Deprescribing in Long Term Care

Preetha Krishnan NP, PhD (c)
Nurse Practitioner
WRHA,LTC

Presenter Disclosure

- Presenter: Preetha Krishnan
- Relationship with commercial interest: None
- Commercial support: None
- Potential for conflicts of interest: None
- Mitigating potential bias: None

Objectives

- To briefly describe polypharmacy & deprescribing
- To discuss the importance of deprescribing in Long Term Care (LTC)
- To share the outcomes of deprescribing in a LTC facility in Winnipeg

Polypharmacy & Deprescribing

Polypharmacy means….

- Use of five or more medications
- Taking more medications than clinically indicated
- Use of medications where harm outweighs benefits
- 2/3rd of LTC residents take ≥ 10 medications (CMAJ, 2014, 186(9)

(CaDeN, 2016)

Psychotropic Polypharmacy means…..

- Concomitant use of two or more psychotropic drugs from four main classes or use of 2 or more psychotropics from same class
  - Antipsychotics, antidepressants, antianxietics & hypnotics/sedatives
  - Most common combination: antipsychotic + antidepressant ± BDZ
  - 1/2 of LTC residents use two more psychotropics
  - More common in LTC residents with dementia

(Journal of Alzheimer's Disease, 2017, 56(2)

Potentially Inappropriate Medication (PIM)

- Lack of clinical indication
- Duplicate medication
- Presence of side-effects
- 70% of LTC residents use at least one PIM (CIHI, 2016)

(CaDeN, 2016)

Number of Medications & Risk of Drug Interactions

2/3rd of LTC residents take ≥ 10 drugs

(Johnell and Klarin 2007

https://deprescribing.org/wp-content/uploads/2015/11/CaDeN_Annual-Report_23Jan2017_EN_WEB.pdf

Reasons for Polypharmacy

- Adherence to clinical practice guidelines
- Single disease approach
- Multiple chronic illness
- Prescribing cascade
  - Symptoms resulting from side-effects are perceived as ‘new diseases’
- Drug duplication
- Demands from resident/family
- Emphasis on primary and secondary prevention
- Multiple prescribers /specialties

Clinical Practice Guidelines and Quality of Care for Older Patients With Multiple Comorbid Diseases

Objective To evaluate the applicability of CPGs to the care of older individuals with several comorbid diseases.

Study Selection Of the 15 most common chronic diseases, we selected hypertension, chronic heart failure, stable angina, atrial fibrillation, hypercholesterolemia, diabetes mellitus, osteoarthritis, chronic obstructive pulmonary disease, and osteoporosis, which are usually managed in primary care, choosing CPGs promulgated by national and international medical organizations for each.

Conclusions This review suggests that adhering to current CPGs in caring for an older person with several comorbidities may have undesirable effects.

"It is evident that CPGs, designed largely by specialty-dominated committees for managing single diseases, provide clinicians little guidance about caring for older patients with multiple chronic diseases" (p. 720)

(JAMA, 2005, 296 (6), 716-724)

Consequences of Polypharmacy

- Risk of hospitalizations
  - 2/3 related to IMU
- Risk of falls & fractures
  - Risk increases 3 times with ≥ 6 medications
- Risk of cognitive impairments, dementia & depression
- Increase morbidity, disability & mortality
- Over-diagnosis, useless evaluations & over-treatment
- Increased financial burden

Cost of Inappropriate Medications among Canadian Seniors

$250 million

Proton-pump inhibitors

Increased risk of fractures, memory problems, pneumonia, *Clostridium difficile* infections and diarrhea, kidney disease, and low levels of magnesium and vitamin B12 in the blood. (CIHI 2015)

$97 million

Antipsychotics

Increased risk of memory and concentration problems, falls, fractures, stroke, dizziness, confusion, diabetes and weight gain.

$14 million

Sulfonylurea diabetes pill glyburide

Higher risk of hypoglycemia causing dizziness, falls, fractures and confusion.

$135 million

Benzodiazepines

Increased risk of cognitive impairment, delirium, falls, fractures and motor vehicle accidents.

https://deprescribing.org/wp-content/uploads/2015/11/CaDeN_Annual-Report_23Jan2017_EN_WEB.pdf

Total cost of Inappropriate Medication among Canadian Seniors

$419 million

Canadians spend $419M per year on potentially harmful prescription medications. This does not include hospital costs.

$1.4 billion

Canadians spend $1.4B per year in health care costs to treat harmful effects from medications, including fainting, falls, fractures and hospitalizations.

(Morgan *et al.* 2016; 2013 CIHI data)

50%

Certain inappropriate medications, such as benzodiazepines, antipsychotics and long-acting sulfonylureas, can increase the risk of falls by 50% because they cause side effects like concentration and balance problems, or dizziness.

https://deprescribing.org/wp-content/uploads/2015/11/CaDeN_Annual-Report_23Jan2017_EN_WEB.pdf

Deprescribing

- A critical review of medications to stop those that have lost their original indication, have no clear efficacy for the resident or do not fit with the resident's goals of care (CMJA, 2014, 186(6)
- A planned and supervised process of reducing or stopping medications that may no longer be of benefit or may be causing harm (CaDeN,2016)

Deprescribing

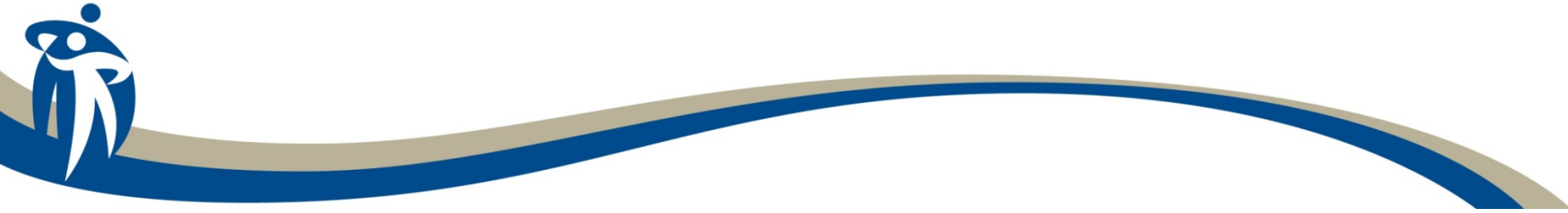
- Poly-de-prescribing means simultaneous discontinuation of as many nonlife-saving drugs as possible
- Goal
  - Reduce medication burden & harm
  - Maintain or improve quality of life

Top 14 High Priority Drugs for Deprescribing: Canadian Clinical Experts

- Benzodiazepines
- Atypical antipsychotics
- Statins
- Tricyclic antidepressants
- Proton-pump inhibitors
- Urinary anticholinergics
- Typical antipsychotics
- Cholinesterase inhibitors
- Opioids
- SSRIs
- Bisphosphonates
- Anticonvulsants
- Beta-blockers
- Antiplatelets

(PLOS ONE, 2015)

Importance of Deprescribing in LTC Facilities



Nursing Home Residents = **VOCODFLEX**

- 85 years or older (Very Old: VO) (61%)
- Have one or more chronic illness (Co-morbidities: CO) (97%)
- Majority have dementia (Dementia: D) (61%)
- Have moderate to severe frailty (Frailty: F) (75%)
- Average life expectancy is 18-22 months (Limited LifE eXpectancy: LEX)
  - 1/3 die in the 1st year of admission
  - 2/3 die in the 2nd year of admission

In reality nursing home care is geriatric palliative care

Clinical Frailty Scale*

1 **Very Fit** – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.

2 **Well** – People who have **no active disease symptoms** but are less fit than category 1. Often, they exercise or are very **active occasionally**, e.g. seasonally.

3 **Managing Well** – People whose **medical problems are well controlled,** but are **not regularly active** beyond routine walking.

4 **Vulnerable** – While **not dependent** on others for daily help, often **symptoms limit activities.** A common complaint is being "slowed up", and/or being tired during the day.

5 **Mildly Frail** – These people often have **more evident slowing,** and need help in **high order IADLs** (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.

6 **Moderately Frail** – People need help with **all outside activities** and with **keeping house**. Inside, they often have problems with stairs and need **help with bathing** and might need minimal assistance (cuing, standby) with dressing.

7 **Severely Frail** – **Completely dependent for personal care**, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).

8 **Very Severely Frail** – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.

9. **Terminally Ill** - Approaching the end of life. This category applies to people with **a life expectancy <6 months**, who are **not otherwise evidently frail**

Scoring frailty in people with dementia

The degree of frailty corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

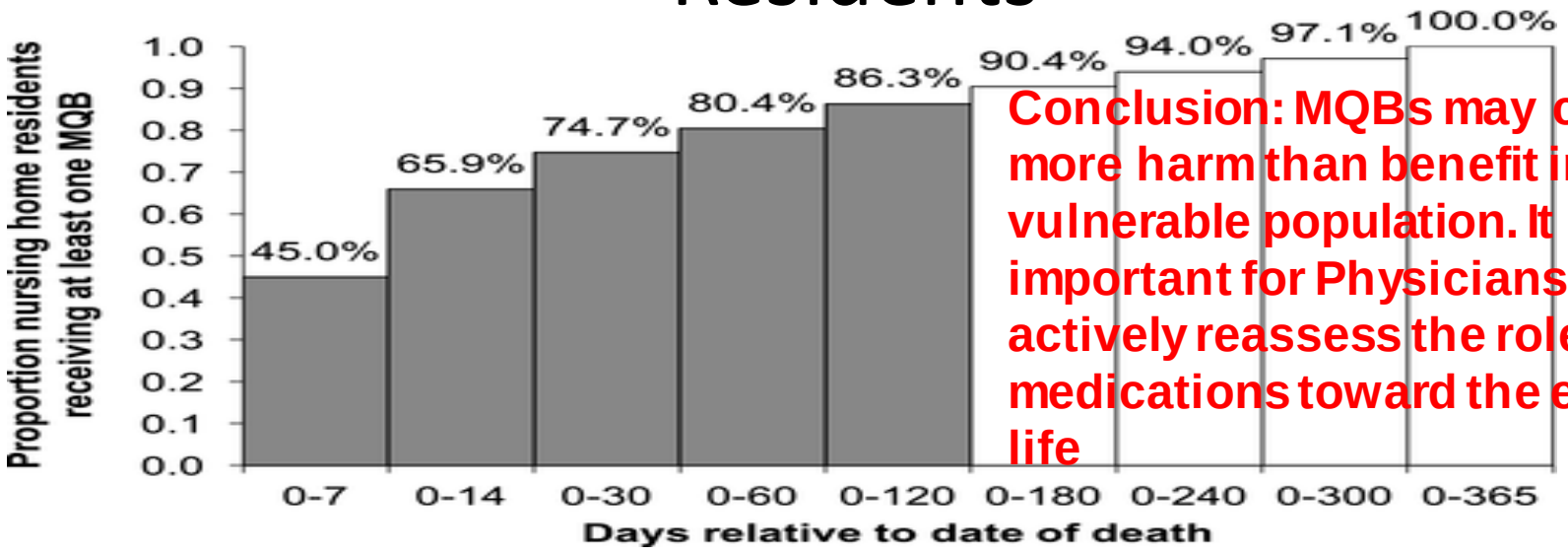
In **moderate dementia**, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In **severe dementia**, they cannot do personal care without help.

* 1. Canadian Study on Health & Aging, Revised 2008.
2. K. Rockwood et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;173:489-495.

DALHOUSIE UNIVERSITY
Inspiring Minds

Use of Medications of Questionable Benefit at End of Life in Nursing home Residents



Conclusion: MQBs may cause more harm than benefit in this vulnerable population. It is important for Physicians to actively reassess the role of all medications toward the end of life

Drug Class	Last 120 Days, n (%) Total, n = 8,027	Last 7 Days, n (%) Total, n = 8,027
Antidementia	5,108 (63.6)	2,546 (31.7)
Lipid lowering	3,836 (47.8)	1,867 (23.3)
Antiplatelet	1,423 (17.7)	766 (9.5)
Sex hormones	166 (2.1)	82 (1.0)

(J Am Geriatr Soc, 2017, 65)

Medication Appropriateness in Advanced Dementia

Never Appropriate

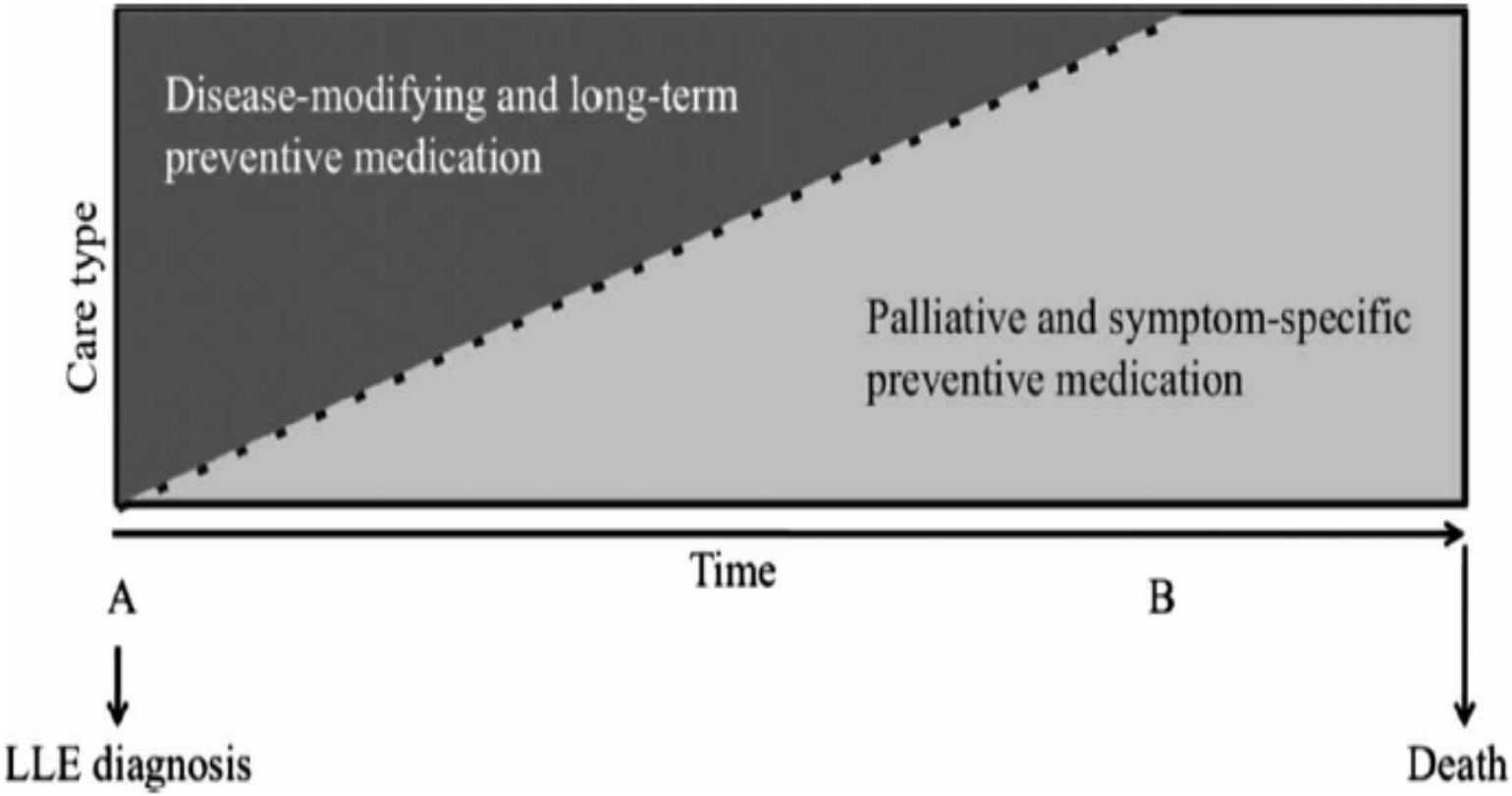
- Acetylcholinesterase inhibitors
- Antiestrogens
- Antiplatelet agents (expect ASA)
- Immunomodulators
- Lipid lowering agents
- Hormone antagonist
- Chemotherapy agents

Always Appropriate

- Laxatives
- Analgesics
- Antiemetics
- Antidiarrheals
- Antiepileptics
- Inhaled bronchodilators
- Expectorants
- Lubricating eye drops

(JAGS, 2008, (56)

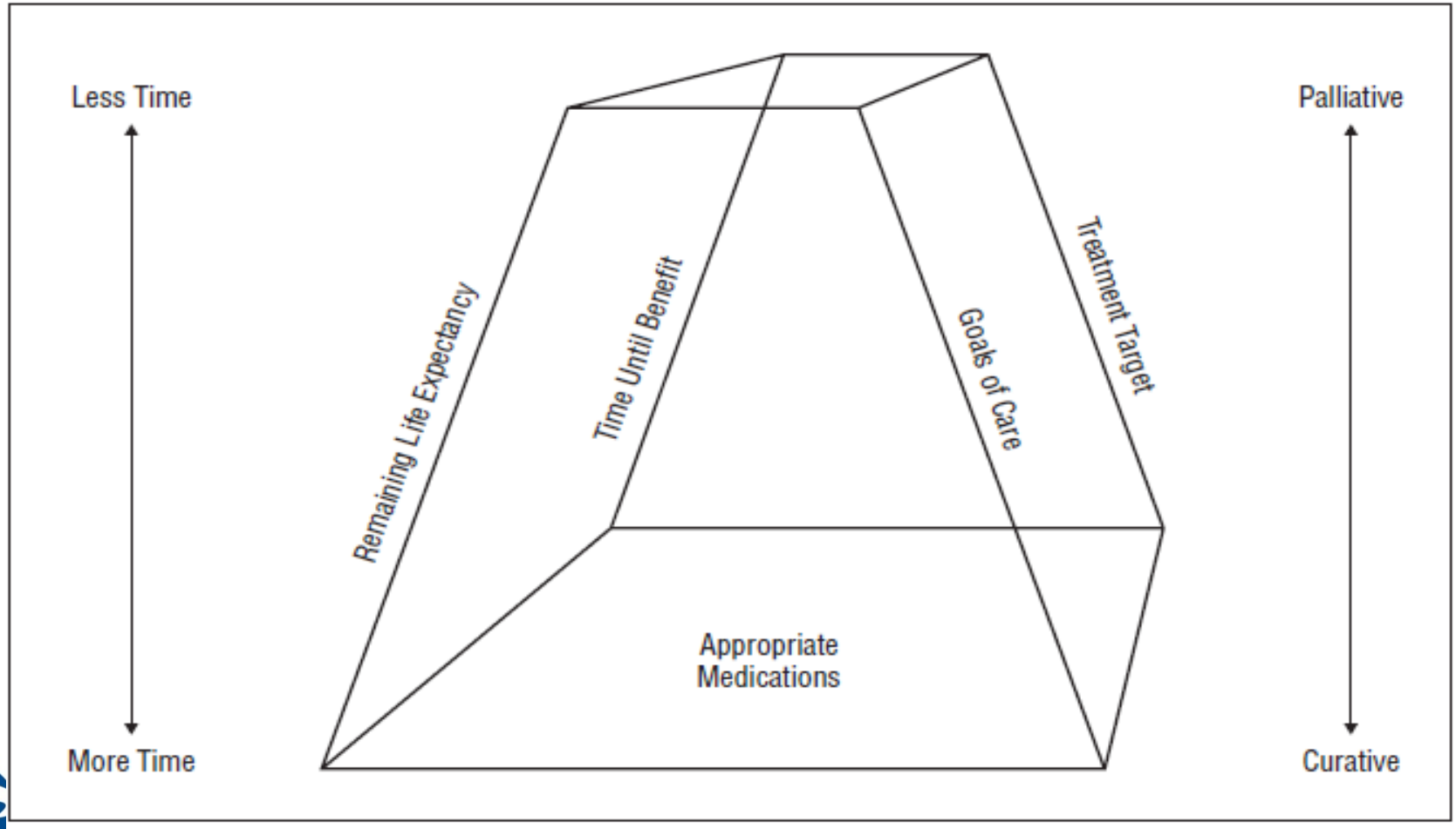
Transition in Medication Use at End of Life



LLE: Limited Life Expectancy

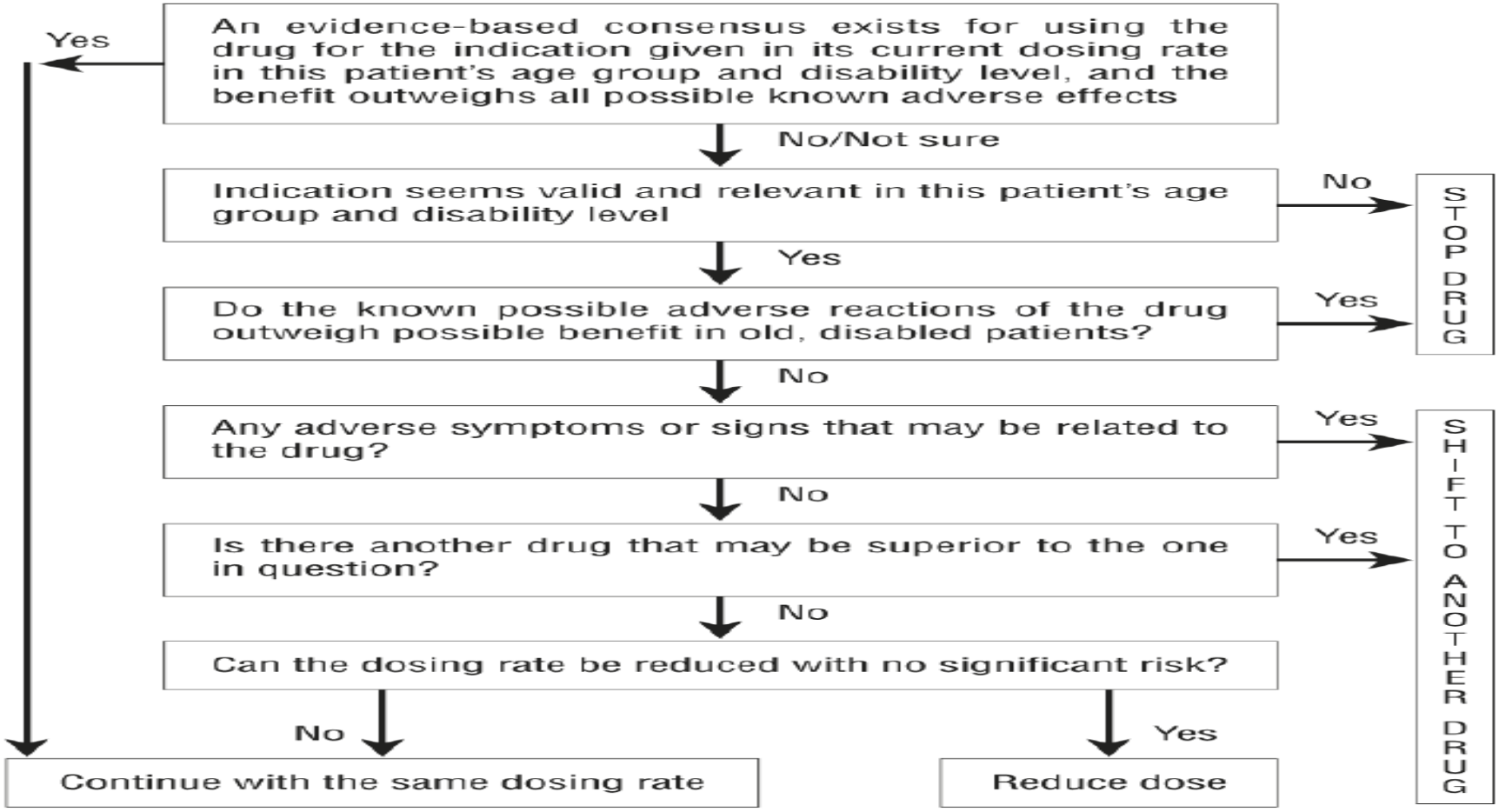
progress in palliative care, 2011, 19(1)

Model for Prescribing Late in Life



Arch intern medicine, 2006, (166)

The Good Palliative-Geriatric Practice (GP-GP) Algorithm



(Arch Intern Med, 2010,170(18)

Frailty Treatment Guidelines: Palliative & Therapeutic Harmonization (PATH)

- Hypertension
  - Aim sitting SBP of 140-160 mmHg
  - Severely frail target SBP of 160-190 mmHg
- Diabetes
  - Discontinue all antihyperglycemics if HgA1c < 8%
  - Maintain HgA1c > 8%
  - HgA1c 8-12% acceptable if asymptomatic
- Hyperlipidemia
  - No treatment with cholesterol lowering drugs

Drug Use Among Canadian Seniors at LTC Facilities vs. Community Living Seniors: 2016

- LTC residents were prescribed more drugs
  - 9.9 vs. 6.7
- Two times more opioids use
  - 39.9% vs. 20.4%
- Three times more antidepressants use
  - 60.3% vs. 19.1%
- 20% more use of medications from Beer's list
  - 70% vs. 49%

https://www.cihi.ca/sites/default/files/document/drug-use-among-seniors-2016-en-web.pdf

Deprescribing should be done-----

Start Low & Go Slow to Stop Most & Reduce Dose

- All nursing home residents
  - Multimorbidity
  - End of Life
  - Frailty
  - Goals of Care Change
  - Dementia
  - Adverse reactions suspected/ identified
  - Interactions suspected/ identified
  - New conditions develop

Outcomes of Deprescribing: Lions PCC

Drug Use among Residents at Lions PCC vs. Residents at Other Canadian LTC Facilities: 2016

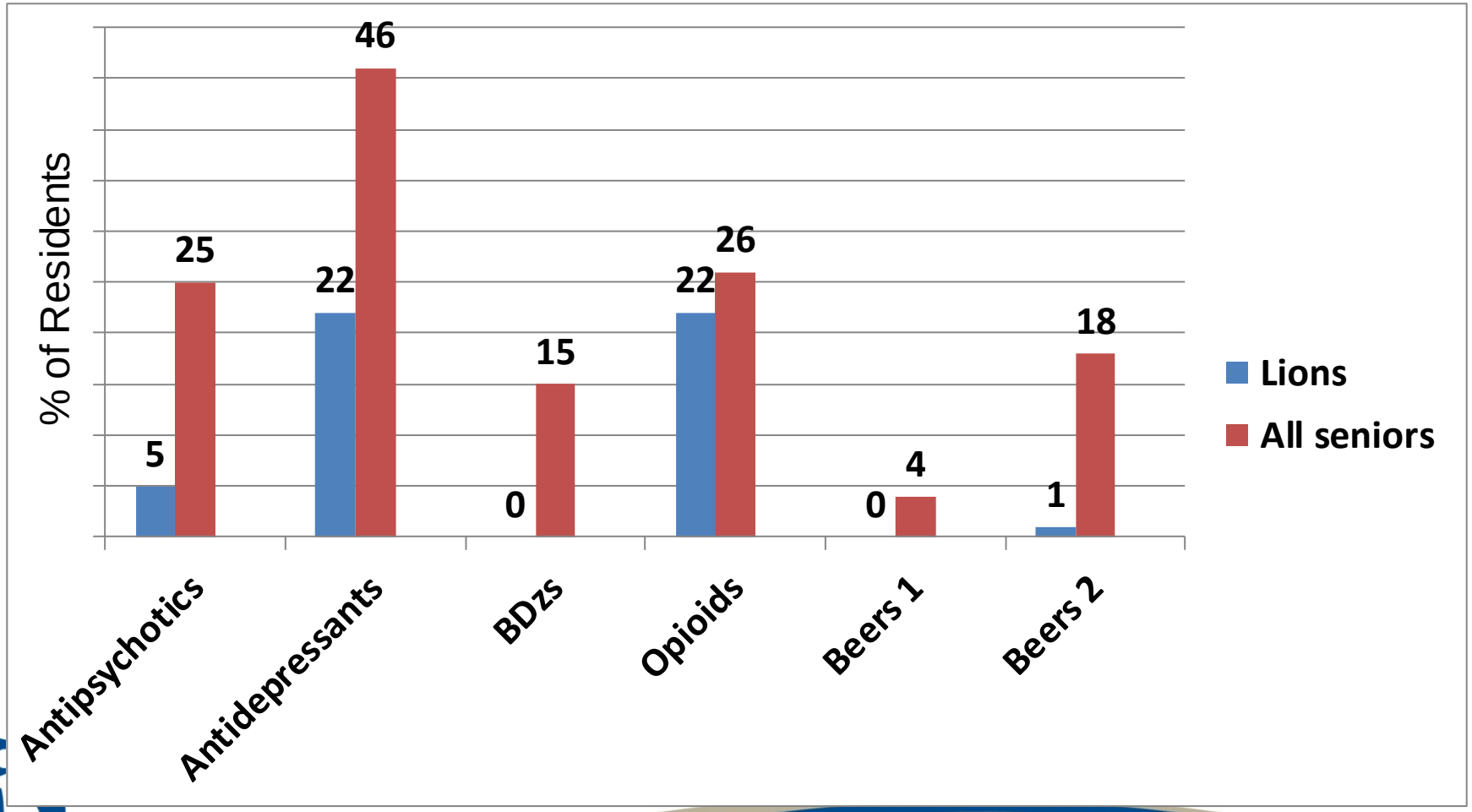
- Prescribed less drugs
  - 6.3 vs. 9.9
- 10 times less antipsychotic use
  - 3.6% vs. 36%
- 3 times less antidepressants use
  - 19% vs. 60%
- 25 times less BDZs use
  - 1% vs. 26%
- 25 times less Trazadone use
  - 1% vs. 26%
- 70 times less use of medications from Beer's list
  - 1% vs. 70%
- 14% less use of opioids
  - 26% vs. 40%

https://www.cihi.ca/sites/default/files/document/drug-use-among-seniors-2016-en-web.pdf

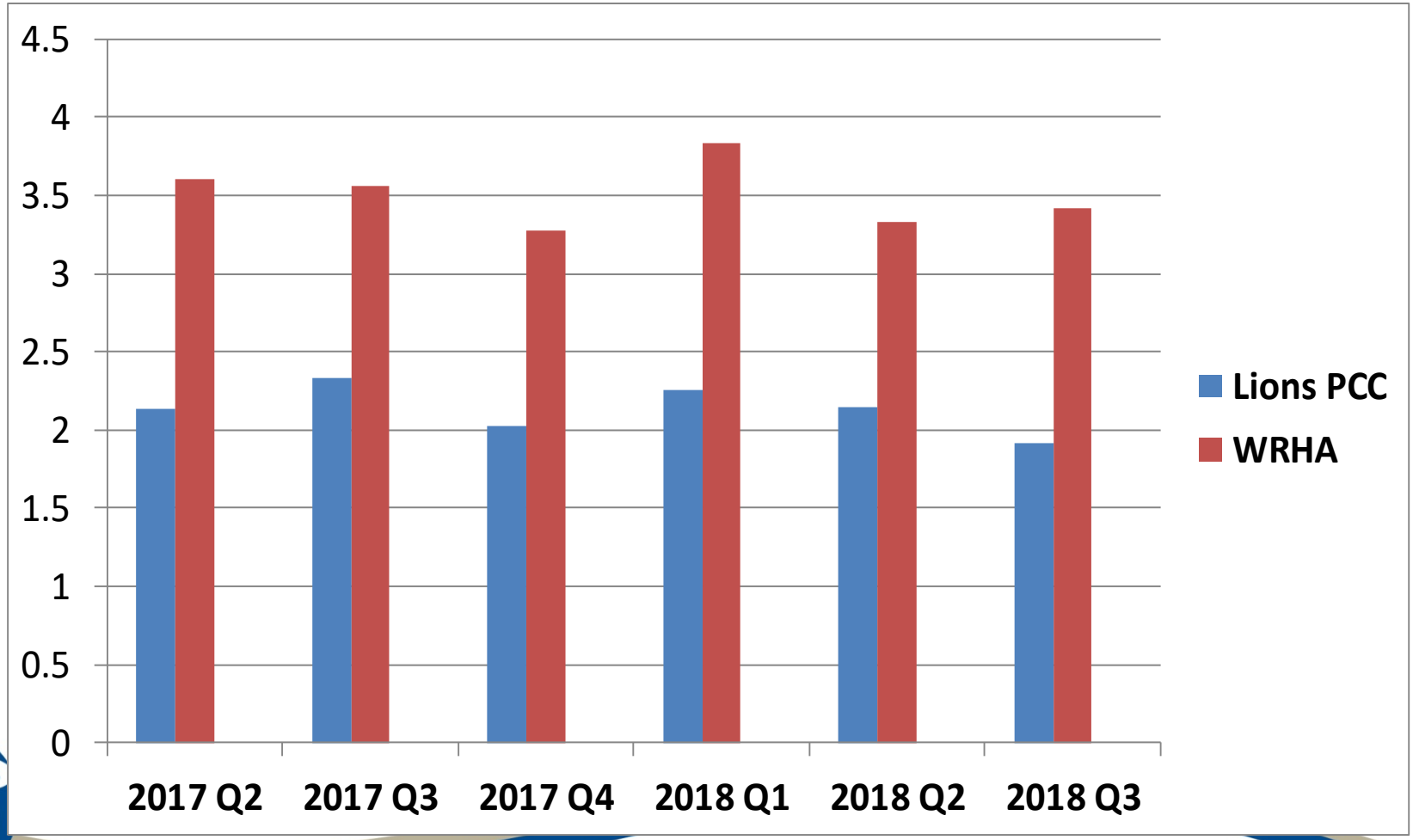
Successfully Deprecribed Drugs

- Antihypertensives
  - Beta-blockers
  - Calcium channel blockers
  - ACE inhibitors/ARBs
- Diuretics
- Digoxin
- Aspirin/Plavix
- Anti-epileptics
- Lipid lowering drugs
- Oral antihyperglycemics
- PPIs/H2blockers
- Benzodiazepines
- Antidepressants
- Bisphosphonates
- Warfarin
- Antipsychotics
- Parkinson's medications
- Sleeping aids
- Anti-angina medications
- Anti-dementia drugs
- Anti-vertigo drugs
- COPD/asthma drugs
- Gout medications
- Levothyroxine
- Insulin
- Opioids
- BPH medications
- Fe, B12, Slow-k

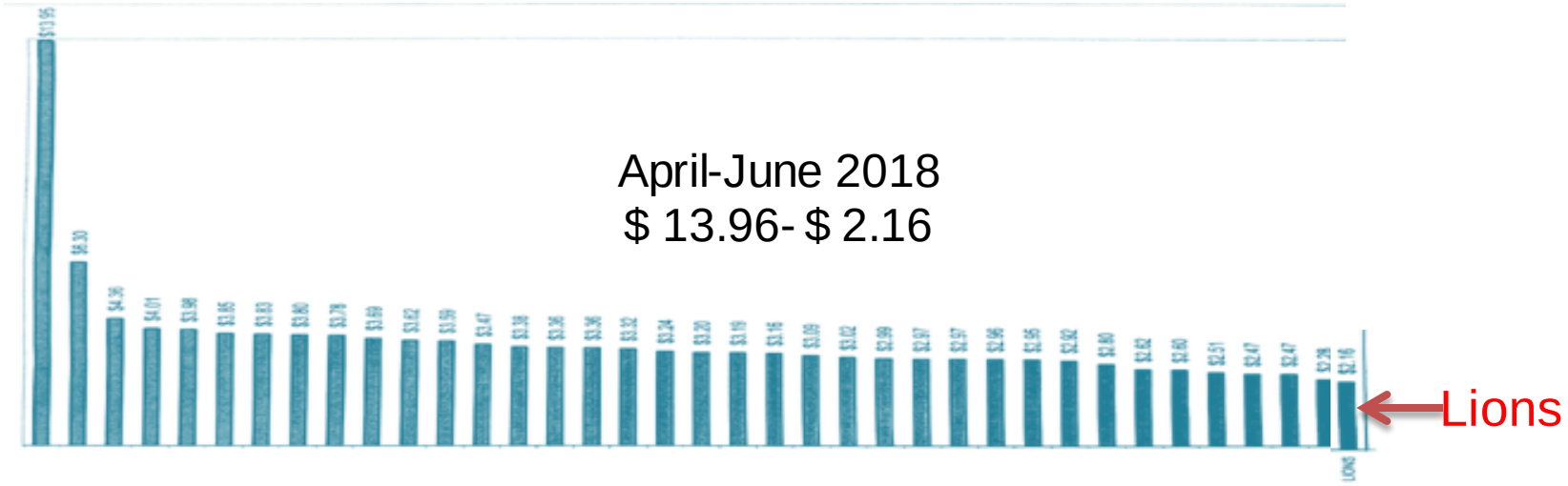
Drug Utilization: Lions PCC vs. All Seniors: June 2018

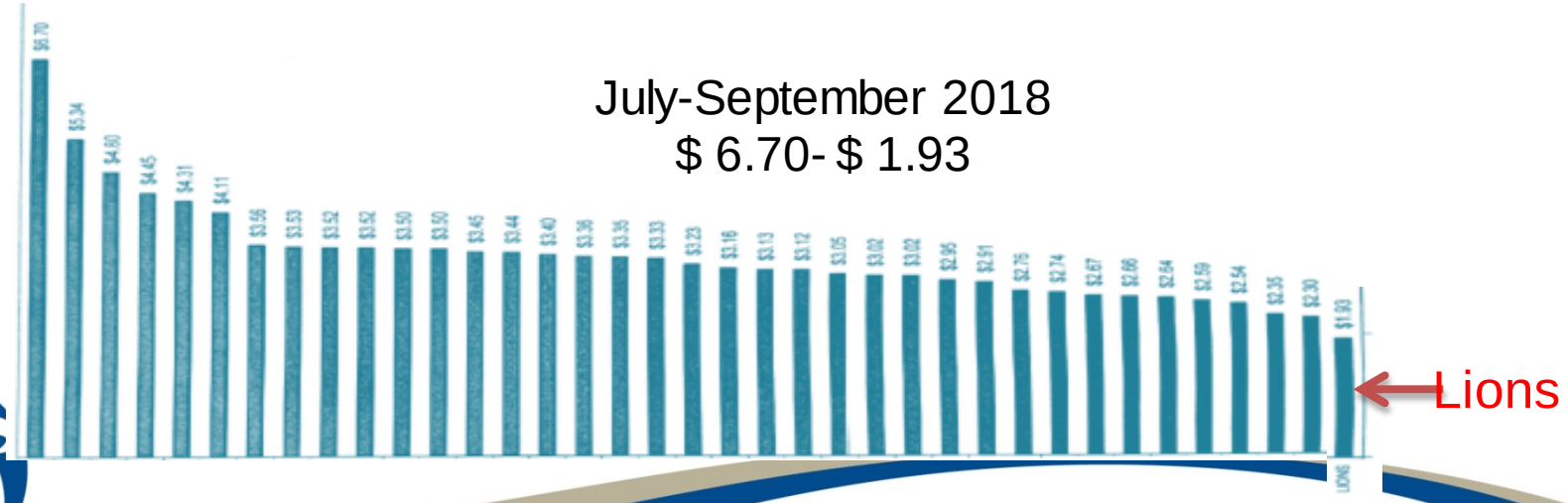


Average Drug Cost/Resident/Day: Lions PCC vs. WRHA: 2017-2018



Average Drug Cost/Resident/Day: WRHA-LTC





Mrs. John on Admission

- 76 years old
- Admitted from Grace Psychiatric ward in June 2010
- Dx: Chronic paranoid schizophrenia, DM2, MI, HTN, GERD, Dementia, severe OA to hips, Dizziness
- Mainly in w/c; MMSE: 16/30
- Weight: 80kg; HgA1c: 10.2
- Flat affect, orofacial/hand tremors & unsteady gait
- Complete assistance for all ADLs

- Medications
  - Olanazepine 20 mg daily
  - Resperidone 1 mg in am & 2 mg @ hs
  - Ativan 0.5 mg @ 1300 hrs & 1 mg @ hs
  - ASA, Adalat, Metoprolol, Isosorbide dinitrate, Pantoloc, Gluconorm, Metformin
- # of medications = 10
- Psychotropic Polypharmay

Mrs. John: 2018

- Celebrated her 84th Birthday
- Independent with all ADLs
- Walks with a cane, MMSE: 28/30
- Weight: 62 kg, HgA1c: 6.8
- No hospital transfers since PCH admission

- Medications
  - ASA, B12, Gabapentin, Gliclazide, Metformin, Metoprolol, Ramipril, Ranitidine, Senna & Tylenol
- # of medications = 10
- Not on any psychotropics
  - Ativan tapered & stopped by Sept 2010
  - Olanazepine by March 2011
  - Risperidone by January 2012

Supervised tapering and cessation of inappropriate psychotropic polypharmacy

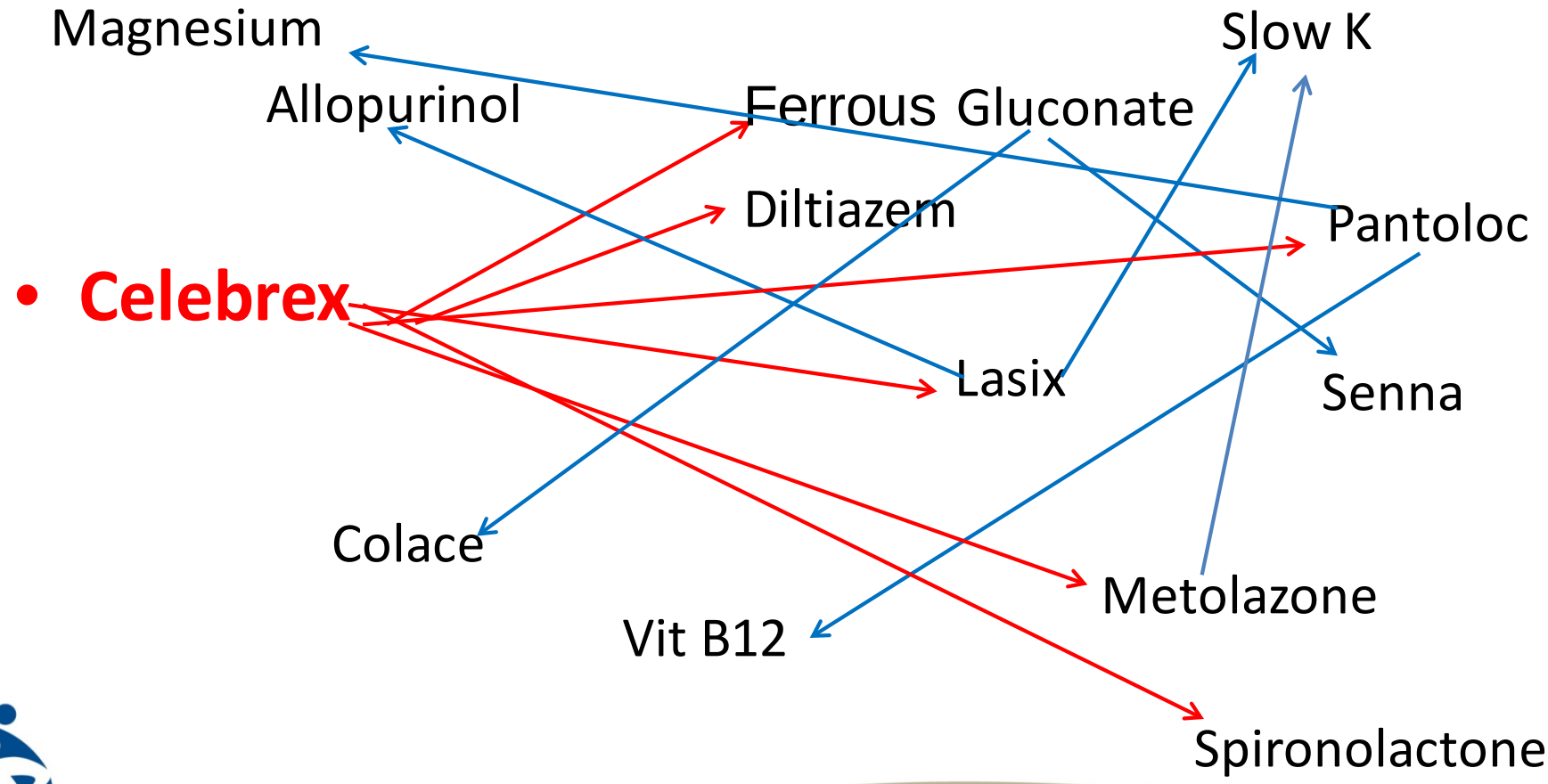
Mrs. Smith on Admission

- 72 years old
- Admitted form community in February 2017
- Wheel chair bound
- Home care 6 times/day
- On 31 medications
  - Polypharmacy/IMU
  - Drug interactions 400%
- Drug cost: $ 3,200/month
- PCH rent: $ 2,300/month
- Total care
- Medical history
  - OA, DM2, Fibromyalgia, Asthma, HTN, Gout, Chronic pain, Anxiety, sleep apnea, Sever leg edema, GERD
- Weight: 312 lbs
- On Bi-pap
- Accu checks
  - Pre-breakfast : 15-20
  - Pre-dinner: 18-25

Mrs. Smith's Admission Medications

- Clonazepam 0.5 mg po TID
- Trazadone 50 mg po OD
- Morphine SR 60 mg po TID
- Gabapentin 500 mg po TID
- Celebrex 200 mg po OD
- Lasix 80 mg po OD
- Spironolactone 50 mg po OD
- Metolazone 2.5 mg po OD
- Diltiazem 240 mg po OD
- Allopurinol 300 mg po OD
- Rosuvasatin 10 mg po OD
- Pantoloc EC 40 mg po OD
- Slow-K 2tabs Po QID
- Ferrous gluconate 30omg OD
- Pulmicort puffer
- Bricanyl turbohaler
- Forxiga 10 mg po OD
- Magnesium 100 mg OD
- Vitamin B12 1000 mg OD
- Senna 4 tabs BID
- Metformin 850 mg po TID
- Insulin N 60 units in am & 120 units in pm
- Humalog 60 units three times prior to meals
- Laculose 30 ml BID PRN
- Clonazepam 0.5 mg po BID PRN
- Morphine 5 mg po TID PRN

The Prescribing Cascade of Mrs. Smith



Specialists

Prior to PCH Admission

- Dermatology
- Pain Clinic
  - Trail of genicular nerve block
- ENT
- Cardiology
- GI
- Endocrinology
- Companion cost/visit : $ 90-120/visit

During PCH stay

- Endocrinology
- No visits, only through correspondence

Mrs. Smith on February 28/2018

- Totally independent
- Walks with two-wheeled walker
- Weight: 195 lbs
- Off Bi-pap
- Only on 2 medications
  - Metformin 850 mg TID
  - Gliclazide MR 120 mg OD
- Drug cost: $39/month
- Accu checks
  - Pre-breakfast: 6-8
  - Pre-dinner: 7-9
- Moved to community
- Monthly rent: $900
- Home care once a week
  - Laundry/house keeping

simultaneous discontinuation of as many drugs as possible with the goal of managing polypharmacy and improving outcomes

ORIGINAL RESEARCH

Physician Factors Associated with Polypharmacy and Potentially Inappropriate Medication Use

Kenya Ie, MD, PhD, MPH, Maria Felton, PharmD, BCPS, Sydney Springer, PharmD, BCPS, Stephen A. Wilson, MD, MPH, and Steven M. Albert, PhD

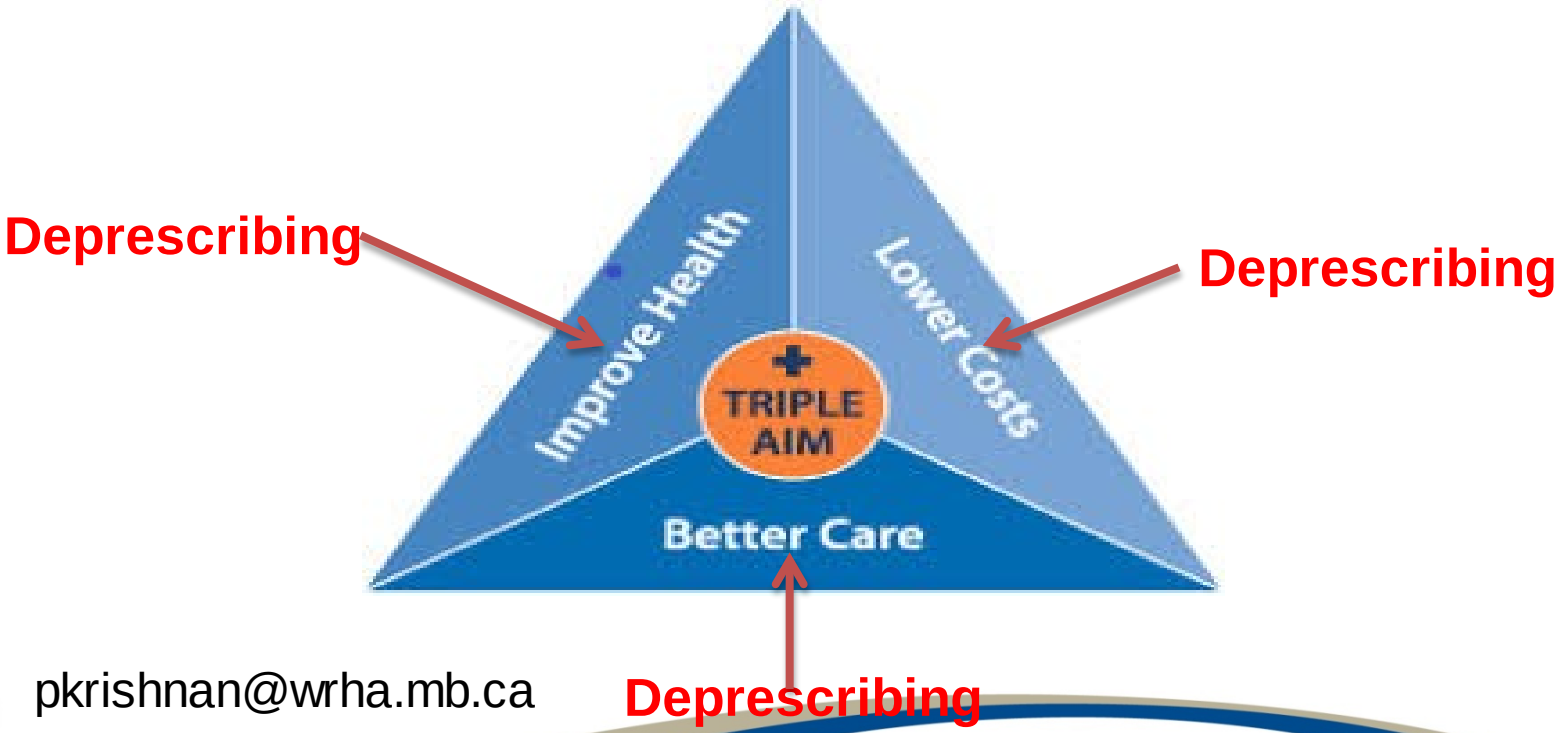
Results: **A total of 61 physicians (38 residents, 23 fellows/faculty) completed the survey, and 2103 visits by 932 patients seen by these physicians were analyzed. The mean numbers of prescriptions and PIMs per visit per physician were 9.50 and 0.46, respectively. After controlling for patient race and age, low prescribers were more likely to consider the number of medications ($P = .007$) and benefit/risk information for deprescribing ($P = .017$) when making prescribing decisions. Use of the Beers List was marginally significant in lower PIM prescribing ($P = .05$). Physicians' sex, duration of experience, and perceived confidence were not associated with prescribing patterns.**

Conclusions: **Conscious consideration concerning the number of medications and benefit/risk information, as well as using the Beers List, were associated with less polypharmacy and fewer PIMs. (J Am Board Fam Med 2017;30:528–536.)**

Conclusion: Physicians' gender, duration of experience and perceived confidence were not associated with prescribing patterns. Conscious consideration concerning the number of medications and benefit/risk information, as well as the Beers list were associated with less polypharmacy and inappropriate medication use.

Thank You

Polypharamcy is a Disease: The Cure is Deprescribing



pkrishnan@wrha.mb.ca