Transitions of Care Best Practices: Moving the Needle on De-Prescribing and Patient Safety in Post-Acute Care Settings

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Learning Objectives

1. Describe gaps in current transition of care (TOC) practices and the top 5 barriers to closing those gaps at the system, provider, and patient level
2. Describe development and implementation of evidence-based transitions of care practices that address these barriers to improve patient safety outcomes
3. Apply medication safety principles and evidence-based solutions to patient cases to optimize patient outcomes

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Outline/Agenda

- The Problem
  - Gaps: communication, education, medications
  - Barriers: provider, teams, patient, system
- Solutions – Communication and Education
  - Evidence-based programs
  - Implementation experience
- Solutions – Medications and Deprescribing
  - Evidence and tools
  - Application practice

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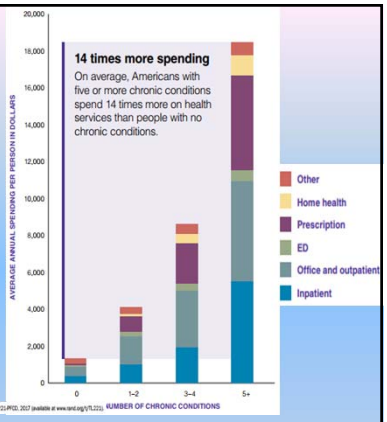
Gaps in TOC

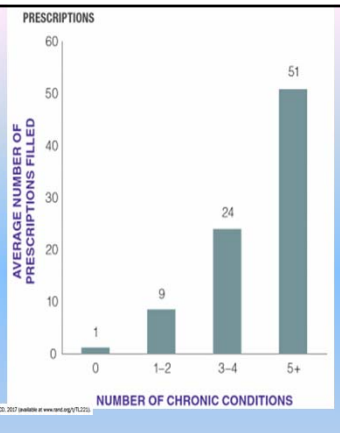
- Nearly 25% of patient experience complicated care transitions
  - 23% of patients discharged to a SNF
  - 19% readmitted within 30 days
- Estimated 60% of medication errors occur during transition, resulting in more
  - Readmissions
  - ER visits
  - Post-acute stays
- Almost 20% of patients experience AE within 3 weeks of discharge
- Medication errors each year:
  - Harm 1.5 million people
  - Cost nearly $3.5 billion

http://www.ntocc.org/Portals/0/PDF/Resources/PolicyPaper.pdf

Health Care Spending by Number of Chronic Conditions (2014)



Annual Prescription Refills by Number of Chronic Conditions (2014)



Slide 4

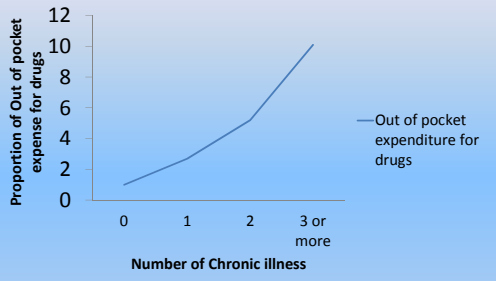
a1 Statement is confusing..should it be Nearly 25% of patient's experience
admin011, 7/24/2018

a2 Need references for these statistics.
admin011, 7/24/2018

a3 References needed for these statistics
admin011, 7/24/2018

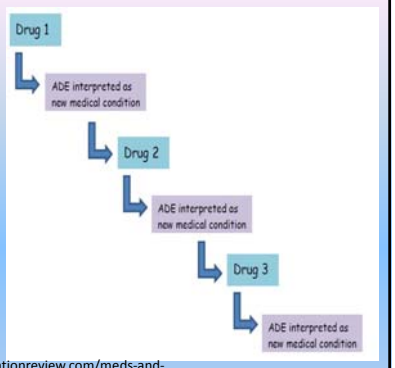
a4 Please include what AE stands for.
admin011, 7/24/2018

Multimorbidity, more medicines, more costs



Multimorbidity and out-of-pocket expenditure on medicines: a systematic review.
Grace Sum, Thomas Hone, Rifat Atun, Christopher Millett, Marc Suhrcke, Ajay Mahal, Gerald Choon-Huat Koh, John Tayu Lee BMJ Global Health Feb 2018, 3 (1) e000505; **DOI:** 10.1136/bmjgh-2017-000505

Prescription Cascade



ADE = Adverse Drug Effects

http://www.askapharmmedicationreview.com/meds-and-the-elderly.html

TOC Barriers – System

- Communication infrastructure
- Culture, time, resources
- Standardized procedures
- Communication infrastructure
- Accountability breakdowns
- Resource availabilities at next setting
- Discharge education

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http://www.ihpm.org/pdf/COPD81752MHC_AllPatientCOPDTran_Readers1up_PDF.pdf
https://www.accp.com/docs/positions/whitePapers/PubProfReltns2010Paper_Final.pdf
https://www.jointcommission.org/assets/1/18/Hot_Topics_Transitions_of_Care.pdf

TOC Barriers – Provider

- Appropriate medical follow-up
- Inter-institutional provider communication
- Physician/pharmacist availability in LTC
- Misaligned expectations
- Subpar information for patients
- Non-patient-centered transition planning
- Discharge summary challenges

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http://www.ihpm.org/pdf/COPD81752MHC_AllPatientCOPDTran_Readers1up_PDF.pdf
https://www.accp.com/docs/positions/whitePapers/PubProfReltns2010Paper_Final.pdf
https://www.jointcommission.org/assets/1/18/Hot_Topics_Transitions_of_Care.pdf

TOC Barriers – Patient

- Health literacy
- Special populations
- Polypharmacy
- Multimorbidity

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http://www.ihpm.org/pdf/COPD81752MHC_AllPatientCOPDTran_Readers1up_PDF.pdf

Barriers to Deprescription in PA/LTC setting

patient and family

- *"I have to ask my primary doctor after I finish my rehab"*
- *"My neurologist started this medicine"*
- *"I have been taking it for long time"*
- *"What is the alternative?"*
- *"It worked for the night shift's CNA's mom, why can't I take it? The aide said I should ask for this medicine"*
- *"My daughter said I must take this medicine"*

Barriers to Deprescription in PA/LTC setting

provider level

- *"I don't know this patient"*
- *"I'm not the PCP"*
- *"The specialist started this medication"*
- *"The family wants it"*
- *"Insurance covers it, so why not?"*
- *"They have been taking it for 35 years"*
- *"But the symptom is still there"*
- *"The guidelines say this patient should be on this medication"*

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Barriers to Deprescription in PA/LTC setting

interdisciplinary team level

- *"That's the provider's role"*
- *"I dispense what order is written, I don't question"*
- *"I don't know what my role is in deprescription"*

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Barriers to Deprescription in PA/LTC setting

system and policy level

- *Limitations on PA/LTC specific guidelines*
- *Lack of comprehensive approach to deprescription*

What are strategies to success despite many barriers?

TOC Communication and Education: Solutions

- Care Transitions Intervention (CTI)
- Transitional Care Model (TCM)
- Better Outcomes for Older Adults through Safe Transitions (BOOST)
- Project RED (Re-Engineered Discharge)
- Multi-Center Medication Reconciliation Quality Improvement Study (MARQUIS)

TOC Communication and Education: Solutions

- Interprofessional teams
- Shared accountability at all transitions
- Comprehensive planning and risk assessment throughout stay
- Standardized transition plans, procedures, forms
- Timely follow-up, support, and coordination (when leaving care setting)
- RCA for 30-day readmissions
- Evaluation of measures
- Hospitalists and SNFists professions growing – need to talk (tie to warm hand-off tool)

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TOC Communication and Education: Solutions

System	Provider	Patient
• Interprofessional teams • Evaluation of measures • Care coordination • Comprehensive planning and risk assessment • Standardized transition plans, procedures, forms • RCA for 30-day readmissions	• Shared accountability at all transitions • Timely follow-up, support, and coordination • Proper medication management	• Health coaching and self management • Education and engagement

https://www.jointcommission.org/assets/1/18/Hot_Topics_Transitions_of_Care.pdf
http://www.thpm.org/pdf/COPD81753MHC_AllPatientCOPDTwn_ReadersSup_PDF.pdf

Inpatient Communication/Patient Solution Examples

Health professions students	Pharmacy support	Risk-stratify patients

SNF Communication/Patient Solution Examples

KINGSTON CARE CENTER of FORT WAYNE

- Patient and Family Engagement
- Consistent Patient Education
- Face-to-face with PCP
- Warm hand-off from acute care

SNF Communication/Patient Solution Examples (contd.)

Lessons learned from IU-Geriatrics Extended Care group (IU Health hospital/Eskenazi health and skilled nursing facilities)

- Communication
- Dashboard
- Feedback
- Safe Discharge

Where are the opportunities to intervene?

Slide 23

a5 Hospital, Eskenazi Health
admin011, 7/24/2018

Deprescription in PA/LTC: When, How and by whom?

- Admission (Transitions of Care from a Hospital or other provider)
- Medication Reconciliation - Sources and Review of Medication List (Admission Nurse, Consultant Pharmacist, Primary Care Physician, Medical Director, Family meeting, Community Pharmacy)
- Entering medications in facility EMR and medication reviews in EMR
- Interdisciplinary team meeting and team members' rounds
- Review of medicines by consultant pharmacist
- Discharge planning and discharge team

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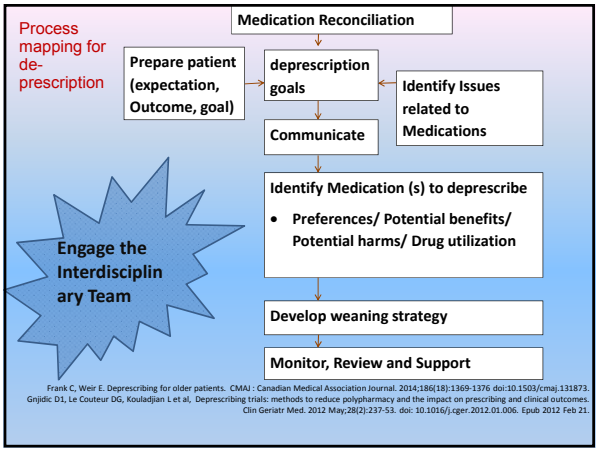

Frank C, Weir E. Deprescribing for older patients. CMAJ : Canadian Medical Association Journal. 2014;186(18):1369-1376 doi:10.1503/cmaj.131873. Gnjidic D1, Le Couteur DG, Kouladjian L et al, Deprescribing trials: methods to reduce polypharmacy and the impact on prescribing and clinical outcomes. Clin Geriatr Med. 2012 May;28(2):237-53. doi: 10.1016/j.cger.2012.01.006. Epub 2012 Feb 21.

Strategies

Strategies from literature review (N=41):
• Education Based Strategy (11)
• Education Outreach Initiatives (7)
• Interdisciplinary Team (9)
• Pharmacist driven review and intervention (8)
• Specialist involvement (geriatric psychiatrist, psychiatrist, infectious disease specialist) (4)
• Physician driven (2)

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Enhanced Interdisciplinary Team Work for Deprescription

Images from: a) http://startupmanagement.org/2017/12/26/13-questions-for-the-blockchain-as-we-enter-2018
b)https://www.myoptimind.com/describing-your-teamwork-skills-heres-what-you-should-do//

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Ingredients of Team work

Think of a sports team and health care team

In these two settings what are the similarities and differences on following:

- role clarity
- trust and confidence
- the ability to overcome adversity
- the ability to overcome personal differences
- collective leadership

1. Leadership and management
2. Communication
3. Personal rewards, training and development
4. Appropriate resources and procedures
5. Appropriate skill mix
6. Climate
7. Individual characteristics
8. Clarity of vision
9. Quality and outcomes of care
10. Respecting and understanding roles

Brennan Bosch and Holly Mansell, Interprofessional collaboration in health care Lessons to be learned from competitive sports Can Pharm J (Ott). 2015 Jul; 148(4)
Nancarrow et al. Human Resources for Health 2013, 11:19
http://www.human-resources-health.com/content/11/1/19

What's in your toolbox?

Tools:

- **BEERS Criteria**
- **STOPP and START**
- **ACB Scale**
- **MAI**
- **ARMOR**
- **Clinical Decision Support System**

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STOPP (Screening Tool of Older Persons' Prescriptions)
START (Screening Tool to Alert doctors to Right Treatment)
ACB (Anticholinergic Burden)
MAI (Medication Appropriateness Index
ARMOR (stands for Assess, Review, Minimize, Optimize, Reassess

BEERS Criteria – how to use it?

Medications in the AGS 2015 Beers Criteria are potentially inappropriate, not definitely inappropriate.

The AGS 2015 Beers Criteria should be a starting point for a comprehensive process of identifying and improving medication appropriateness and safety.

Therapeutic Category/Drug(s)	Rationale	Recommendation	Quality of Evidence	Strength of Recommendation
Alpha1 blockers Doxazosin Prazosin Terazosin	High risk of orthostatic hypotension; not recommended as routine treatment for hypertension; alternative agents have superior risk–benefit profile.	Avoid use as an antihypertensive.	Moderate	Strong

American Geriatrics Society, www.geriatricscareonline.org
Steinman MA, Beizer JL, DuBeau CE et al. How to Use the AGS 2015 Beers Criteria – A Guide for Patients, Clinicians, Health Systems, and Payors. *Journal of the American Geriatrics Society*. 2015;63(12):e1-e7. doi:10.1111/jgs.13701.

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Beers Criteria: Application of Key Principles for Clinicians

- Don't let Beers Criteria distract you from closely attending to other elements of prescribing that are not addressed by the criteria.
- These include
  - Other high-risk medications (e.g. warfarin, hypoglycemics)
  - Medication adherence
  - Unnecessary medication use
  - Underuse of medications

Steinman MA, Beizer JL, DuBeau CE et al. How to Use the AGS 2015 Beers Criteria – A Guide for Patients, Clinicians, Health Systems, and Payors. *Journal of the American Geriatrics Society*. 2015;63(12):e1-e7. doi:10.1111/jgs.13701.

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Contents of **STOPP** and **START** criteria

STOPP

Physiological System	Number of criteria
Cardiovascular system	17
Central nervous system	13
Gastro-intestinal system	5
Musculoskeletal system	8
Respiratory system	3
Urogenital system	6
Endocrine system	4
Drugs that adversely affect fallers	5
Analgesics	3
Duplicate drug classes	1

START

Physiological System	Number of criteria
Cardiovascular system	8
Respiratory system	3
Central nervous system	2
Gastro-intestinal system	2
Musculoskeletal system	3
Endocrine system	4

STOPP / START

- 53 STOPP/START criteria were deemed to be compatible with the U.S. NH setting and measurable using data from electronic NH databases
- Twenty-four criteria were deemed as most relevant, consisting of 22 measures of potentially inappropriate medications and 2 measures of underused medications

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Khodyakov D, Ochoa A, Olivieri-Mui BL et al. Screening Tool of Older Person's Prescriptions/Screening Tools to Alert Doctors to Right Treatment Medication Criteria Modified for U.S. Nursing Home Setting. Am Geriatr Soc. 2017 Mar;65(3):586-591. doi: 10.1111/jgs.14689. Epub 2016 Dec 23.

The Anti Cholinergic Burden (ACB) Scale

- ACB scale can be used to ascertain anticholinergic burden of patient in nursing home
- Easy tool to alert provider on the anticholinergic burden
- Each one point increase in the ACB total score, has been correlated with a 26% increase in risk of death, and a decline in MMSE score of 0.33 points over 2 years.

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http://www.agingbraincare.org/uploads/products/ACB_scale_-_legal_size.pdf

Kolanowski A, Fick DM, Campbell J et al. A preliminary study of anticholinergic burden and relationship to a quality of life indicator, engagement in activities, in nursing home residents with dementia. J Am Med Dir Assoc. 2009 May;10(4):252-7. doi: 10.1016/j.jamda.2008.11.005. Epub 2009 Jan 9.

ACB Scale

- Possible Anticholinergics = 1
- Definite Anticholinergic score = 2 (moderate) and 3)severe)
- Each definite anticholinergic may increase risk of cognitive impairment by 46% over 6 years
- Each one point increase in ACB total score has been correlated with a 26% increase in risk of death

http://www.agingbraincare.org/

ACB Score 1 (mild)	ACB Score 2 (moderate)	ACB Score 3 (severe)
Alimemazine	Amantadine	Amitriptyline
Alprazolam	Belladonna alkaloids	Amoxapine
Alverine	Carbamazepine	Atropine
Atenolol	Cyclobenzaprine	Benztropine
Beclometasone dipropionate	Cyproheptadine	Chlorpheniramine
Bupropion hydrochloride	Loxapine	Chlorpromazine
Captopril	Meperidine	Clemastine
Chlorthalidone	Methotrimeprazine	Clomipramine
Cimetidine hydrochloride	Molindone	Clozapine
Clorazepate	Oxcarbazepine	Darifenacin
Codeine	Pethidine hydrochloride	Desipramine
Colchicine	Pimozide	Dicyclomine
Dextropropoxyphene		Diphenhydramine
Diazepam		Doxepin
Digoxin		Flavoxate
Dipyridamole		Hydroxyzine
Disopyramide phosphate		Hyoscyamine
Fentanyl		Imipramine
Fluvoxamine		Medicine
Furosemide		Nortriptyline
Haloperidol		Orphenadrine
Hydralazine		Oxybutynin
Hydrocortisone		Paroxetine
Isosorbide preparations		Perphenazine
Loperamide		Prazosine
Metoprolol		Promazine
Morphine		Promethazine
Nifedipine		Propentheline
Prednisone/Prednisolone		Pyrilamine
Quinidine		Scopolamine
Ranitidine		Thioridazine (withdrawn)
Theophylline		Tolterodine
Timolol maleate		Trifluoperazine
Trazodone		Trihexyphenidyl
Triamterene		Trimipramine
Warfarin		

Medication Appropriateness Index

- Is there an indication for the drug?
- Is the medication effective for the condition?
- Are the dosage correct?
- Are the directions correct?
- Are the directions practical?
- Are there clinically significant drug-drug interactions?
- Are there clinically significant drug-disease interactions?
- Is there unnecessary duplication with other drugs?
- Is the duration of therapy acceptable?
- Is this drug the lease expensive alternative compared to others of equal utility?

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Hanlon JT, Schmader KE. The Medication Appropriateness Index at 20: Where it Started, Where it has been and Where it May be Going. *Drugs & aging*. 2013;30(11):10.1007/s40266-013-0118-4. doi:10.1007/s40266-013-0118-4.

ARMOR – A tool to Evaluate Polypharmacy in Geriatric Patients

- **A**ssess
- **R**eview
- **M**inimize
- **O**ptimize
- **R**eassess

RazaHaque, M.D. (2009). ARMOR: A Tool to Evaluate Polypharmacy in Elderly Persons. Annals of Long-Term Care, 17(6).

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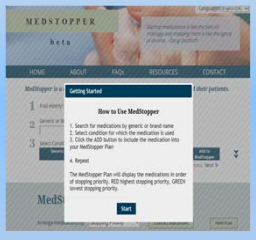
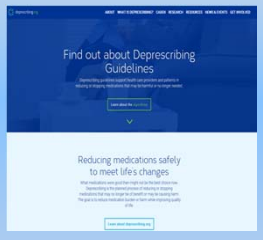
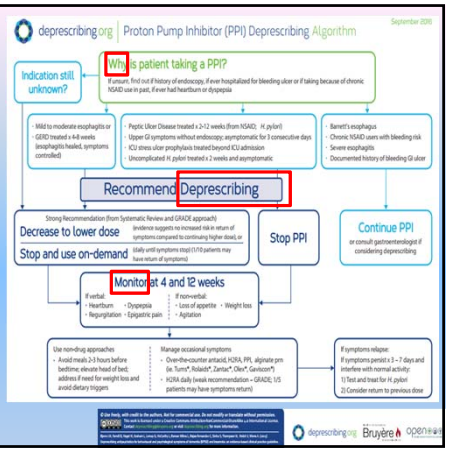
Clinical Decision Support

- www.medstopper.com
- https://deprescribing.org/





PPI Deprescription Algorithm



Medication Safety through transitions of care

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Case 1

- 78 years old female, a long term care patient in nursing home was transferred to hospital for fever, and signs of sepsis. PMH: Dementia, hypertension, diabetes, falls, hypothyroidism, constipation
- She was diagnosed with aspiration pneumonia and delirium while in hospital.
- She returns after a week in hospital, and has now completed antibiotics
- She is more debilitated, diet is now downgraded due to some dysphagia, speech therapy is following. In terms of mental status: no agitation, but she is more sleepy and appeared worn out all the time.
- Other history: In a month, she had two unwitnessed falls without injuries. Other histories: former smoker, former drinker, nephew is guardian.

Case 1 medication list

- Acetaminophen 650 mg po q 6 hour prn fever/pain,
- Amlodipine 10 mg daily
- Atorvastatin 80 mg po daily
- Carvedilol 25 mg po bid
- Docusate 100 mg po bid
- Hydrochlorothiazide 12.5 mg po daily
- levothyroxine 50 mcg po daily
- Insulin glargine 30 U s/c at bed time
- Insulin lispro 4 U s/c TID with meals
- Lisinopril 30 mg po daily
- Memantine 5 mg po bid
- Risperidone 1 mg po bid
- Multivitamin 1 tablet po once daily

Antipsychotic was started when she was admitted in hospital for hyperactive delirium

Case 1 continues

- Wt 140lb, BP 100/50, HR 90, T 97.2F, RR 16, B sugar 168 mg/dl (range: 80-400)
- Labs: Creatinine CrCl 33 ml/min (CG), Vit D 30.2, K 3.8, Na 143, Creatinine 1.13, BUN 17 mg/dl, Hb 10.4 Hct 31.7, WBC 6.9, platelet 89,

Group session

- Small groups to review the case,
- Point of potential issues with medications
- Each group to subsequently report to large group
- Highlight key points

Points to highlight from the case

- Aggressive treatment of hypertension
- Antipsychotic use
- Proper indication of meds for the patient
- Appropriate sugar control
- Use tools

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Case 1 discussion

Introduce Tool and Strategy

Tools:
• BEERS Criteria
• STOPP and START
• ACB Scale
• MAI
• ARMOR
• Clinical Decision Support System

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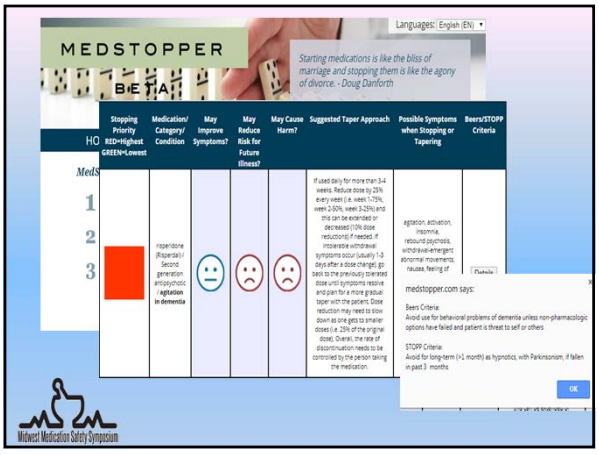

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Deprescribing Antipsychotics

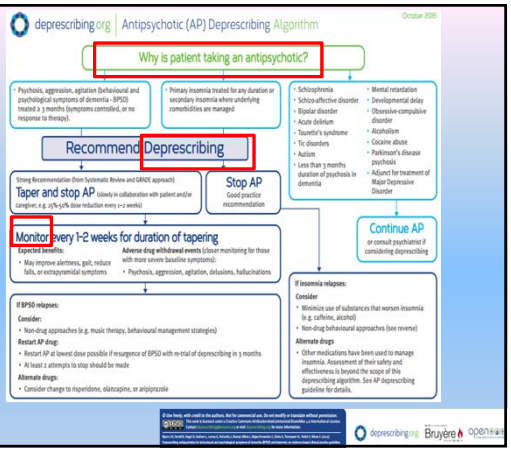
Withdrawal versus continuation of chronic antipsychotic drugs for behavioural and psychological symptoms in older people with dementia (Review)

Declercq T, Petrovic M, Azermai M, Vander Stichele R, De Sutter AIM, van Driel ML, Christiaens T

Cochrane Library
Cochrane Database of Systematic Reviews

"Many older people with Alzheimer's dementia and neuropsychiatric symptoms (NPS) can be withdrawn from chronic antipsychotic medication without detrimental effects on their behavior"

Declercq T, Petrovic M, Azermai M et al, Withdrawal versus continuation of chronic antipsychotic drugs for behavioral and psychological symptoms in older people with dementia. Cochrane Database of Systematic Reviews 2013, Issue 3. Art. No.: CD007726.



Take Home Message

Transitions of Care require communication, patient engagement and education, and a particular focus on medications to improve outcomes

- Solutions must be realistic in time and resource demands
- Many tools for transitions and deprescribing available
- Best results from team-oriented care

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Thank you !

.... Questions ?