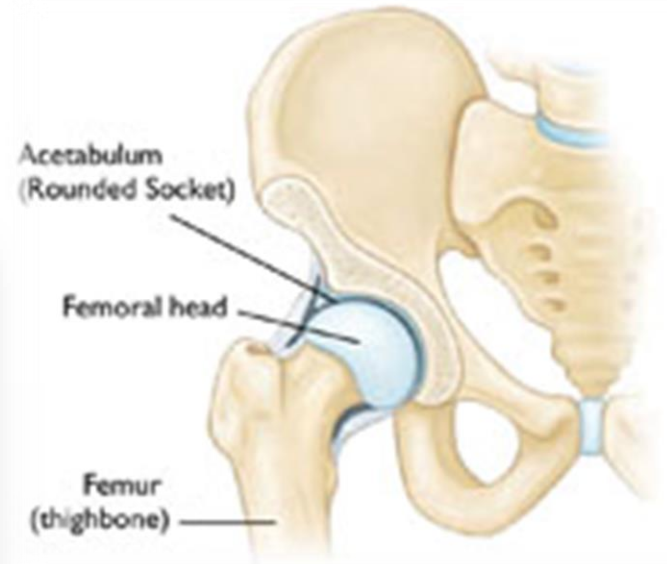
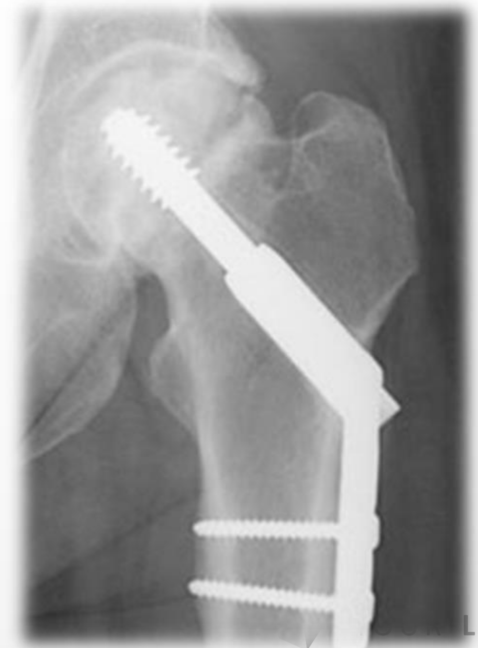
Geriatric Pharmacotherapy

Jason Chenard, BScPhm, BCGP, CDE

YOUR LOGO


Acetabulum
(Rounded Socket)
Femoral head
Femur
(thighbone)



Learning Objectives

1	Recognize physiological changes of aging to prevent stigma
2	Review terminology used in day-to-day geriatric pharmacy practice
3	Introduce updated Beers guidelines from 2015
4	Introduce START/STOPP recommendations
5	Share pharmacotherapy pearls and common pharmacist interventions
6	Introduce a novel Geriatric Medication Review Tool developed in Sudbury
7	Review links to billable professional services

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Disclosure

- No sponsorships, endorsements, honorariums,
  backyard scams, underground deals, under-the-table dough
- No real/potential conflicts to disclose
- *Makers of Aricept® may be paying, but can't remember!*

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GB, 79, lives at home with spouse

- Happy to see me but weak handshake
- Shuffle/near-stumble on carpet
- Hoarding of old blister packs, Nitro sprays

- Spouse comments about seclusion in basement
- Jogging pants, not clean shaven, 20 lbs wt loss
- Drives; daughter has been doing groceries, banking

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Are these observations “normal”?

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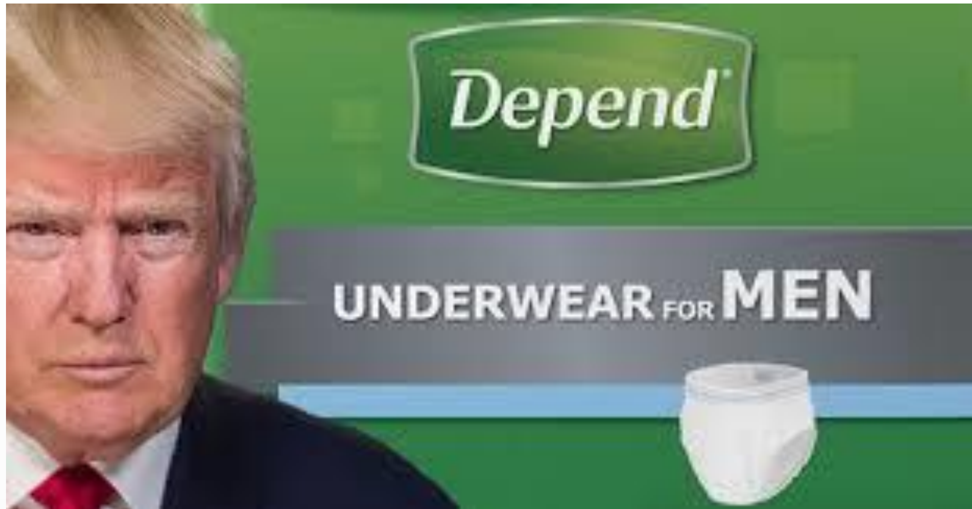

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We expect high quality function & independence

EXPECT:

- Mobility, socialism
- Wt, hygiene maintenance
- Organizational skills

RED FLAGS:

- Seclusion
- Unexplained wt loss
- Hoarding, misplacing, forgetting

George: crushes his grandkids at cards, pays his Netflix bill with his tablet

Medications

Metoprolol 50mg bid

Amlodipine 2.5mg daily

Flurazepam 30mg qhs

Doxepin 50mg tid

Perindopril 8mg daily

HCTZ 25mg qam

Digoxin 0.25mg qam

Tamsulosin CR 0.4mg qhs

Ranitidine 150mg bid

Simvastatin 80mg daily

Glyburide 5mg bid

Metformin 500mg ii bid

Omeprazole 20mg bid

Salbutamol MDI prn

Advair Diskus® 250 bid

Tiotropium 18ug daily

Who has the time?!?

YOUR LOGO

Medications… needing deeper consideration

- Metoprolol 50mg bid
- Amlodipine 2.5mg daily
- Flurazepam 30mg qhs
- Doxepin 50mg tid
- Perindopril 8mg daily
- HCTZ 25mg qam
- Digoxin 0.25mg qam
- Tamsulosin CR 0.4mg qhs
- Ranitidine 150mg bid
- Simvastatin 80mg daily
- Glyburide 5mg bid
- Metformin 500mg ii bid
- Omeprazole 20mg bid
- Salbutamol MDI prn
- Advair Diskus® 250 bid
- Tiotropium 18ug daily

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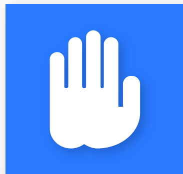
Seniors are living longer
and they need your help more than ever…

Why spend time in geriatrics?

- Fast growing age group
- More meds, more complex regimens
- Ontario: $4B on drugs/yr (70% used by seniors)[1]
- 62% seniors take 5 classes of drugs[1]
- 29% seniors take 10 classes of drugs[1]

- OHIP will spend $ here for largest impact
- <u>HUGE</u> opportunities for RPh intervention



Aging is inevitable; aging unhealthily is not.

Geriatric Terminology

Deprescribing

Prescribing Cascade

Agism

YOUR LOGO

“Deprescribing”

Defined by Scott et al, 2015 as the process of tapering or stopping drugs, aimed at minimizing polypharmacy and improving patient outcomes.[2]

i) “Non-pharm” when a drug is not truly needed
ii) Lowest effective dose when a drug is indicated
iii) Eliminate a drug not being taken by a patient (prn or regular)
iv) Eliminate a root-cause drug causing a side-effect

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“Prescribing Cascade”

Since it is sometimes habitual to add a drug rather than investigate deeper into its cause and effect...

“A prescribing cascade occurs when a new medicine is prescribed to 'treat' an adverse reaction to another drug in the mistaken belief that a new medical condition requiring treatment has developed” (*Kalisch et al, 2011*).[3]

Geriatr Gerontol Int 2009; 9: 402–404

LETTER TO THE EDITOR

Prescribing cascade in an 80-year-old Japanese immigrant

Pei-Tsung Liu, Vivian S Argento and Beata A Skudlarska

Center for Geriatrics, Department of Internal Medicine, Bridgeport Hospital, Yale School of Medicine, Milford, Connecticut, USA

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Depression: TCA→constipation→bisacodyl + docusate

Schizophrenia: risperidone→EPS→benztropine

Hypertension: HCTZ→frequency→silodosin

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“Agism” as a Stereotype

Weak, Cheap, Slow, “In the way”

Don’t contribute to society

Sleep in separate beds

Cause car accidents

Computer illiterate

Set in their ways

Has dementia

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More Geriatric Jargon

Immunosenescense: natural, progressive immune waning with age

"**Inflammaging**": marker for all disease + older age

"**Old-timers**" = slang Alzheimer's

Druggist = you and me

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How pharmacists can help

"Let's remember that patients living with dementia were effective working members of their community who previously enjoyed life and paid their dues to society" Riachi, *CPJ*, 2016.[4]

His paper emphasises that pharmacists can focus on the

patient as a whole

instead of using the dementia diagnosis

as a reason for behaviour.

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Physiology of Aging

What is expected?

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1. **Reduced muscle:fat & reduced plasma protein**
2. Reduced renal & hepatic blood flow
3. Achlorhydria, difficulty swallowing, crushing medications, tube feedings
4. Vertebral compression; fractures
5. Reduced immunity
6. Reduced skin elasticity
7. Psychological component linked to physiological changes (eg, being afraid of a fall)

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Communicating with older adults

- Hearing: last sense to dissipate (don’t shout)
- Longer processing time: welcome “dead air”
- Shorter sentences, enunciate, use low pitch
- First name *vs.* Mr/Mrs
- Avoid jargon (eg, Medscheck, co-pay, deductible)
- Let them talk (establishes rapport)
- Respect their **job experience** on this planet

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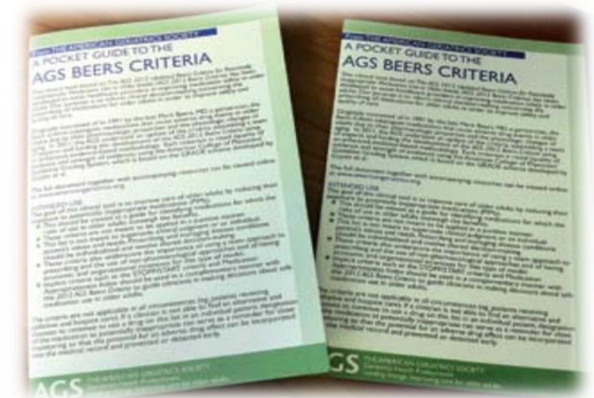
What is Beers?

- Screening tool for **PIM**s developed by **AGS**
- See references[5]
- Requires:
  - whole patient approach
  - professional judgment



- PIMs to avoid in older adults
- PIMs to avoid in older adults with certain conditions
- PIMS to use with caution

PIM: potentially inappropriate medication
AGS: American Geriatric Society

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What is **START/STOPP**?

Beers potentially creates a "hit list"

Evidence-based guideline for:

- what should go?
- what is missing?

Organized by body system:

- Cardio, CNS, GI, MSK, Resp, Uro, Endo, Falls, Pain

Age and Ageing 2008; **37:** 673–679
doi: 10.1093/ageing/afn197
Published electronically 1 October 2008
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STOPP (Screening Tool of Older Persons' potentially inappropriate Prescriptions): application to acutely ill elderly patients and comparison with Beers' criteria

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Denis O'Mahony. Email: Denis.omahony@mailp.hse.ie

Great reference for drug therapy change recommendations

Commonly sited in literature

Highly recognized by health care providers

See reference [6]

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Common Pharmacist Interventions

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Types of Interventions

Anticholinergic load

(next slide)

BP, A_1C, SIADH

(next slide)

Low PRN use

"End of the line" meds

eg, calcium, statins, bisphosphonates

Renal dose adjustments

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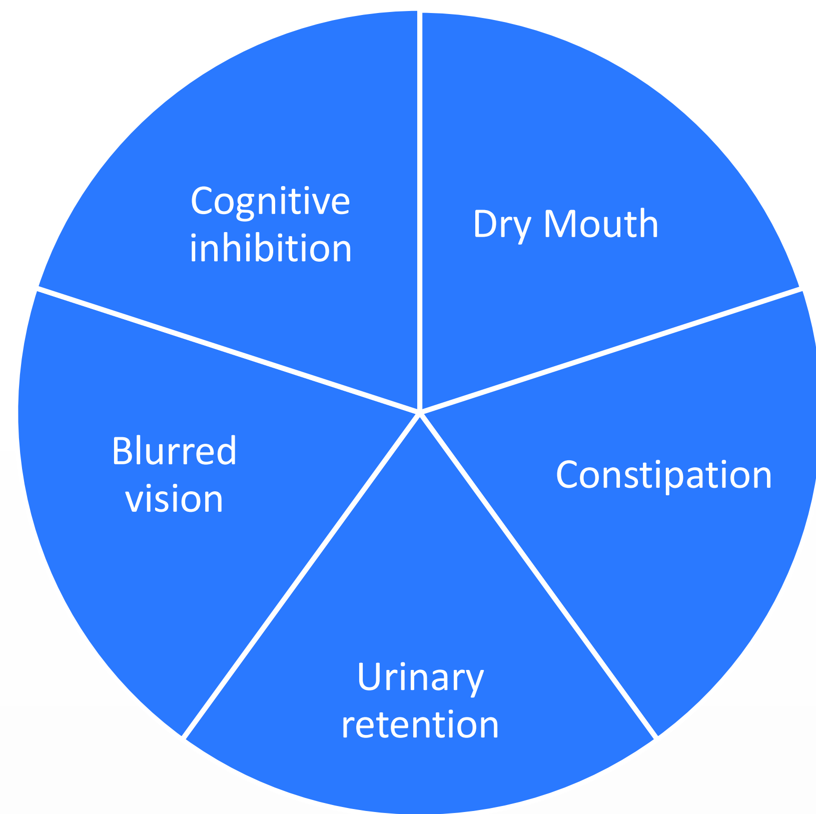
Anticholinergic load

- Additive
- Dose-dependant
- Directly antagonizes MOA AChEi
- Strongly correlates to fall risk
- 75% hip fractures: death within 1 year



"Big 5"

Opioids

BZDs

TCAs

Sleep agents/antihistamines

Psychotropic agents

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Symptom of Inappropriate Antidiuretic Hormone

- ADH retains fluid

•SSRIs promote ADH → volume overload → hyponatremia → dizziness/falls

RPh Intervention:

lytes with new/increased doses of SSRIs, SNRIs

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Specific interventions

- amitriptyline→nortriptyline (less anticholinergic)
- stick with digoxin ≤ 0.125mg
- reduce or d/c PPIs
- reduce or d/c ranitidine 150mg bid
- reduce citalopram to 20mg or less (QT prolongation)
- reduce anti-infective dosing for renal function

  eg, cipro, cefs, nitrofurantoin, oseltamivir

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Specific interventions 2

- antimuscarinics: use fesoterodine(quat amine) or mirabegron(β-3)
- α-blockers: use silodosin (most α_{1A} selective; less orthostasis)
- bisphosphonates→use denosumab 60mg for CrCl<30 or crush meds
- d/c or reduce metformin to 250mg bid for CrCl<30
- nitrofurantoin: acute UTIs when CrCl>30ml/min [6]

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Specific interventions 3

- reduce ACE/ARBs doses
- change SUs from glyburide→gliclazide MR (if used at all!)
- caution re: SGLT2s & diuretics (orthostasis)
- reduce for age/weight/CrCl dabigatran to 110mg
  rivaroxaban to 15mg
  apixaban to 2.5mg
- avoid or monitor antipsychotics with dementia
  - increase incidence of stroke, mortality

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Specific interventions 4

- taper (vs. d/c) β-blockers, BZDs
- d/c diltiazem, verapamil (interactions, anticholinergic)
- reducing doses for low BPs
- achlorhydria: B_{12} supplement + d/c PPIs (offer H_2RA bridging)
- alternative to BZD/zopiclone for sleep:

  ***trazodone* 12.5mg qhs + 12.5mg prn before 4am**

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Specific interventions 5…vaccines

Zostavax II®	live, attenuated, 50+, reduces PHN!
Shringrix®	Phase III done, coming 2018, **2 doses**, **inactive**, 50+
Pneumovax 23®	23 types of *S. pneumonia* 50+ or immune compromised
Fluad®	TIV, adjuvanted with MF59C higher immune response for 65+
Fluzone HD®	TIV, 4x hemagglutinin higher immune response for 65+ covered 2018?

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Additional tidbits

Common non-pharm add-ins:

- COPDers can use fan across face
- d/c carpets & slippers
- take patches off during saunas/hot tubs
- laser-pointers for PD-induced freezing
- compliance packaging

More forgiving guidelines for:

- Blood pressure (eg, BP=150/100 without Sx)
- Blood sugar (eg, higher A_1C to prevent lows)

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What we can do for George…

Anticholinergics

- Doxepin 50mg tid--------taper→escitalopram….lytes?
- Flurazepam 30mg qhs-------------------------taper to D/C
  (consider changing to BZD tab for splitting)
- Started trazodone trick
- Tamsulosin CR 0.4mg qhs----change to silodosin 4mg qhs

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Cardio

- Perindopril 8mg daily-----reduce 4mg?, review at MC F/U
- d/c HCTZ 25mg qam----------------BPH + likely low GFR
- Digoxin 0.25mg---------------------------reduce to 0.125mg
- Metoprolol 50mg bid-------------------------taper to HR/BP

Diabetes

- Metformin 500mg ii bid---reduce to 250mg bid (CrCl=32)
- Glyburide 5mg bid…hypoglycemia
  consider changing to DPP-4 or SGLT2
- Simvastatin 80mg daily…myalgia risk!...
  rosuvastatin if even required…could D/C

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Miscellaneous

- Tiotropium 18ug daily----------------------Respimat® or Ellipta®
- Atrovent® MDI ii qid--------------------------------------seriously?!
- Omeprazole 20mg bid---------------------------------taper to D/C
- Ranitidine 150mg bid-------------too anticholinergic; 75mg qhs (bridge for acid rebound to D/C PPI)

Geriatric Assessment Tool

Front

Geriatric Medication Assessment

- MedsCheck completed
- Compliance a concern
- Polypharmacy a concern

Geriatric Syndrome Snapshot *(Circle all that **currently** apply):*

Drowsiness	Constipation	Fatigue	Pain	Depressed
Dizziness	Diarrhea	SOB	Swelling	Anxious
Forgetfulness	Dysuria	Palpitations		Weight Loss
Confusion	Polyuria	Orthostatis		Aggression

1) Medications contributing to cumulative anticholinergic load

- History of falls

2) Potential dose reductions for declining renal function

3) Possible medications no longer required — **Rationale**

4) Possible drug-drug interactions

Back

5) Possible drug-disease interactions

6) Possible contributors to drug-induced fractures

- History of fractures: ___________

7) Possible contributors to drug-induced bleeding

- History of stroke/DVT: __________
- History of bleeding: __________

High-Priority Recommendations — **Low-Priority Recommendations**

Prescriber Signature:
Date:

Please circle only recommendation(s) you accept; ignore remainder

Patient Signature:
Date:

Pharmacist Signature:
Date:

Billable services – George in 2016

Medscheck Diabetes (day 1)	$75
New glucometer through STI (day 1)	$15
15 POPs	$225
Medscheck F/U to assess BP, HR (day 14)	$25
Medscheck F/U to assess IPSS (day 30)	$25
Flu shot	$7.50
Smoking cessation program	$125
Nutrition forms for Ca, Vit D, Vit B_{12}	free

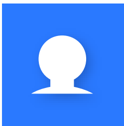
Getting paid for your work: $497.50

+ OTC sales on vitamins

+ now he buys his weekly groceries with us

Geriatric program at 1 ½ years

What if every senior was 3% of your business?

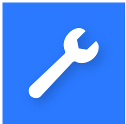


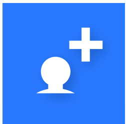
95 Patients, 32% of Rx sales

13,000 Rx, 194 POPs, 215 Medschecks

Over $304K sales

Don’t leave money on the table





- Examine workflow to find time
- Easy links to professional services
- Prevent 1 stroke
- Prevent 1 hospitalization
- Prevent 1 bleed
- Delay/prevent 1 nursing home admission
- Reverse the geriatric stereotype
- Grow your business
- Receive baked goods!

YOUR LOGO

References

[1] www.CIHI.ca/CIHI-ext-portal/pdf/internet/SENIORS_DRUG_INFO_EN (accessed May 21, 2016).

[2] IA Scott et al. Reducing Inappropriate Polypharmacy: The Process of Deprescribing. *JAMA Intern Med.* 2015;175(5):827-834. archinte.jamanetwork.com/article.aspx?articleid=2204035 (accessed 21 May 2016).

[3] LM Kalisch et al. The Prescribing Cascade. *Aust Prescr* 2011;34:162–6. www.australianprescriber.com/magazine/34/6/article/1229.pdf (accessed May 21, 2016).

[4] Riachi, M. How pharmacists can help their dementia patients. *Can Pharm J (Ott)* 2016; 149(2): 67-9.

[5] American Geriatric Society 2015 Expert Panel. American Geriatric Society 2015 updated Beers Criteria for potentially inappropriate medication use in older adults. *J Amer Geriatr Soc* 2015;63:2227-46.

[6] *PL* Detail-Document # 270906, STARTing and STOPPing Medications in the Elderly. Pharmacist's Letter/Prescriber's Letter. September 2011:1-14.

Questions

YOUR LOGO