Oregon Department of Human Services
AGING & PEOPLE WITH DISABILITIES

SELF-STUDY PROGRAM

0731A: Intro: Safe Medication Administration

Medications treat a wide variety of chronic conditions and diseases allowing people to live longer, healthier and more independently than in the past. Not using medications properly can have serious consequences including significant injury to major organs, such as kidneys and liver, or death.

You are responsible as a caregiver for learning about all the medications residents take in your setting. You must understand how those medications should be taken and be aware of each medication's possible side effects or adverse reactions.



Giving medications safely and on time is one of your most important roles.

What is medication?

Medications are any chemical treatment, drug or remedy used to:

- Maintain health;
- Treat disease or illness; and
- Prevent or treat a symptom, such as aches that are not related to disease (headaches, sprains, etc.) or difficulty sleeping.

It is important to remember that medications are not just medications that require a prescription by a prescribing practitioner and dispensed at a pharmacy. Products purchased over the counter (OTC) as well as herbal or "natural" preparations are also considered medications. They require the same degree of caution as prescribed medications.

People often do not consider products they buy over-the-counter to be medications that can cause harm. However, people need to be cautious about their use of OTC medications, including supplements.

How a medication affects a person depends on that person's health, age, weight, foods eaten, attitude and other medications he or she is taking. You need to know what medications residents in your care take, how they are intended to work and any possible side effects.



Vitamins, "natural" nutritional supplements and even some teas are considered medications.



Supplements contain highly concentrated nutrients. Any product that contains high levels of naturally occurring nutrients can cause harm or interfere with medications and must be approved by the resident's practitioner.

Types of medication

Medications can be divided into three categories:

- **Prescription medications** — medications (such as antibiotics, insulin or narcotic pain relievers) prescribed by a medical professional and dispensed through a pharmacy.
- **Over-the-counter medications (OTC)** — medications (such as cold remedies, laxatives, pain relievers like acetaminophen) that may be purchased without a prescription. OTCs require that the resident's practitioner approve them if the resident lives in a licensed or certified setting.
- **Alternative medications** — herbal remedies such as Saint John's Wort, nutritional supplements such as Ensure, and vitamins. The resident's practitioner must approve alternative medications if resident lives in a licensed or certified setting.

No matter how you classify a medication, the risk for a drug interaction increases with each additional medication the person takes. A drug interaction is when one drug changes or alters the function of another drug.

This includes pharmacy-dispensed medications, medications purchased OTC, and alternative and supplemental medications. Foods and beverages can also interact with drugs.

Effects of medication

An action (effect) or a reaction occurs any time you take a medication. As a caregiver, you are responsible for:

- Monitoring the effects of a medication for your resident;
- Documenting any action or reaction that the resident observes and reports to you; and
- Providing the information to the resident's prescribing practitioner.

Part of safe medication administration is to be alert to changes in a resident that may be related to the drug's use. Ask the prescribing practitioner, pharmacist or a nurse to explain any effects that need to be monitored and reported.

In Oregon, a prescribing practitioner includes a:

- Medical doctor (M.D.);
- Doctor of osteopathic medicine (D.O.);
- Doctor of podiatric medicine (D.P.M.);
- Physicians' assistant (P.A.);
- Nurse practitioner (N.P.);
- Clinical nurse specialist (C.N.S.); or
- Dentist (D.M.D. or D.D.S.).

Licensed acupuncturists are limited to prescribing oriental herbs, vitamins and minerals and to giving dietary advice.



Many OTC medications have prescription-strength versions, but any prescription and OTC drug can cause side effects or interact with other medications.

All medications have what is referred to as their therapeutic effect. This is the desired effect from a medication. Examples of therapeutic effects include:

- Pain relief from pain medication;
- Reduced high blood pressure from blood pressure medication;
- Maintenance of appropriate blood sugar levels in diabetes; and
- Reduced psychotic symptoms in psychiatric conditions.

Medications sometimes have side effects. Side effects may be desirable or undesirable effects not intended from the medication used to treat the condition.

Side effects of a medication may be minor and not interfere with the person taking the medication. However, they may be enough of a problem that the medication should be changed. Some side effects are common. 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 relieve stomach irritation and discomfort, but cause constipation and may interfere with the effectiveness of other medications.

Why does medication have both therapeutic effects and side effects? When a person takes a medication, it circulates throughout the body in the bloodstream. A medication will reach virtually all parts of the body rather than just the body part (or symptom of illness) being treated. For example, when someone takes an aspirin for its desired effect of headache relief, it can also cause side effects such as stomach irritation and increased bleeding.

Side effects may be enough of a problem that a medication should be changed. Your resident should make this decision with a prescribing practitioner. It is your responsibility to contact or assist the resident in contacting his or her prescribing practitioner to discuss possible changes in medications.



Some herbal teas can interact negatively with some prescription medications such as garlic, ginkgo biloba, American ginseng and ginger.



The desired result (therapeutic effect) of using antibiotics is eliminating a bacterial infection.



Dizziness is an example of a side effect that may be minor for some individuals but for others it may be considered a serious side effect.

Generally, a headache is considered a minor side effect.

An adverse drug reaction (ADR) is a less common or unexpected effect that generally means a medication is not right for that person. Severity can range from moderate to extremely serious. An ADR can occur soon after beginning a medication, or it can take weeks or months to appear.

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

- Sedation/insomnia;
- Confusion;
- Unsteady gait;
- Incontinence;
- Blurred vision;
- Hallucinations;
- Movement disorders (tremors);
- Memory loss;
- Rash;
- Agitation, anxiety;
- Seizures;
- Stomach ulcers or bleeding.

Side effects and adverse reactions can be subtle and hard to identify. For example, someone in your care suddenly developing a red, bumpy rash from head to toe would be a clear indication of an adverse drug reaction. However, it would be harder to identify an ADR if the same person stopped reading the newspaper due to blurred vision.

It is important for you to know what is usual for people in your care: their usual activity levels and appetite, how easily they get around, how they interact with others, their daily routine, including their normal bowel pattern, etc. Knowing your residents' care needs will help you recognize unusual changes.

Be alert for possible side effects and/or adverse reactions, no matter how small, in a person in your care who has recently started a new medication or had a change in medication dosage. Older persons or those with multiple illnesses are at higher risk of experiencing side effects and/or adverse reactions.



You must immediately report ADRs to the resident's health care provider.



Side effects and adverse reactions must be documented and reported to the resident's prescribing practitioner.

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

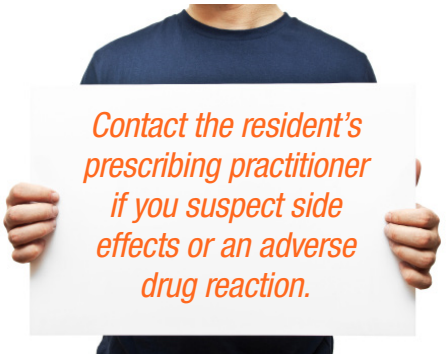
- Physical reactions to medication such as fatigue, falling or weight loss that may be mistaken as "normal" aging;
- Side effects or adverse drug reactions may be mistaken for decline of an existing health condition or a new health condition;
- Side effects and adverse reactions often mimic signs or symptoms of a disease such as the confusion associated with Alzheimer's disease.

Alternative and over-the-counter (OTC) medications are often considered safer than prescription medications. Alternative medications and OTCs 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 for everyone. Check with the resident's prescribing practitioner for approval before administering any alternative medication or OTC.

The risk of side effects or 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 a side effect or an adverse reaction to a medication, immediately report it to the resident's health care provider.



What you can do to prevent drug reactions

You can help reduce the risk of adverse reactions. Take a few simple steps by asking the resident's prescriber or the pharmacist the following questions:

- What is the drug being prescribed?
- Why is the drug being prescribed?
- What will the drug do? What are the intended effects, side effects and possible adverse reactions?



It's important to know everything you can about a resident's medications. Where can you find information? Check with the resident's prescribing practitioner or pharmacist, or consult a nurse or current drug reference book, medication inserts or information sheets, or an online resource such as www.drugs.com.

- 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 is taking?
- Should the resident avoid certain foods while taking the medication?
- Are there any special instructions on how to give the medication?
- When would the prescribing practitioner want to re-examine the resident or hear how he or she is doing with the new medication?

Document your observations when any new medications begin. Immediately report to the prescribing practitioner suspected adverse drug reactions and/or side effects that interfere with the resident's functioning.



An example of a drug to drug interactions

Medication interactions

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

Drug to drug: This occurs when two or more drugs react with each other to:

- Cause unwanted side effects;
- Interfere with one or more of the drugs' effectiveness; or
- Increase the drug's effects.

For example, calcium supplements can reduce the effectiveness of medications used to treat low thyroid levels.



An example of a drug to food interaction

Drug to food or beverage: Some drugs react with certain foods or beverages. For example, some medications that treat angina or high blood pressure can cause an increase in the medication's intended effects if they are given with grapefruit juice.

Most medications react negatively with alcohol and can result in injury or organ failure.

Drug to disease: An existing medical condition can make certain drugs potentially harmful. For example, someone with cardiac disease who uses an Albutrol inhaler may experience increased cardiac risks.

A medication can also react with all three: other drugs, food/beverages and disease processes. You can't be expected to know every medications possible side effects, adverse reactions or possible interactions. However, you must make sure each resident's prescribing practitioner sees a complete list of all medications and supplements (including nutritional supplements) as well as a copy of the resident's medication administration record and any documentation in the resident record.

Remember: Consider any sudden change in an older adult's physical ability or personality, especially after beginning a new medication, to be an adverse drug reaction until proven otherwise.



When a resident has an appointment with any health care practitioner, bring a list of all of the person's medications to the appointment, or fax a list before the day of the appointment.

Medication's impact on seniors

Seniors and individuals with chronic health conditions or developmental or physical disabilities are at higher risk for medication-related problems for a variety of reasons:

- **Multiple medications.** Taking several medications increases the risk for an adverse reaction because medicines often interact negatively with one another.
- **Multiple diseases.** One or more chronic conditions — such as heart disease, high blood pressure, diabetes and arthritis — can affect how a medication works in the body.

Other disabilities may affect a person's ability to correctly take medications. For example, a person with a poor memory may not remember when he or she has taken a medication. People with poor vision may find it hard to read prescription labels.

- **Complex dosage schedules.** Multiple medications can also mean complex directions for administration. This 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.



It is critical that you give medications on time. Medications should be given within 30 minutes of the scheduled time unless otherwise indicated (e.g., Novolog requires administration 10 minutes before eating).

Don't hesitate to inform a prescriber if a resident's routine interferes with a medication schedule. Other alternatives may be available.

Aging and medication

Aging and medication management present challenges. As we age, we are likely to have more health-related issues that require more medications. Additionally, the normal aging process can change 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. As a result, the medication becomes stronger unless the dose is decreased or the resident drinks more water.
- **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. This causes them to remain in the body and be active longer. This prolongs the drug's effect.
- **Liver and kidney function decline with age:** The liver breaks down medications so the body can use them. The kidneys 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.



Aging, underlying conditions, normal activities, hydration and other factors can influence the effects of any medication.

Medication information resources

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

- Help identify potential interactions and provide you with guidelines about what to watch for;
- Answer your or the resident's questions;
- Provide expert reliable information about medication dosing, administration and possible adverse reactions.

Every medication dispensed through a pharmacy must include a patient education sheet or product information insert with important information about dosing, adverse effects and possible interactions with



Have questions? A pharmacist can assist you.

food and other medications. Save these sheets alongside the resident's medication administration record for quick reference. *Replace the patient education sheets and/or product insert, if provided, each time the medication is refilled.*

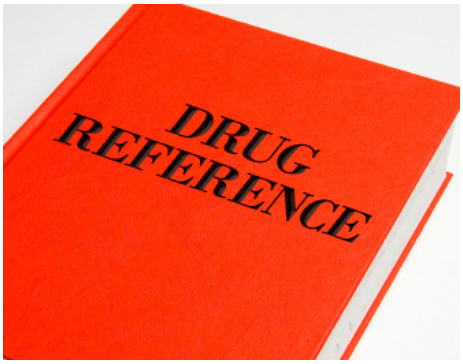
Drug handbooks have information about:

- Available forms of medications;
- Indications for usage and usual dosages;
- Common side effects;
- Adverse reactions; and
- Possible interactions with other medications and food or beverages.

You must replace drug handbooks each year. Each edition has many changes to drug information on existing drugs as well as new drugs. The handbook should be located near the medications and used often as a reference.

Internet access provides up-to-date information at your fingertips. You can quickly find information online about medications that may not appear in a drug handbook.

Product inserts (drug information sheets) for prescription and OTC medications should be kept with the resident's medication administration record. When the medication is refilled, replace the older product insert with the new product insert.



Always consult your resource materials and keep them up-to-date. If you are using a drug reference book it must be kept current and replaced every year.

In summary

Medications are chemicals. How a medication affects a person depends on the person's health, age and other medications.

You can promote medication safety for the people in your care by knowing them well, observing physical and mental changes large and small, recognizing observed and reported symptoms, and taking action.

Course Development: Deborah Cateora B.S.N., R.N.

Resources

ODHS's Safe Medication Administration: https://tinyurl.com/ODHS-SafeMed

ODHS's Ensuring Quality Care tools and resources: https://tinyurl.com/ODHS-EQC-ToolsResources

National Institute of Health - Safe Use of Medicines for Older Adults:
https://www.nia.nih.gov/health/taking-medicines-safely-you-age

Drug Information including pill identifier: www.drugs.com

Institute for Safe Medication Practices Consumer Website:
www.consumermedsafety.org

Federal Drug Administration (FDA) Medication Safety Tips for Older Adults:
www.drugs.com/fda-consumer/four-medication-safety-tips-for-older-adults-311.html

Note: Completing this self-study course does not meet the Six Rights training requirement specified the Adult Foster Home OAR: 411-050-0625.

Training credit - 2 Hours

Online testing will be through Workday Learning (WDL) which requires an WDL account. To request a WDL account go to: https://tinyurl.com/CreateWDLAccount

Self-study Test Policies, including how to access the self-study test go to:
https://tinyurl.com/ODHS-Selfstudy-Policies

Intro to Safe Medication Administration Course Code: 0731A

Questions or inquires?

Send questions or inquiries to: afhtraining.spd@odhsoha.oregon.gov
Workday Learning Assistance: https://www.surveymonkey.com/r/WDLhelp

Oregon Department of Human Services
AGING & PEOPLE WITH DISABILITIES

You can get this document in large print, braille or a format you prefer. Contact the Safety, Oversight and Quality Unit at 1-800-282-9092.

REV072023 EXP072024 SDS 0731A (03/22)