

# *Medication safety - Part 1*

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*Self-study course*



This brochure is available in alternate formats.

Call 1-800-282-8096 (V/TTY)

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## *Course objectives:*

**At the end of this course you will be able to:**

- 1) Recognize the difference between therapeutic effects, side effects, and adverse reactions to medications.
- 2) Know how the aging body reacts to medications.
- 3) List three factors associated with medications and the elderly.

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# *Medication safety*

People today live longer, healthier and more independently than ever before. This is partly because medications are available to treat diseases or disorders from the common cold to heart disease. However, if medications aren't used properly there can be serious consequences.

As a caregiver you should learn all you can about the medications being taken by the residents in your home, understand how those medications should be taken and be aware of possible side effects or adverse reactions each medication may produce.

## *What is medication?*

Medication use is so common people often don't consider what medications actually are. Medications are any chemical treatment, drug or remedy used to maintain health, treat disease or illness and prevent or treat a symptom, like aches that aren't related to disease (headaches, sprains, etc.). This includes medication for medical, surgical, dental or psychiatric treatment. It is important to remember that medications are not just those prescribed by a physician and dispensed at a pharmacy. Products purchased over the counter as well as herbal or "natural" preparations are also considered medications.

How a medication affects a person depends on that person's health, age, weight, foods eaten, attitude and other medications he/she is taking. It is your responsibility to be knowledgeable about the residents in your care and the medications they use.

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# *Types of medication*

Medications can be divided into three categories:

- **Prescription medications**

Medications (such as antibiotics, insulin or narcotic pain relievers) that are prescribed by a medical professional and dispensed through a pharmacy.

- **Over-the-counter medications (OTC)**

Medications (such as cold remedies, laxatives, pain relievers like Tylenol or aspirin) that may be purchased without a prescription.

- **Alternative medications**

Herbal remedies such as St. John's Wort, nutritional supplements such as Ensure, and vitamins.

No matter how you classify a drug, the risk for a drug interaction increases with each additional drug taken by a person. The potential for any drug to interact with another drug is very great and very real. Remember that this includes pharmacy dispensed medications, medications purchased over-the-counter, and alternative and supplemental remedies.

# *Effects of medication*

Whenever you take a medication there is a reaction or an effect. As a provider, it is your responsibility to monitor the effects of your resident's medications. Is the drug doing what it is intended to do? Part of safe medication management is to be alert to changes related to their use. Be certain to ask the medical professional who is prescribing the medication to explain any effects that need to be monitored and reported.

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All medications have what is referred to as their **therapeutic effect**. This is the desired effect from a medication that we expect to happen. Examples of therapeutic effects include pain relief from pain medication, reduction of high blood pressure from blood pressure medication, maintenance of safe blood sugar levels in diabetes and reduction in psychotic symptoms in psychiatric conditions.

Medications also have **side effects**. Side effects are effects from the medication that can be desirable, or undesirable, but are not the effects intended from the medication used for treatment of an illness. Side effects of a medication may be minor and not interfere with the person taking the medication or they may be enough of a problem that the medication should be changed.

Some side effects are common so you should be aware of them. For example: an antihistamine (allergy medication) may stop you from sneezing and having a runny nose but it will also make you sleepy. An antacid may be taken to relieve stomach irritation and discomfort, but can also cause constipation and may interfere with the effectiveness of other medications.

Why does medication have both therapeutic effects and side effects? This is because when a medication is taken, it circulates throughout the body in the bloodstream. This means that a medication will reach virtually all parts of the body; not just the body part (or symptom of illness) being treated. For example, when an aspirin is taken for its desired effect of headache relief, it can also cause side effects such as of stomach irritation and increased bleeding.

Side effects may be minor and still allow the person to take a medication or they may be enough of a problem that a medication should be changed. This is a decision for your resident to make with their health care provider.

An **adverse drug reaction (ADR)** is a less common, or unexpected, effect that generally means a medication is not right for that person. Adverse reaction severity



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can range from moderate to extremely serious and may occur soon after beginning a medication, or take weeks or months to appear.

The following is a list of symptoms commonly seen when someone is experiencing an ADR.

- Sedation/Insomnia
- Unsteady Gait
- Blurred Vision
- Movement Disorders (tremors)
- Rash
- Seizures
- Confusion
- Incontinence
- Hallucinations
- Memory Loss
- Agitation, anxiety
- Stomach ulcers or bleeding

Side effects and adverse reactions can be subtle in nature and difficult to identify. If someone in your care suddenly developed a red, bumpy rash from head to toe it would be a clear indication of an adverse drug reaction, however, it would be harder to know if the same person were to stop reading the newspaper due to blurred vision.

It is important for you to know what is usual for the persons in your care; their usual activity levels, how easily they get around, how they interact with others, their usual appetite, daily routine, etc. a good knowledge of your resident's care needs will help you recognize an unusual changes.

If a person in your care has recently started a new medication or has had a change in dosage of a medication, be alert for possible side effects and/or adverse reactions, no matter how small. Older persons or those with multiple illnesses experience side effects and/or adverse reactions more commonly than younger or healthier persons.

Unfortunately, side effects and adverse reactions often go unnoticed or are misdiagnosed in seniors. Reasons for this include:

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- Physical reactions to medication, such as fatigue, falling or weight loss, may be mistakenly labeled as “normal” aging
  - Side effects or adverse drug reactions may be mistaken for a worsening of an existing health condition or the onset of a new health condition
  - Side effects and adverse reactions often mimic signs or symptoms of a disease such as the confusion associated with Alzheimer’s Disease.

Over-the-counter (OTC) and alternative medications are often thought to be safer than prescription medications. Alternative medications and OTC’s can have side effects and adverse reactions similar to those from prescription medications.

Just because a medication can be purchased off the shelf does not guarantee it will be safe. It is your responsibility to check with the resident’s health care provider or pharmacist before administering any OTC or alternative medication.

The risk of adverse drug reactions increases with each additional medication taken. This includes reactions from individual medications as well as reactions that result from medications interacting with each other. *If you suspect an adverse reaction to a medication, report it to the appropriate health care professional immediately.*

## *What can you do to prevent drug reactions*

It is estimated that adverse drug reactions are among the top five health threats to the elderly. You can help reduce the risk of adverse reactions by taking a few simple steps:

When a new medication is prescribed, be certain you ask:

- What is the drug being prescribed?



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- Why is the drug being prescribed?
  - What will the drug do? What are the intended effects, side effects and possible adverse reactions?
  - Ask the physician to write the reason for the drug on the prescription for your reference.
  - How quickly will the medication begin to work and how will you know it is working?
  - Will the drug react with other drugs the resident already takes?
  - Are there certain foods that should be avoided?
  - Are there any special instructions on how to give the medication?
  - When would the physician, nurse practitioner or other health care professional like to re-examine the resident or hear how he/she is doing with the new medication?

Document your observations when any new medications are started. Report to the doctor or pharmacist any suspected adverse drug reactions and/or side effects that interfere with the resident's functioning.

## *Medication interactions*

Drug interactions can occur at any time. Safe medication practice includes being aware of the possibility of drug interactions and how to avoid them. Drug interactions are separated into three categories:

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**Drug-drug:** This occurs when two or more medicines react with each other to cause unwanted side effects, cancel each other's effectiveness or increase the medicine's effects. For example, commonly used aspirin interacts with many prescription and over-the-counter medications and should be monitored closely.

**Drug-food/beverage:** Some drugs react with certain foods or beverages. For example, some medications used to treat angina or high blood pressure, given with grapefruit juice, can cause an increase in the intended effects of the medication. Many medications react negatively with alcohol and can result in permanent damage to the liver.

**Drug-disease:** An existing medical condition can make certain drugs potentially harmful. Someone with Parkinson's Disease runs the risk of increasing rigidity and tremor with the use of an inhaler.

A medication can also react with all three: other drugs, food/beverages and disease processes. You can't be expected to know every medication's possible side effects, adverse reactions or possible interactions. However, it is your responsibility to make sure that the prescriber of any new medications sees a copy of your resident's medication administration record.

***Remember:** With older adults, any sudden change in physical ability or personality, especially after beginning a new medication, should be considered an adverse drug reaction until proven otherwise.*

## *Seniors and medication*

Seniors are at high risk for medication-related problems for a variety of reasons.

- **Amount of medications.** Seniors take 33 percent of all medications prescribed in this country and 40 percent of all over-the-counter medications.

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- **Multiple medications.** Seniors take multiple medications sometimes several times per day for a variety of health problems. Taking several medications increases the risk for an adverse reaction because medicines often interact negatively with one another. The potential risk for an adverse reaction is:
    - 5.6 percent for a person taking two medications;
    - 50 percent for a person taking five medications; and
    - Nearly 100 percent for a person taking eight or more medications.
  - **Multiple diseases.** Seniors are more likely than other age groups to have one or more chronic diseases. Heart disease, high blood pressure, diabetes and arthritis are examples of medical conditions that can affect the way a medication works in the body. Other disabilities may affect a person's ability to take medications correctly. For example, a person with a poor memory may not remember when he or she has taken a medication. Poor vision may make reading prescription labels difficult.
  - **Complex dosage schedules.** Multiple medications can also mean complex directions for administration that can increase the risk for medication errors. Some medicines must be taken with food, while others may need to be taken on an empty stomach. Medications ordered to be given every four hours around the clock can be difficult for both the resident and the caregiver and increase the risk of not being given as prescribed. Don't hesitate to inform a prescriber if a resident's routine interferes with a medication schedule.

## *Aging and medication*

Medication management in the elderly presents many challenges. Not only do seniors have more health-related issues and routinely take more medications

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than younger people, but also the normal aging process alone changes the way medications work in the body.

Age-related changes include:

- **The percentage of body weight made up of water decreases:**
  - Some medications are distributed throughout the body in water. With less body fluid the medication becomes stronger unless the dose is decreased or more water is ingested.
  
- **An increase in body fat:**
  - Seniors may appear thin but they retain more body fat and have less lean muscle mass than when they were younger. Some drugs are stored in body fat causing them to remain in the body longer, and thereby prolong the effect of the drug.
  
- **Liver and kidney function decline with age:**
  - The liver breaks down medications so the body can use them.
  - The kidneys are the organs that eliminate excess medication from the body.
  - As these organs work less efficiently drugs remain active in the body longer and can build to toxic levels.

## *Medication information resources*

The **pharmacist** can be a valuable resource if you have questions or concerns about medications. He/she can:

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- Maintain a medication profile of each resident
  - Help identify potential interactions and provide you with guidelines about what to watch for
  - Answer questions you or the resident may have
  - Provide reliable information about medication dosing, times of administration and possible adverse reactions

Every medication dispensed through a pharmacy must include a patient education sheet that contains important information about dosing, adverse effects and possible interactions with food and other medications. These sheets can be placed alongside the resident's medication administration record for quick reference.

**Contract RN** services are available to all Medicaid eligible residents who live in foster homes or in their own home. If you have concerns regarding medication or health-related issues of a resident in your care, contact the resident's case manager and ask for a Contract RN consultation.

The Contract RN can assist with:

- Establishing a safe medication system
- Assessing residents with multiple health issues and complex dosing schedules
- Teaching proper medication administration to the resident and caregiver
- Delegating and supervising of ongoing skilled nursing tasks such as insulin administration
- Answering questions you or the resident may have

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- Written parameters for administration of PRN medications
  - Consultation and assessment prior to use of psychoactive medications

**Drug handbooks** have information about available forms of medications, indications for usage and usual dosages, common side effects, adverse reactions and possible interactions with other medications and food/beverages. Most drug handbooks also contain “patient teaching” tips that include instructions for preventing or minimizing adverse reactions. A useful drug handbook should be no more than three years old. The handbook should be located near the medications and used as a frequent reference.

**Internet access** provides up to date information at your fingertips. Medications that may not appear in a drug handbook can be quickly found on-line. If you don't have access to the internet in your home, most libraries have free computer access available.

**The physician** or other health care provider prescribing the medication is an excellent resource for information.

As you seek information from health care providers, remember that information goes both ways. In order to provide safe and effective care, health care providers need to be aware of all medications that a person is taking; prescription, over the counter, and alternative remedies alike. The more complete information a health care provider has, the more safely she or he can prescribe, recommend, monitor, fill, and/or review medications for that person. As part of the person's care team, you, in turn, can more safely administer, or monitor the administration of medication to that person, and observe for potential problems.



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## *In summary*

Today in the U.S., where the use of medication is so common, people often don't consider what those medications actually are. Medications are chemicals. How a medication affects a person depends on the person's health, their age, and other medications they are already taking.

By knowing the person in your care, observing physical and mental changes large and small, recognizing observed and reported symptoms, and taking action, you can effectively promote medication safety for the people in your care.



**Seniors and People with Disabilities**  
Oregon Department of Human Services  
500 Summer St. NE, E13  
Salem, Oregon 97301-1073

Phone: 1-800-232-3020 V/TTY

V/TTY: 503-945-5811

Fax: 503-378-8966