

Less is More: Introduction to Deprescribing

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About ISMP Canada


The Institute for Safe Medication Practices Canada (ISMP Canada) is an independent not-for-profit organization committed to reducing preventable harm from medications, and advancing medication safety in all healthcare settings.

Our aim is to heighten awareness of system vulnerabilities and facilitate system improvements.

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Analysis Outputs: Safety Bulletins





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Canadian Medication Incident Reporting and Prevention System

ISMP Canada Safety Bulletin

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Deaths Associated with Medication Incidents: Learning from Collaborative Work with Provincial Offices of the Chief Coroner and Chief Medical Examiner

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Background

Each Canadian province and territory has an Office of the Chief Coroner or Chief Medical Examiner responsible for investigating deaths from unexplained, unexpected, or unnatural causes. Within the scope of these investigations are deaths associated with medication incidents. In-depth analysis of information from these cases offers unique opportunities to identify underlying factors and generate recommendations to reduce the chances of similar incidents in the future. ISMP Canada has had a formal collaborative relationship with the Office of the Chief Coroner in one province since 2004, and has worked with other Offices on selected cases. A collaborative medication safety project undertaken with the Offices of the Chief Coroner or Chief Medical Examiner in 4 provinces provided an opportunity to test a coordinated process for analysis of medication incidents from several jurisdictions, and to share learning broadly. This bulletin describes selected findings from the project.

Methods and Findings

An analysis team from ISMP Canada, consisting of 3 pharmacists, a registered nurse, and a physician with experience as a coroner, reviewed 523 death cases (from the years 2007 to 2012) in which a medication incident was potentially associated with the death. Of

these, 122 cases were determined to have involved a medication incident and were abstracted into the ISMP Canada database for further analysis. In 115 of the 122 cases analyzed, the medication incident met the criteria for a category I incident (defined as an incident that may have contributed to or resulted in the patient's death).¹

Medications Involved

The medication classes most commonly involved in incidents associated with death were opioids, psychotherapeutic agents (e.g., benzodiazepines, antidepressants, neuroleptics), anticoagulants, cardiovascular agents, and insulin (Table 1).

Table 1: Medication classes most commonly involved in incidents associated with death

Medication Class	No. (%) of Incidents *
Total no. of category I cases	115 (100%)
Opioids	54 (47%)
Psychotherapeutic agents	28 (24%)
Anticoagulants	24 (21%)
Cardiovascular agents	11 (10%)
Insulin	8 (7%)

*Some incidents involved more than one medication class.

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Reminder - Check Your Prescription!

Has your pharmacy ever made a mistake with your medicine? If so, you're not alone. Mistakes with medicines can happen even when healthcare professionals have tried their best to prevent them. SafeMedicationUse.ca has received many reports from consumers who received the wrong medicine or the wrong dose of a medicine from a pharmacy.

Here is one example: A consumer had been taking trazodone 25 mg (one half of a 50 mg tablet) at bedtime. One day, when the consumer picked up a new supply of trazodone at the pharmacy, she received white tablets with "100" printed on one side and "Novo" on the other. The consumer knew that her tablets were usually peach in colour, but did not notice the difference until after her pharmacy had closed. Thinking that the appearance of the medicine might have changed because she had been given a different brand of trazodone, she decided to take half of one of the new tablets at bedtime. The next day, she called the pharmacist and was told that a mistake had been made. The consumer returned the medicine to the pharmacy and was given the correct strength of trazodone. The person who reported the mistake to SafeMedicationUse.ca stated that the white tablets contained 100 mg of trazodone. Fortunately, the consumer experienced no harm from taking one incorrect dose.

Ontario

CRITICAL Incident Learning

Improving quality in patient safety

Issue 4 April 2013

Designing Effective Recommendations

The reporting, investigation, and analysis of medication incidents are important elements in improving patient safety, but these efforts must be accompanied by effective strategies to mitigate the contributing factors leading to the incidents.

Distributed to:

- Chief executive officers
- Chiefs of staff
- Board chairs
- Quality/patient safety leads
- Directors of pharmacy

Advice for Hospitals

- Review patient safety incidents using a systematic, team-oriented approach, as described in the Canadian Incident Analysis Framework.¹
- Recognize that certain types of risk-mitigation strategies are more effective than others. Mitigation strategies can be ordered by hierarchy of effectiveness:²

**Low Leverage
LEAST EFFECTIVE**

Rules and policies
(e.g., policies to prohibit borrowing doses from other areas)

Education and information
(e.g., education sessions on high-alert medications)

**Medium Leverage
MODERATELY EFFECTIVE**

Simplification and standardization
(e.g., standardized paper or electronic order sets)

Reminders, checklists, double checks
(e.g., independent double checks for high-alert medications)

**High Leverage
MOST EFFECTIVE**

Forcing functions and constraints
(e.g., removal of a product from use)

Automation or computerization
(e.g., automated patient-specific dispensing)

HIERARCHY OF EFFECTIVENESS

Disclosures

- None to declare



Presentation Outline

- **Part 1:** Introduction to deprescribing
- **Part 2:** Approach to deprescribing: Guiding Principles
- **Conclusion**

A case example of deprescribing: Meet JH





Meet JH



- 77 year old female
- Lives at home with her son and daughter-in-law
- No Known Drug Allergies
- Past Medical History:
 - Hypertension
 - Hiatus Hernia
 - Depression
 - Insomnia
 - Iron deficiency anemia
 - Osteoarthritis
 - Osteopenia
 - Chronic constipation
- Chief Complaint:
 - Experiences frequent daytime sedation/dizziness and dry mouth
 - Suffers from chronic constipation



Meet JH



- Medications:

Medication Name	Dose	Indication
Amitriptyline	25 mg daily	Depression/insomnia
Rabeprazole (Pariet®)	20 mg daily	Hiatus Hernia
Acetaminophen (Tylenol®)	500 mg daily	Osteoarthritis
Valsartan (Diovan®)	80 mg daily	Hypertension
Ferrous gluconate	300 mg twice a day	Iron Deficiency Anemia
Standardized Sennosides (Senokot®)	17.2 mg daily	Laxative (Constipation)
Docusate Sodium (Colace®)	200 mg daily	Stool softener (Constipation)
Elemental Calcium 333 mg/ Magnesium oxide 167 mg	1 tablet twice daily	Osteopenia
Vitamin D2	50,000 units once weekly	Osteopenia



Is there an opportunity to optimize her medication regimen and improve her quality of life?

Is there a role for deprescribing in this case?



Part 1: **An Introduction to Deprescribing**



Deprescribing

- The process or trial of tapering, stopping, discontinuing, or withdrawing inappropriate, unnecessary, and potentially harmful drugs,
- Goal is to manage polypharmacy, decrease risks (adverse drug events), improve outcomes, and quality of life





Potential Benefits of Deprescribing

- ✓ Fewer falls and hospital admissions
- ✓ Decreased risks of adverse drug events and drug interactions
- ✓ Simplifies the patient's medication regimen; improved adherence
- ✓ Improved cognition
- ✓ Reduced healthcare and societal costs

What can pharmacists do?



- Identify candidates for deprescribing, especially during medication reviews
- Inform and educate patients regarding the benefits of deprescribing
- Collaborate with patients' prescriber(s) to implement deprescribing plan and recommendations
- Connect and follow-up with the patient regularly to monitor symptoms to determine progress or deterioration

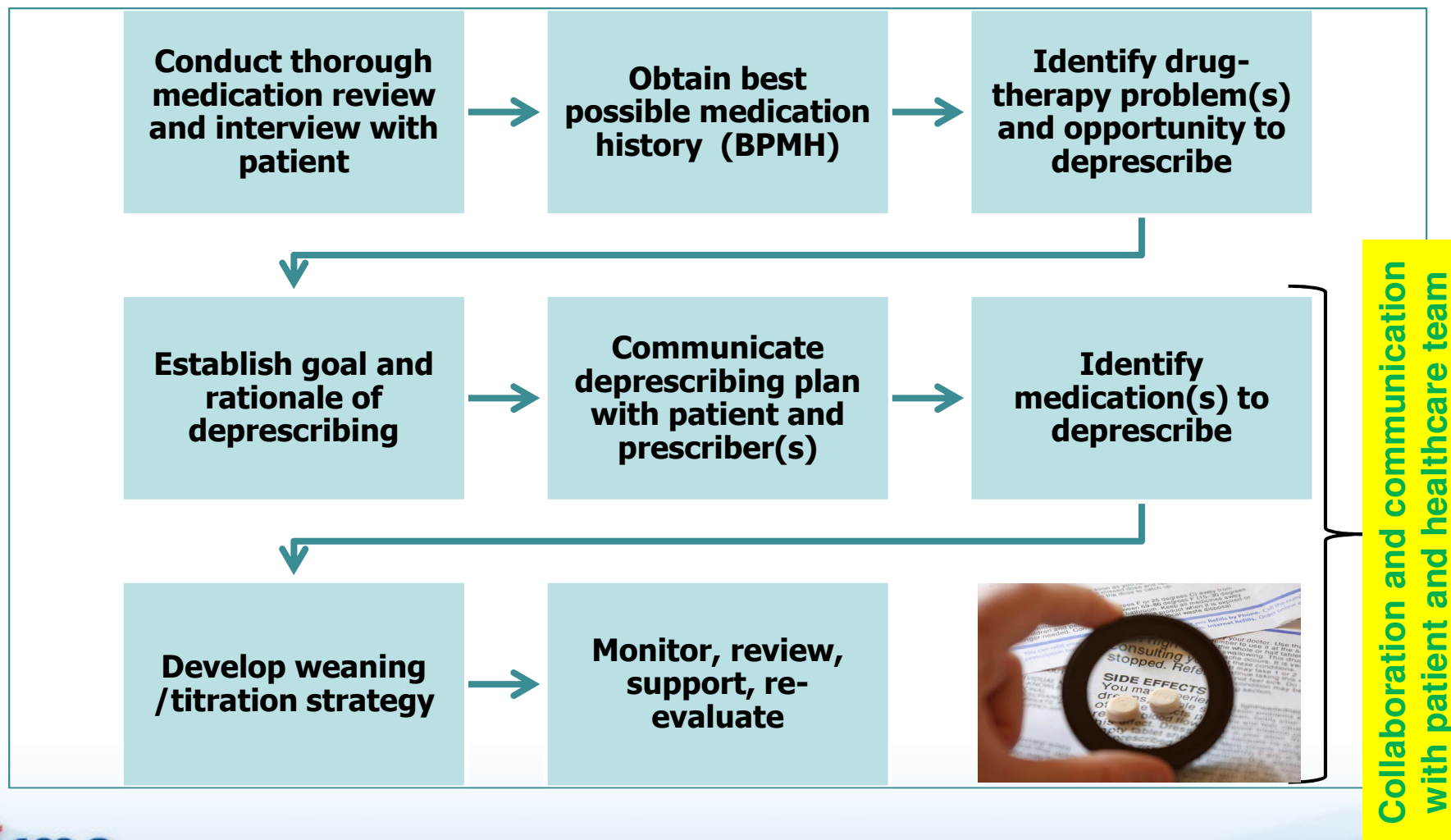




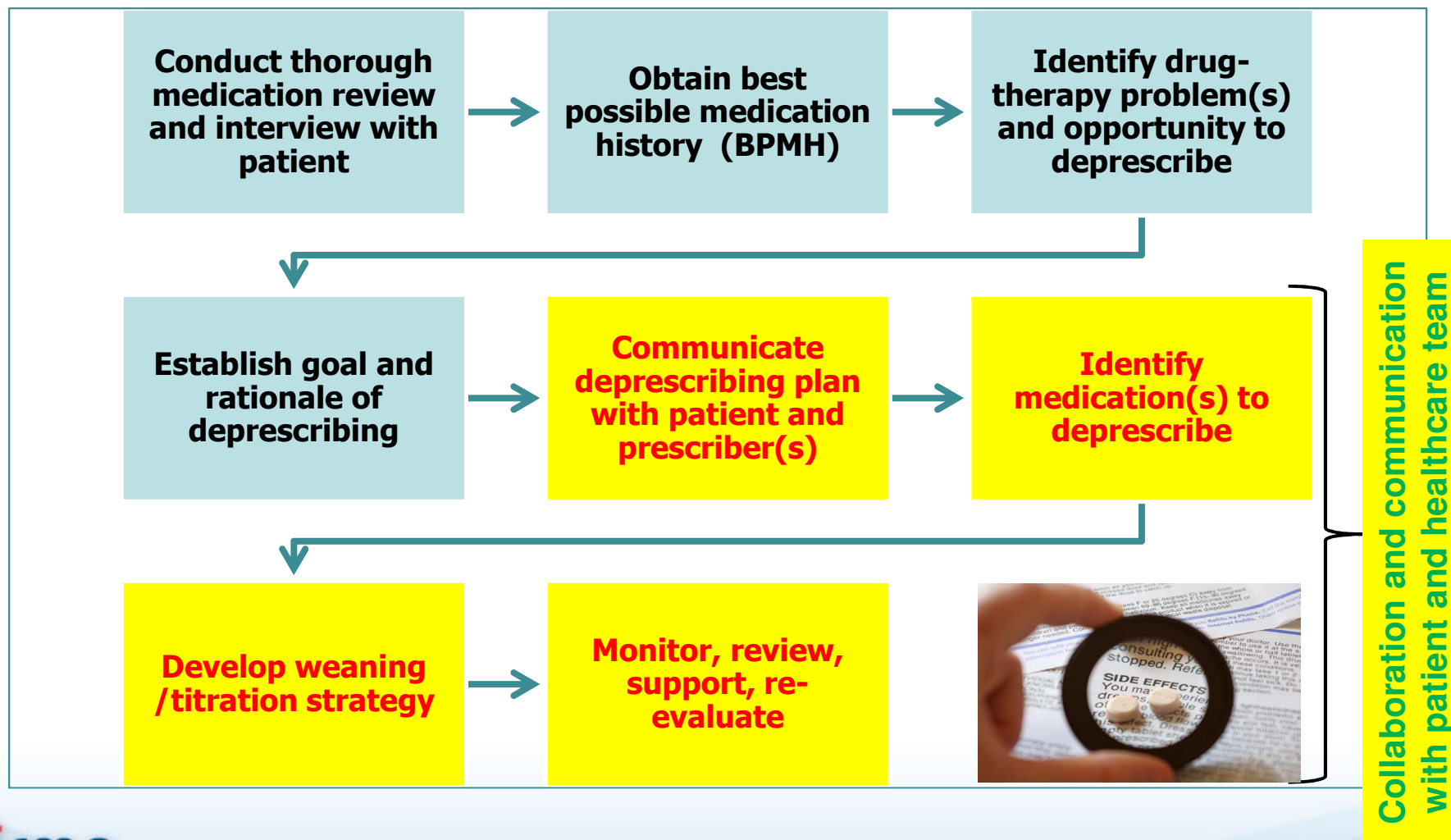
Part 2:
**Approach to
deprescribing:
Guiding
principles**



Deprescribing Process: Steps



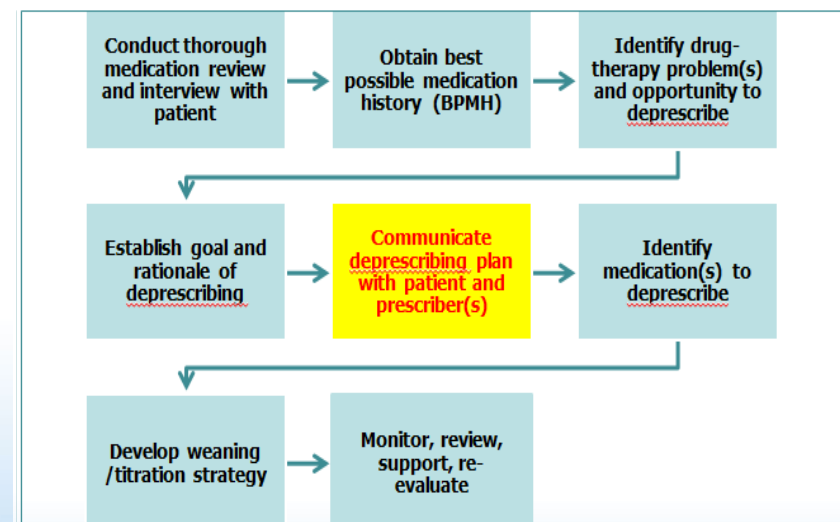
Deprescribing Process: Steps



Communicate deprescribing plan with patient and prescriber



- Gaining patient acceptance and buy-in is important for successful deprescribing
- Explain the reason for deprescribing and the risks of ongoing treatment
- Not abandonment or giving up, rather a part of patient-centered care, and that they will be supported throughout the process
- Confirm that it is a trial and the medication can be re-started if necessary
- Emphasize reductions in cost and pill burden
- Address any fears and questions

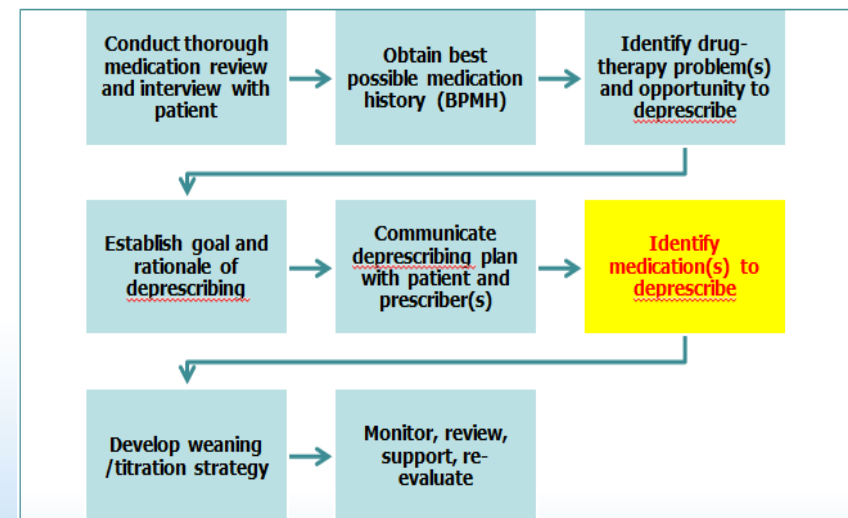


Identify medication(s) to deprescribe



- Withdraw one medication at a time; prioritize medications according to those that:
 - × Cause adverse effects; risks outweigh the benefits of therapy
 - × Medications that are not being used
 - × Have no indication
 - × Being used irregularly for non-life-threatening conditions
 - × Used to combat side effects of another drug

- Consult appropriate resources (Beers, STOPP Criteria etc.)





Drug Effectiveness Summary: Numbers Needed to Treat (NNT)

Drug effectiveness summary; Numbers needed to treat⁵

Indication	NNT per annum	To do what	Notes
ACE Inhibitors			
Elevated Vascular Risk [Normal LV]	280	Prevent one death [all causes]	Trial ran for 5 years
Impaired LV Function-mild/moderate	30	Prevent one death [all causes]	Likely symptomatic benefit
Combination Therapy including ACE			
ACE + Indapamide	55	Prevent one stroke	Trial ran for 5 years
Secondary Prevention post MI > 80 yrs [ACE+ BB +ASP+ STAT]	33	Prevent one Death	
ACE + Beta blocker for impaired LV	14	Prevent one death	Likely symptomatic benefit
Impaired LV Mild /moderate ACE + BB	15	Prevent one Death	Likely symptomatic benefit
Impaired LV Severe ACE + BB + Spiro	7	Prevent one Death	Likely symptomatic benefit
ASPIRIN Primary Prevention	Enormous	No longer recommended	
ASPIRIN Post Stroke/ TIA	100	Prevent one stroke or MI or Vascular Death	
DYPYRIDAMOLE In addition to ASPIRIN post stroke/TIA	100	Prevent one vascular event	BNF caution in cardiac disease
CLOPIDOGREL post stroke or TIA	Equivalent to Dypridamole + Aspirin	Prevent one vascular event	
ATRIAL FIBRILLATION			
AF + another risk factor WARFARIN v ASPIRIN	40	Prevent one Stroke- no difference in mortality	
AF (Secondary Prevention after Stroke) WARFARIN v ASPIRIN	16	Prevent one stroke	
ASPIRIN	No effect		
HYPERTENSION	BP > 140/90 trial predominantly systolic hypertension		
Cardiovascular morbidity and mortality >80 yrs			
Low Risk	80	Avoid one cardiovascular event	2 years for effect
High Risk [Diabetes, vascular disease]	32	Avoid one cardiovascular event	2 years for effect
Cerebrovascular morbidity and mortality > 80 yrs	122	Avoid one cerebrovascular event	2 years for effect
Cardiovascular morbidity and mortality > 60yrs			
Low Risk	107	Avoid one cardiovascular even event	4.5 years for effect
High Risk [Diabetes, vascular disease]	40	Avoid one cardiovascular event	4.5 years for effect
HYPERTENSION (Tayside Day Hospital cohort)	36	Prevent one death	NNT 30 if also Cardiovascular Disease



Develop weaning strategy: General Tapering Recommendations

- Determine if tapering is necessary
- Tapering can take days, weeks, or months
- Considerations: Age, comorbidities, other medications, pharmacokinetics of drug, reason for taper, consequences of withdrawal
- Consult drug information resources for guidelines regarding tapering schedules and discontinuation syndromes
- Possible strategies:
 - Halve the dose and monitor
 - Reduce dose by 25% at weekly or longer intervals and monitor

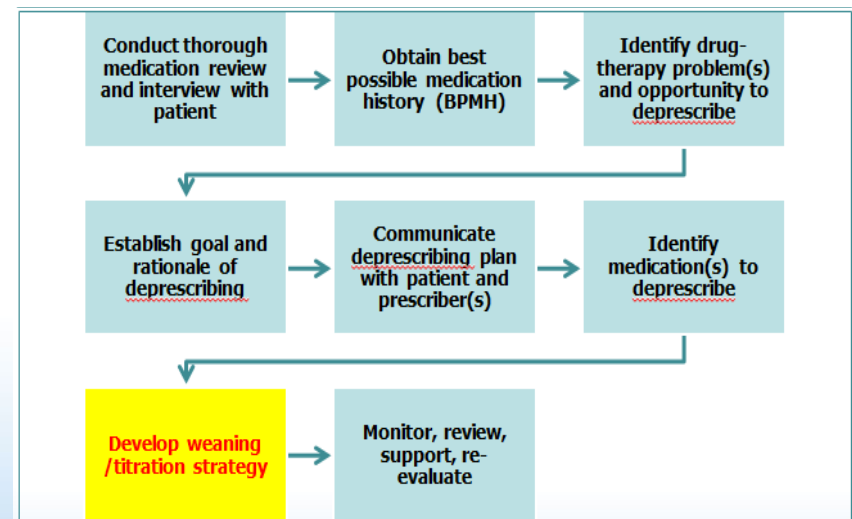




Table 2 Medications commonly associated with discontinuation syndromes which require slow weaning

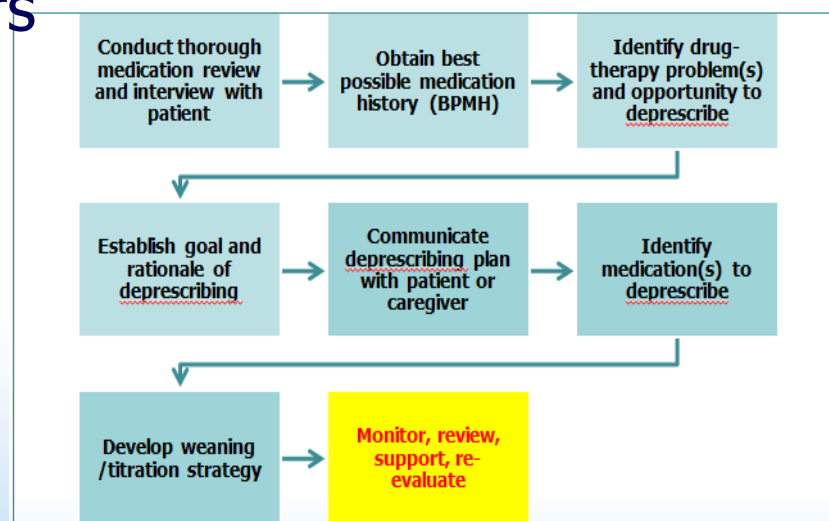
Medication	Type of discontinuation syndrome	Clinical manifestations
α -Blockers	W, R	Agitation, headache, hypertension and palpitations
ACE-inhibitors	D	Heart failure and hypertension
Antianginal agents	D	Angina
Anticonvulsants	W, D	Anxiety, depression and seizures
Antidepressants	W, D	Akathisia, anxiety, chills, coryza, gastrointestinal distress, headache, insomnia, irritability, malaise, myalgia and depression
Antiparkinsonian agents	W, D, R	Hypotension, psychosis, pulmonary embolism, rigidity and tremor
Antipsychotic	W	Dyskinesias, insomnia, nausea and restlessness
Anticholinergics	W	Anxiety, nausea, vomiting, headache and dizziness
Baclofen	W, R	Agitation, anxiety, confusion, depression, hallucinations, hypertonia, insomnia, mania, nightmares, paranoia and seizures
Benzodiazepines	W	Agitation, anxiety, confusion, delirium, insomnia and seizures
β -Blockers	W, D	Angina, anxiety, hypertension, acute coronary syndrome and tachycardia
Corticosteroid	W, R, D	Anorexia, hypotension, nausea, weakness, hypothalamic–pituitary–adrenal axis suppression and inflammatory states
Digoxin	D	Heart failure and palpitations
Diuretic	D	Heart failure and hypertension
Narcotic analgesia	W	Abdominal cramping, anger, anxiety, chills, diaphoresis, diarrhoea, insomnia and restlessness
NSAIDs	D	Recurrence of gout and arthritis

D, disease recrudescence; NSAID, non-steroidal anti-inflammatory drug; R, rebound; W, withdrawal.



Monitor, review, and follow-up

- Close and frequent monitoring of patients undergoing a deprescribing regimen is critical to ensure success and prevent potential adverse effects.
- At each visit, monitor for:
 - Withdrawal symptoms, including rebound symptoms
 - Signs of disease recurrence
- Follow-up should occur 24 hours to 7 days after altering a medication



A case example of deprescribing: Let us revisit JH





Revisit JH



- Medications:

Medication Name	Dose	Indication
Amitriptyline	25 mg daily	Depression/anxiety
Rabeprazole (Pariet®)	20 mg daily	Hiatus Hernia
Acetaminophen (Tylenol®)	500 mg daily	Osteoarthritis
Valsartan (Diovan®)	80 mg daily	Hypertension
Ferrous gluconate	300 mg twice a day	Iron Deficiency Anemia
Standardized Sennosides (Senokot®)	17.2 mg daily	Laxative (Constipation)
Docusate Sodium (Colace®)	200 mg daily	Stool softener (Constipation)
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Revisit JH - Assessment



- JH is experiencing adverse effects secondary to amitriptyline therapy and would benefit from an alternative antidepressant/sedative agent
- Amitriptyline:
 - Classified as a potentially inappropriate medication in the elderly by several guidelines (Beer's Criteria, STOPP tool, etc.), whereby risks outweigh benefits
 - Associated with anticholinergic side effects including falls, impaired cognition, **constipation**, **dizziness**, blurred vision, etc.
 - Implicated in prescribing cascade that led to addition of laxatives and stool softener





Revisit JH – Plan & Monitoring



- Plan (after contacting and collaborating with the prescriber)
 - Amitriptyline discontinued, initiated trazodone (no washout/taper/titration period needed)
 - Initiate trazodone 50 mg once daily in the evening
- Monitoring/follow-up:
 - Symptoms of daytime dizziness and sedation beginning to improve
 - Satisfactory response to and tolerating the new trazodone
 - Constipation symptoms improved over time after discontinuation of amitriptyline
- Senokot® (Sennosides) decreased to 1 tablet daily, then prn
- Colace® (Docusate Sodium) discontinued



Revisit JH

- Medications:

Medication Name	Dose	Indication
Trazodone	50 mg daily	Depression/insomnia
Rabeprazole (Pariet)	20 mg daily	Hiatus Hernia
Acetaminophen (Tylenol)	500 mg daily	Osteoarthritis
Valsartan (Diovan)	80 mg daily	Hypertension
Ferrous gluconate	300 mg twice a day	Iron Deficiency Anemia
Standardized Sennosides	8.6 mg daily, PRN	Constipation
Elemental Calcium 333 mg/ Magnesium oxide 167 mg	1 tablet twice daily	Osteopenia
Vitamin D2	50,000 units once weekly	Osteopenia

Practical Deprescribing Resources



Name of Tool	Description
Beers Criteria	List of drugs of concern in geriatric care and associated with quality of evidence and strength of recommendation
STOPP (Screening Tool of Older Person's Potentially inappropriate Prescriptions)	Screening tool with 65 indicators; focuses on drug-drug and drug-disease interactions
START (Screening Tool to Alert doctors to Right Treatment)	Screening tool to identify possible prescribing omissions
Anticholinergic Risk Scale (ARS)	Ranked categorical list of commonly prescribed medications with anticholinergic potential
ARMOR (Assess, Review, Minimize, Optimize, Reassess)	Algorithm that prompts review of drug classes, interactions, functional status, systems review and reassess status
Geriatric-Palliative Method	Consensus-based flowchart to reduce polypharmacy
Prescribing Optimization Method	6 questions to guide general practitioners to address under-treatment, adherence, inappropriate drugs, interactions, and dosing
Choosing Wisely Canada	Management recommendations from the American and Canadian Geriatrics Societies
IPET (Improving Prescribing in the Elderly)	A list of the 14 most prevalent prescription errors identified from a list of inappropriate prescription instances according to a Canadian consensus panel
Deprescribing.org	Website with the aim of sharing and exchanging information and resources regarding deprescribing approaches and research with the public, healthcare providers and researchers
Medstopper.com	An online tool to aid clinicians and patients make informed decisions about reducing or stopping medications. After entering a list of medications a patient is taking, the tool sequences the drug(s) from "more likely to stop" to "less likely to stop". Suggestions for how to taper the medication are also provided.



Conclusion & Summary

- Pharmacists play an important role in deprescribing
- Potential inappropriate medications can be successfully stopped or tapered down without generating harm
- Deprescribing can be a long and complicated process; however:
- It can potentially minimize and avoid adverse drug events, produce a better quality of life, and enable savings to the health care system





Thank you

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References

- Best Practice Advocacy Centre New Zealand (2010). A practical guide to stopping medicines in older people. *Best Pract J*, 27, 10–23.
- Frank, C., & Weir, E. (2014). Deprescribing for older patients. *CMAJ*, 186(18), 1369–1326.
- Janiszewski, C., & Boivin, M. (2015, March). Deprescribing: Less is more. *RxPassport Pharmacy Newsletter*, 1–5. Retrieved Dec 28, 2016 from http://www.rxbriefcase.com/info/email/studentenl_rxpp_march.html?utm_source=rxblog&utm_medium=rxblog&utm_term=claudia&utm_content=deprescribing&utm_campaign=rxblog
- NHS Southern Derbyshire CCG Medicines Management Team (2013). *Deprescribing: A practical guide*. Retrieved from http://www.derbyshiremedicinesmanagement.nhs.uk/assets/Clinical_Guidelines/clinical_guidelines_front_page/Deprescribing.pdf
- O'Mahoney D., Gallagher P.F. (2009). Inappropriate prescribing in the older population: need for new criteria. *Age and Ageing*, 37, 138 – 141
- Patterson, S. M., Cadogan, C. A., Kerse, N., Cardwell, C. R., Bradley, M. C., Ryan, C., & Hughes, C. (2014). Interventions to improve the appropriate use of polypharmacy for older people. *Cochrane Systematic Reviews*, 10, 1–117.
- Reeve, E., To, J., Hendrix, I., Shakib, S., Roberts, M. D., & Wiese, M. D. (2013). Patient barriers to and enablers of deprescribing: A systematic review. *Drugs Aging*, 30(10), 793–807.
- Reeve, E., Shakib, S., Hendrix, I., Roberts, M. S., & Wiese, M. D. (2014). The benefits and harms of deprescribing. *Medical Journal of Australia*, 201(7), 1–4.
- Richardson, T., & Emberley, P. (2013). The role of pharmacists in deprescribing. *The Translator*, 7(3), 1-4.
- Schuling, J., Gebben, H., Veehof, L. J. G., & Haaijer-Ruskamp, F. M. (2012). Deprescribing medications in very elderly patients with multimorbidity: the view of Dutch GPs. A qualitative study. *BMC Fam Pract*, 13, 56.
- Scott, I. A., Gray L. C., Martin, J. H., Pillans, P. I., & Mitchell, C. A. (2013). Deciding when to stop: towards evidence-based deprescribing of drugs in older populations. *Evid Based Med*, 18(4), 121–124.
- Thompson, W., & Farrell, B. (2013). Deprescribing: What is it and what does the evidence tell us? *CJHP*, 6(3), 201-202.
- Woodward, M. C. (2003). Deprescribing: achieving better health outcomes for older people through reducing medications. *J Pharm Pract Res*, 33, 323–328.