

EGUIDE

Polypharmacy



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Table of **CONTENTS**

- 3 **What You'll Learn**
- 4 **Top Causes**
- 5 **Dangers to Seniors**
- 7 **Risk Factors**
- 8 **Recognizing Polypharmacy
and Next Steps**
- 9 **Deprescribing**

What You'll Learn

While no standard definition of polypharmacy exists, it is commonly described as the use of unnecessary medications or more medications than clinically necessary. These include both prescription drugs as well as over-the-counter medications and supplements. Although there is not a precise number of medications that constitutes polypharmacy, it is generally considered to mean the concurrent use of five or more.

The consequences of polypharmacy can be dangerous, particularly for seniors, reducing their quality of life and increasing morbidity and mortality. Because of these threats, this guide is designed to help senior living communities understand the risk factors and signs of polypharmacy, and steps to take if staff suspects polypharmacy.

39%
of seniors
over age 65 take
five or more
medications

Top Causes

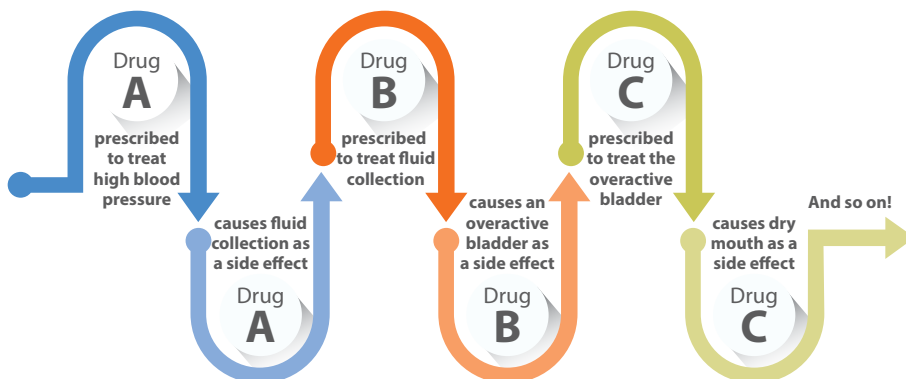
Polypharmacy can arise from different situations. One of the primary causes of polypharmacy is the use of duplicate medications. Clinical guidelines for chronic diseases like hypertension, diabetes, and chronic obstructive pulmonary disease often require the employment of two or more drugs in the same pharmacologic class. For example, multiple antihypertensives are usually used to treat hypertension.

Another common contributor to polypharmacy is what is known as a prescribing cascade. In this situation, a drug administered to a patient causes adverse event signs and symptoms that are inaccurately interpreted as a new condition for which an additional medication is then prescribed. In these cases, the second drug can increase the adverse reaction to the first drug or place the resident at risk for additional adverse reactions. Some of the drugs most commonly involved in prescribing cascades are:

- Opioids
- NSAIDs
- Antihypertensives
- Antibiotics
- Drugs for dementia

For example, calcium channel blockers prescribed to treat hypertension may cause peripheral edema, which can be interpreted a new condition for which diuretics are prescribed.

WHAT IS A PRESCRIBING CASCADE?



Dangers to Seniors

While there are some cases where polypharmacy is necessary and beneficial, generally speaking, the more medications a resident takes, the greater the health risks. Some of the top health consequences of polypharmacy are:



Patients taking five to nine medications have a **50% chance** of an adverse drug interaction.*

Adverse drug events cause up to **30%** of all geriatric hospital admissions.*

- **Poor Adherence:** Medications are only effective when they are taken as directed. A greater number of prescriptions complicates administration, and residents may forget to take them or take them at the wrong time. When that occurs, their condition may worsen.
- **Adverse Drug Events:** While a single drug carries with it the risk of adverse outcomes, the combination of medications can prove even more dangerous. Drugs can interact in harmful ways, such as cancelling out the intended effect of a medication, leading to treatment failure or the creation of new risks. Seniors are at a particular risk of adverse drug reactions because of age-related changes in pharmacokinetics (e.g. absorption, distribution, metabolism, and excretion) and pharmacodynamics (the physiologic effects of the drug).
- **Hospitalizations:** Adverse drug events can lead to emergency hospitalizations along with unintentional overdoses.

*Morin L, Calderon Larrañaga A, Welmer AK, Rizzuto D, Wastesson JW, Johnell K. Polypharmacy and injurious falls in older adults: a nationwide nested case-control study. Clin Epidemiol. 2019;11:483-493. Published 2019 Jun 24. doi:10.2147/CLEP.S201614



The risk of injurious falls increases in a nearly linear fashion for each additional drug.*

- **Falls:** Studies have shown there is an increased risk of falls as the number of medications increases as well as with specific classes of drugs such as antipsychotics. Falls can cause serious injuries that can lead to functional impairment, a lower quality of life and increased risk of mortality.
- **Decreased Function and Cognition:** Polypharmacy has been found to reduce physical function in older adults, which can decrease a resident's ability to perform daily living tasks. It has also been linked to lowered cognitive function, especially with specific drug types like psychotropics.
- **Mortality:** Polypharmacy is associated with elevated mortality risk in elderly patients.
- **Medication Errors:** Prescribing or monitoring rates increase with the number of medications prescribed.

In addition to the negative health consequences of polypharmacy, it can also impact a senior's quality of life. One such effect is "pill burden," which is the need to take medications at various times throughout the day and night. Side effects from multiple medications and/or drug interactions can also create anxiety and depression. Moreover, the cost of multiple medications can be burdensome, particularly for older adults on fixed incomes.

*Morin L, Calderon Larrañaga A, Welmer AK, Rizzuto D, Wastesson JW, Johnell K. Polypharmacy and injurious falls in older adults: a nationwide nested case-control study. Clin Epidemiol. 2019;11:483-493. Published 2019 Jun 24. doi:10.2147/CLEP.S201614

Risk Factors

Seniors are at a particularly high risk of polypharmacy for several reasons.

- **Increased Life Expectancy:** When individuals live longer, there is a consequent increase in the prevalence of multiple co-morbidities/disease states that may each require treatment with prescription drug therapy.
- **The Shift to Specialists:** As individuals age, they typically develop multiple co-morbidities/disease states and see various providers such as a cardiologist for a heart condition, a pulmonologist for lung disease, an endocrinologist for diabetes or thyroid disease, and so on. Prescribers often prescribe with only one disease state in mind so having a specialist for every condition expands the potential number of medications that may be prescribed.

- **Pharmaceutical Advances:**

Research and development have armed prescribers with additional drugs in their toolbox. Often, these innovative therapies are used concomitantly or as an “add-on” to current therapy. Even when used appropriately, every drug has the potential for side effects that often lead to the addition of drugs to treat them.



- **The Media:** Access to social media and television advertising that encourage older adults and/or their caregivers to ask their providers for prescription medications to treat multiple conditions, such as insomnia or osteoporosis, or that market OTC supplements to older adults to “enhance brain function,” for example.
- **Multiple Pharmacies:** Using more than one pharmacy creates multiple fragmented dispensing records, prevents a comprehensive review by the dispensing pharmacist, and makes it difficult to identify and/or eliminate duplicate therapies.

Recognizing Polypharmacy and Next Steps

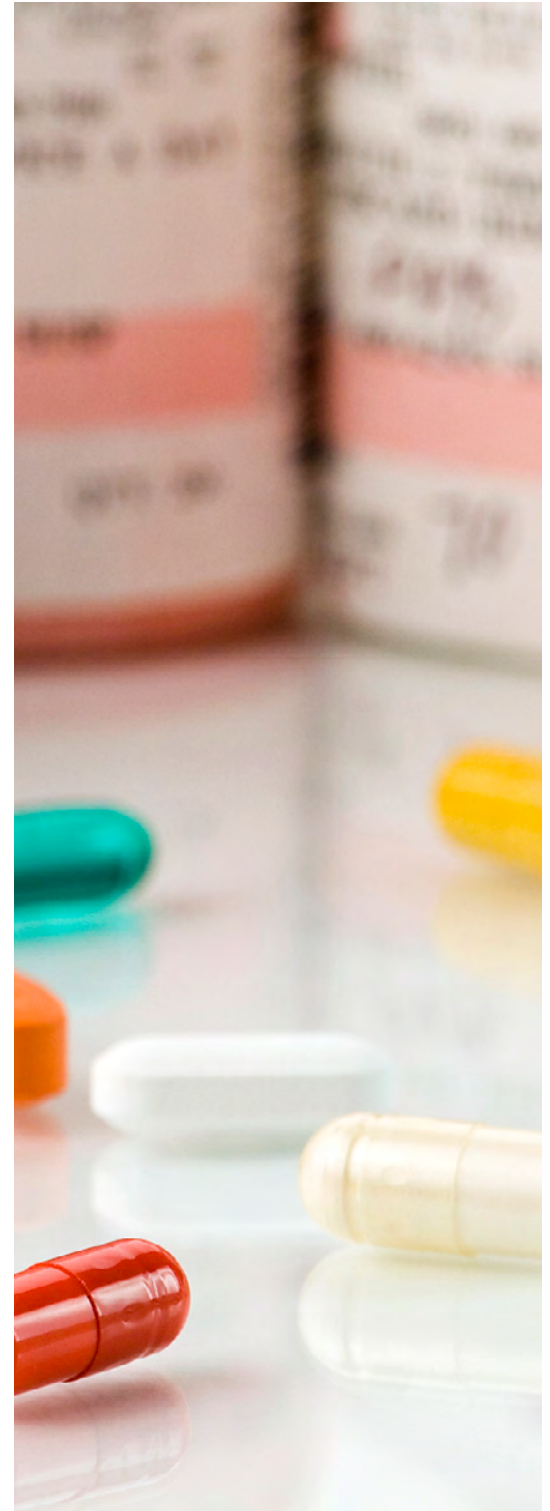
Due to the dangers of polypharmacy, it is important that communities stay alert to the signs. There are three primary considerations to recognizing polypharmacy: new medication, new side effect, and new symptom.

When a resident starts a new medication, be sure to watch for things like:

- A change in participation in daily activities
- Falls
- A change in behavior (e.g. depression, anxiety, or delirium)
- Symptoms like nausea, headache, stomach pain, or rash

If nursing staff suspects polypharmacy, next steps include:

- Ask if a new medication was recently started.
- Develop a list of current medications found in bottles, lists, and pillboxes. Include over-the-counter medications and vitamins and supplements. Check for both the date of the last fill and the expiration date.
- Request an on-demand review of the resident's medication regimen by the team pharmacist. The main purpose of a review is to improve the appropriateness of medications, reduce harm, and enhance outcomes.





Deprescribing

To minimize polypharmacy, deprescribing is a decision-making process that is intended to taper or stop medications. It is the systematic way of identifying and discontinuing drugs because the actual or potential harm outweighs the benefits given a patient’s goals, preferences, life expectancy, and other factors.

Pharmacists can assist in this process by regularly reviewing medications and the appropriateness of each one, and recommending discontinuation, changes, or reductions in medication use as they review and evaluate a resident’s medical record. In addition, pharmacists can collaborate with prescribers and discuss the overall medication profile as well as the current indication for each medication and whether it is still beneficial.

In addition, communities can offer to partner with prescribers who recommend drug discontinuation by monitoring the taper and any adverse drug withdrawal events. It is also important to teach residents and their caregivers about potential side effects, including when to call prescriber or seek help.

Definition:
DEPRESCRIBING
 is the process of tapering, stopping, discontinuing, or withdrawing drugs, with the goal of managing polypharmacy and improving outcomes.

– WHO

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