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Integrating targeted consultant pharmacists into a new collaborative care model to reduce the risk of falls in older adults owing to the overuse of opioids and benzodiazepines

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Abstract

Using central nervous system (CNS)-active medications increases older adults' risk for falls and fall-related injuries. Opioids and benzodiazepines are among the most widely used CNS-active medications and because of their addictive potential and widespread use for common ailments such as chronic pain, anxiety, or sleep, are also among the most difficult to deprescribe. Reducing the dose burden of these 2 medication classes in older adults—to balance safety with efficacy—is a challenge that requires persistence and strategic support structures to be successful.

We propose a novel care model that uses the support of targeted consultant pharmacist services to help primary care providers reduce the unnecessary use of opioids and benzodiazepines in their patients who are older adults. This care model holds promise to not only offer providers additional time-saving clinical support but to help their practices improve patient outcomes, such as a reduction in medication-related falls and excess opioid use.

Falls and fall-related injuries continue to be a public health concern, with increasing efforts globally to address factors that affect falls and the associated morbidity and

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mortality. Falls among older adults in the United States account for 2.8 million injuries, 800,000 hospitalizations, and 28,000 deaths per year.¹ Many potentially modifiable factors influence the risk of falls in older adults (65 years and older), including certain commonly used prescription medications. For example, medications with central nervous system (CNS)-active properties can cause dizziness, somnolence, and poor balance in older adults, increasing their risk of falling.^{2,3} Minimizing the unnecessary use of CNS-active medications in older adults is essential to decreasing their risk of falls and fall-related injuries.

Opioids and benzodiazepines are potent, commonly used CNS-active medications that are difficult to appropriately prescribe and monitor. These medications have high potential for dependency or abuse and are often used to treat conditions that have a great impact on patients' quality of life, such as pain, anxiety, and insomnia. The prevalence of chronic pain and the associated opioid epidemic are major public health concerns that affect adults of all ages, including older adults. Approximately 5% of older adults were long-term opioid users in 2014,⁴ and opioid overdose death rates in this population have steadily increased over the past 20 years, similar to other age demographics.⁵ Benzodiazepines pose similar health risks for older adults. Benzodiazepines are the most commonly prescribed anxiolytic medications, with 9% of older adults having received a benzodiazepine prescription in 2008, one-third of which were for long-term use.⁶ Both opioid and benzodiazepines can lead to injurious falls and other serious adverse effects in older adults, even when used as prescribed, and especially if used concurrently.³ The standard doses of these medications are often unsafe for older adults owing to changes in metabolism and body composition that come with aging.

As a result of the risks associated with opioids and benzodiazepines, health professionals have been working to decrease the use of these medications among their patients. However, tapering opioids and benzodiazepines is a time-intensive process that many providers do not feel equipped to address and one that many patients resist.⁷

The overuse of opioids and benzodiazepines in older adults, as well as the increase in fall-risk that these medications pose, is a public health concern for which practical, effective, and affordable solutions need to be developed.

Benefits of pharmacist-provider collaborations

Older adults are living longer and taking more medications. More than 80% of U.S. adults aged 65 years and older have multiple chronic conditions,⁸ and more conditions are associated with increasing numbers of prescription medications. In addition, the growing primary care provider shortage and the time constraints of clinic visits result in increasing difficulty for outpatient providers to ensure patients' medications are appropriately monitored.

Pharmacists have the necessary pharmacotherapy-focused training and expertise in managing medications to be valuable resources for other providers. Models of care exist in which outpatient health care providers have successfully partnered with pharmacists

to address patients' medication-related problems, leading to improved patient outcomes and reduced health care costs.^{9,10} Such models include community pharmacist-provider collaborations, embedded pharmacists in outpatient clinics, and home-based medication management services. Many of the positive outcomes of these models relate to the management of chronic medical conditions such as diabetes and cardiovascular disease.⁹ However, some studies have highlighted the impact of pharmacist-provider collaborations on outcomes specifically related to opioid and benzodiazepine use. In 1 study, a pharmacist embedded in a clinic performed chart reviews for patients diagnosed with chronic pain and taking at least 50 morphine milligram equivalents (MMEs) per day, and then sent their recommendations to clinic physicians electronically before each patient's clinic appointment. This intervention resulted in a reduction in mean MMEs per day by 14% ($P < 0.001$) after 4 months with no change in pain scores for the patients included in the study.¹¹ These results highlight how pharmacist-provider collaborations can improve opioid-specific outcomes, such as a reduction in overall opioid use and a reduction in fall-risk for older adults.

Although many models of collaborations with pharmacists have demonstrated clear success, limitations exist. Community pharmacist-provider partnerships are often limited by the inherent problems with Medicare Part D-funded Medication Therapy Management services, such as lack of electronic health record access for the pharmacists and difficulties in maintaining pharmacist-provider relationships.¹² Other models of care are limited by the reality that many primary care clinics simply cannot afford to embed pharmacists in their practices or establish home-based medication management services.

Given the success of pharmacist-provided care juxtaposed with the limitations of current models of care, new types of pharmacist-provider collaborations must be considered. These collaborations can capitalize on pharmacists' expertise and improve medication-related patient outcomes, such as optimizing opioid and benzodiazepine use in older adults to reduce their risk of falls and other associated adverse effects.

Targeted consultant pharmacist services

Targeted consultant pharmacist services are a model of care that is not yet widely used and offer a solution to medication management challenges, such as tapering opioids and benzodiazepines. With targeted consultant pharmacist services, clinical pharmacists who are not embedded in outpatient clinics offer medication-related recommendations for a specific disease state or medication class to clinic-based providers, with the goal of improving targeted outcome metrics for that clinic. Consultant pharmacists providing such recommendations can serve multiple outpatient clinics at once, such as clinics within 1 health care system or physician group. This type of model is similar to pharmacist-provided pharmacokinetic services for optimizing aminoglycoside and vancomycin dosing, wherein decentralized pharmacists provide drug-specific dosing recommendations (i.e., aminoglycosides and vancomycin) to providers across multiple inpatient hospital units.¹³ This model differs, however, in that it is implemented in an outpatient setting. This type of service can be particularly helpful for primary care clinics that are targeting specific disease state or medication class outcome metrics, such as those related to diabetes control,

opioid use, or fall-risk. The potential benefits of this type of service include time saved for providers, additional clinical and medication management support for practices, improved outcomes for targeted patient populations, and decreased injury-related costs for patients. These cumulative benefits are a value-gained proposition for the clinics involved, especially if the cost of the pharmacist services is distributed across multiple clinics. The cost of employing a pharmacist to provide targeted consultant pharmacist services would be outweighed by the net benefit of improved patient outcomes, reduced total costs of care, and improved provider experience, all key aspects of the quadruple aim of health care.¹⁴

Targeted consultant pharmacist services are also similar to traditional consultant pharmacist services that are most often seen in skilled nursing or assisted living facilities, as both provide patient-specific medication adjustment or monitoring recommendations to providers on the basis of chart review. However, targeted pharmacist consultant services differ from traditional consultant pharmacist services in that medication-related recommendations focus on a particular disease state or medication class instead of a patient's full medication list. For example, a traditional consultant pharmacist's medication review for a patient may list medications that contribute to adverse effects such as falls, cardiovascular events, or anti-cholinergic adverse effects and ask the provider to consider dose reduction or stopping agents, without specific recommendations on how to prioritize or perform these changes. A targeted consultant pharmacist focused on minimizing opioid and benzodiazepine use is able to concentrate on these particular high-risk medications and give more specific recommendations on appropriate tapers and alternate agents. A targeted approach minimizes the frustration providers may feel when reviewing a comprehensive, nonprioritized list of consultant pharmacist recommendations. Whereas comprehensive medication management involving a full review of all a patient's medications is a beneficial and important service, using a targeted approach for optimizing medication use may, at times, be more impactful. A targeted approach allows providers to receive specific medication-related recommendations for a high-priority disease state, providing focused and time-saving constructive clinical support.

An additional benefit of using targeted consultant pharmacist services is the health care system or a physician group's ability to give input on the guidelines and protocols used by the pharmacist in formulating their medication-focused recommendations. Providers' input and feedback can be used to revise and refine the content and structure of the pharmacist's recommendations on an ongoing basis, not just before service implementation. Garnering regular input and feedback from providers allows for continual quality improvement, fosters provider trust in the pharmacist's recommendations, and ensures that outcomes important to the practice or health care system are targeted with maximum impact. Regular communication between the providers and the consultant pharmacist—through in person and electronic communication—can help strengthen the provider-pharmacist collaborative relationship and likelihood of recommendations being implemented, minimizing the risk of the pharmacist simply being a faceless voice in a consult note.

Targeted consultant pharmacist services for the management of opioids and benzodiazepines can be particularly time-saving for providers. In addition to performing a thorough chart review including a patient's medical history and medication use, the pharmacist can

review their state's prescription drug monitoring program to assess for potential misuse or nonuse of controlled substances, including opioids and benzodiazepines. Pharmacists can also perform calculations of a patient's total daily dose of opioids (in MMEs)¹⁵ or benzodiazepines (in diazepam or lorazepam milligram equivalents)¹⁶ and develop a feasible tapering plan on the basis of available capsule strengths. Recommending alternative agents or strategies for addressing underlying symptoms would also be a key part of a proposed tapering plan. Finally, pharmacists could review a patient's chart for previous falls risk assessments and fall-related injuries and document these findings in their notes. Once the service is well established and the pharmacists are trusted partners in care, the providers could consider allowing the pharmacists to reach out to patients directly, to gather a more detailed medication history on which to base their recommendations, to educate the patient on the risks versus benefits of using these medications, and to help follow up on implementation of recommendations. Each of these steps can be time-consuming for providers, who generally have limited time to address multiple issues with each patient during clinic visits. Actionable recommendations from a trusted pharmacist could facilitate a reduction in opioid and benzodiazepine use and lead to improved outcomes, such as reduction in overall fall-risk for older adults.

Summary

Reducing the use of CNS-active medications, such as opioids and benzodiazepines, is an important strategy for reducing the risk of falls, particularly in older adults. Pharmacists are uniquely qualified to assist health care providers in developing patient-specific tapering plans for these medication classes and can offer prescribers evidence-based and time-saving clinical support. Targeted consultant pharmacist practice models can also help clinics achieve their medication-related population and public health outcomes efficiently and effectively. Using such a targeted approach for opioid and benzodiazepine management, specifically, can improve outcomes such as patient fall-risk and associated morbidity and mortality.

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