De-prescribing
When Less is More

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Objectives

• Recognize the challenge, scope and cost of poly-pharmacy in the geriatric population

• Apply tools and resources like BEERS and STOPP guidelines to identify at least three potentially inappropriate prescriptions and adverse drug events in hospital, nursing home and end of life situations

• Apply principles of chronic disease management and palliative care to medication guidelines for elderly patients with diabetes, hypertension and end stage dementia

• Appreciate barriers to de-prescribing and apply patient centered strategies to assist patients in medication reduction based on goals of care

• Recognize PCP leadership opportunities for de-prescribing in your team and community
CBLTC case

- MS. B 74 yo new patient; family moved her from Medford home into independent housing ALF
- Weakness and depression after moving in. Independent in all ADL no stml. Exam is WNL. No POLST
- Medications from five physicians, three pharmacies and naturopath;
- Duplicate bottles in her pharmacy bag. Her medi-set is not filled properly.
- PH: HTN, GERD, CAD, AF, gout, DJD, neuropathy.
- Furosemide, fluoxetine, gabapentin, naproxen, colchicine, gingko., garlic tablets, warfarin, lovastatin, amlodipine, alendronate, vit D, Calcium, lisinopril, zolpidem, amiodarone, metoprolol, omeprazole
Teaching points

- MULTIPLE PROVIDERS, MULTIPLE DISCIPLINES
- 11 RX and 5 OTC
- POOR: ORGANIZATION/COORDINATION/RECONCILIATION
- Obtain POLST: what are goals of care
- BLEEDING RISK COUMADIN + NSAID, GINGKO, GARLIC/AMIODARONE
- NEURONTIN PLUS ZOLPIDEM RISK sedation or FALLING
- GERD RISK WITH ALENDRONATE, NSAID
- STATIN WITH COLCHICINE, AMIODARONE
- PRESCRIBING CASCADES: Amlodine>edema>Furosemide>CKD
  GERD >Omeprazole> CKD/osteoporosis
  Lovastatin> Amlodipine> Colcichine> myalgia> weakness> falling
  Fluoxetine>Furosemide> Lisinopril> Metoprolol>
  ORTHOSTATIC HYPOTENSION> SIADH> FALLING
- Labs include PT/INR, CMP, HgB, Mg
Polypharmacy in the Geriatric Population

- 88% of those 65 years of age and older use at least one medication

- One third of those 65 years of age and older use **five or more** medications

- 42.6% of all older adults reporting medication use had at least one PIM (potentially inappropriate medication)
Untangling the evidence: is it possible?

- Should we consider patient and/or clinical outcomes?
- How to define polypharmacy?
- How to define syndromes?

- Polypharmacy
- Geriatric Syndromes
- Multimorbidity
- Patient-centred outcomes
  - Clinical outcomes
Polypharmacy
2005-2011

• The number of older adults using five or more prescription drugs on a regular basis increased from 31% to 36%.
• When adding non prescription drugs use went from 53% to 67%
• Rates of potential ADE adverse drug events rose from 8% to 15%
• Most significant increases:
  – Statins 34-46%
  – Anti-platelet therapy 34-44%
  – Omega 3 fish oils 5-19%
Polypharmacy
LTC 2000-2010

• Per cent residents with 9 or more medications rose from 26-71%.
• Nearly 3.2 million elderly and disabled Americans live in nursing homes. Those who remain for over 90 days receive on average over 10 different routine and OTC medications
• Nearly 60% receive unnecessary or inappropriate medications
• Underuse of beneficial medications may be over 40%
• 22-50 % of medications in community based care may be inappropriate
Multi-morbidity Diseases

- Hypertension
- Heart failure
- Chronic kidney disease
- Diabetes
- Atrial fibrillation
- Dementia
- Respiratory
- Anemia
- musculoskeletal
- GERD, BPH, Osteoporosis, others
CDM and geriatric NH care

• Expert panel reviewed Medicare/Medicaid NH admissions yearly for over one million hospitalizations and 39% had potentially avoidable hospitalizations
• 50% of hospital admissions for NH residents in their last year of life were for potentially avoidable conditions
• Five conditions accounted for 80% of those identified by expert panels: CHF, dehydration, UTI, pneumonia, falls with trauma
Multi-morbidity and Frailty two separate trajectories

- Functional deficits, frailty and higher symptom burden are better markers for poor prognosis independent of comorbidity clusters or patterns.
- Multi-morbidity is a better predictor of poor survival and poor quality of life than any single disease specific measurement.
- 50% of older adults have three or more chronic conditions.
- Of those with dementia nearly 40% have five or more chronic conditions.
- Of those with CHF over 50% have five or more chronic conditions.
Opportunity for Palliative Care

Medicare Deaths: Who are they?

• 11% of US dollars spent on individuals in last year of life
• 28% of Medicare costs go to 5% of enrollees in last year of life
• Most elderly do not die in the hospital.
• Over 50% will die in community based care at home or in a facility.
• In Oregon this is close to 85%.
• Patients with a PCP are much more likely to die out of a hospital and have hospice care.
• Half of all older Americans who die will make a visit to the ED in the final six months of life.
• 40% of those who die within a year continue to have high daily costs.
• Nursing home residents with Palliative Care consultations had significant less ED and hospitalization use in the last 60 days of life.
CDM, multiple chronic conditions in the elderly and prognosis: the origins of palliative care

- Failure to thrive
- End stage Dementia Fast level 7
- Delirium
- Drugs- three or more
- Deconditioning
- Depression
- Falling, poor balance or gait
- Immobility
- Abuse, isolation, poverty
- Malnutrition, anorexia, dysphagia
- Weight loss
- CVA or sensory impairment
- Chronic illness/weakness
- Dehydration
- Pain
- Incontinence
- Pressure sores

Age is not risk factor
Greater variation within cohorts than between them
Every geriatric case has palliative and ethical dimensions
Autonomy and Function are major contributors to Quality of Life

One year mortality rises with the number of syndromes
CH Winograd JAGS 39; August 1991; 778-84
Drug Cascade Picture and Concept

- Example: NSAID prescribed for osteoarthritis pain
- Example: Patient develops hypertension
- Example: Hydrochlorothiazide prescribed
- Example: Patient develops hyperuricemia
Drug cascade - HOUSE OF CARDS
Emergency Department Polypharmacy
2013-2014 adults 65 and over

• Emergency room visits for ADE on the rise
• 43% of those 65 and older with ADE were hospitalized
• 60% of ED visits for ADE in those 65 and older were associated with: anticoagulants
diabetic agents
opioid analgesics replacing digoxin
Tools used for identifying potentially inappropriate Rx

- **BEERS-**
  - drugs to avoid
  - Drugs to use with caution
  - Drug-disease interactions

- **STOPP** Screening tool of older persons PIP
  - 2008 European consensus expert panel
  - Organized according to physiological systems
    - slightly more specific at recognizing PIP; both can be used in complimentary manner

- Recent validation of STOPP/START criteria for NH polypharmacy see handout D
  - Khodyakov JAGS 65,3; March 2017 586-91
  - JD Brown et al; JAGS 64:22-30, Jan 2016
BEERS Criteria for Potentially Inappropriate Rx in older Adults due to disease-drug or syndrome-drug Interactions

<table>
<thead>
<tr>
<th>Category</th>
<th>Drugs</th>
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<tbody>
<tr>
<td>Cardiovascular/ CHF</td>
<td>NSAIDS, Cox 2 inhib, diltiazam and verapamil with reduced EF, cilastazol, pioglitazone, rosiglitazone, dronadarone (severe chf)</td>
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<tr>
<td>Syncope</td>
<td>AChEi, alpha 1 blockers-doxazosin, prazosin, terazosin, TCA, chlorpromazine, thioridazine, olanzapine</td>
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<tr>
<td>CNS/ seizures</td>
<td>bupriprion, chlorpromazine, clozapine, maprotiline, olanzapine, thorazine, thioridazine, tramadol</td>
</tr>
<tr>
<td>Delirium</td>
<td>anti-cholinergics, anti-psychotics, benzodiazapines, chlorpromazine, coricosteroids, H2 receptor antagonists, meperidine, sedative hypnotics</td>
</tr>
<tr>
<td>Dementia</td>
<td>same as above and add non benzodiazapine receptor agonists, hypnotics- eszopiclone, zolpidem, zaleplon</td>
</tr>
<tr>
<td>Falls, fractures</td>
<td>same as above with anticonvulsants, TCAs, SSRIs, opioids</td>
</tr>
</tbody>
</table>
BEERS criteria drug syndromes; cont/

- **GI**  
  ASA- over 325mg, non-Cox2 NSAIDs

- **Renal**  
  NSAIDS Cox and non-Cox  
  - Incontinence in women: avoid oral estrogens, alpha-1 blockers  
  - BPH: avoid anticholinergics except anti-muscarinics

- **Parkinsons**  
  anti-psychotics *except aripiprazole, quetiapine, clozapine*  
  Anti-emetics-metoclopramide, prochlorperazine, promethazine
BEERS non-infective drug drug strong warnings

- ACEI
- Anticholinergics
- Anti-depressants SSRI, SNRI, TCA
- Antipsychotics
- Benzodiazepines, non Benz.,
- Corticosteroids
- Lithium
- Opioids
- Peripheral Alpha 1 blockers
- Theophylline
- Warfarin

Amiloride, trimaterine +K
Anti-cholinergics
Other CNS drugs
Other CNS drugs
Other CNS drugs
NSAIDs
ACEI, loop diuretics; lith+
Other CNS drugs
Loop diuretics
Cimetidine
Amiodarone, NSAIDs
Intervention Trials with RCT

• B Clyne et al  JAGS 64: June 2016; 1210-22
  – Meta analysis of selected RCT for community dwelling elderly
  – Three types of interventions: organizational – adding a pharmacist,
    Working with IDG team, EMR/clinical decision support systems
  – Effects were modest, difficult to measure outcomes or preferences
  – Combination of interventions most effective
  – IDG most effective when pharmacist present or when at least one physician was geriatrician
  – EMR systems more effective at reducing new PIP orders than de-prescribing existing orders
Intervention RCT

- D Frankenthal JAGS 62: Sept 2014; 1658-65
  - 359 nursing home residents; STOPP screening pharmacist and PCP;
  - Hospitalizations, FIMS, falls, QOL; one year follow up
  - No change in QOL or number of hospitalizations; but monthly number of medications dropped significantly
  - Significant improvement in monthly medication costs
  - Recurrent falls were reduced in the intervention group but not total prevalence of falls; time to benefit may have been too short
  - Effectiveness of PCP to work with pharmacist is crucial
Intervention RCT

- MN O’Connor  JAGS 64; Aug 2016; 1558-66
  - 732 hospital admissions 13 month study
  - Pharmacist report and rounding with attending within 24 hours admission
  - Applying STOPP criteria
  - Measured ADE, 28 day medication costs, hospital LOS
  - 78/372 controls had one or more ADE; 42/360 with intervention p<.001
  - Absolute risk reduction 9.3% NNT 11
  - No change in LOS
  - Highly significant reduction in median medication costs
RCT- O’Connor continue

Drugs Associated with ADE in hospital

• Opioids  delirium, falls, constipation
• Diuretics  electrolyte disorders, AKD
• Beta Blockers  symptomatic bradycardia
• All HTN meds  symptomatic orthostatic hypotension
• ARB,ACE  hyperkalemia, AKD
• Anticoagulants  bleeding requiring transfusions
• Antibiotics  C Diff diarrhea, Vanco resistant enterococci, gentamicin CKD
• NSAIDS  AKD, GI bleeding
• Antiplatelet meds  GI bleeding
Recent Observational studies

• 1000 hospital discharges had nearly 20% ADE in first 45 day period; 35% serious; 5% life threatening  AO Kanaan JAGS 61;Nov 2013; 1894-99
  – More than half occurred within 14 days discharge
  – BEERS criteria met in 17% of cases and this small role in identifying events suggests that interventions must extend beyond a simple application of this criteria

• N Ferrah JAGS 65;Feb 2017; 443-42
  – ADE and PIP in nursing homes leading to hospitalization or death
  – Eleven studies met criteria for review
  – 13-31% of residents had medication errors, up to 40% of these were ADE up to 75% had one PIP
  – Only a small percent associated with death. Causation in this setting hard to establish.
Mr. Robbins, 78 yr old new SNF case following fall, hip Fx and THA
In hospital steroids for Polymyalgia Rheumatica stopped when he was on lovenox. Switched to rivaroxaban. POLST DNR Limited
PH: lumbar laminectomy, shoulder arthroplasty, CKD, DM, GERD, BPH, HTN, CHF.
Complaining of weakness, light-headedness, new muscle cramping, hip and shoulder pain impairing his rehab course. Appetite poor, intermittently confused; family worried
118/60 drops to 92/55 on standing, 97.7, 12, 62. normal exam, hip is fine, legs are fine. No edema or calf pain. Cr up 1.7 to 2.4, BUN 23, Na down 131 to 125, HgB stable 8.7, ESR up 26 to 28, CBG in AM 68, Mg 2.2
His meds include lansoprazole, cipofloxacin for UTI post op, tamsulosin, carvedilol, Digoxin, furosemide, vit D, spironolactone, amlodipine, hydrochlorthiazide, losartan
Glyberide, glargine insulin, metformin, sliding scale lispro, rivaroxaban
hydrocodone, oxycodone, aspirin, tramadol, celexicob, Duloxetine, gabapentin
PRN include include DOS, zolpidem, diphenhydramine, trazadone, lorazepam, melatonin.
<table>
<thead>
<tr>
<th>Drug Class or Physiological System</th>
<th>Criterion</th>
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<tbody>
<tr>
<td>Potential prescribing omissions (START)</td>
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<tr>
<td>Vaccines</td>
<td>Pneumococcal vaccine at least once after age 65</td>
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<tr>
<td>Seasonal influenza vaccine annually</td>
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<tr>
<td>Potentially inappropriate medications (STOPP)</td>
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<tr>
<td>Antiplatelets, anticoagulants</td>
<td>Concomitant prescription of NSAID and vitamin K antagonist, direct thrombin inhibitor or factor Xa inhibitors</td>
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<td></td>
<td>Concomitant prescription of NSAID and antiplatelet agent without PPI prophylaxis</td>
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<td>Central nervous system and psychotropics</td>
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<td></td>
<td>Any phenothalzine</td>
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<td></td>
<td>Anticholinergic or antimuscarinic with delirium or dementia</td>
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<td></td>
<td>Antipsychotic (except quetiapine or clozapine) with Parkinsonism or Lewy body disease</td>
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<td></td>
<td>Benzodiazepines for ≥4 weeks</td>
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<td>Concomitant use of ≥2 drugs with antimuscarinic or anticholinergic properties</td>
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<td></td>
<td>Any tricyclic antidepressants</td>
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<td></td>
<td>Any first-generation antipsychotics</td>
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<td></td>
<td>Any duplicate prescription within these drug classes: hypnotics, sedatives, antidepressants, anxiolytics, antipsychotics</td>
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<tr>
<td>System</td>
<td>Medication</td>
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<tr>
<td>Endocrine system</td>
<td>Sulphonylurea with type 2 diabetes mellitus</td>
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<tr>
<td>Gastrointestinal system</td>
<td>Oral elemental iron doses &gt;200 mg/d</td>
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<td></td>
<td>Prochlorperazine or metoclopramide with Parkinsonism</td>
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<td></td>
<td>PPI for uncomplicated peptic ulcer disease or erosive peptic esophagitis at</td>
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<td>full therapeutic dosage for &gt;8 weeks</td>
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<tr>
<td>Musculoskeletal system</td>
<td>COX-2-selective NSAID with cardiovascular disease</td>
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<tr>
<td></td>
<td>Prescription NSAID and COX-2-selective NSAID with peptic ulcer disease,</td>
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<tr>
<td></td>
<td>unless with concurrent PPI or histamine antagonist</td>
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<tr>
<td>Renal system</td>
<td>Digoxin at a dose &gt;125 $\mu$ g/d</td>
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<td>Metformin with ESRD or dialysis</td>
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<tr>
<td></td>
<td>NSAID with renal failure, ESRD, or dialysis</td>
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<tr>
<td>Urogenital system</td>
<td>Antimuscarinic drug with dementia, cognitive impairment, glaucoma, cataracts,</td>
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<td></td>
<td>macular degeneration, enlarged prostate</td>
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<td></td>
<td>Selective alpha-1 blocker with orthostatic hypotension</td>
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<tr>
<td>Respiratory system</td>
<td>Systemic corticosteroid instead of inhaled corticosteroid for maintenance</td>
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<td>therapy (&gt;14 days) in chronic obstructive pulmonary disease</td>
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</tbody>
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*a International Classification of Diseases, Ninth Revision, codes 585.4, 585.5, 585.6.

*b Chronic kidney disease Stage 3–5 and end-stage renal disease (ESRD).

NSAID = nonsteroidal antiinflammatory drug; PPI = proton pump inhibitor; COX-2 = cyclooxygenase-2.
<table>
<thead>
<tr>
<th>Antihistamines</th>
<th>Antiparkinsonian agents</th>
<th>Skeletal muscle relaxants</th>
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<tbody>
<tr>
<td>Brompheniramine</td>
<td>Benztrpine</td>
<td>Cyclobenzaprine</td>
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<td>Carbinoxamine</td>
<td>Trihexyphenidyl</td>
<td>Orphenadrine</td>
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<td>Chlorpheniramine</td>
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<td>Clemastine</td>
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<tr>
<td>Cyproheptadine</td>
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<tr>
<td>Dextromethorphan</td>
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<td>Dimehydrinate</td>
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<td>Diphenhydramine (oral)</td>
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<td>Doxylamine</td>
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<td>Hydroxyzine</td>
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<td>Medetane</td>
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<td>Triprolidine</td>
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<td>Antidepressants</td>
<td>Antipsychotics</td>
<td>Antiarrhythmic</td>
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<td>Amloptryptiline</td>
<td>Chlorpromazine</td>
<td>Disopyramide</td>
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<td>Amoxapine</td>
<td>Clozapine</td>
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<td>Clomipramine</td>
<td>Loxapine</td>
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<tr>
<td>Desipramine</td>
<td>Olanzapine</td>
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<td>Doxepin (&gt;6 mg)</td>
<td>Perphenazine</td>
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<td>Imipramine</td>
<td>Thioridazine</td>
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<td>NorTriptiline</td>
<td>Trifluoperazine</td>
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<td>Paroxetine</td>
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<td>Protriptyline</td>
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<td>Tramipramine</td>
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<tr>
<td>Antimuscarinics (urinary incontinence)</td>
<td>Antispasmodics</td>
<td>Antiemetic</td>
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<tr>
<td>Darifenacin</td>
<td>Atropine (excludes ophthalmic)</td>
<td>Procyclizine</td>
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<td>Fesoterodine</td>
<td>Belladonna alkaloids</td>
<td>Promethazine</td>
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<td>Felodoxate</td>
<td>Clidinium-chloride-epoxide</td>
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<td>Oxybutynin</td>
<td>Dicyclomine</td>
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<tr>
<td>Solifenacin</td>
<td>Homatropine (excludes ophthalmic)</td>
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<tr>
<td>Tolterodine</td>
<td>Hyoscyamine</td>
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<td>Trospium</td>
<td>Propantheline</td>
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<td>Scopolamine (excludes ophthalmic)</td>
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Dr. Krulewitch’s stepwise intervention protocol in agitated dementia cases

1. Confirm the diagnosis of dementia and understand the different presentations of different types of neurodegenerative disorders in the elderly

2. Rule out delirium. When it presents above the neck THINK BELOW THE NECK

3. Rule out pain, dehydration, hunger, constipation, immobility; the geriatric syndromes
   - Consider trial analgesia, fluids, laxatives, feeding, dysphagia

4. Rule out infections: UTI, aspiration pneumonia, cellulitis, joints, abdomen

5. Rule out polypharmacy; malignant pathways, cascades, house of cards

6. Rule out metabolic syndromes- serotonin, anti-cholinergic, SIADH, opiate sedation

7. Identify the set and setting/triggers and target behaviors/listen to family, staff and patient and explore the patient’s narrative with a person centered approach

8. Can triggers and environmental factors be modified first? Avoid throwing sedating drugs into the mix first. Can any non-pharmacological approach be effective?

9. Identify the core behavioral mood disorder- depression, anxiety, psychosis; treat with the lowest dose from one class of medication. Consider adding a trial of memantine.

10. Educate staff and family.

11. Re-assess

   based on Pieper MJC JAGS 64: 261-269, 2016
Statins

- Most commonly prescribed drug in elderly adults
- 10-15% patients have myopathy ranging from mild to rhabdomyolysis
- At risk: women, frail adults, low BMI, hypothyroid, polypharmacy, ETOH abuse
- Vitamin D deficiency increases risk- taking 50,000-100,000IU weekly may help
- Observational studies suggesting Co-enz Q not confirmed with RCT
- Check CPK, vit D, TSH if myalgia is present. Stop statin and correct
- Associations with cognitive impairment and diabetes lack good evidence
- Statin toxicity increased with drug drug interactions
  - Lipophilic statins simvastatin and lovastatin higher risk of interaction
  - Gemfibrozil, niacin, calcium channel blockers, amiodarone, cyclosporin, tacrolimus, clarithromycin,azole antifungals, protease inhibitors, colchicine
Proton Pump Inhibitors

• Nearly 20% community dwelling elderly taking them
• 2015 BEERS recommends stopping after eight weeks unless high risk
• Several meta-analysis consistently show association with bone loss, fractures, and also C Diff infections, p<.001
• PPI also weakly associated with Salmonella and Campylobacter infections
• Consider treating CDI in patients with persistent diarrhea taking PPI
• PPI reduces calcium absorption and inhibits osteoclast activity
• PPI less able to absorb iron, Mg, B12,azole anti-fungals and thyroid medications but Calcium effect is strongest.
• Greater risk of incident CKD in PPI users, mechanism unclear
• Crosses blood brain barrier; animal studies found increased beta-amyloid levels in brain tissue but no sound studies linking it to dementia
• Recent good evidence there is strong association of risk for pneumonia in patients with dementia using PPI
Antimicrobials

- Trimethoprim-sulfamethoxazole and fluoroquinolones commonly use
- TMP/SMX increased use due to UTI and MRSA
- Increased risk of hyperkalemia in patients with CKD, taking ACE or ARB
- TMP is potassium sparing and reduces K excretion up to 40%
- Very rare QT prolongation and sudden death with azithromycin
- Fluoroquinolones - associated with neuropathy, CNS side effects including delirium, anxiety, restlessness, euphoria, insomnia, dizziness and rarely seizures
  - Collagen related adverse events primarily tendon rupture and aortic aneurysm, greater risk with amoxicillin, over 75, or on steroids
  - Avoid if on steroids or as first line use for UTI, acute sinusitis or acute bronchitis
Zolpidem and NSAIDS
In case you weren’t paying attention

- BEERS 2015 avoid even for short term use
- Risk of delirium, falls, fractures, MVA, and mortality
- And minimal effect on sleep latency or duration
- No studies have demonstrated causal association with dementia
- BUT- NO pharmacological agents are recommended for insomnia in elderly patients
- NSAIDS- risk of GI bleeding, peptic ulcer disease, exacerbation of CHF, acute renal disease
- At risk those on anticoagulants or anti-platelet medications, CHF, CKD, older than 75, taking steroids
- Can increase risk of CVA or MI within one week of use; holds for Cox-2 inhibitors
- No longer routinely used for short term use without risk benefit discussion
Common drug interactions with Warfarin

Thrombosis- increased metabolism
- Carbamazepine
- Phenobarbital
- Phenytoin
- Rifampin
- Cholestyramine

Bleeding- decreased metabolism
- Antibiotics, especially trimethoprim with sulphamethoxazole, quinolones, azithromycin
- Simvastatin
- Prednisone
- Acetaminophen
- Omeprazole
- Omega 3 fatty acids
- Garlic, gingko supplements
Decision making with common diseases

• DM adults-conventional goals
  – Tight control reduces risk of microvascular and macrovascular complications
  – Aggressive management of CV risk factors requires near normal CBG
  – Improve quality of life by lengthening life
  – Drive HgA1C below 7.0
Managing diabetes with CDM goals at the end of life

- Prevent hypoglycemia CBG <80; risks encephalopathy and deteriorating cognition. Less stringent hyperglycemia monitoring of CBG and HgA1C
- Minimize adverse side effects with other drugs
- Improve burden of care with less needless monitoring
- Active dying: no consensus but allow CBG <350, taper or stop diabetic meds
Decision making with common diseases-HTN

- Various studies indicate both high and low BP contribute to mortality
- Indications-essential htn, CHF, edema/ascites, Portal HTN, angina, BPH
- Primary, secondary, tertiary prevention
  - CKD, CVD, Cerebrovascular disease
- JNC 8 Guidelines- (non diabetics) evidence is poor
  - < 60 yrs >60 yrs
  - <140/90 <150/90 *I use <160/95 if polypharmacy and frailty
- Treat HTN with SBP >160 and symptoms
- Adverse effects of anti-HTN medications recognized by BEERS and STOPP contributing to orthostatic hypotension, syncope, falls, injury, bradycardia, selective bronchospasm, edema, immobility, electrolyte disorders, dehydration, ARF, dry cough, confusion
More targets- consider stopping

- Warfarin and drug interactions bleeding check Hgb, INR
- Factor Xa inhibitors bleeding check Hgb, risk anti-fungals
- Calcium Channel blockers statin toxicity, ARF with clarithromycin and erythromycin; azithromycin is safer
- Mirtazapine with SSRI or SNRI serotonin syndrome: agitation, confusion, tremors, diarrhea
- SSRI/SNRI, - SIADH/orthostatic hypotension, near syncope
- Vitamins and minerals diuretic increases risk; check bmp
- Cold medications no benefit, nausea, anorexia, constipation
- Hormone replacements antihistamines and alpha-adrenergic effects
- Dipeptidyl peptidase 4 inhibitors no benefit severe arthritis
Easy Targets

• Review and reconciliation of medications at hospital admission, transfer to SNF/PAC, ICF, ALF, and upon entering a hospice program

• Common drugs- review use of statins, proton pump inhibitors, trimethoprim-sulfa and fluoroquines, zolpidem, NSAIDS, SSRI/SNRI, Dipeptidyl peptidase 4 inhibitors, anti-thrombotics, anti-cholinergics, Sedatives, and Anticholinergic Esterase inhibitors

• Consider drug-drug interactions- warfarin, statins, Factor Xa inhibitors, calcium channel blockers

• Common diseases- question tight controls for HTN, Diabetes
SNF -post acute care
How did we do?

• PIP-STOPP- taper or stop opioids, lorazepam, benedryl, neorontin, celexicob, trazedone, tramadol, zolpidem, DOS.
• Drug Cascades: STOP: hydrochlorthiazide, spironolactone, losarstan, furosemide ciprofloxacin >CKD duloxetine>SIADH>orthostatic hypotension>confusion>FALLS
• Drug –syndromes: HTN and Falls- taper or stop carvedilol, amlodipine, tamsulosin
• Drug-syndromes: DM- stop sliding scale, taper or stop metformin and glyberide, taper glargine
• Check Hgb with new start rivaroxabin
• Check digoxin levels
• Resume steroid do not use ESR to measure PMR relapse. Continue PPI?
• Consider lidoderm patch if back or shoulder pain from spinal stenosis impairs rehab; or low dose fentanyl patch if documented need for baseline opioids leads to GI, CNS symptoms.
Eol care in ICF

- Mr. Jones is an 88-year-old man with multi-infarct dementia, Parkinson's disease.
- Recent anorexia, contractures, and weight loss. FAST level 7C.
- PH: CHF, AF, HTN, and CVA.
- He is bedbound, immobile, incontinent, and has had further cognitive and functional declines and agitation since his last aspiration pneumonia.
- POST DNR Limited: family is considering a feeding tube.
- He is on donezepil, memantine, carbadopa/levodola, olanzapine, quetiapine, sertraline, mirtazipine, zolpidem, metaprolol, trazedone, diphenhydramine, prn tylenol, statin, asa, clopidogrel, lisinoprol, diltiazam, mvi, calcium, vit d, hydrocodone, acetominiphren and DOS routinely with PRNS senna, MOM, mirilax.

*FAST 7A- limited speech <six words/day or conversation; cannot wash, bathe, dress, toilet and is incontinent; SLUMS consistent with end stage dementia <10/30. FAST B-limited to one word.
FAST C-immobile, bedbound needs assistance with all transfers; FAST D Cannot smile
FAST D cannot hold head up
LTC and Dementia
In the last year of life

- 86% received at least one medication of questionable benefit (MQB) in the last 120 days
- 45% received at least one MQB in the last week of life
- Most common: anti-dementia drugs, lipid lowering drugs, anti-platelet drugs
- Patients with severe cognitive impairment without rapid decline more at risk:
  - Polypharmacy
  - Poor pain control
  - Feeding tube use
Drug Burden, Frailty and Mortality

• To investigate the effects of the number of medications and DBI drug burden index on transitions between frailty stages and death in community dwelling men 70 yrs and older over at two and five years. Patients placed in robust, pre-frail and frail categories

The DBI was calculated based on sedative and anti-cholinergic use

Each additional medication was associated with a 22% greater risk of death from the robust state

As the DBI rose the risk of transitioning increased from robust to pre-frail and from robust to death

MEPS 2005-9; almost 25 % of all dementia patients 65 years of age or older use clinically significant anti-cholinergic agents

KM Jamsen et al JAGS 64:89-95, January 2016
PIP medications used in LTC in the oldest old and dementia patients

- 9200 moderate to severe dementia patients from LTC who died in a three year period 2010 to 2013 In the last four months of life 64% continued to use AChEI, lipid lowering agents 48%, and anti-platelet medications 18%.  
- 60% of all patients who died went to the ED in final 120 days of life  
- 33% were hospitalized within the final 120 days of life  
- Individuals in LTC with advanced dementia are less likely to receive palliative care conferences than those with other chronic diseases  
- Recent RCT of LTC patients moderate to severe Alzheimers patients found that discontinuing ACEI was safe and well tolerated
PIP in oldest old; UK study
JC Menant JAGS 64; May 2016; 1073-78
Up to one third of patients over 100 receive one or more high risk PIP in study from UK with 11000 cases 1990-2013

- CNS
  - Temazepam, diazepam, amitriptyline

- Anticholinergic
  - Chlorphenamine, promethazine, hydroxyzine

- Anti-Infective
  - nitrofurantoin

- Analgesic
  - NSAID

- GI
  - Metaclopramide

- CV
  - Amiodarone, doxasozin, spironolactone

- Antithrombotic
  - dipyridamole

- Endocrine
  - glyberide
Medication Appropriateness Index

• Is there an indication for the drug?
• Is the medications effective for this condition?
• Is the dosage correct?
• Are the directions correct?
• Are the directions practical?
• Are there significant drug-drug interactions?
• Are there significant drug- syndrome interactions?
• Is there unnecessary duplication with other drugs?
• Is the duration of therapy acceptable and meaningful?
• Is the drug the least expensive alternative?
Reasons for Stopping Rx

- Changing goals of care
- Time to benefit
- Physiological changes
- Lack of efficacy
- Pill burden
- Complexity of regime
- Potential for a prescribing cascade

- Dropping risk/benefit
- Drug-drug interactions
- Adverse effects
- Duplication
- Cost
- Regulations
Patients Protest de-prescribing

- “my specialist said never stop this drug”;
- “thanks but I want to talk to a specialist first”
- Medication is perceived as beneficial
- Lack of physician guidance to taper or stop
- Influence of friends and family
- Fears about withdrawal or relapse
When Stopping a medication is perceived as “breaking bad news”

SPIKES tool

- Setting- listen
- Patients perception comes first
- Invitation- do they want to hear your concern
- Knowledge transmission- risk polypharmacy
- Explore emotions with empathy**
- Summarize and strategize plan
Eol care in ICF
How did we do?

• PIP/STOPP: Stop memantine, donezepil, zolpidem, aspirin, clopidogrel, hydrocodone
• Care conference for palliative and hospice goals of care; POLST comfort
• Drug-syndromes: serotonin/confusion: assess cognitive status and mood disorder after new baseline established after stopping or tapering- mirtazipine and-sertraline, olanzapine, quetiapine. SSRI safest choice or low dose quetiapine.
• Constipation risk in parkinsons patient at end of life- stop DOS and anti- cholinergics like trazedone, diphenhydramine. Consider tramadol and acetaminophen before opioids. Add routine senna and polyethylene glycol.
• Medications unnecessary at end of life: question need for diltiazam, lisinopril, metaprolol, statin, calcium, vit D, carbidopa/levodopa
• If spasticity is issue consider baclofen or, lorazepam, pramipexole
Evidence Based guidelines : a growing crisis
Evidence is mounting that disease based outcomes are flawed

- Every condition has a guideline
- Every guideline recommends at least one pill
- Evidence based medicine is based on single organ system interventions and disease based outcomes not patient oriented outcomes
- “Treatment cascade” increases risk of polypharmacy
- RCT exclude patients with multi-morbidity and use healthy individuals without confounding diseases
- Heterogeneity of the oldest elderly physiology impacts outcomes
  - Greater variety within cohorts than between them
  - Variation increases with each aging cohort
- Drug–drug interactions impact efficacy studies
- RCT rarely measure negative outcomes or side effects
- Time to treatment benefit reduces effectiveness in the oldest old
Barriers to providing effective CDM

Patient challenges
- loss of hope, control, trust
- Fear of dying
- Fear care will be sub-optimal
- Frequent fluctuations in symptoms
- Suffering and sense of abandonment
- Multiple transitions and providers
- Changing goals

Provider challenges
- Changing trajectory and prognosis
- Fluctuating course of illness and clinical complexity
- Lack of guidelines and criteria for palliative care
- Fragmented care and poorly integrated systems of care
- Multiple transitions and providers
- Lack of reimbursement, process or time for team or family to meet
Guidelines for CDM from AGS
moving from disease to patient centered outcomes

• Inquire about primary concern of patient and family—preferences, goals, intentions
• Conduct a complete review of care plan or focus on key aspect of care
• Identify current conditions and interventions and adherence with plan
• Identify and consider patient preferences and goals of care
• Is relevant evidence available regarding key outcomes
• Consider prognosis
• Consider interactions within and between treatments and conditions
• Weigh benefit and harm of treatment components
• Communicate and decide which plans to implement or continue
• Reassess at selected intervals: benefit, feasibility, adherence, alignment with preferences and changing goals

— JAGS; expert panel 60; 2012; 1957-1968
CDM conceptual model - Components and Skills

- principles of adult learning - enhance capacity through self learning
- build efficacy, mastery, resilience

Family/caregiver

provider/physician And IDG

patient
Principles of CDM and goal centered care

- Locus of control restores capacity: mastery, efficacy, resilience
- Goals of Care derived from models of rehabilitation, developmental theories of aging, end of life tasks
- Hope as a sense of choice and participation rather than prognosis
- Focus is on capacity building for team, patient and caregivers
- Is fundamentally an interdisciplinary activity includes: MD, NP, PA, MSW, SLP, OT, PT, nutritionist, chaplain, pharmacist, RN, CNA- and patient and caregivers
- How you communicate is more vital than what you communicate
- PRIDE: a rehabilitation care plan tool instead of SOAP
  - Problem solving, researching, identifying goal, developing a plan, establish reward
CDM is Goal oriented care

Goal oriented care *is* palliative care

- Defined by each individual not provider
- Best determined through collaboration
- Use Patient oriented outcomes instead of Disease oriented outcomes; apply CDM principles
- Evidence for polypharmacy, multimoribidity and palliative care outweighs single disease guidelines
- Goal definition based on strengths, resources, needs, values of patient and communication and leadership skills of provider
- Motivation and participation based on agreement and collaboration
- Success based on achievement of goals
Palliative Care When is it time?
Care Conference

- Two or more hospitalizations within one year
- Failure to thrive: 10% weight loss and functional decline
- Three or more geriatric syndromes with change in clinical condition or transition of care
- Know your hospice criteria for non-neoplastic conditions: FAST level 7 for dementia
- “Would you be surprised if you had less than a year to live?”
EVERY GERIATRIC CASE IS A PALLIATIVE CASE
Palliative Care Conference skills
7 steps to successful family conference

• Create the right setting
• Determine what they know
• Ask how much they want to know
• Explore meaning and hope
• Suggest realistic goals
• Affirm affect and respond empathetically **
• Plan and follow through

STAY CLOSE AND DO NOTHING: don’t do something; be present
Developing a new paradigm
PALLIATIVE CARE SKILLS

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<tr>
<th>Problem centered</th>
<th>Person centered</th>
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Wrap up for De-prescribing
JUST DO IT!!

- Shift from “start low go slow”
  - To “stop most and reduce dose”
- Patients will consider it if you bring it up
- It is patient specific intervention
- Person oriented outcomes over disease oriented outcomes
- It will improve their QOL
- Prioritize-optimizing benefit, minimize harm, maximize QOL and function
- Work with a pharmacist in your team
- Use tools and algorithms

**PRACTICE   PRACTICE   PRACTICE**
Patient centered care and Culture Change

• What kind of team leader are you? *Change starts at the top*

• What management systems reinforce patient centered care? *Requires ongoing training*

• Are you modeling and promoting your team efficacy, resilience, and mastery. *If you are not empowering and respecting each other how can you expect residents and family to change*

• Your team is an ongoing training environment

• Joy and rewards for you, your team, the family and the patient
PCP Physician leadership

“One of the first duties of the physician is to educate the masses not to take medicine.” - William Osler

- New role for PCP at center of team not periphery - Who else?
- Palliative care consultations at transitions of life: CBLTC, SNF ICF and NH EOL are missed opportunities to address polypharmacy and goals of care
- Role of PCP in palliative care/hospice care growing in Oregon as more patients die outside hospital and many more living in ALF, RCF, AFH, NH
- The PCP is best provider to have palliative care conference
- Learn reimbursement codes for palliative care conversations
- CADEN model program with multiple interventions
- Building an Oregon De-prescribing Network
1: Public Awareness
- Compile patient resources
- Baseline survey of public knowledge
- Distribute Patient Toolkit to seniors' organizations
- Administer and evaluate public awareness campaign

2: Health Care Provider Awareness
- Complete deprescribing toolkit
- Distribute deprescribing toolkit
- Partnerships for continued education
- Speaker inventory and resources
- Curriculum change

3: Policy Change
- Environmental scan
- International policy scan
- Windows of opportunity
- Jurisdictions chosen for change
- Policy change

4: Integration with electronic record
- Randomized controlled trial with Canadian Primary Care Sentinel Surveillance Network: Assess effectiveness of electronic medical records to assist decision-making for deprescribing
- Upscale promising practices

5: Develop a Research Agenda
- Raise deprescribing as priority
- Awareness that sex and gender matter in deprescribing
- Deprescribing and overuse funding opportunities
Website Resources

- http://deprescribing.org/caden/
- http://deprescribing.org/resources/deprescribing-guidelines-algorithms/
The Nature of suffering and the Goals of Medicine-Eric J. Cassell

“The relief of suffering and the cure of disease must be seen as twin obligations of a medical profession that is truly dedicated to the care of the sick. Physicians failure to understand the nature of suffering can result in medical interventions that, though technically adequate, not only fail to relieve suffering but becomes a source of suffering itself.”