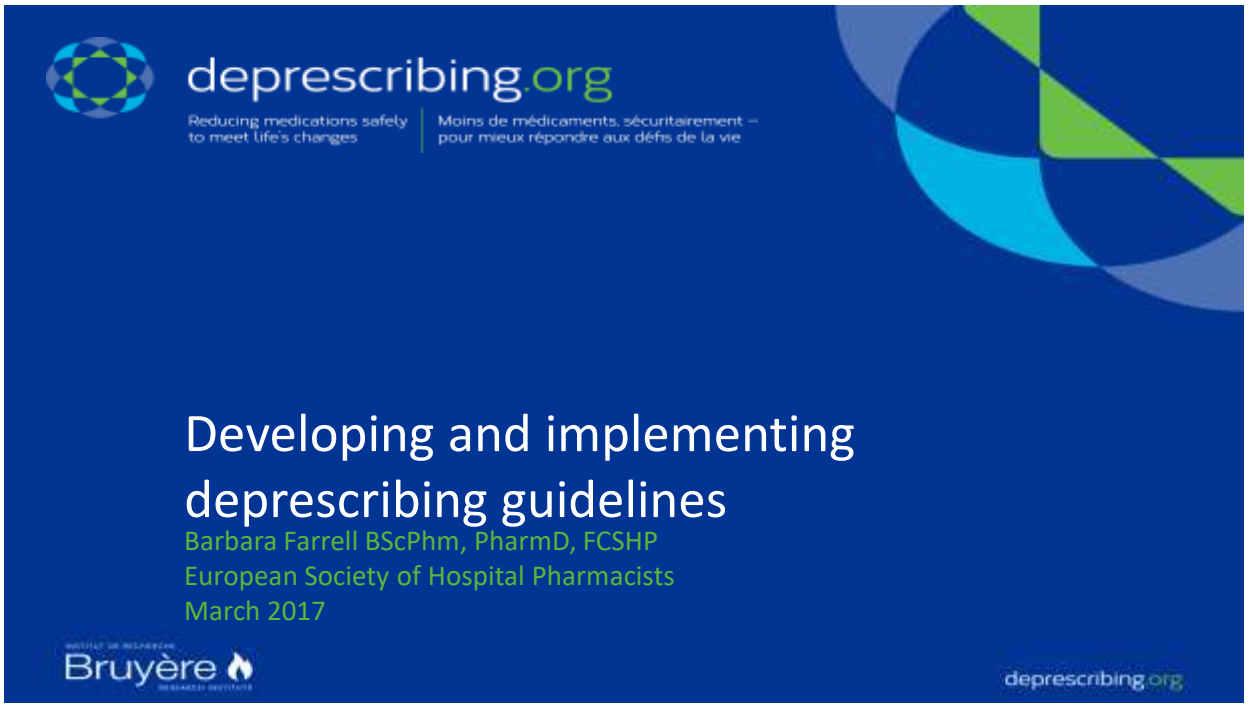


Disclosure

- Relevant financial relationships
  - None

Acknowledgments

- *Deprescribing guidelines developed with funding from the Government of Ontario*, the Ontario Pharmacy Research Collaboration and Canadian Institutes of Health Research*
- **The views expressed in this presentation are the views of the author(s)/presenter(s) and do not necessarily reflect those of the Province.*

Self-assessment questions

1. Deprescribing should be tested by recommending to patients that they periodically choose to stop taking medications (T/F)
2. Evidence-based deprescribing guidelines consider harm of continuing a drug in addition to evidence for the harm/benefit of stopping a drug (T/F)
3. There are not enough tools available to help make decisions about deprescribing (T/F)

Objectives

- Participants will be able to
  1. Describe how the concept of deprescribing contributes to management of polypharmacy
  2. List resources and tools available to help with making deprescribing decisions
  3. Assist patients and prescribers with prioritizing medications for deprescribing and carrying out deprescribing safely

What problem are we trying to solve[1,2]

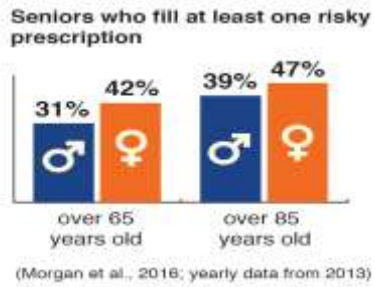
- Polypharmacy: more medications than needed, or for which harm outweighs benefit
- Increases risk of:
  - Adverse drug reactions, drug interactions, prescribing cascades
  - Falls, fractures
  - Functional and cognitive decline
  - Nonadherence
  - Hospitalizations and higher healthcare costs
- Especially for the elderly who handle and respond to drugs differently, are often frail and not represented in research

Why are the elderly at risk?[1]

- Age-related changes
  - Absorption: altered bioavailability (↓ transport, ↓ first pass)
  - Distribution: ↑ body fat, ↓ body water
  - Metabolism: ↓ oxidative metabolism
  - Excretion: ↓ renal function (increases half-life)
- Altered pharmacodynamics
  - Changes in receptor numbers, post-receptor alterations
  - Impaired homeostatic mechanisms
- Increasing comorbidity

How big is the problem?[3,4]

- 2/3 Canadian seniors are prescribed at least 5 prescription medications
- Who takes 10 or more?
  - 27% over 65 years
  - 40% over 85 years
  - 66% in long-term care homes
- $419 million spent on PIMs
- $1.4 billion in incremental health care expenditure due to PIMs



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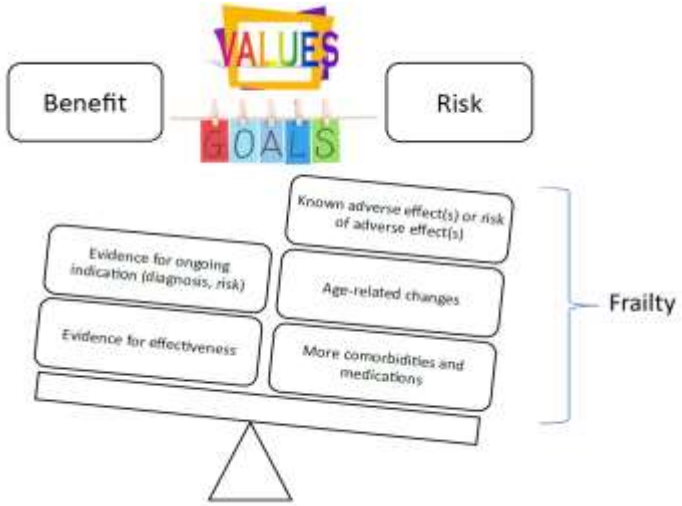
Deprescribing

- "The planned and supervised process of dose reduction or stopping of medication that may be causing harm or no longer be of benefit. The goal of deprescribing is to reduce medication burden and harm, while maintaining or improving quality of life."
- **"Deprescribing is part of good prescribing – backing off when doses are too high, or stopping medications that are no longer needed."**

Making deprescribing decisions



Goals in the elderly

- Maintain and improve
  - Physical functioning (e.g. activities of daily living)
  - Psychological functioning (e.g. cognition, depression)
  - Social functioning (e.g. social activities, support systems)
  - Overall health and well-being (e.g. general health perception)

Challenges and enablers[5]

- Prescribers
  - Awareness/insight
  - Inertia
  - Self-efficacy
  - Feasibility
  - Devolving responsibility
  - Patient and prescriber complexity
  - Treatment guidelines
- Patients
  - Vast majority hypothetically willing
  - Belief in appropriateness
  - Fear
  - Influences: GP, family, friends, media, previous experience
  - Medication dislike
  - Knowing there is a process

Taking action on deprescribing

The Deprescribing Guidelines Research Program

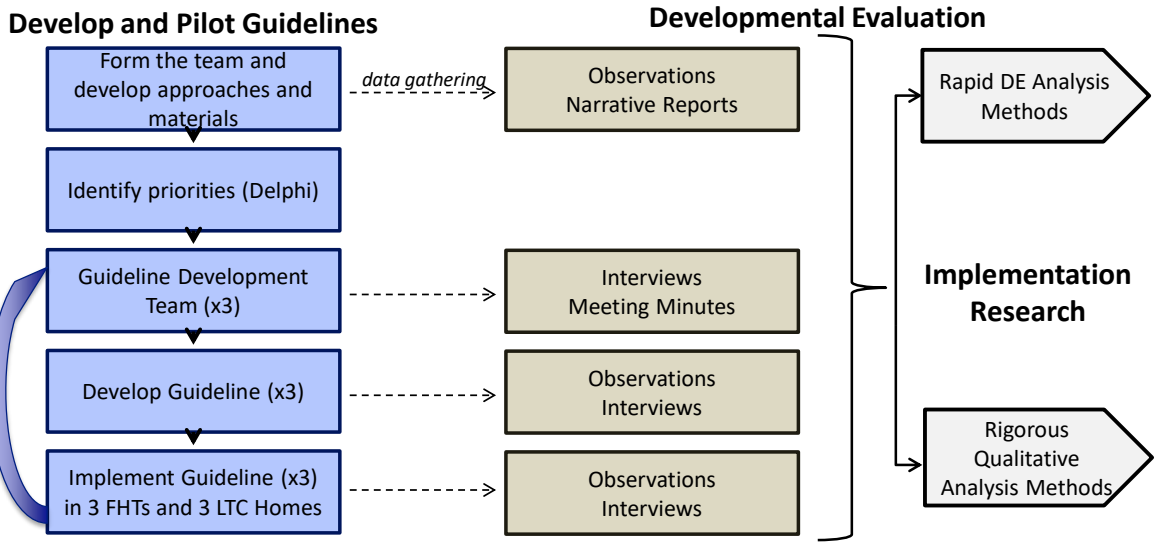
http://www.open-pharmacy-research.ca/research-projects/emerging-services/deprescribing-guidelines/

Bruyère deprescribing.org

Deprescribing guidelines research

- Aim
  - Develop, implement, evaluate evidence-based deprescribing guidelines to facilitate management of polypharmacy

Methods[7]



Guideline development to date

	PPI Guideline	BZRA Guideline	AP Guideline	AHG Guideline
Team	Barb Farrell, Paul Moayeddi, Kevin Pottie, Carlos Rojas-Fernandez, Kate Walsh (Shannon Gordon, Joy Rashid, Taline Boghassian, Vivian Welch, Lisa Pizzola)	Kevin Pottie, Simon Davies, Vivian Welch, Jean Grenier, Cheryl Sadowski , Anne Holbrook, Cynthia Boyd, Robert Swenson, Barbara Farrell (Wade Thompson, Andy Ma, Elli Polemiti, Sonia Hussain, Olanrewaju Medu)	Lise Bjerre, Barb Farrell, Carlos Rojas-Fernandez, Andrew Wiens, Genevieve Lemay, Lalitha Raman-Wilms, Lisa McCarthy, Lyla Graham, Samir Sinha, Vivian Welch (Matt Hogel, Cody Black, Jessica Tang, Wade Thompson)	Barb Farrell, Wade Thompson, Lisa McCarthy, Carlos Rojas-Fernandez, Heather Lochnan, Salima Shamji, Ross Upshur, Manon Bouchard, Vivian Welch (Cody Black)
Develop	Nov 2013-May 2014	July 2014-Jan 2015	Feb-May 2015	June 2015-June 2016
Pilot	June-Nov. 2014	Feb-May/June 2015	June-Nov 2015	Not piloted
Publish	In press (CFP)	In press (CFP)	Under review (CFP)	Under review (CFP)

From thought process to guidelines

Typical thought process

1. What factors warrant continued use?
2. Under what conditions is it appropriate to deprescribe (taking appropriate targets and potential for harm into account)? And, what is the evidence for the effectiveness and safety of deprescribing?
3. How can the patient/family be engaged in the process?
4. How should the medication be deprescribed?
5. What should be monitored? And, how often?
6. How should symptoms be managed?
7. When should treatment be restarted?

Developing a guideline[8]

1. Define scope and purpose
2. Generate key clinical questions
3. Set criteria for admissible evidence; conduct systematic review(s)
4. Synthesize evidence (including harms, patient values, resource implications, other guidelines) (GRADE)
5. Formulate recommendations; assess strength (GRADE)
6. Add clinical considerations
7. Conduct clinical and stakeholder review (AGREE II)
8. Update pre-publication

Selected outputs

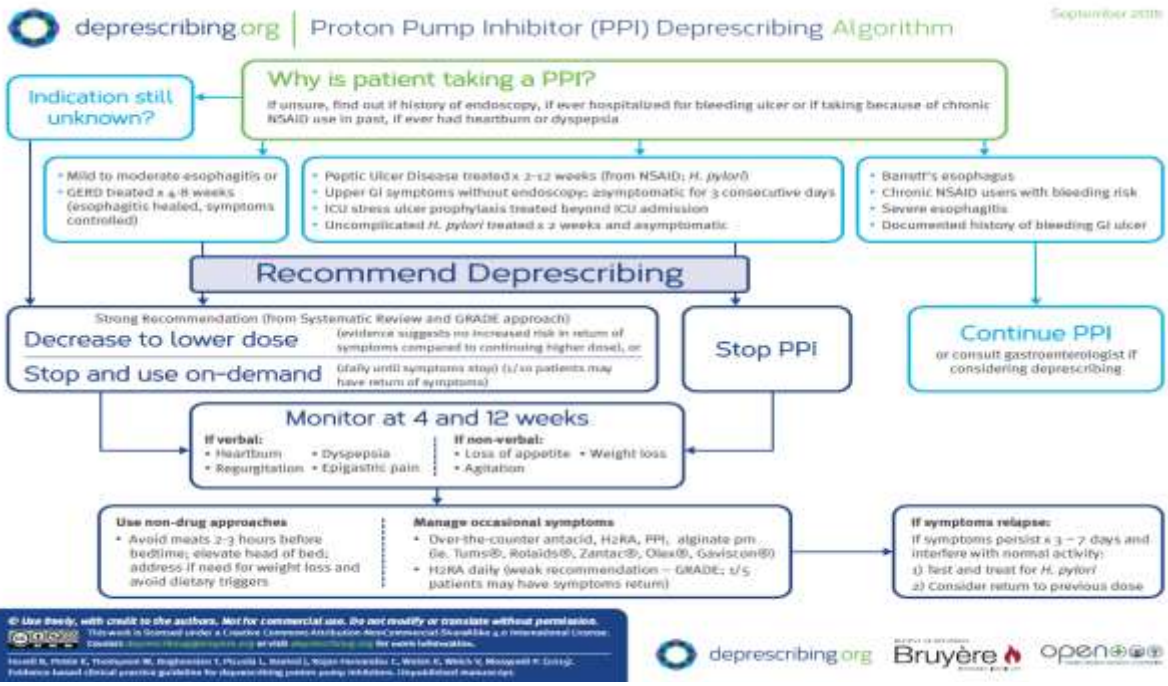
Findings

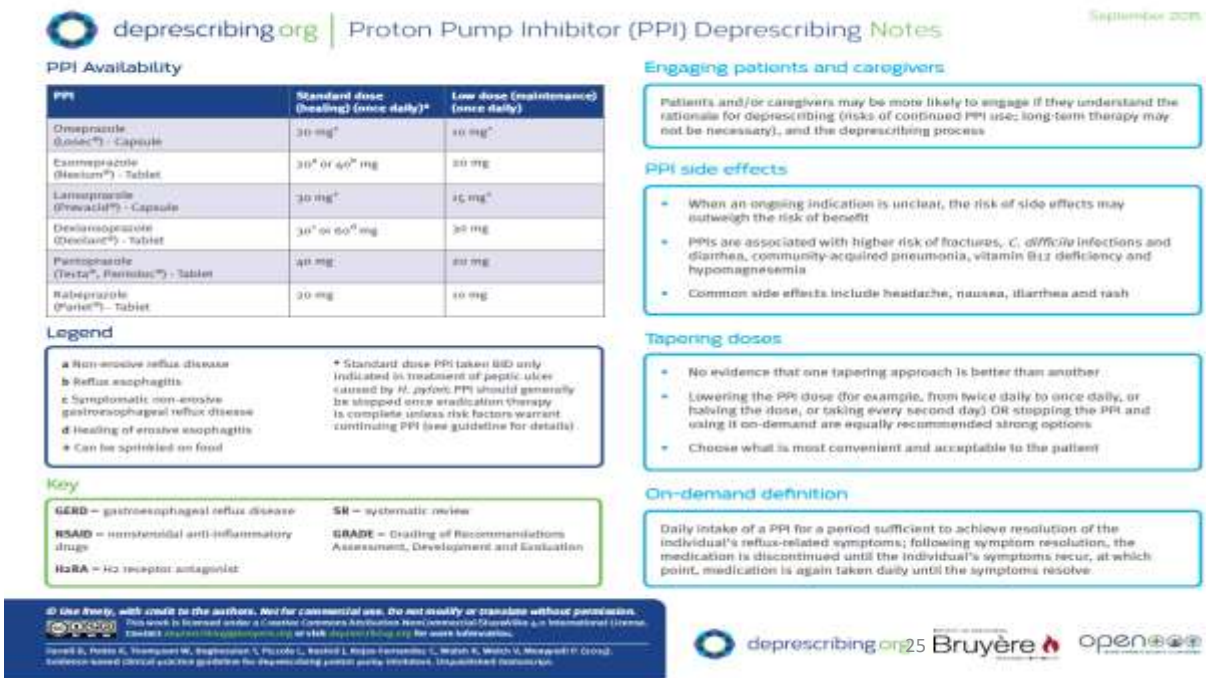
- There is an appetite for such guidelines; many priorities identified[6]
- Using an evidence-based approach (with GRADE and AGREE II) was time-consuming and costly but increased trustworthiness
- Deprescribing decision-support algorithms easily implemented into routine pharmacist-physician LTC medication reviews; appeared to increase self-efficacy for deprescribing[9] + reduce targeted medication use[10]
- In LTC, need patient/family/staff buy-in + better communication strategies
- Implementation in Family Health Teams more challenging due to competing priorities, EMR limitations + lack of documented reason

Case examples

PPIs

- High prevalence of use often with no documented indication
- Expense and pill burden
- Potentially harmful





deprescribing.org | Proton Pump Inhibitor (PPI) Deprescribing Notes

September 2015

PPI Availability

PPI	Standard dose (healing) (once daily)*	Low dose (maintenance) (once daily)
Omeprazole (Losec®) - Capsule	20 mg*	10 mg*
Esomeprazole (Nexium®) - Tablet	20* or 40* mg	20 mg
Lansoprazole (Prevacid®) - Capsule	30 mg*	15 mg*
Dexlansoprazole (Dexilant®) - Tablet	30* or 60* mg	30 mg
Pantoprazole (Tecta®, Pantoloc®) - Tablet	40 mg	20 mg
Rabeprazole (Pariet®) - Tablet	20 mg	10 mg

Legend

a Non-erosive reflux disease
b Reflux esophagitis
c Symptomatic non-erosive gastroesophageal reflux disease
d Healing of erosive esophagitis
* Can be sprinkled on food

* Standard dose PPI taken BID only indicated in treatment of peptic ulcer caused by *H. pylori*; PPI should generally be stopped once eradication therapy is complete unless risk factors warrant continuing PPI (see guideline for details)

Key

GERD = gastroesophageal reflux disease
NSAID = nonsteroidal anti-inflammatory drugs
H2RA = H2 receptor antagonist
SR = systematic review
GRADE = Grading of Recommendations Assessment, Development and Evaluation

Engaging patients and caregivers

Patients and/or caregivers may be more likely to engage if they understand the rationale for deprescribing (risks of continued PPI use; long-term therapy may not be necessary), and the deprescribing process

PPI side effects

- When an ongoing indication is unclear, the risk of side effects may outweigh the risk of benefit
- PPIs are associated with higher risk of fractures, *C. difficile* infections and diarrhea, community-acquired pneumonia, vitamin B12 deficiency and hypomagnesemia
- Common side effects include headache, nausea, diarrhea and rash

Tapering doses

- No evidence that one tapering approach is better than another
- Lowering the PPI dose (for example, from twice daily to once daily, or halving the dose, or taking every second day) OR stopping the PPI and using it on-demand are equally recommended strong options
- Choose what is most convenient and acceptable to the patient

On-demand definition

Daily intake of a PPI for a period sufficient to achieve resolution of the individual's reflux-related symptoms; following symptom resolution, the medication is discontinued until the individual's symptoms recur, at which point, medication is again taken daily until the symptoms resolve

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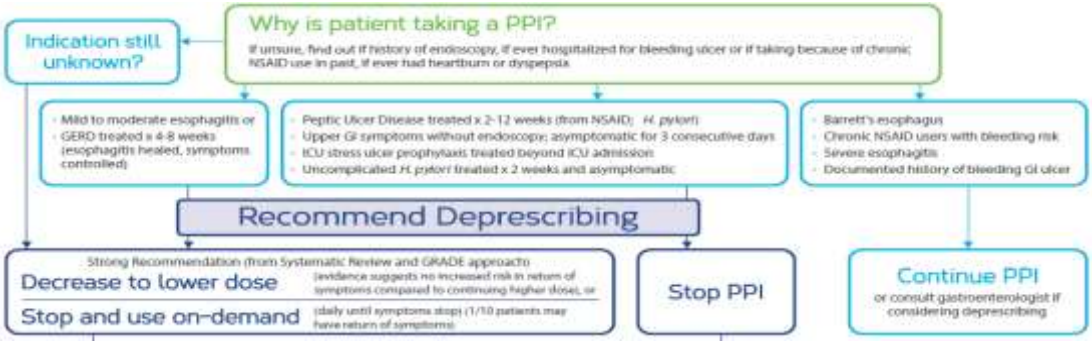
Mr. D. – 62 year old male

- Pantoprazole 40mg bid started by primary care provider 4 years ago for heartburn related to stress and diet
- Heartburn relieved since starting PPI (no endoscopy)
- No history ulcer

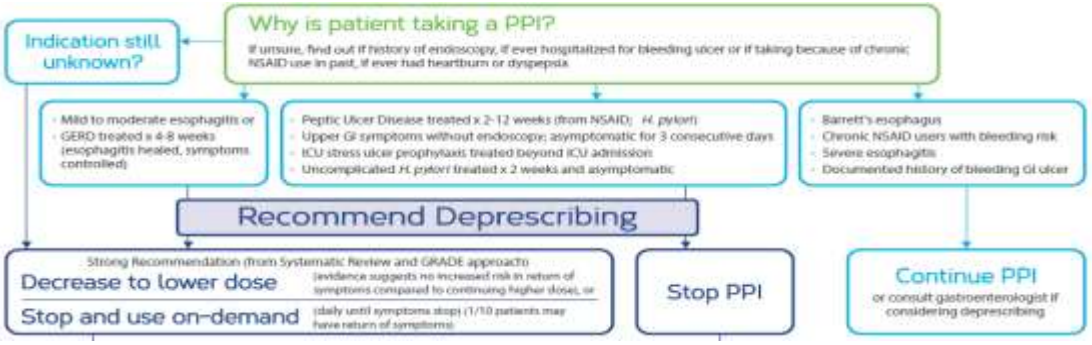
- **Is there an opportunity?**
- **Why do it?**
- **How?**



Mrs A. – 89 year old female (LTC)

Medication	Reason
Alendronate 70mg once weekly Vitamin D 1000 IU daily	Osteoporosis
Ramipril 10mg daily Bisoprolol 2.5mg daily Atorvastatin 40mg daily ASA 81mg daily	Secondary prevention (CVD)
Levothyroxine 50mcg daily	Hypothyroidism
Tiotropium 18mcg daily Salbutamol prn	COPD
Omeprazole 20mg daily	Unknown

Is there an opportunity?
Why do it?
How?



Other PPI deprescribing opportunities

- PPI started for stress ulcer prophylaxis; out of ICU
- PPI started for temporary heartburn during pregnancy or in hospital (3 days without symptoms)
- PUD due to NSAID or *H. pylori* treated x 2-12 weeks; no longer on NSAID
- GERD diagnosis – treated for 8 weeks and no symptoms

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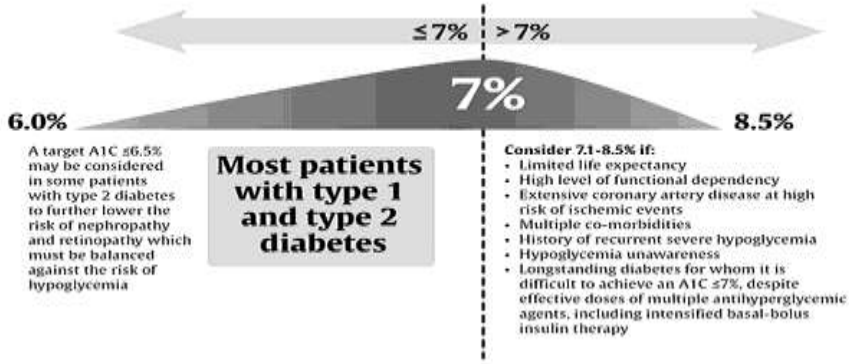
PPI Challenges

- How would you approach these issues?
  - "I tried stopping once before and got really bad heartburn that night"
  - "I'm worried my patient will bleed"

Antihyperglycemics – balancing benefit/risk

- Shifting goals of treatment as people age (QoL, reducing treatment burden vs. prolonging life/reducing risk)
- Time to benefit may be longer than life expectancy
- May be at higher risk of hypoglycemia, with complications such as falls, fractures, cognitive impairment, seizures, and hospitalisation
- Risk is greatly increased in the frail elderly
- No evidence demonstrates benefits of traditional glycemic control for older adults who are frail, demented, or have limited life expectancy

Diabetes Canada targets



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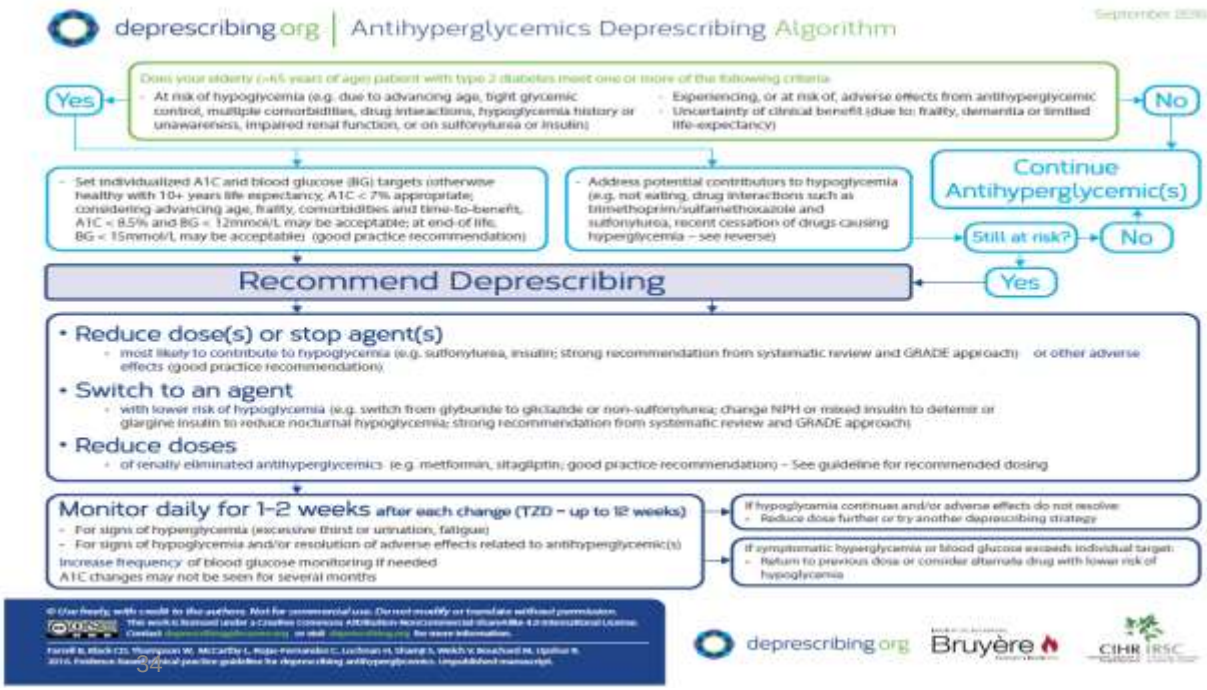

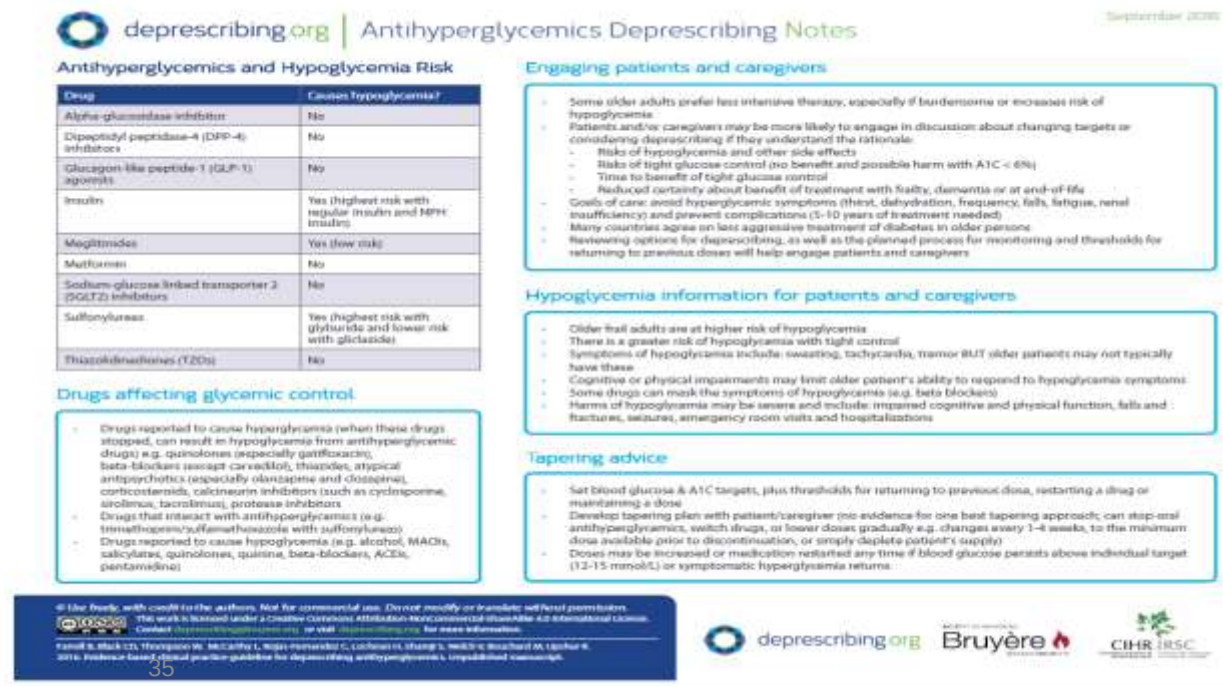

Some cases to consider

Mr. B.

- 82 years of age
- Dizziness, impaired cognition, falls
- Community dwelling
- A1C of 7.2%; blood glucose ranges 4.0 to 9.0
- CrCl = 40ml/min
- On metformin 1g bid, sitagliptan 100mg daily, glyburide 10mg bid

Ms. F.

- 97 years of age
- 20 lb loss of weight
- Recently stopped HCTZ and metoprolol due to dizziness; still weak, confused, falling; frequent bronchitis treated with Septra
- Community dwelling
- A1C = 7.9%; clinic blood glucose 10-14
- CrCl = 30ml/min
- On metformin 1g bid, sitagliptan 100mg daily, glyburide 10mg bid and NPH 10 u qhs
- Enjoys evening glass of whiskey

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For each case

- Is there an opportunity?
- Why do it?
  - Decide patient goals and targets (A1C & blood glucose)
- How? Determine what deprescribing steps need to be taken:
  a) Reduce dose(s) or stop agent(s) most likely to contribute to hypoglycemia (e.g., sulfonylurea, insulin) or other adverse events
  b) Switch to an agent with a lower risk of hypoglycemia
     - E.g. glyburide to gliclazide or non-sulfonylurea
  c) Reduce doses of renally eliminiated antihyperglycemics
     - E.g. metformin, sitagliptin
- What and how to monitor?

What else should be considered to minimize risk of hypoglycemia, reduce burden?

- Could a drug interaction be increasing hypoglycemic effect?
  - If so, consider reducing dose or stopping the offending interacting drug, or reduce AHG dose
- Has a medication that causes hyperglycemia recently been stopped?
  - Is so, AHG doses may need reduction
- Anything else?

For the elderly person with diabetes

- Older people with diabetes may be at risk of hypoglycemia, resulting in falls, fractures, cognitive impairment, seizures, and hospitalisation; risk is increased in the frail elderly
- Set individualized targets with avoidance of hypoglycemia in mind
- Engage patients in discussion about harms of continued AHG use, goals of deprescribing
- Collaborate with patient to develop goals and plan
- Monitoring and follow-up is extremely important

More resources

New online module

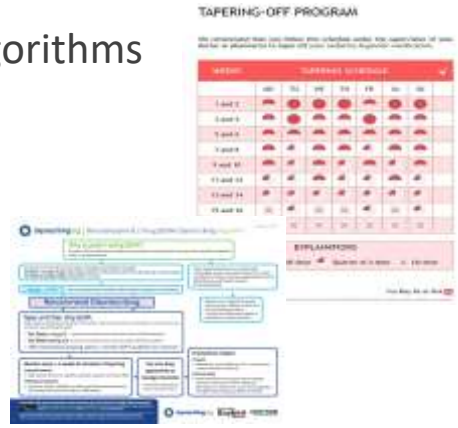
http://www.bruyere.org/en/polypharmacy-deprescribing

MEDSTOPPER

http://medstopper.com/

http://deprescribing.org/

- Deprescribing guidelines and algorithms
- Patient information pamphlets
- EMPOWER brochures
- National stakeholders meetings
- Ongoing research projects
- Resources and links



More useful links to explore…

- http://pathclinic.ca/resources/
- http://www.polypharmacy.scot.nhs.uk/
- http://www.bpac.org.nz/BPJ/2010/April/stopguide.aspx
- https://rxisk.org/
- http://sydney.edu.au/medicine/cdpc/documents/about/outcome-statement-national-stakeholders-meeting.pdf
- http://www.primaryhealthtas.com.au/resources/deprescribing

CaDeN Canadian Deprescribing Network ReCaD Réseau canadien pour la déprescription

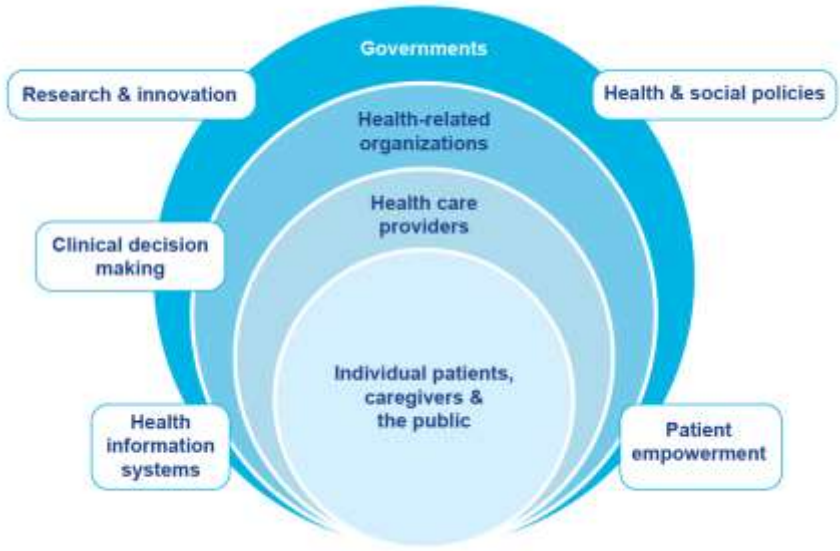
http://deprescribing.org/caden/

Less is More

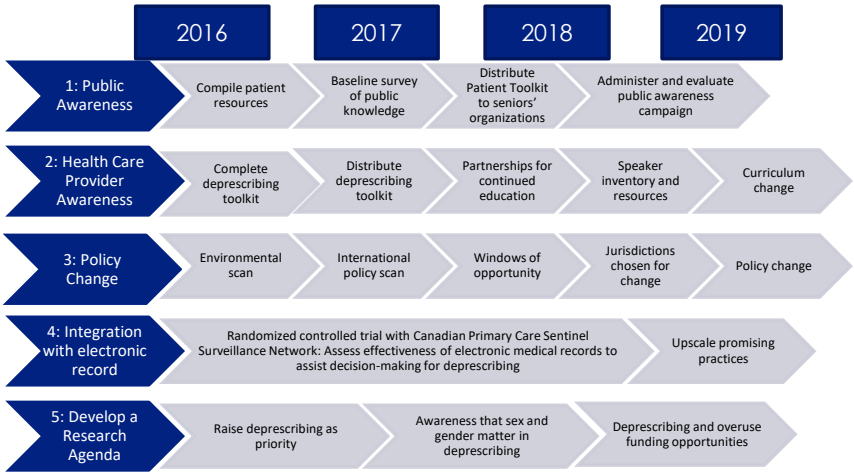
The Canadian Deprescribing Network

Canadian Deprescribing Network (CaDeN)[11]

- A network of patient advocates, health care professionals, researchers and health care leaders
- Optimize medication use and reduce harm through deprescribing
- Mission: to build capacity and catalyze action to promote deprescribing across Canada
- Two overarching goals:
  1. Reduce harm by curbing the prescription of inappropriate medications by 50% by 2020
  2. Promote health by ensuring access to safer pharmacological or non-pharmacological therapies



CaDeN's structure and timeline



Answers to self-assessment questions

1. Deprescribing should be tested by recommending to patients that they periodically choose to stop taking medications (T/F)

   FALSE
2. Evidence-based deprescribing guidelines consider harm of continuing a drug in addition to evidence for the harm/benefit of stopping a drug (T/F)

   TRUE
3. There are not enough tools available to help make decisions about deprescribing (T/F)

   FALSE

Take home messages

- Deprescribing is part of good prescribing – backing off when doses are too high or stopping medications no longer needed or where they are causing harm
- Evidence-based deprescribing guidelines help clinicians make decisions about when and how to reduce or stop medications safely
- Pharmacists have an important role in engaging patients in deprescribing discussions and helping prescribers make decisions about and monitoring impact of deprescribing

It takes a village…

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Contacts

- http://deprescribing.org/ (Evidence-based guideline algorithms, EMPOWER brochures, other resources e.g. Medstopper, CaDeN, research summaries etc.)
- For deprescribing guidelines research:
  - http://www.open-pharmacy-research.ca/research-projects/emerging-services/deprescribing-guidelines/
  - deprescribing@bruyere.org
  - Follow us on twitter: @Deprescribing
- For CaDeN: annie.webb@criugm.qc.ca and @DeprescribeNet

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