<thead>
<tr>
<th>Drug</th>
<th>Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donepezil (Aricept®, Aredia®, Arazia®)</td>
<td>Tablet – 5mg, 10mg</td>
</tr>
<tr>
<td>Galantamine (Galantyl®, Gamine XR®, Reminyl®)</td>
<td>Controlled release capsule – 8mg, 16mg, 24mg</td>
</tr>
<tr>
<td>Rivastigmine (Exelon®)</td>
<td>Capsule – 1.5mg, 3mg, 4.5mg, 6mg</td>
</tr>
<tr>
<td></td>
<td>Patch – 4.6mg/24 hours, 9.5mg/24 hours, 13.5mg/24 hours</td>
</tr>
<tr>
<td>Memantine (Ebixa®, Memanza®)</td>
<td>Tablet – 10mg, 20mg</td>
</tr>
</tbody>
</table>

### ChEI and memantine side effects
- Common: include gastrointestinal effects, dizziness, confusion, headache, insomnia, agitation, weight loss and falls.
- Rare (ChEI): may include urinary, cardiovascular (e.g., bradycardia), pulmonary and dermatological (e.g., Stevens-Johnson syndrome) complications, Pisa syndrome, seizures, gastrointestinal haemorrhage and rhabdomyolysis.
- Lack of evidence of potential harms in complex older adults.
More information:

depresscribing.org

Reducing medications safely to meet life’s changes

Moins de médicaments, sécuritairesment – pour mieux répondre aux défis de la vie

Connect with us!
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www.depresscribing.org  |  depresscribing@bruyere.org
<table>
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<tr>
<th>Medical History</th>
<th>Medication</th>
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<td>HTN</td>
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<td>GERD</td>
<td>Pantoprazole 40mg daily</td>
</tr>
<tr>
<td>OA</td>
<td>Acetaminophen CR 1300mg BID</td>
</tr>
<tr>
<td></td>
<td>Voltaren gel PRN</td>
</tr>
<tr>
<td>Dementia, mild stage</td>
<td>Donepezil 10mg daily</td>
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<td></td>
</tr>
</tbody>
</table>

- No longer dizzy
- Fewer falls
- Diarrhea improved
- Leg swelling gone
Grace – fast forward

3 years later...

- She has reached severe dementia
- Living in LTC, dependent
- GP notes that she is close to end-of-life
- Goals of care are comfort, symptom management in LTC, no transfer to hospital
End-of-Life Care
Deprescribing at EofL

• As diseases progress, goals of care often evolve to focus on symptom management and quality of life over prolongation of life

• Medications that may have been appropriate at different stages of care become inappropriate near end-of-life
  • new medications (e.g. benzos) may become appropriate for palliative care

• Increased risk polypharmacy
  • New meds to treat pain & symptoms of terminal disease
  • Old meds for long-term prevention & management of chronic conditions

Maddison et al. 2011; Tanvetyanon & Choudhury 2006
PEACE - Palliative Excellence in Alzheimer Care Efforts

- Holmes criteria: primary validated explicit system for identifying PIMs in pts with advanced dementia, EoL
- Consensus data, 12 geriatricians
- Rated medications as ‘never’, ‘rarely’, ‘sometimes’ or ‘always’ appropriate in 34 patients with advanced dementia

Holmes et al. 2008
PEACE - Palliative Excellence in Alzheimer Care Efforts

- Important limitations
  - Needs further validation
  - Needs a larger & more representative expert panel
  - Lacks inherent flexibility – cannot integrate patient factors (e.g. comorbidities, symptoms, goals of care)

Holmes et al. 2008
### Appropriateness Rating of Medications - PEACE Concensus Panel

<table>
<thead>
<tr>
<th>Always appropriate - 1</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Antidiarrheals</td>
<td>Narcotic analgesics</td>
</tr>
<tr>
<td>Laxatives</td>
<td>Non-narcotic analgesics</td>
</tr>
<tr>
<td>Antiemetics</td>
<td>Antiepileptic drugs</td>
</tr>
<tr>
<td>Inhaled brochodilators</td>
<td>Anxiolytics/benzos</td>
</tr>
<tr>
<td></td>
<td>Expectorants</td>
</tr>
<tr>
<td></td>
<td>Pressure ulcer products</td>
</tr>
<tr>
<td></td>
<td>Lidoderm</td>
</tr>
<tr>
<td></td>
<td>Lubricating eye drops</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Sometimes appropriate - 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Proton pump inhibitors</td>
<td>Antipsychotics</td>
</tr>
<tr>
<td>Antihistamines</td>
<td>Tricyclic antidepressants</td>
</tr>
<tr>
<td>Beta-blockers</td>
<td>Antidepressants</td>
</tr>
<tr>
<td>Calcium channel blockers</td>
<td>Antihistamines</td>
</tr>
<tr>
<td>Diuretics</td>
<td>Tricyclic antidepressants</td>
</tr>
<tr>
<td>ACEI &amp; ARBs</td>
<td>Antihistamines</td>
</tr>
<tr>
<td>Nitroglycerin</td>
<td>Tricyclic antidepressants</td>
</tr>
<tr>
<td>Inhaled corticosteroids</td>
<td>Antihistamines</td>
</tr>
<tr>
<td>Corticosteroids</td>
<td>Tracyclic antidepressants</td>
</tr>
<tr>
<td></td>
<td>Decongestants</td>
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<tr>
<td></td>
<td>Antipsychotics</td>
</tr>
<tr>
<td></td>
<td>Antidepressants</td>
</tr>
<tr>
<td></td>
<td>Antihistamines</td>
</tr>
<tr>
<td></td>
<td>Tricyclic antidepressants</td>
</tr>
<tr>
<td></td>
<td>Decongestants</td>
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<td></td>
<td>Antipsychotics</td>
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<td></td>
<td>Antidepressants</td>
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<tr>
<td></td>
<td>Tricyclic antidepressants</td>
</tr>
<tr>
<td></td>
<td>Decongestants</td>
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<tr>
<td></td>
<td>Antipsychotics</td>
</tr>
<tr>
<td></td>
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<td>Antihistamines</td>
</tr>
<tr>
<td></td>
<td>Tricyclic antidepressants</td>
</tr>
</tbody>
</table>

Sourced from Holmes et al. (2008)
# Appropriateness Rating of Medications - PEACE Consensus Panel

<table>
<thead>
<tr>
<th>Rarely appropriate - 3</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Alpha blockers</td>
<td>Antiandrogens</td>
<td>Appetite stimulants</td>
</tr>
<tr>
<td>Digoxin</td>
<td>Bisphosphonates</td>
<td>Bladder relaxants</td>
</tr>
<tr>
<td>Clonidine</td>
<td>Mineralocorticoids</td>
<td>Tamsulosin</td>
</tr>
<tr>
<td>Antiarrhythmics</td>
<td>Heparin/LMWH</td>
<td>Antispasmodics</td>
</tr>
<tr>
<td>Hydralazine</td>
<td>Warfarin</td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Never appropriate - 4</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lipid-lowering medications</td>
<td>Memantine</td>
<td>Cytotoxic chemotherapy</td>
</tr>
<tr>
<td>Antiplatelet agents (excluding aspirin)</td>
<td>Acetylcholinesterase inhibitors</td>
<td>Leukotriene receptor antagonists</td>
</tr>
<tr>
<td>Antiestrogens</td>
<td>Sex hormones</td>
<td>Immunomodulators</td>
</tr>
<tr>
<td>Hormone antagonists</td>
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<td></td>
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</table>

<table>
<thead>
<tr>
<th>No consensus - 5</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirin</td>
<td>Antivertigo agents</td>
<td>Bladder stimulants</td>
</tr>
<tr>
<td>Sedatives and hypnotics</td>
<td>Vitamins</td>
<td>Iron</td>
</tr>
<tr>
<td>Muscle relaxants</td>
<td>Mineral supplements</td>
<td>Finasteride</td>
</tr>
<tr>
<td>Central nervous system stimulants</td>
<td>Calcitonin</td>
<td>Red blood cell colony stimulating factors</td>
</tr>
</tbody>
</table>

Sourced from Holmes et al. (2008)
The Evidence: Locally

- Care by Design in LTC in NS

- Single physician coverage by floor with team on-call coverage (Jan 2009)
- Comprehensive Geriatric Assessment (LTC-CGA) tool (June 2011)
- Performance Measurements to Support Improvements (Jan 2010)
- Extended Care Paramedics: on-site care & facilitated transfers (Feb 2011)
- Interdisciplinary Education (Sept 2010)
Nova Scotia Data

- Data collected in the CBD study
- Use compared between residents at end-of-life vs. not at end-of-life
- Medications categorized as Potentially Inappropriate Meds (PIMS) based on PEACE data

- Total patients: 748
- Total patients EofL: 130
- Total patients EofL with medication information: 118
Resident characteristics - compared between those at end-of-life and those not at end-of-life within each time period

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Pre-CBD (T1)</th>
<th>Post-CBD (T3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not End of Life</td>
<td>End of Life</td>
</tr>
<tr>
<td><strong>Age (years)</strong></td>
<td>n = 118</td>
<td>n = 41</td>
</tr>
<tr>
<td>Mean (+/-SD)</td>
<td>85.1 (+/- 11.53)</td>
<td>87.4 (+/- 7.76)</td>
</tr>
<tr>
<td><strong>Gender, % (n)</strong></td>
<td>n = 118</td>
<td>n = 41</td>
</tr>
<tr>
<td>Female</td>
<td>72.0 (85)</td>
<td>70.7 (29)</td>
</tr>
<tr>
<td><strong># med/resident</strong></td>
<td>n = 118</td>
<td>n = 41</td>
</tr>
<tr>
<td>Mean (+/-SD)</td>
<td>17.2 (+/- 6.44)</td>
<td>17.29 (+/- 5.34)</td>
</tr>
<tr>
<td>Range</td>
<td>4 - 42</td>
<td>6 - 29</td>
</tr>
<tr>
<td><strong>Polypharmacy, % (n)</strong></td>
<td>n = 118</td>
<td>n = 41</td>
</tr>
<tr>
<td>0 – 5 medications</td>
<td>0.8 (1)</td>
<td>0.0 (0)</td>
</tr>
<tr>
<td>6 – 10 medications</td>
<td>11.0 (13)</td>
<td>12.2 (5)</td>
</tr>
<tr>
<td>&gt; 10 medications</td>
<td>88.1 (104)</td>
<td>87.8 (36)</td>
</tr>
</tbody>
</table>
Nova Scotia data

<table>
<thead>
<tr>
<th>Appropriateness*</th>
<th>All residents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% (n)</td>
</tr>
<tr>
<td>Always</td>
<td>100.0 (118)</td>
</tr>
<tr>
<td>Sometimes</td>
<td>100.0 (118)</td>
</tr>
<tr>
<td>Rarely</td>
<td>65.3 (77)</td>
</tr>
<tr>
<td>Never</td>
<td>62.7 (74)</td>
</tr>
<tr>
<td>No consensus</td>
<td>98.3 (116)</td>
</tr>
<tr>
<td>Not included</td>
<td>6.8 (8)</td>
</tr>
</tbody>
</table>

**Graph:**
- "Rarely" appropriate
- "Never" appropriate

**Medication class:**
- Alpha blocker
- Anti-spasmodic
- Anti-arrhythmic
- Anti-coagulation
- Bisphosphonate
- Chemotherapy
- Immunomodulator
- LTRA
- Hormonal
- Anti-platelet
- Cholinesterase inhibitor
- Lipid lowering
## Nova Scotia Data

<table>
<thead>
<tr>
<th>Medication Class</th>
<th>%</th>
<th>Appropriateness based on PEACE consensus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opioids</td>
<td>79.7</td>
<td>Always appropriate</td>
</tr>
<tr>
<td>Benzos</td>
<td>56.8</td>
<td>Always appropriate</td>
</tr>
<tr>
<td>Anticholinergics</td>
<td>34.7</td>
<td>Sometimes appropriate</td>
</tr>
<tr>
<td>Oral Diabetic Meds</td>
<td>31.4</td>
<td>Sometimes appropriate</td>
</tr>
<tr>
<td>Anti-hypertensives</td>
<td>86.4</td>
<td>Sometimes – rarely app.</td>
</tr>
<tr>
<td>Bisphosphonates</td>
<td>27.1</td>
<td>Rarely appropriate</td>
</tr>
<tr>
<td>Therapeutic anti-coag</td>
<td>23.7</td>
<td>Rarely appropriate</td>
</tr>
<tr>
<td>Statins</td>
<td>38.1</td>
<td>Never appropriate</td>
</tr>
<tr>
<td>Cholinesterase inh</td>
<td>16.9</td>
<td>Never appropriate</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>87.3</td>
<td>no consensus</td>
</tr>
<tr>
<td>Oral calcium</td>
<td>55.1</td>
<td>no consensus</td>
</tr>
<tr>
<td>Oral Iron</td>
<td>34.7</td>
<td>no consensus</td>
</tr>
<tr>
<td>Oral B12</td>
<td>24.6</td>
<td>no consensus</td>
</tr>
</tbody>
</table>
Many LTCF residents got ‘preventative’ therapies, even when identified as being at end-of-life

- Anti-hypertensives
- Statins
- Bisphosphonates
- Cholinesterase inhibitors
- Oral vitamins!

All have little to no relation to the needs of residents at end-of-life
Why is this so hard to do?

• **Barriers on the Physician side of things:**
  ◦ No awareness of the problem
  ◦ Inertia, perceived lower value of pill cessation (compared to starting or continuing meds)
  ◦ Time constrains, few medication reviews
  ◦ Lack of knowledge, self-efficacy around how to deprescribe
  ◦ External constraints
    ◦ Frequency of follow-up visits
    ◦ Patient/family pressures
    ◦ Conflicting consultant recommendations

Anderson et al. 2015
Why is this so hard to do?

- **Barriers on the Patient side of things:**
  - Comfort with current meds/routine ("I’ve always...")
  - Scared to change ("What if...happens?")
  - Unclear process, no planned follow-up or guidance ("How will I know what to do?")
  - Family pressures ("My daughter wants me to stay on...")
  - Trust in previous clinician ("Dr X said this pill is very important for me")

- **Helpful:**
  - Dislike of medications, too many pills
    - Requires patient insight into compliance, pill burden

Reeve et al 2013
What can we do?

- Awareness
- Education
- Standardization, requirements of quarterly medication reviews in LTC, automated alerts
- Pharmacist involvement, structured patient-pharmacist consultation
- Guidelines
- Working groups, SIG (CGS)

Kovacevic et al. 2017; Farrell 2015
Deprescribing in 10 Steps

1) What are the current medications?
2) Is my patient at high risk of or experiencing adverse drug reactions or interactions?
3) What is their life expectancy?
4) What are their overall goals of care?
5) What are their current indications for ongoing treatment?
6) How long will it take for my patient to benefit from this medication?
7) What is the risk vs benefit for each medication?
8) Which medication would be the best choice/practical?
9) What medications can be weaned/stopped?
10) What is my follow-up plan for ongoing reassessment of meds and adherence? (try for one central physician)

Scott et al. 2012
Prescribing at end of life
### Medical History

<table>
<thead>
<tr>
<th>Medical History</th>
<th>Medication</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTN</td>
<td>Perindopril 4mg daily</td>
</tr>
<tr>
<td>DLP</td>
<td>Rosuvastatin 20mg daily</td>
</tr>
<tr>
<td>OA</td>
<td>Acetaminophen CR 1300mg BID Voltaren gel PRN</td>
</tr>
<tr>
<td>Dementia, mild stage</td>
<td>Donepezil 10mg daily</td>
</tr>
<tr>
<td></td>
<td>Citalopram 20mg daily</td>
</tr>
<tr>
<td>Rt hemicolecotomy for bowel CA (curative, 1993)</td>
<td></td>
</tr>
<tr>
<td>End of life</td>
<td>Dilaudid 0.25mg subcut q4h</td>
</tr>
<tr>
<td></td>
<td>Dilaudid 0.25-0.5mg subcut q1h PRN</td>
</tr>
<tr>
<td></td>
<td>Midaz 2mg subcut q30min PRN ordered</td>
</tr>
</tbody>
</table>
Take Home Points

1) Polypharmacy is a problem in our patient population, but multiple tools exist to identify those patients. **Careful medication review** with slow titration, patient/family buy-in

2) Identify and **address barriers**: time constraints, education, access to resources, lack of standardized practices, patient/family pressures

3) Review and adjust medications to meet **evolving goals of care** - essential for optimal patient care
Selected References

- Andrew, Melissa (2015). Unpublished Data from Poster: A Long-Term Care-Comprehensive Geriatric Assessment Tool: Improving care for frail older adults?
Thank You!
Questions, comments?