

## The Growing Dangers of Polypharmacy and the Critical Role of Pharmacogenetics

Polypharmacy, or the regular use of more than four medications, is significant among seniors. The numbers are staggering—the [American Society of Consultant Pharmacists reports](#) that people between the ages of 65 and 69 take an average of 14 prescriptions per year. Among those age 70 and older, the average is 18 prescriptions.

With an increased number of medications comes an increased number of side effects and the possibility of medication interactions. This yields a heightened risk of adverse drug events, which are the most common cause of hospitalizations among seniors.

But what can be done to protect seniors from the dangers of polypharmacy? A multifaceted approach is necessary.

The first step? Making certain that a medication is necessary in the first place.

### Defining Necessity

For a medication to be considered necessary, it should be prescribed with a clear diagnosis that is supported by practice guidelines, clinical research, or standards of care. This includes whether the prescribed dose, duration, frequency, and route of administration adhere to best practices. Medications should always be used at the lowest effective dose for the shortest duration possible, avoiding duplication of therapy with other medications.

Once a medication is prescribed, how a patient is reacting to that medication should be monitored according to practice guidelines, including periodic lab testing as well as clinical monitoring for therapeutic response and the development of adverse effects.

When prescribing a medication, definitive therapeutic goals should be established in addition to the indication for use. Having clear therapeutic goals is vital in order to appropriately assess



whether a medication is beneficial as therapy progresses. It also enables the healthcare team to create a larger and more comprehensive care plan for the patient.

## The Role of Medication Reviews and Clinical Consults

A thorough **medication review** when a patient transitions from one type of care to another is one of the most important pharmacy practices to help eliminate unnecessary medications. It's important to determine why a patient is using a particular medication and to match each medication to an appropriate diagnosis.

Often, medications are associated with a general diagnosis, no diagnosis, or a diagnosis that is not an FDA-approved indication. In these cases, clinical judgment should be utilized to determine whether the off-label use is appropriately supported based on the patient's medical history and if the benefits of therapy outweigh the risks of adverse effects.

The psychotropic medication class, which includes antipsychotics, anxiolytics, and sedative/hypnotics, is one of the highest risk medication classes for seniors. The risk of adverse events, including increased mortality, is very high in the elderly—making the risk versus benefit of psychotropic medications extremely tenuous.

When psychotropic medications are used outside of their FDA-approved indications, the literature supporting their use is lacking. In fact, most literature does not recommend off-label use due to lack of positive outcomes. Adverse effect monitoring is extremely important for this class since these medications carry substantial risks, and periodic dose reductions are necessary to provide evidence that the lowest effective dose is being utilized.

Optimizing medication regimens when more than one medication is being used to treat a single condition is another important practice for preventing polypharmacy. The most prevalent example of this would be using multiple medications to manage hypertension. It's not uncommon to see as many as four or five antihypertensive medications ordered for the same patient.

## A Look at Polypharmacy in the Senior Population

Seniors between the ages of 65 and 69 take an average of

**14**  
medications  
each year.

Those older than **age 70** take an average of 18 medications each year.

While the senior population represents only 15 percent of the U.S. population,

they consume **40 percent** of all prescription medications.

Approximately **one-in-five** medications prescribed for seniors are inappropriate.

A recent study found that 13 percent of seniors taking five or more medications required medical attention for an **adverse drug event**.

The inappropriate use of medications leads to approximately **10 million** avoidable hospital visits and 4 million emergency room visits.

Source of statistics:  
American Society of  
Consultant Pharmacists,  
Medscape, CDC

One of the fundamental guidelines in treating a condition that may require more than one medication is to start with one medication and maximize the dose until either the maximum recommended dose is reached or the maximum dose without adverse effects is reached. After the maximum dose is reached, then another agent can be added and titrated if better control is needed.

Patients on multiple medications at suboptimal doses should have their regimen evaluated and, if clinically acceptable, have a medication discontinued while adjusting the doses of the other medications.

**Regular clinical consults** are also important in preventing polypharmacy. As part of clinical consultation, pharmacists implement a number of safety checks, including:

- Elimination of duplicate medications
- Identification of drug interactions
- Medication regimen reviews that utilize Beer's criteria and anticholinergic burden scoring and intervention
- Clinical change of status or emergency room visit reviews
- Quality Assurance and Performance Improvement (QAPI) services

## Finding Potential Interactions Before a Prescription Is Written

With the large number of medications typically taken by seniors comes an increased risk of both medication interactions and repetitive therapies. When a pharmacist processes a prescription that has the potential for medication interaction or duplicates a current medication, he or she has to reach out to the prescriber with that information and request that an alternative medication be prescribed. This process can keep a patient from beginning a new medication in a timely manner.

What if there was a way to uncover potential interactions before even electronically transmitting a prescription to the pharmacy? There is.

The **Grane Rx Medications Insights** program, powered by YouScript, utilizes a patented technology that innovates prescribing. Medication Insights allows providers to quickly identify up to 37 percent more medication interactions than any other software—and offers alternative medications both within the same medication class and for the same indication. All of this information is available in real-time at the prescriber's fingertips.

Not only does this save time and money for your center, but it also helps reduce the risk of adverse drug events and associated hospitalizations. ■



**Grane Rx's Medication Insights Program**

Powered by YouScript

Allows providers to identify medication interactions and find alternative medications — in real-time.

[Request a FREE demo >>](#)

The advertisement features a photograph of a person's hands holding a tablet displaying a medication list. The text is overlaid on a blue background with a subtle pattern of pills.