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September 2019

Vol. 21, No. 4

Our Mission: Helping to prepare Iowa's health practitioners to care for our growing population of elders. *E-NEWS* is one of our methods of teaching through technology.

Each month, *E-NEWS* delivers abstracts from current multidisciplinary healthcare journal articles related to a specific geriatric topic. This month's *E-NEWS* focuses on HIGH RISK MEDICATIONS: BALANCING THE RISKS AND BENEFITS WHEN DEPRESCRIBING.

HIGH RISK MEDICATIONS: BALANCING THE RISKS AND BENEFITS WHEN DEPRESCRIBING

In this issue of the *E-NEWS*, you will find abstracts for:

- An article that addresses reducing potentially inappropriate medications in older adults.
 - A study that tests a pharmacist-physician intervention model using a computerized alert system to reduce high-risk medication use in primary care.
 - An article that examines priorities for deprescribing for older adults.
 - An article that describes polypharmacy and medication appropriateness in vulnerable older adults.
 - An article that discusses evaluating risks and deprescribing in regards to polypharmacy.
 - An article that presents a novel comprehensive conceptual framework for deprescribing.
 - An article that reviews polypharmacy and deprescribing.
 - A review that seeks to evaluate medication appropriateness criteria for older adults.
 - A study that explores decision-making preferences and deprescribing with older adults and their companions.
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- Bala SS, Chen TF, Nishtala PS. Reducing Potentially Inappropriate Medications in Older Adults: A Way Forward. *Can J Aging*. 2019 Mar 27;1-15. doi: 10.1017/S0714980819000084. [Epub ahead of print]

Reducing potentially inappropriate medications (PIMs) in older adults is an area of sustained interest for many clinicians and researchers across the globe, as PIMs contribute to a significant burden of morbidity and mortality in the aging population. The prevalence of PIMs is a pervasive problem despite the presence of several explicit and implicit criteria for reducing PIMs in older adults, the most common being the Beers criteria, the Screening Tool of Older Persons' potentially inappropriate Prescriptions/Screening Tool to Alert doctors to the Right Treatment (STOPP/START) criteria, and several country-specific criteria. This narrative review aims to discuss the frequently used published criteria for reducing PIMs, and elucidates the role of certain measures, especially de-prescribing, to optimize medication prescription in older adults. Electronic databases were searched using keywords and MeSH terms. The numerous available criteria have their specific advantages and drawbacks. De-prescribing, an initiative to reduce the use of PIMs, has gained significant importance in improving appropriate prescribing practices. De-prescribing is a methodical approach to gradually stopping inappropriate medications judiciously for each patient and simultaneously monitoring the patient carefully for the onset of adverse events or rebound symptoms. A combined caregiver-patient-centered approach encourages the collaboration between prescribers and pharmacists to reduce PIMs in older adults.

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- Cossette B, Taseen R, Roy-Petit J, Villemure MP, Grondin M, Ricard G, Goyer F, Blanchard C, Joly-Mischlich T, Éthier JF. A pharmacist-physician intervention model using a computerized alert system to reduce high-risk medication use in primary care. *Eur J Clin Pharmacol*. 2019 Jul;75(7):1017-1023.

PURPOSE: Potentially inappropriate medications (PIMs) have been associated with a greater risk of adverse drug events and hospitalizations. To reduce PIMs use, a family health team (FHT) implemented a knowledge translation (KT) strategy that included a pharmacist-physician intervention model based on alerts from a computerized alert system (CAS). **METHODS:** Our pragmatic, single-site, pilot study was conducted in an FHT clinic in Quebec, Canada. We included community-dwelling older adults (≥ 65 years), with at least 1 alert for selected PIMs and a medical appointment during the study period. PIMs were selected from the Beers and STOPP criteria. The primary outcome was PIMs cessation, decreased dose, or replacement. The secondary outcome was the clinical relevance of the alerts as assessed by the pharmacists. **RESULTS:** During the 134 days of the study, the CAS screened 369 individuals leading to the identification of 65 (18%) patients with at least 1 new alert. For those 65 patients, the mean age was 77 years, men accounted for 29% of the group and 55% were prescribed 10 or more drugs. One or more clinically relevant alerts were generated for 27 of 65 included patients for an overall clinical relevance of the alerts of 42%. Of the 27 patients with at least 1 relevant alert, 17 (63%) had at least 1 medication change as suggested by the pharmacist. **CONCLUSION:** An interdisciplinary pharmacist-physician intervention model, based on alerts generated by a CAS, reduced the use of PIMs in community-dwelling older adults followed by an FHT.

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- Farrell B, Tsang C, Raman-Wilms L, Irving H, Conklin J, Pottie K. What are priorities for deprescribing for elderly patients? Capturing the voice of practitioners: a modified delphi process. *PLoS One*. 2015 Apr 7;10(4):e0122246.

Polypharmacy and inappropriate medication use among older adults contribute to adverse drug reactions, falls, cognitive impairment, noncompliance, hospitalization and mortality. While deprescribing - tapering, reducing or stopping a medication - is feasible and relatively safe, clinicians find it difficult to carry out. Deprescribing guidelines would facilitate this process. The aim of this paper is to identify and prioritize medication classes where evidence-based deprescribing guidelines would be of benefit to clinicians. A modified Delphi approach included a literature review to identify potentially inappropriate medications for the elderly, an expert panel to develop survey content and three survey rounds to seek consensus on priorities. Panel participants included three pharmacists, two family physicians and one social scientist. Sixty-five Canadian geriatrics experts (36 pharmacists, 19 physicians and 10 nurse practitioners) participated in the survey. Twenty-nine drugs/drug classes were included in the first survey with 14 reaching the required ($\geq 70\%$) level of consensus, and 2 new drug classes added from qualitative comments. Fifty-three participants completed round two, and 47 participants completed round three. The final five priorities were benzodiazepines, atypical antipsychotics, statins, tricyclic antidepressants, and proton pump inhibitors; nine

other drug classes were also identified as being in need of evidence-based deprescribing guidelines. The Delphi consensus process identified five priority drug classes for which expert clinicians felt guidance is needed for deprescribing. The classes of drugs that emerged strongly from the rankings dealt with mental health, cardiovascular, gastroenterological, and neurological conditions. The results suggest that deprescribing and overtreatment occurs through the full spectrum of primary care, and that evidence-based deprescribing guidelines are a priority in the care of the elderly.

- Fried TR, Mecca MC. Medication Appropriateness in Vulnerable Older Adults: Healthy Skepticism of Appropriate Polypharmacy. *J Am Geriatr Soc.* 2019 Jun;67(6):1123-1127.

Older adults are prescribed a growing number of medications. Polypharmacy, commonly considered the receipt of five or more medications, is associated with a range of adverse outcomes. There is a debate about the reason(s) why. On one side is the assertion that older persons are being prescribed too many medications, with the number of medications increasing the risk of adverse events. On the other side is the observation that polypharmacy is associated both with overprescribing of inappropriate medications and underprescribing of appropriate medications. This leads to the concept of "inappropriate" vs "appropriate" polypharmacy, with the latter resulting from the prescription of many correct medications to persons with multiple chronic conditions. Few studies have examined the health outcomes associated with adding and/or removing medications to address this debate directly. The criteria used to identify underutilized medications are based on results of randomized controlled trials that may not be generalizable to older adults. Several randomized controlled trials and many more observational studies provide evidence that these criteria overestimate medication benefits and underestimate harms. In addition, evidence suggests that the marginal effects of medications added to an already complex regimen differ from their effects when considered individually. Although in selected circumstances adding medications results in benefit to patients, patients with multimorbidity and frailty/disability have susceptibilities that can decrease the likelihood of medication benefit and increase the likelihood of harms. The identification of appropriate polypharmacy requires more robust criteria to evaluate the net effects of complex medication regimens.

- Halli-Tierney AD, Scarbrough C, Carroll D. Polypharmacy: Evaluating Risks and Deprescribing. *Am Fam Physician.* 2019 Jul 1;100(1):32-38.

Polypharmacy, defined as regular use of at least five medications, is common in older adults and younger at-risk populations and increases the risk of adverse medical outcomes. There are several risk factors that can lead to polypharmacy. Patient-related factors include having multiple medical conditions managed by multiple subspecialist physicians, having chronic mental health conditions, and residing in a long-term care facility. Systems-level factors include poorly updated medical records, automated refill services, and prescribing to meet disease-specific quality metrics. Tools that help identify potentially inappropriate medication use include the Beers, STOPP (screening tool of older people's prescriptions), and START (screening tool to alert to right treatment) criteria, and the Medication Appropriateness Index. No one tool or strategy has been shown to be superior in improving patient-related outcomes and decreasing polypharmacy risks. Monitoring patients' active medication lists and deprescribing any unnecessary medications are recommended to reduce pill burden, the risks of adverse drug events, and financial hardship. Physicians should view deprescribing as a therapeutic intervention similar to initiating clinically appropriate therapy. When deprescribing, physicians should consider patient/ caregiver perspectives on goals of therapy, including views on medications and chronic conditions and preferences and priorities regarding prescribing to slow disease progression, prevent health decline, and address symptoms. Point-of-care tools can aid physicians in deprescribing and help patients understand the need to decrease medication burden to reduce the risks of polypharmacy.

- Linsky A, Gellad WF, Linder JA, Friedberg MW. Advancing the Science of Deprescribing: A Novel Comprehensive Conceptual Framework. *J Am Geriatr Soc.* 2019 Aug 20. doi: 10.1111/jgs.16136. [Epub ahead of print]

Polypharmacy is common in older adults and associated with inappropriate medication use, adverse drug events, medication nonadherence, higher costs, and increased mortality compared with those without polypharmacy. Deprescribing, the clinically supervised process of stopping or reducing the dose of medications when they cause harm or no longer provide benefit, may improve outcomes. Although potentially beneficial, clinicians struggle to overcome structural, organizational, technological, and cognitive barriers to deprescribing, limiting its use in clinical practice. Deprescribing science would benefit from a unifying conceptual framework to prioritize research. Current deprescribing conceptual frameworks have made important contributions to the field but often with a focus on specific medication classes or aspects of deprescribing. To further this relatively nascent field, we developed a broader deprescribing conceptual framework that builds on prior frameworks and includes patient, prescriber, and system influences; the process of deprescribing; outcomes; and dissemination. Patient factors include patients' biology, experience, values, and preferences. Prescriber factors include rational (e.g., based on explicit knowledge) and nonrational (e.g., behavioral tendencies, biases, and heuristics) decision making. System factors include resources, incentives, goals, and culture that contribute to deprescribing. The framework separates the deprescribing decision from the deprescribing process. The framework captures the results of deprescribing by examining changes in clinical structures, performance processes, patient experience, health outcomes, and cost. Through testing and refinement, this novel, more comprehensive conceptual framework has the potential to advance deprescribing research by organizing the existing evidence, identifying evidence gaps, and categorizing deprescribing interventions and the settings in which they are applied. © AGS.



- Machado-Alba JE, Gaviria-Mendoza A, Machado-Duque ME, Chica L. Deprescribing: a new goal focused on the patient. *Expert Opin Drug Saf.* 2017 Feb;16(2):111-112.

It is estimated that one-fifth of adult patients are treated with polypharmacy (five or more drugs) and the prevalence of this phenomenon in the elderly is even higher, ranging from 30% to 70%, even reaching 90% in residents of residential aged care facilities. Polypharmacy in the elderly increases the risk of adverse reactions, inappropriate prescriptions, drug interactions, number of hospitalizations, costs, and even death. In a recent systematic review, the authors proposed defining deprescribing as 'the process of withdrawal of inappropriate medication supervised by a health care professional with the goal of managing polypharmacy and improving outcomes'.



- Niehoff KM, Mecca MC, Fried TR. Medication appropriateness criteria for older adults: a narrative review of criteria and supporting studies. *Ther Adv Drug Saf.* 2019 Jan 18;10:2042098618815431.

Polypharmacy is common among older adults and is associated with adverse outcomes. Polypharmacy increases the likelihood of receiving a potentially inappropriate medication (PIM). PIMs have traditionally been defined as medications that have either no benefit (e.g. therapeutic duplication) or increased risk (e.g. altered pharmacodynamics/kinetics with aging). A growing literature supports the notion that these represent only a subset of the potential risks of medications prescribed to older adults. Different authors have proposed new sets of criteria for evaluating medication appropriateness. This narrative review had two objectives: 1) to summarize the contents of these criteria in order to obtain preliminary information about where clinical consensus exists regarding appropriateness; 2) The second was to describe studies examining the risks and benefits of medications identified by the criteria to determine the strength of the evidence supporting the derivation of these criteria. We identified 13 articles sharing overlapping criteria for evaluating appropriateness including: (1) delayed time to benefit; (2) altered benefit-harm ratios in the face of competing risks; (3) effects that do not match patients' goals; and (4) nonadherence. The similarities across the articles suggested strong clinical consensus; however, the articles presented little data directly supporting these criteria. Additional studies provide evidence for the proof of concept that average estimates of benefit and harm derived from randomized controlled trials may differ from the benefits and harms experienced by older persons. However, more data are required to characterize the benefits and harms of medications in the context of the regimen as a whole and the individual's health status.



- Weir K, Nickel B, Naganathan V, Bonner C, McCaffery K, Carter SM, McLachlan A, Jansen J. Decision-Making Preferences and Deprescribing: Perspectives of Older Adults and Companions About Their Medicines. *J Gerontol B Psychol Sci Soc Sci.* 2018 Sep 20;73(7):e98-e107.

Objectives: Polypharmacy in the older population is increasing-and can be harmful. It can be safe to reduce or carefully cease medicines (deprescribing) but a collaborative approach between patient and doctor is required. This study explores decision-making about polypharmacy with older adults and their companions. Method: Semi-structured interviews were conducted with 30 older people (aged 75+ years, taking multiple medicines) and 15 companions. Framework analysis was used to identify qualitative themes. Results: Participants varied considerably in attitudes towards medicines, preferences for involvement in decision-making, and openness to deprescribing. Three types were identified. Type 1 held positive attitudes towards medicines, and preferred to leave decisions to their doctor. Type 2 voiced ambivalent attitudes towards medicines, preferred a proactive role, and were open to deprescribing. Type 3 were frail, perceived they lacked knowledge about medicines, and deferred most decisions to their doctor or companion. Discussion: This study provides a novel typology to describe differences between older people who are happy to take multiple medicines, and those who are open to deprescribing. To enable shared decision-making, prescribers need to adapt their communication about polypharmacy based on their patients' attitudes to medicines and preferences for involvement in decisions.



Next Month's Issue:

Deprescribing and Alternative Treatments to
Opioids and Anti-Anxiety Medications in Older Adults

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