Chapter 15: Medications: Medication Services in Assisted Living

Purpose of Medications - What do they do? Giving medication is a tremendous responsibility.

There are thousands of medications on the market and many more are released each year. You should make yourself familiar with every drug you administer. A "drug" is a substance that does one of the following:

- ❑ Relieves pain or distressing symptoms
- ❑ Cures or controls disease or infection
- ❑ Maintains Health
- ❑ Prevents disease
- ❑ Replaces normal body substances that the body is no longer able to produce.

What is a drug?

The Department of Health Services *defines medication as* follows:

A "Medication" means one of the following used to maintain health or to prevent or treat a medical condition or behavioral health issue:

a. Biologicals as defined in A.A.C. R18-13-1401,
b. Prescription medication as defined in A.R.S. § 32-1901, or
c. Nonprescription medication as defined in A.R.S. § 32-1901.

Medications can also:

- ❑ Have responses – desired or undesired
- ❑ Undesired side effect
- ❑ Local effect or systemic effect
- ❑ Cause allergic reactions
- ❑ Can have food and drug interactions or effects
- ❑ Are commonly deactivated by liver (can cause liver damage)
- ❑ Are excreted by kidneys (can change color or odor of urine)

Decision making by PCP- Established PCP (MD, DO, NP, or PA)

While drugs may be very useful, they can also be very dangerous. There really is no such thing as a harmless medication. The Medical Practitioner knows the actions of each prescribed drug and is the only person qualified to prescribe them for use.

When we use the word "Physician" or "Doctor" (both referred to as “MD) or “Doctors of Osteopathy (DO)” we are referring to an individual that is educated, clinically experienced and licensed to practice medicine.

However when we refer to a Primary Care Provider (PCP) or a **Medical Practitioner**, we also include the other professionals who can also prescribe medications such as: Nurse Practitioners or Physician Assistants.

Medications are part of a treatment plan, provided by the doctor. The drug is chosen and the dose is regulated to produce the desired *or therapeutic effect.* A drug given at any one time is called a "dose." If the ordered dosage (how strong and how many) no longer produces the desired effect, the dose may need adjustment.

You are the eyes, ears, and hands of the doctor. Without your attentiveness and attention to detail, good health care is not possible.
Drugs are given to produce certain effects. *Any effect of the drug is either considered desirable or undesirable*. We speak of the purpose a medication was ordered as the "desired response."

- **The definition of "Adverse Reaction"** with "Side Effect" is an effect that is "in addition to its intended effect" were as an "adverse reaction" is either a noxious, appreciably harmful or unpleasant reaction that shows the individual cannot tolerate the medicine.

- **The undesirable response is called a "*Side Effect*."** Side effects can be mild or severe. Some side effects are common, so common in fact to outweigh the potential benefit of a medication to some residents, and therefore be contraindicated.

Although a medication may be ordered to treat a specific problem, an ingested medication travels to all cells of the body. How does the medication know where it's needed? It doesn't "know." Medications are manufactured to target certain areas of the body or certain disease processes. But the medication is dispersed everywhere.

We look at the effect of the medication on the whole body. *This is examining its "systemic" effect*. Injecting Cortisone into an arthritic joint may be a better choice than giving the same medication in a pill form. Placing the medication where it is needed - is often more desirable than placing it into the body, in the form of a pill, where more side effects may be experienced. We are thereby also considering a medication's local and systemic effects.

Drugs are ***normally deactivated by the liver and excreted by the kidneys***. In this manner, a dose of medication disappears from the circulation and the next dose is needed. Eighty-year old livers and kidneys do not metabolize or "break down" drugs as quickly- drugs can then have cumulative effects and the resident can become toxic. A correct dosage can therefore actually become an "over-dose."

Another factor to consider when looking for the desired response is the frequently observed effect *of "tolerance."* The phenomenon of tolerance occurs when the body becomes so accustomed to a medication that to achieve the same desired response, a larger dose is required.

There are other factors that have an effect upon a drug's action and ultimately influence the choices made by the Medical Practitioner:

- Age and gender
- weight
- other disease processes
- nutritional status
- route that the mediation is given
- interaction with other drugs

- **Food Interaction** with foods- some medications are not to be taken with milk or foods. Some medications are better absorbed with food. *(Which simply is the unwanted of effect of food mixing with meds)*

With these considerations in mind, the next decision to be made by the ordering Medical Practitioner is *what route is to be* ordered. Tylenol is available as a tablet, a liquid or a suppository. If there are problems with digestion and stomach upset, the suppository form of Tylenol may achieve the desired effect more reliably than the oral. Steroid cream to quiet an itchy rash may be a better choice than to give a systemic pill. ***NOTE:*** Toxic effects and adverse reactions occur more frequently in older residents because the medicine may not be metabolized as quickly as that of a younger person.

Drugs are produced from five main sources:

- ❑ Animal - Insulin for example (in mid-70's) now more synthetic forms are used
- ❑ Plant - Lanoxin, Metamucil
- ❑ Herbal Medications - Classified by the Food and Drug Administration as "food additives."
- ❑ Mineral - Supplements such as calcium, iron
- ❑ Synthetic - Drugs made in laboratories. Antibiotics for example.

Drugs have different names:

- ❑ Chemical name - the long complicated descriptive name
- ❑ Generic name - the shortened version of the chemical name
- ❑ Trade/Brand name - the name given to the drug from the manufacturer for marketing purposes; the original name given to the medication by the discoverer
- ❑ Sometimes health professionals use acronyms or nick- names for medications. Examples are: MOM is short for Milk of Magnesia. "T3" is meant to mean Tylenol #3 with Codeine.

The major difference between **a brand-name pharmaceutical and its generic counterpart**

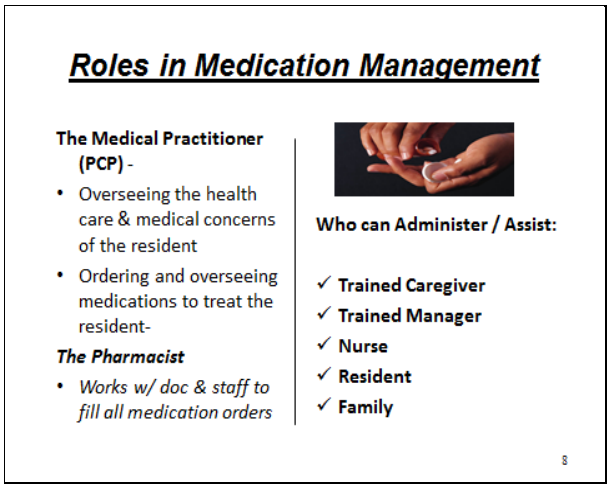
The drug may differ in color, shape, taste, inactive ingredients, preservatives and packaging, however. Because of these differences, the generic drug manufacturers are required to submit additional paperwork to the FDA to prove that their product is manufactured in accordance with good manufacturing practices (GMPs), and is as pure and stable as the brand-name product.

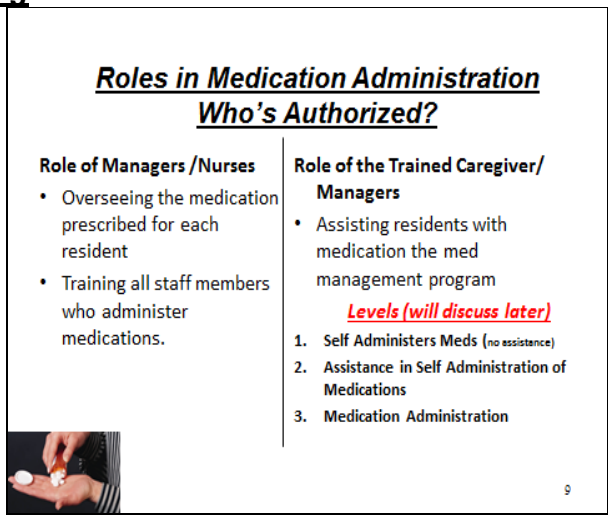
The ***Medication resource*** allows for medications to be characterized by the form of the drug and the ingredient (or ingredients), as well as how it is packaged. What are the 4 categories of medicine?

They are:

1. General Sales List.
2. Pharmacy **Medicines**.
3. Prescription Only **Medicines**.
4. Controlled **Drugs**.

Roles in Medication Services in Assisted Living:



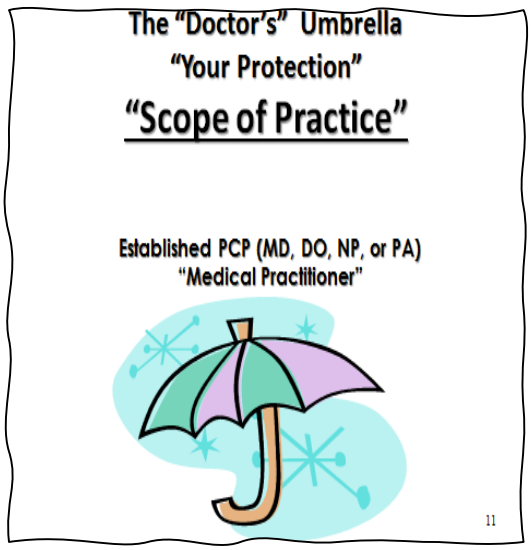


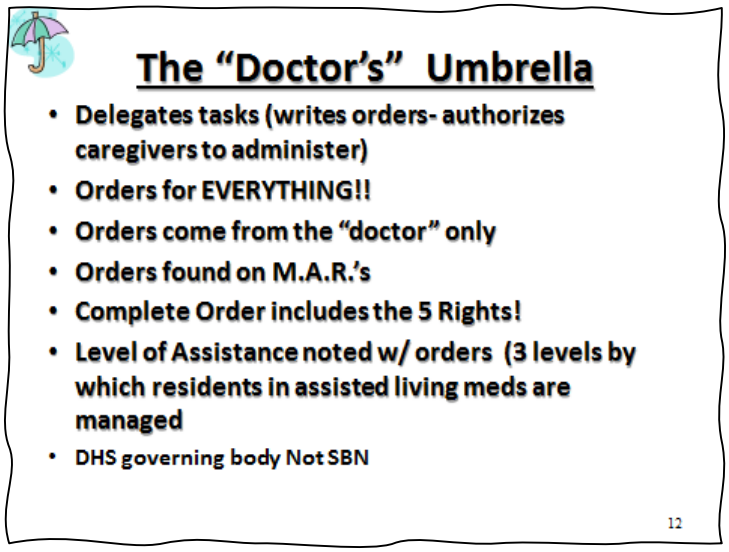
Medications Policies & Procedures Considerations: ***R9-10-816- read regulation and take quiz see handout # 2***

Medications are used in almost every assisted living facility. These facilities must have all the regulated policies and procedures regarding medications approved by a licensed physician, pharmacist, or registered nurse which address the following:

- ❑ The procuring, prescribing, administration and dispensing of medications
- ❑ The administration of routine and PRN medications (those that are on an "as needed" basis)
- ❑ The administering of treatments.
- ❑ Storage of medications & Disposal of medications
- ❑ Transcription of orders
- ❑ Assisting with self-administration of medications and medication administration
- ❑ Control of medications brought into the facility
- ❑ Individuals authorized to administer medications
- ❑ Recording of medication assistance provided to residents
- ❑ Maintenance of medication records.

Scope of Practice: What a health professional can and cannot do to or for a patient is dependent on that health professionals *scope of practice* (SOP), which is defined by state boards of medicine, boards of nursing, etc., oftentimes with the guidance or instruction (via statute) of the state's legislature.





We must have orders for what?

We need an order for everything!!!

- ❑ **Prescription medications**,
- ❑ **Controlled Substances (also called Narcotics or Narcs**
- ❑ **Over the Counter** - medications (OTCs) such as vitamins, herbals, pain relievers, any product that displays the word "medicated," including Blistex. Topical medications, from Bengay to Neosporin, require an order.
- ❑ **Treatments** such as: topical meds, SVN treatment, Wound care, TED hose, Oxygen all fall in this category

Our knowledge of the resident's medications comes from the ordering Medical Practitioner. We must have written instructions, "*orders," for everything* that a resident is given for medical purposes.
At early stages of a resident's admission, the basic question would be: "What are you taking at home?"

Everything is just a play on words to help us remember the are no exceptions in Assisted Living if it looks like a medication no matter the category we must have an order for it!! RX, Controlled Substances OTC and Treatments, **Everything must have an order**!!

Orders come from who?

Later in the chapter we will discuss in detail receiving orders from medical practitioner(s). Orders come from the following:

- ❑ MD is a Medical Doctor
- ❑ DO is a Doctor of Osteopathic Medicine
- ❑ PCP is a Primary Care Provider
- ❑ GP is the resident's General Practitioner, in other words a Medical Doctor
- ❑ NP is a Nurse Practitioner
- ❑ PA is a Physician Assistant
- ❑ MP - Medical Practitioner is the term most commonly used to describe any of the above

Orders are found and documented where?

The Right Document is the **MEDICATION ADMINISTRATION RECORD(s)**, called a M.A.R. (s).

The MAR is a record, single page or several, or computer generated list of the medications given to a resident. It affirms the administration of medications for one month and must remain handy during its month of use, to continually document what was given, when it was given.

Once the month is completed, the MAR is filed in the resident's chart or stored electrically as testimony to what was given to the resident. It will be difficult to prove, in court, that a medication was given if it wasn't charted.

A separate medication record is kept on each resident receiving assistance in self-administration of medication or full medication administration (Note: No medication administration record (MAR) is required if the resident has been determined by the doctor to need no assistance in the self- administration of medications.)

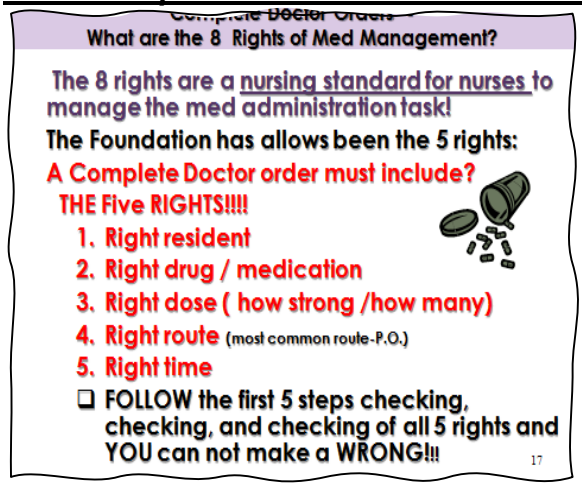
Some MARs are mounted in the chart horizontally, some vertically. ***Some are now electric commonly*** **called E-Mar** or **Computerized Physician Order Entry (CPOE)**

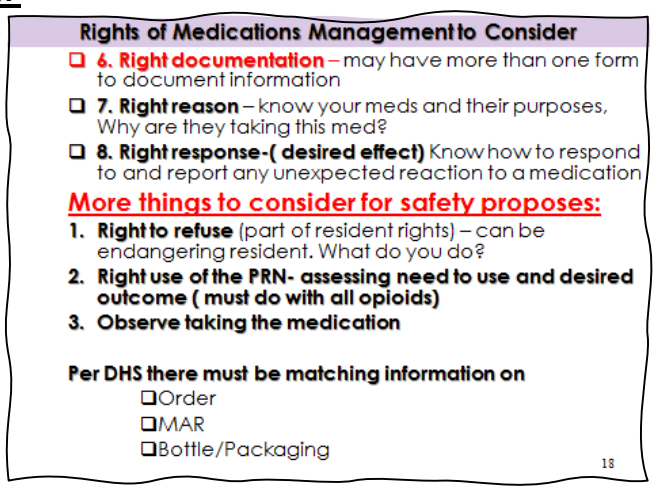
All must have the same information:

- ❑ The resident's name
- ❑ Allergies
- ❑ The complete medication order (for each med) - The Five Rights, including any parameters
- ❑ Columns corresponding to each day of the month
- ❑ Small boxes for you to place your initials, across from the assigned time
- ❑ Small boxes that can also be used for documenting the requested parameter or the time that a PRN medication was given
- ❑ Space used to identify your initials with a full signature.

The signature or initials of the employee providing assistance in self-administration of medication or medication administration must be recorded.

And a complete Doctor order includes what?





Level of Assisting Residents with Medications

How much assistance will resident need? Arizona DHS regulations outlines the levels of assistance we may provide or allow in assisted living the 3 levels are as follows, the resident requires and must be noted on the service plans

- ❑ No Assistance (with Self-administration of Medications)
- ❑ Assistance in Self-administration of Medications
- ❑ Medication Administration

When a new resident is admitted to a facility, the FIRST order from a Medical Practitioner (MP) may include how much assistance the resident will need; what level of medication administration is required? Many facilities will list the ordered medications on the Service Plan.

No Assistance with Self-Administration of Medication (frequently called Self –Administration of Meds)

The likely candidate for this level of medication administration is like most individuals living on their own. They go to the doctor who gives them a prescription. They take it to the pharmacy and pick up the medication ordered. Next they begin taking the medication as ordered by the doctor. It is up to them to remember when to take the medication and in most cases, they do not make a record as to whether they did or did not take it. However, if capable a resident who resides in assisted living may administer their own meds.

This resident does not require assistance, is thus able to self-administer. *This resident **must** have cognitive and physical ability to*:

- ❑ store medication per facility's policy
- ❑ know what time to take medications,
- ❑ to read medication labels,
- ❑ open the medication container, to place the medication into the prescribed route and
- ❑ perform or demonstrate any other requirements the facility may require *such as, "knows what each med is used for, name and recognize each med, common side effects and proper dose."*

NOTE: Facility *must have policies and procedures for monitoring a resident who self-administers medication*. "Takes or Administering medication" is described as" placing the medication in its final destination"- a pill that is swallowed; eye drops into the eyes.

Residents that require no assistance with the medications must store their medications according to the facility's policy and procedures. If a locked cabinet, container or closet is used to store the medication the facility staff must be a key also in event of an emergency. You must know where to find a list of the medications currently being taken by the resident. The service plan should state how the meds are being stored.

Circumstances changes: If you **notice pills on the floor** in a resident's room or apartment, please bring this to the attention of management. If you notice that a recently filled prescription bottle is empty- tell management. Perhaps it's time that the Service Plan be amended to include medication assistance and the representative/family member will be contacted. Until then, no documentation of medication administration is necessary for those who "self-med."

Assistance in Self-Administration of Medication - R9-10- 816

C. If an assisted living facility provides assistance in the self-administration of medication, a manager shall ensure that:

1. A resident's medication is stored by the assisted living facility;

2. The following assistance is provided to a resident:
   a. A reminder when it is time to take the medication;
   b. Opening the medication container or medication organizer for the resident;
   c. Observing the resident **while the resident removes** the medication from the container or medication organizer;
   d. Except when a resident uses a medication organizer, verifying that the medication is taken as ordered by the resident's medical practitioner by confirming that:
      i. The resident taking the medication is the individual stated on the medication container label,
      ii. The resident is taking the dosage of the medication stated on the medication container label or according to an order from a medical practitioner dated later than the date on the medication container label, and
      iii. The resident is taking the medication at the time stated on the medication container label or according to an order from a medical practitioner dated later than the date on the medication container label;
   e. For a resident is using a medication organizer, verifying that the resident is taking the medication in the medication organizer according to the schedule specified on the medical practitioner's order; or
   f. Observing the resident while the resident takes the medication;

3. Policies and procedures for assistance in the self-administration of medication are reviewed and approved by a medical practitioner or nurse; and

4. Assistance in the self-administration of medication provided to a resident:
   a. Is in compliance with an order, and
   b. Is documented in the resident's medical record.

This regulation came into effect October 2013 and was finalized July 1, 2014, which requires the facility to store the medication may open the container or packaging; however the resident must remove it from the container or packaging system and staff observe them take it. This is more like a reminder "it's time to take the medication." Currently facilities can or do offer this level of assistance for meds such as: Nitroglycerin tablets, eye drops, & inhalers

Medication Administration: R-9-10-816

B. If an assisted living facility provides medication administration, a manager shall ensure that:

1. Medication is stored by the assisted living facility;

2. Policies and procedures for medication administration:
   a. Are reviewed and approved by a medical practitioner, registered nurse, or pharmacist;

   b. Include a process for documenting an individual, authorized, according to the definition of "administer" in A.R.S. § 32-1901, by a medical practitioner to administer medication under the direction of the medical practitioner;

   c. Ensure that medication is administered to a resident only as prescribed; and

   d. Cover the documentation of a resident's refusal to take prescribed medication in the resident's medical record; and

3. A medication administered to a resident:

   a. Is administered by an individual under direction of a medical practitioner,

   b. Is administered in compliance with a medication order, and

   c. Is documented in the resident's medical record.

This means **full assistance with medications** per the facility's policies and procedures. Each facility must outline all requirements the facility will follow but typical will include but not limited to that the staff will:

- ❑ Store the medication according to DHS Article 8 requirements
- ❑ Confirm all orders (the 5 rights)
- ❑ Open the container, packaging system
- ❑ Place the specified dose into a cup, mouth or by prescribed route and
- ❑ Observe and ensure medication is taken
- ❑ Would include obtaining order to crush and place in food (if needed)

Scope of Practice in Review

- ❑ "Doctor" delegates task in writing
- ❑ Must Have Order for Everything (any item that has drug fact on container)
- ❑ Orders come from the "Doctor"(a Medical Practitioner)
- ❑ We find our orders on the M.A.R (all orders are then maintained in resident medical records)
- ❑ A Complete Order includes: The 5 RIGHTS
- ❑ There are 3 level of medication management services by which residents receive/take their medications
- ❑ DHS is the governing body for Assisted Living Facilities

Before we start: Wash or sanitize hands then, gather your equipment!

REMEMBER: Handwashing is the single most important thing you can do to prevent the spread of disease.

Equipment and Supplies for Medication Administration

The "6" Rights of Medication Administration *(Nursing Standards and "ALF Medication Services" Guidelines)*

1. Right resident

- Check the name on the order and the resident.
- Use 2 identifiers.
- Ask resident to identify himself/herself if possible.
- When available, use technology (for example, bar-code system) E-Mar, Pictures

2. Right medication

- Check the medication label.
- Check the order (on the MAR)

3. Right dose

- Check the order.
- "*Dosage" = how strong and the Amount = How many"* **Example**- Doctor orders Tylenol **325mg** take **2 tabs** P.O. TID
- Confirm appropriateness of the dose using a current drug reference.
- If necessary, calculate the dose and have another calculate or check the dose as well.

4. Right route

- Again, check the order and appropriateness of the route ordered.
- Confirm that the resident can take or receive the medication by the ordered route.

5. Right time

- Check the frequency of the ordered medication.
- Double-check that you are giving the ordered dose at the correct time.
- Confirm when the last dose was given.

6. Right documentation

- Document administration AFTER giving the ordered medication.
- Chart the time, route, and any other specific information as necessary. For example, the site of an injection or any laboratory value (such as BG test) or vital sign that needed to be checked before giving the drug.

Plus 3 of Medication Management to Consider"

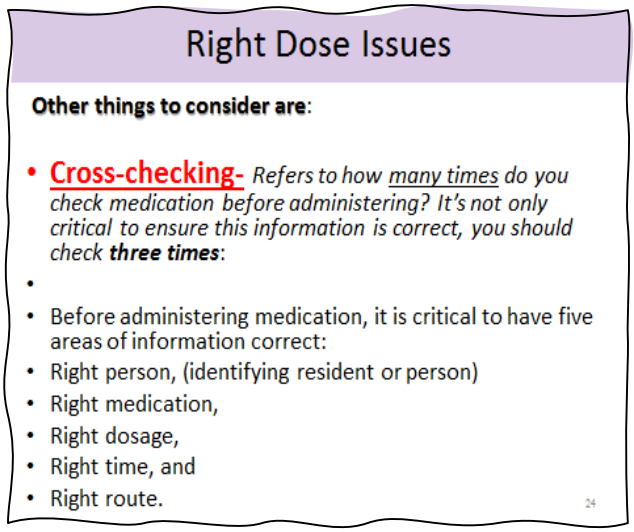
1. **The Right to Refuse**: (part of resident rights) **Right to refuse services**, unless such services are court ordered or the health, safety or welfare of **other individuals** is endangered by the refusal of services

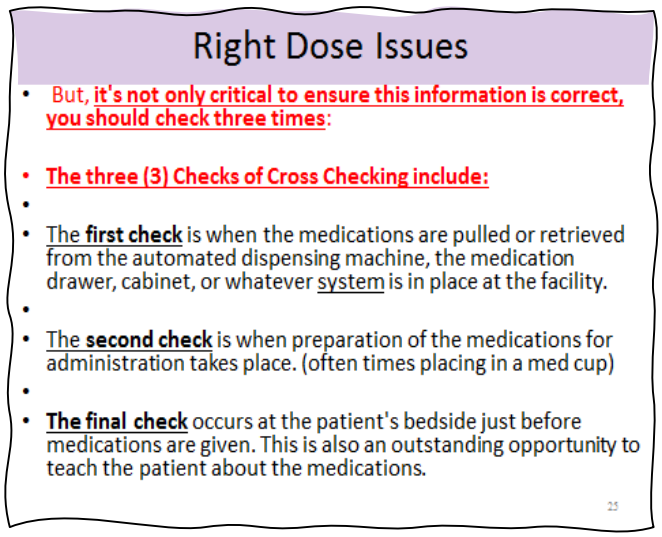
    - Check the house policy: What to do? **REPORT & DOCUMENT!!!!**
    - Try later, notify manager or nurse, Notify medical practitioner, responsible party. **DOCUMENT**
    - Initial box of MAR, circle and write "story" on back of MAR (may require incident report also)

2. **Observe resident take** the medication—for safety and ensure was taken

3. **The Right Reason for the PRN**

    - Why is the med prescribed,
    - What is it used for?
    - Caution with PRN meds- only given for that reason!!
    - Do not use any P.R.N. more than 14 consecutive days!! Must notify medical practitioner that resident is requesting the medication routinely –
    - Doctor must address next steps and provide solution or new orders





Other things to consider that must be followed are

Precautionary statements need to remain as part of the order. For example:
- ❑ "Do not take medication with milk."
- ❑ "Must store in refrigerator."

Parameters are conditions guiding you to make correct decisions. For example:
- ❑ "Hold blood pressure medication if diastolic pressure is < 80"

- ❑ **Medication reconciliation** (often called Med Reviews or Re-caps in nursing and or Assisted Living) and is defined as the process of making sure the Assisted Living Facility's list of a resident's **medications (Current med orders)** matches what the resident is actually taking (what's on the MAR) because resident **medication** regimens change frequently in the Assisted Living Facilities and it's easy for mistakes to be made during transitions in care.

Importance of giving medications (as ordered) on time!

- ❑ To Maximize the effect and benefit of the drugs per Medical Practitioner orders
- ❑ To maintain prescribed therapeutic levels
- ❑ To maintain the safe use of the med

"2 Hour Window of Opportunity"

- ❑ 1 hour **before** and 1 hour **after** the prescribed time is still considered ON **TIME!**
- ❑ Applies to Routine Meds **ONLY!**

Routes of Administration

❑ Oral ❑ Topical ❑ Nasal ❑ Eye ❑ Ear	❑ Vaginal ❑ Rectal ❑ Injection ❑ Sublingual ❑ Inhalation	❑ Buccal ❑ Peg Tube ❑ Oxygen

Understanding Routes of Medications

Medication Route	Definition	Example
Oral Medication	Is a medication that is taken by mouth. It may be solid or liquid form. Some may be taken "as is;" others may require mixing in a beverage.	Bayer Aspirin, cough drops, liquid Tylenol, Metamucil
Sublingual	Medication that is placed under the tongue where it is left until it dissolves	Nitroglycerin
Injection	Medication that is injected into the muscle, or under the skin, by a needle	Morphine, Vitamin B12
Eye drops (ophthalmic)	Liquid medication dispensed from a small bottle with restricted opening. Dropped directly into the eye(s) Often needs refrigeration	Visine, Artificial tears
Ear Drops (otic)	Medication in liquid form placed into the external ear,	Debrox
Nose drops (Nasal)	Medication in liquid form placed into the nostril	Afrin
Topical	Medication that is applied to the skin: creams, ointments	Neosporin
Rectal/Vaginal Suppositories	Medications that are mixed in a base that will melt at body temperature then molded into shapes for insertion	Dulcolax rectal suppositories or Monistat Vaginal suppositories
Inhalers (pulmonary inhalants)	Inhalers are hand-held portable devices that deliver medication directly into the lungs, through the mouth	Proventil, Ventolin
Transdermal (patches)	Medication absorbed through skin through application of a patch	Duragesic, Fentanyl, Nicotine
Buccal, or buccal cavity	Pouch between the cheek cavity & gum at back of the mouth	Midazolam and diazepam
Peg Tube	Meds in liquid form given thru a tube directly into the stomach. Conduit is called a gastrostomy or PEG tube	Liquid Tylenol
Oxygen	Oxygen is compressed gas, Oxygen as a medication is supplied per order by an O2 company	Equipment, E-tanks, Concentrators, demand tanks

Routes of Medication are grouped into 2 main categories:

1. **Parenteral** medications- are those medications that are injected into the body. Typically this is done intravenously (directly into the bloodstream) or by injection though the skin, fatty tissues, and /or muscle into the body. (intradermal, subcutaneous, Intramuscular)

2. **Non-parenteral** medications-are all other medications that enter the bod through any route other than injections. (See routes administration table on previous page)

FYI: Enteral administration involves the esophagus, stomach, and small and large intestines (i.e., the gastrointestinal tract). Methods of administration include oral, sublingual (dissolving the drug under the tongue), and rectal. Parenteral **routes**, which do not involve the gastrointestinal system.

Elixir vs. Suspension

1. **In an elixir**, the active ingredients are mixed with a liquid, usually a kind of syrup or alcohol, in which they can dissolve.
2. **In a suspension**, the medicine is mixed with a liquid, usually water, in which it cannot dissolve and therefore remains intact in the form of small particles.
3. The important thing to remember is that you **have to shake a suspension** before giving each dose so that the medicine particles are evenly distributed throughout the liquid.
4. **Elixirs are typically** more concentrated, so remember to always read the dosage instructions on the bottle before giving any medication.

To Crush or not to Crush:

Must have an order to crush the medications some medication should not be crushed such as

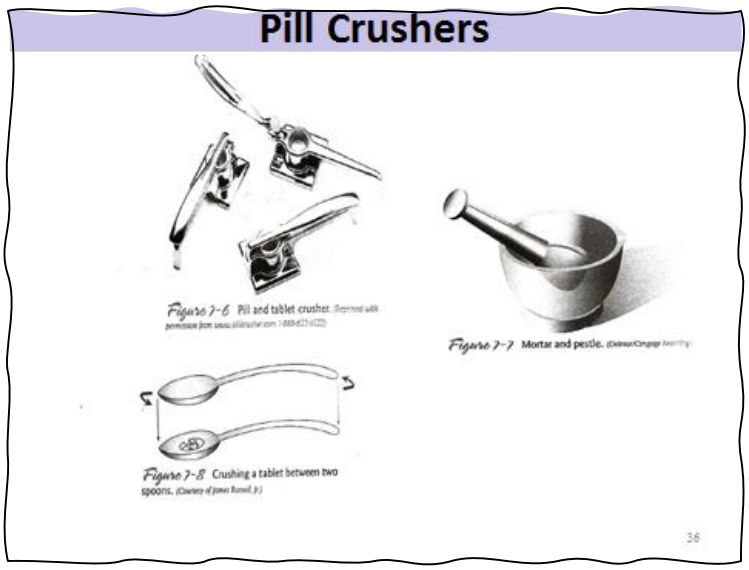
- **Slow-release tablets** are generally intended to be swallowed whole. They should not be **crushed**, split, or chewed. If a **slow-release tablet** is **crushed**, split, or chewed, a large amount of the medicine may be released all at once. This **could** cause serious harm

- **Sugar coated/ enteric coating**- candy like covering to protect the person interlining of stomach- crushing it destroys this property Example, Ibuprofen

- **Softgels can** be cut open. Although **not recommend** doing this for a number of reasons: it is difficult to get all the medication out of the softgel so chances are you won't get the full dose also it can be difficult to cut a softgel

Hiding medication in food?

Called covert medication is the practice of hiding medication in food or beverages so that it goes undetected. Tablets may be crushed or liquid forms of medication may be used for patients who are either not in a position to give consent or refuse consent because of lack of insight. In ALF in Arizona you must have an order to crush and to hide in food and by law could be considered Assault and Battery



Treatments: What are treatments?

R9-10-101. Definitions
In addition to the definitions in A.R.S. § 36-401(A), the following definitions apply in this Chapter unless otherwise specified: "Treatment" means a procedure or method to cure, improve, or palliate an individual's medical condition or behavioral health issue.

Could include:
- ROM exercises
- Behavioral Health treatment

Treatments: Typical in Nursing & ALF Means
A physician ordered application of a medication usually by a topical or inhalation type route: Used to treat a number of medical Conditions:
- Infections
- Wounds
- Chronic Conditions
- SVN treatments

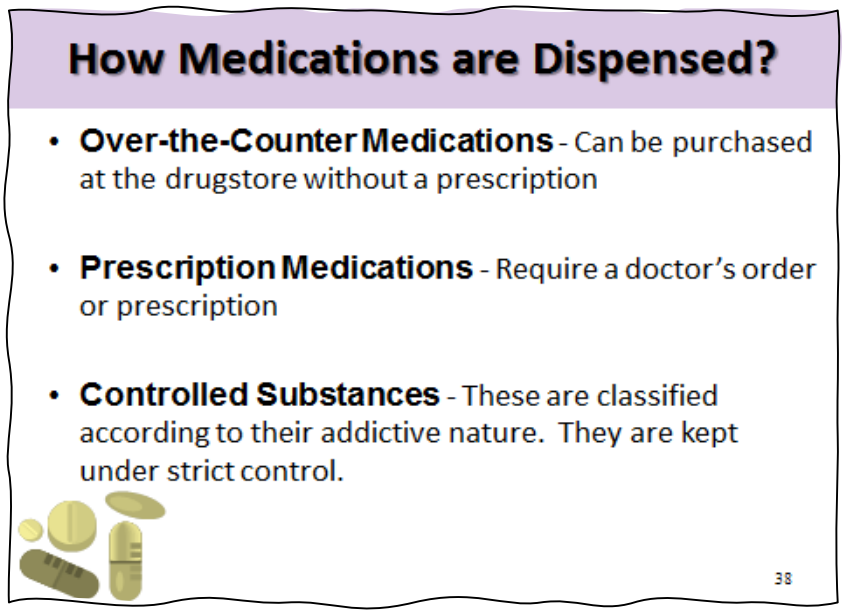
Important to consult with a Home Health agency to administer--- If it's more than first aid it's a treatment that may require a nurse to follow.

Treatments are a specific procedure for delivering medications, for the purpose of promoting or restoring good health. It is still "Medication Administration." However the administering of some "medications" requires *detailed steps, steps* that are an integral part of the medication order.

Usually a topical medication is involved in a treatment. For example:
- Breathing treatments 4x a day,
- Triple antibiotic ointment to a wound daily.

Yes, you need orders for "treatments" which are medications:

- You must have and follow All 5 basic rights of administration.
- If resident is unable to self-administer, doctor must delegate this, in writing, to caregivers.
- All the steps of the procedure will be written in the order.
- Documented typically on the MAR
  .
- They may use special Treatment Administration Records (TAR's) to record order and for documentation purposes.



Medication categories /Classification

- **Antibiotics**- kill or prevent the growth of organisms
- **Cardiovascular Drugs**- treat heart disease
- **Nervous system**- treat or cure related illness of nervous system- brain, spinal cord,
- **Respiratory Drugs**- resp tract- Lungs
- **Gastrointestinal Tract**- digestive system from month to anus
- **Hormones**- complex chemical substances produced in the body
- **Topical Medications**- forms of ointments, salves to cure conditions of the skin or body
- **Nutritional Agents**- used to supplement the nutrition of the body- meds, liquids,

- **Psychotropic Meds**- used to affect the mental function, behavior such as anxiety, sleeplessness, these are behavior altering meds,

EXAMPLES

- **Steroids**
- **Antibiotics**
- **Heart/BP meds**
- **Pain meds and NSAID's**
- **Psych meds**

Homework! Handout #3

(Do medication reference book exercise)

- ***Medication references*** *: Are books or websites used that provide information about medications most widely used is PDR- "Physician Desk Reference" (by doctors and nurses) ALF- "The Pill Book"*
- *Note: if using website be sure it is legitimate site for the most reliable medical information*

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Storing Medications

If in residents possession

» Needs to be in locked box, cabinet or behind locked door (per facility policy)

Generally kept in centralized location

» Locked Med cart or med room or cabinet

» Mediset – use storage- filling will discuss later

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Storing Medications (continued)

- Never leave medication unattended
- Never store medication in bathroom or laundry room
- Store in original labeled containers
- Some medication need to be refrigerated (locked)
- Can be pre-poured into organizers – up to 4 weeks in advance

Do not store medications that

- Have been discontinued
- Passed their expiration date
- Belong to resident who is no longer in facility

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Narcotic (Controlled Substances) Storage

- ❑ More stringent rules
- ❑ Count meds at the beginning and at end of shift
- ❑ Requires extra documentation
- ❑ Disposing of properly
- ❑ *The Controlled Substances Act of 1970* set very tight control on specific groups of drugs abused by society which include: **Depressants, narcotics, and stimulants**
- ❑ **Drug loss:** Many times is referring to **any controlled substance loss** (*med is unaccounted for, such as by theft or mishandled*) *(significant or not),* which must be reported to supervisor and in some states (i.e. California) to "the state board of pharmacy."

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Controlled Substances- Must Lock and Count All Controlled Substances

- Controlled Substances schedules **(are identified** as) are writing in what type of numbers? **Roman numerical**
- **There are 5 Schedules: Schedules I- V**

Schedule I- high potential for abuse, has no accepted medical use in the US- example heroin, **marijuana. AZ policy on Medical Marijuana??? What's the P &P**

Schedule II- high potential for abuse, but does have an accepted medical use in the US. May lead to severe psychological or physiological dependence- Examples: Demerol, morphine, Seconal * Should be accounted for– per house policy should count every shift.... (see count sheet)

Schedule III- accepted medically lower potential for abuse than I & II Ex- Tylenol 3, Fiorinal.

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Controlled Substances

Schedule IV- has a lower potential for abuse than Schedule II drugs but may lead to limited physical or psychological dependence. Examples: Valium, Phenobarbital.

Schedule V- lowest potential for abuse of all controlled substances. These drugs include meds that have limited quantities of narcotics. Example: cough syrup w/ codeine, antidiarrheal

Regulation state that :

- ❑ ALL controlled substance are to be counted,
- ❑ consult policy or pharmacist for which drugs are controlled substances
- ❑ If the Narcotic needs to be disposed of, it should be destroyed per 2 people & documented ! (see Narc count handouts 8-9)

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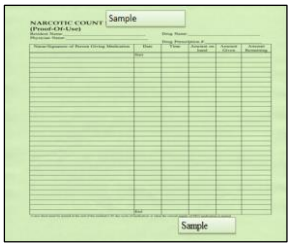


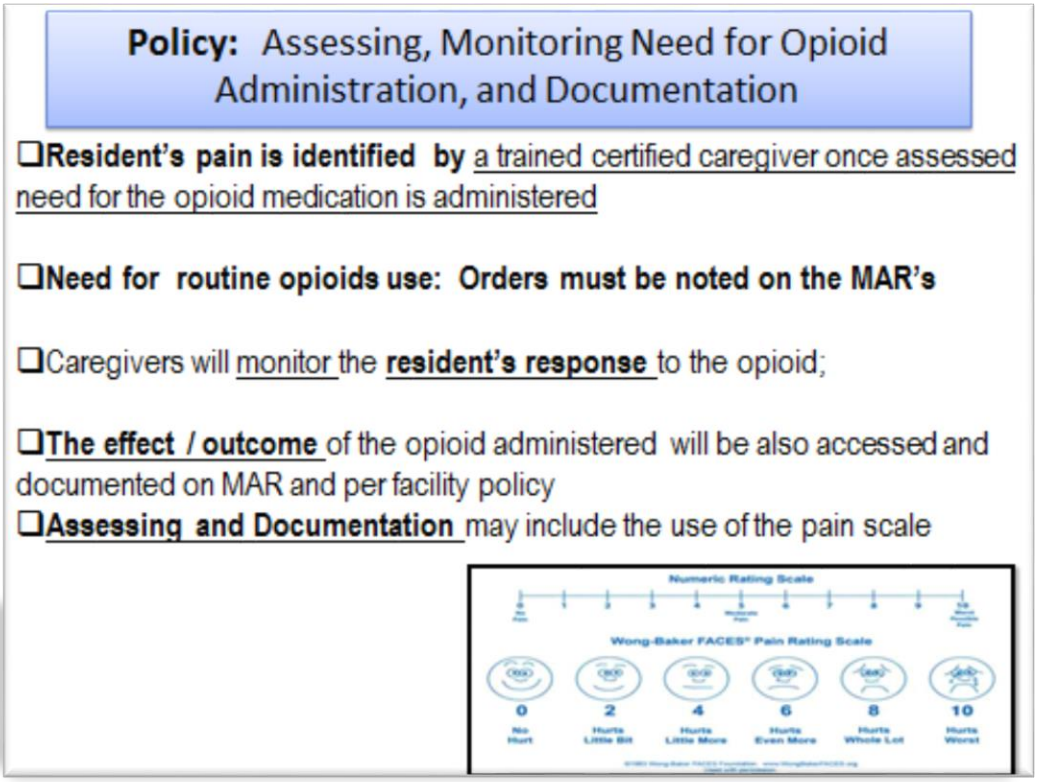
OPIOIDS

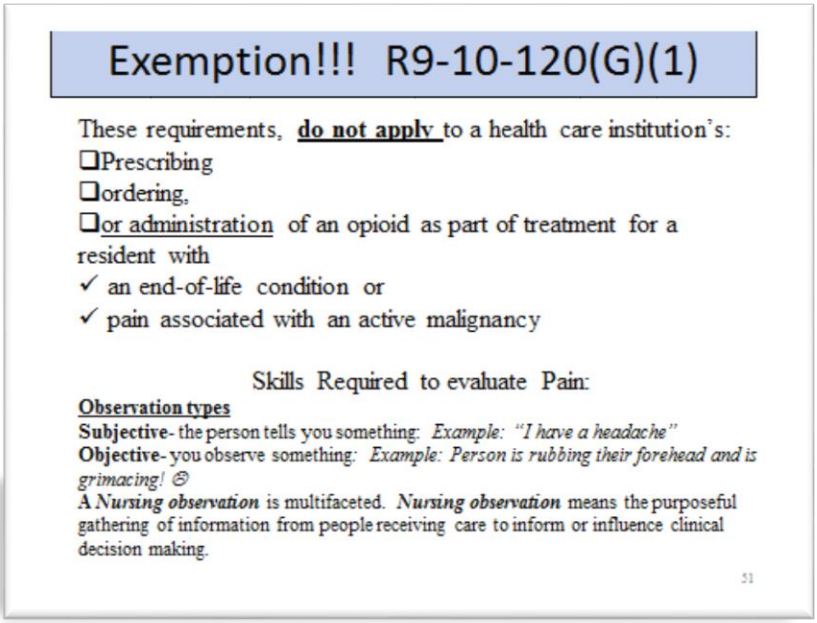
Prescription opioids are powerful pain-reducing medications that include oxycodone, hydrocodone, and morphine, among others, and have both benefits as well as potentially serious risks.

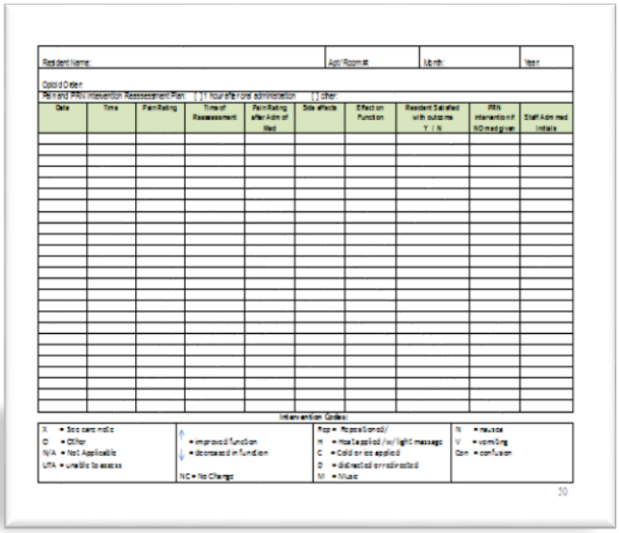
However, too many Americans have been impacted by the serious harms associated with these medications, and despite ongoing efforts, the scope of the opioid crisis continues to grow.

Real Time Opioid Data

https://www.azdhs.gov/prevention/womens-childrens-health/injury-prevention/opioid-prevention/index.php





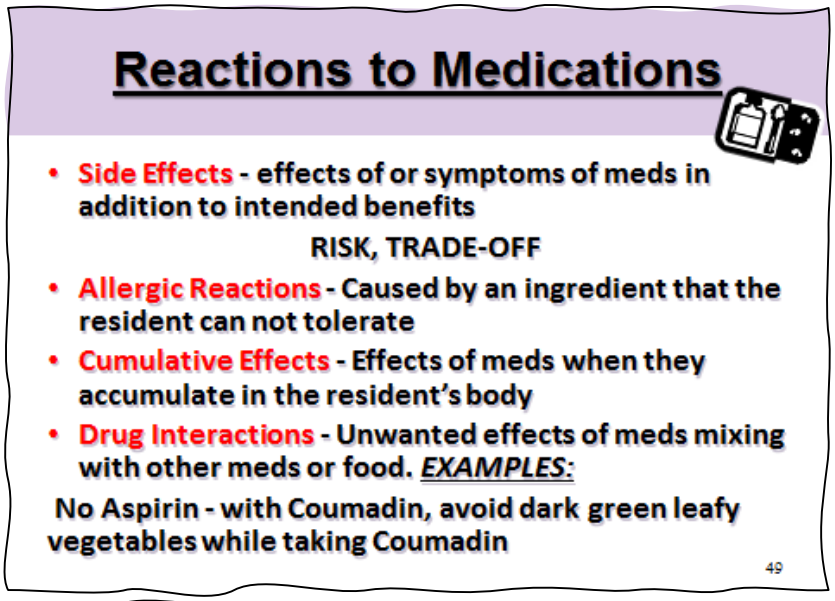


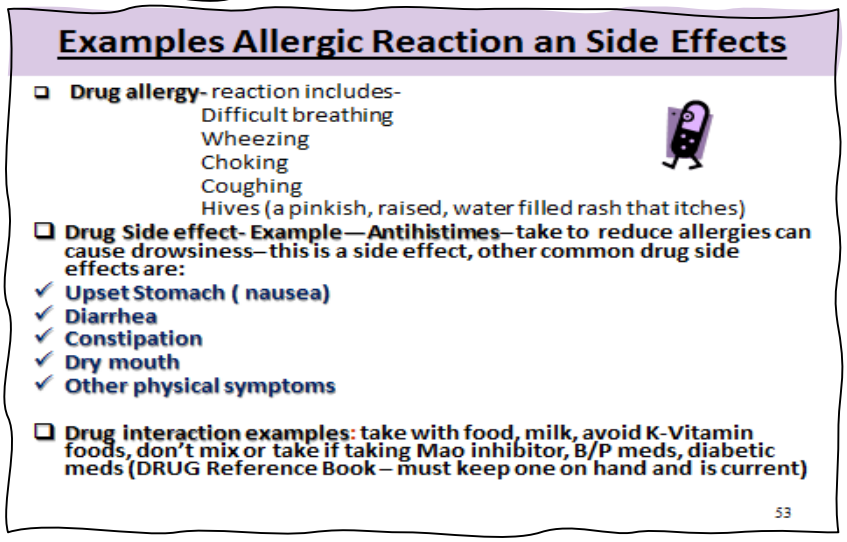
Right response (appropriate response) typically is referring to medications and are they working properly.

- Did the drug lead to the desired effect or any undesired effect*? Examples: If an antihypertensive was given, has his/her blood pressure improved? Does the patient verbalize improvement in depression while on an antidepressant*?

- Be sure to document the monitoring of the resident and any other nursing interventions that are applicable.

Drug tolerance is a pharmacological concept describing person's reduced reaction to a drug following its repeated use. Increasing its dosage may re-amplify the drug's effects; however this may accelerate tolerance, further reducing the drug's effects





MEDICATION EFFECTS: Some common examples mild adverse effects related to drugs include:

- Constipation.
- Skin rash or dermatitis.
- Diarrhea.
- Dizziness.
- Drowsiness.
- Dry mouth.
- Headache.
- Insomnia.

Unwanted or Unexpected Drug Reactions

- **Side effects**, also known as **adverse** events, are unwanted or unexpected events or reactions to a **drug**.
- **Side effects** can vary from minor problems like a runny nose to life-threatening events, such as an increased risk of a heart attack.

Medication Errors/ Medication Occurrence

Medication errors ALSO Called: Medication Occurrence

DEFINITION. A *medication* variance is any preventable event that may cause or lead to inappropriate ***medication*** use or patient harm while the ***medication*** is in the control of the health care professional, patient or consumer.

For the purpose of reporting, a ***medication occurrence*** is defined as an event that **results from a breach** of one of the five "R's,"/ rights:

1. Right individual/person,
2. Right *medication*,
3. Right time,
4. Right dose, and
5. Right route.

Also called medication errors or medications variances. 54

Steps to take when an Error Occurs

- ❑ **Take Vital Signs-if in distress call 911**
- ❑ **Call Manager or Supervisor and REPORT**
- ❑ **Call Physician**
- ❑ **Follow/complete Physician's instructions**
- ❑ **Call Family, talk w/ resident reassure and Monitor closely**
- ❑ **Complete med/incident report –Document FACTS!**
- ❑ **Identify possible reasons why it occurred- "didn't follow procedure!!!"**
- ❑ **Take Actions to prevent similar errors in the future- Manager will complete Action plan.**
- ❑ **All incidents**, events, irregular occurrences, and variances must be identified and reported according to the facility's P & P
- ❑ The purpose of this reporting is to give the facility and the care professionals the opportunity to **address the issue and prevent the occurrence of future incidents, events, irregular occurrences**, and variances. The data collected on these reports is analyzed, tracked and trended.

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Disposing of Medications

Medications are disposed of when:

- a physician dc's it
- it is outdated
- The form has changed (pill → liquid)
- the resident has moved or died

Tips for Disposing Medications

In some cases it can be returned to the pharmacy
check facility policies (Document disposed med)
usually done within 72 hours
For disposing NARCOTICS- 2 signatures are required
Follow AZDEQ rules! Never flush down toilet or drains
Resource: https://www.medline.com/product/Drug-Buster-Drug-Disposal-System/Pharmacy-Supply/Z05-PF19622

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DISPOSAL OF MEDICATION RECORD

RESIDENT'S NAME: _____ Room#_____

DATE: _____ TIME: _____

The following Medications were destroyed:

Name of Medications Destroyed:	Amount
1.	
2.	
3.	
4.	
5.	

Method used:

- ❑ diluted and place in bio-boX
- ❑ USE "DRUG- BUSTER SOLUTION SYSTEM"

Reason meds were destroyed: (check one)

- ❑ Discontinued
- ❑ Resident deceased
- ❑ Outdated
- ❑ Form of med changed
- ❑ Other

(Narcotics always require two signatures when destroying)

_____
Signature & Title

_____
Signature & Title

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Assisting a Resident who will be away from the facility:

When a resident leaves the home/facility be sure to:

- **Document his/her absence & the meds taken with them on their LOA**
- **Explain med orders**
- **Package the meds properly**

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Sample only

Medication Release Form

This form is to be completed each time a resident leaves the residence with his or her medication. Medication orders must be followed so residents who will be away from the residence for more than a few hours must take their medications.

Name of Resident _____

Date(s) of Travel/Absent _____

Medication Given to the Resident or Responsible Party

	Name of Medication	Strength/Dosage	Amount Given to resident
1.			
2.			
3.			
4.			
5.			

Signature: _____
Person taking Medications out of the Residence

Relationship to the Resident _____

Signature: _____
Staff Member releasing medications

Note: It is the responsibility of the staff member releasing the medications to share all instructions regarding the medications. Medications must be administered according to the physician's orders. This signed acknowledgment must be kept in the Medication Sheets book until the resident returns. Upon return, this form should be filed in the Resident's Record.

sample

Steps to Maintaining Sanitary Conditions

1. Implementing Universal Precautions
2. Following appropriate hand washing procedures
3. Cleaning & Disinfecting the Medication cupboard and work area
4. Disposing of infectious waste appropriately
5. Learning the proper sharps procedure

CLASSIFICATION	Definition with action (effect) on the body	Examples of Medication(s)
Acne medications	Medication uses to treat acne	**Benzac** **Accutane** **Sotret**
Alpha blockers	Meds that relax the muscles in the neck of the bladder, thereby decreasing the symptoms of BPH & increasing the passing of urine	Cardura **Flomax** Hytrin
✓ Analgesics	Medications used to relieve pain caused by many different conditions	**Narcotic:** **Nonnarcotic:** Codeine Tylenol Duragesic Advil Vicodin Aspirin Dilaudid Morphine
✓ Analgesis-antipyretics	Medications the (1) relieves pain and (2) reduces fever	Aspirin **Tylenol** Excedrin Fioricet
Androgens	Male hormones that produce male characteristics: also used to treat metastatic breast cancer, endometriosis and fibrocystic breast disease in women	Danocrin Android Estratest
Anesthetics	Medications used to (1) prevent pain,(2) relax muscles, and (3) induce lack of sensation during surgery and other procedures	Marcaine HCL Xylocaine HCL Novocain
✓ Antacids	Medications that neutralize hydrochloric acid in the stomack and used to (1) treat indigestion, heartburn and pain(2) to promote healing of ulcers; and (3) to manage esophgeal reflux	Tums Riopan Maalox **Mylanta**
Antiandrogens	Meds that decrease the size of the prostate, thereby decreasing the symptoms of BPH and the urinary obstruction caused by enlarged prostate	Proscar Avodart
✓ Antianxiety	Med that counteract or relieve anxiety, also used for sedation before some medical treatments	Xanax Valium **Ativan** BuSpar
Antiarrhythmics	Medications used to treat an arrhythmia (irreguar heartbeat)	Verapamil **Inderal** Pronestyl Norpace
Anitbacterial	Medication used to treat bacterial infections	**Bactrim** Septra

Medication references *:* Are books or websites used that provide information about medications most widely used is PDR- "Physician Desk Reference" (by doctors and nurses) in ALF – commonly used is "The Pill Book"

Note: if using website be sure it is legitimate site for the most reliable medical information

CLASSIFICATION	Definition with action (effect) on the body	Examples of Medication(s)
✓ Antibotics	Medications used to treat infectious diseases	**Keflex** Erythromycin Amoxicillin Cipro Achromycin
✓ Anticoagulants	Medication that prevent or delay clotting of the blood	Coumadin Aspirin
✓ Anticonvulsants	Medications used to treat people who have seizures / suffer with epilepsy	Tegretol Topamax **Dilantin** Phenobarbitol
✓ Antidepressant	Meds that elevate mood	Elavil Nardil Celexa Wellbutrin
✓ Antidiabetics (oral)	Meds that are used to manage and treat Non-insulin dependent diabete mellitus (NIDDIM-Type 2 diabetes)	Diabinese Glucotrol **Glucophage** Diabeta Precose
Antidiarrheals	Meds that decrease the number of loose, watery stools (diarrhea) an person is having	Lomotil Kaopectolin Imodium
✓ Antiemetics	Medications that prevent or stop vomiting	Reglan Compazine Tigan Anzemet **Zofran**
Antiflatulents	Meds used to treat (1) symptoms of gastric bloating (2) pain from flatus after surgery	Mylicon
Antifungals	Medictions that control conditions caused by fungi	Lotrimin Mycelex **Diflucan** Monistat
Antihelmintics	Meds used to treat helminthiasis, an infection of the intestine with parasitic worms	Stromectrol Vermo Mintezol
✓ Antihistamines	Meds that relieve allergy symptoms	Benadryl Zyrtec Clarinex **Allerga**
✓ Antihypertensives	Meds to treat hypertension (high blood pressure)	**Lopressor** Catapres Norvasc Vasotec
Anti-infectives	Meds that prevent and treat infections	Trimpex Furadantin **Cipro, Cipro XR**

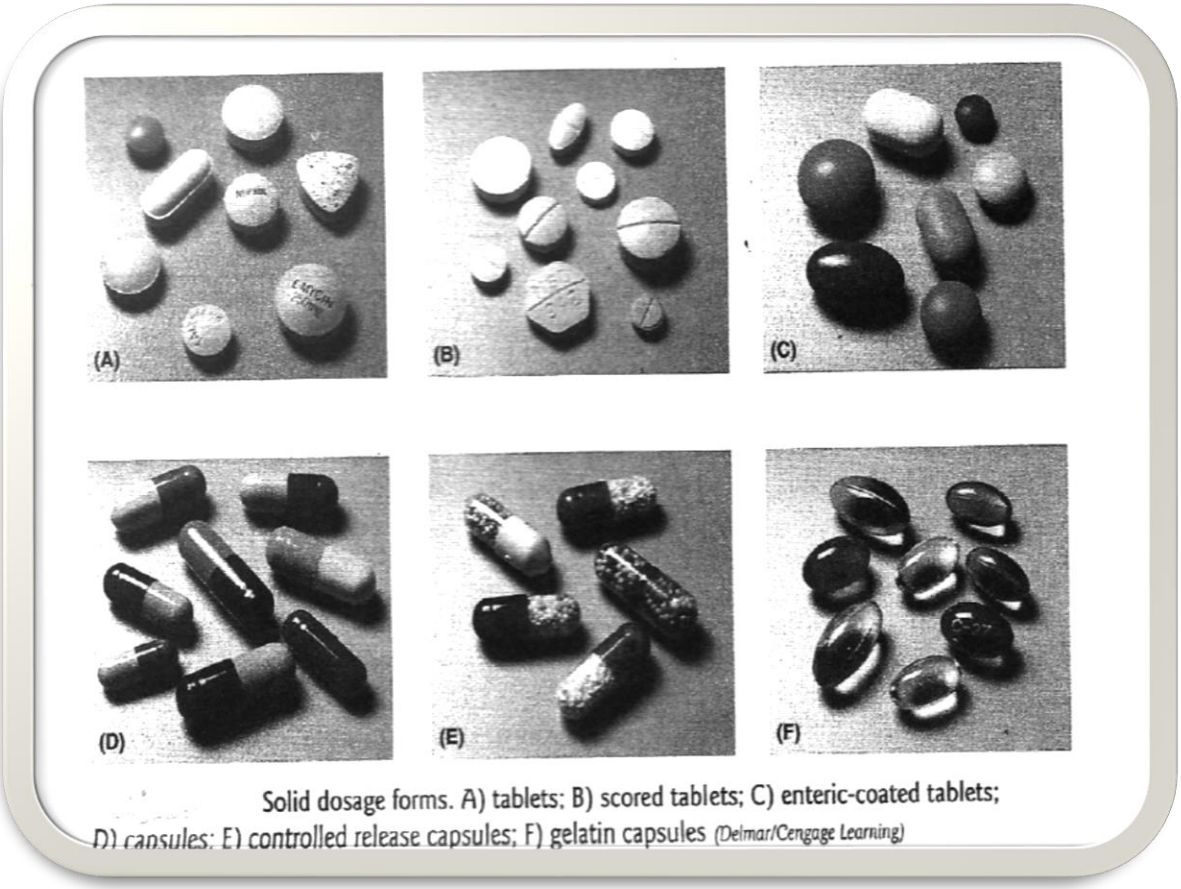
CLASSIFICATION	Definition with action (effect) on the body	Examples of Medication(s)
✓ Anti-inflammatory medications	Medication used to relieve inflammation	Indocin Motrin Acuar **Aspirin**
Antilipidemics	Meds used to treat hyperlipidemia that lower high blood levels of lipids in the blood-such as cholesterol and triglycerides.	Lipitor **Zocor** Lopid Zetia
Antimancis (mood stabilizers)	Meds used to treat the manic phase of bipolar disorder	Lithium Tegretol **Depakote** Symbyax
Antimigraine	Meds used to treat migraine headaches	Replax Maxalt Imitrex
Antineoplastic	Medications that destroy abnormal, damaged, cancer cells, (malignant)	Cytoxan Onocvin Belenoxane Nolvadex
✓ Antiparkinsonian	Medications used to relieve the symptoms of Parkinson disease; also used to treat Parkinson-like side effects from antipsychotic medications	**Sinemet** Parlodel **Cogentin** Symmetrel
✓ Antipruritic	Medications that relieve itching	Solaraine **Benadryl** Cortaid
Antiprotozoal	Medications used to treat diseases caused by parasites, such as malaria	Flagyl Mepron Plaquenil
✓ Antipsychotics	Medications that modify psychotic behavior; also called neuroleptics	**Thorazine** Navane Prolixin Zyprexa **Risperdal**
Antispasmodics	Meds that prevent spasms of urinary bladder	Detrol Ditropan, Ditropan XL Urispas
✓ Anti-thyroid	Meds used for (1) treatment of Hyperthyroidism, (20 prep for removal of thyroid and (3) radioactive iodine therapy	**Tapazole** PTU Thyro-Block
Antitubecular	Medications used to treat tuberculosis	Seromycin Laniazid Rifadin
✓ Antitussives	Medcs that (1) prevent coughing in those who do not need to have a productive cough(2) increase sleeping better, decrease fatigue	Robitussin AC Tussi-Organidin NR **Tessalon** Benylin Robitussin DM
CLASSIFICATION	**Definition with action (effect) on the body**	**Examples of Medication(s)**

Antivirals	Meds used to treat viral infections	**Tamiflu** Relenza Zovirax Valtrex
Biosphosphonates	Meds that directly act to (1) increase bone thickness at the hip and spine and (2) decrease first fractures and future fractures thickness at the hip and spine and (2) decrease first fractures and future fractures	**Fosamax** Boniva Actonel
✓ Bronchodilator	Medications that open up as person's airways, allowing them to breathe better	Slophyllin **Theo-dur**
Burn Medications	Medications used to treat burns	Furacin Silvadene
Cardiac glycoside	Medications (1) strengthen the heartbeat (2) slow the heart rate (pulse) (3) improve the contractions of the heart muscle as it pumps blood throughout the body	**Lanonxin** Lanoxicaps
Cholinessterase inhibitors	Medications that prevent the breakdown of acetylcholine in the brain; used to treat Alzheimer's disease	Cognex **Aricept** Exelon
✓ Corticosteroids	Medications used to treat asthma and some forms of COPD	Beconase AQ Azmacort Nasonex **Flonase** Aerobid
Cox 2 inhibitors	Medications that relieve inflammation, pose less risk to GI bleeding & fewer GI problems than NSAIDs	Celebrex
✓ Decongestants	Medications that shrink the swollen linings of the respiratory tract & open the nasal passages ;used to relieve nasal congestion	Afrin Allerest **Sudafed** Neosynephrine
Demulcents or Emollients	Medications that soother irritation	A & D ointment Desitin
DMARDs- Disease-modifying antirheumatics	Medications used to treat rheumatoid arthritis	**Enbrel** Humira Arava Rheumatrex
✓ Diuretics	Medications that increase urine output and relieve or prevent edema	**Lasix** Aldactone Dyazide Bumex
Estrogens	Female hormones that produce female characteristics; used in hormone replacement therapy and contraceptives & treat various diseased	Estrace Premarin Estratab
✓ Expectorants	Medications that (1) help loosen mucus (2) liquefy bronchial secretions, and (3) remove phlegm (sputum)	**Mucinex** Robitussin
CLASSIFICATION	**Definition with action (effect) on the body**	**Examples of Medication(s)**

Gastrointestinal protectants	Medications that protect the lining of stomach	Carafate Cytotec
Histamine H2 blockers	Medications used for short-term relief of indigestion, heartburn, GERD-gastroesophageal reflux disease, upper GI bleeding and esophagitis	Tagamet Pepcid **Zantac**
Hypnotic	Medication that causes sleep	Dalmane **Restoril** Lunesta Ambien
Keratolytics	Medications that control condition of abnormal scaling or peeling of the skin	Zetar **Tegrin** Neutrogena Podophyllin
✓ Laxatives	Medications that aid the body in the elimination of waste	Metamucil Milk of Magnesia **Senokot** Dulcolax Correctol
✓ Muscle relaxants	Meds that relax the muscles of the body; used to treat pain, muscle spasms, and other conditions affecting the muscles of the body	Soma **Flexeril** Dantrium
Mydriatics	Medications used to dilate the pupil	Atropine Cyclogyl Neo-Synephrine
Muscle stimulants	Medications used to treat the symptoms of progressive musculoskeletal disorders/weakness, such as myasthenia gravis,	Prostigmin
✓ NMDA receptor antagonist	Med used to treat Alzheimer's Disease	**Namenda**
✓ NSAIDs- Non-steroidal anti-inflammatory drugs	Medications use to treat inflammation	Motrin, Advil **Indocin** Naprosyn, Aleve Clinoril
Para-sympatholytic	Medication that cause local bronchodilation	**Atrovent** Spiriva
Pediculicides	Medication used to treat lice	Acticin Nix **Kwell** RID
Phosphodiesterase inhibitors	Medication used to treat erectile dysfunction	**Viagra** Levitra Cialis
Platelet inhibitors	Medications that stop platelets from sticking together and forming clots	Ecotrin **Plavix** Persantine
CLASSIFICATION	**Definition with action (effect) on the body**	**Examples of Medication(s**

Progestin	Synthetic medication that act like the hormone progesterone; used as a contraceptives and to treat various diseases	Prover Depo-Provera Megace
✓ Proton pump inhibitors	Meds that decrease secretion of gastric acid; short term relief of GERD, heartburn, duodenal ulcer, erosive esophagitis	Nexium **Prevacid** Prilosec
Scabicides	Medications used to treat scabies (body lice)	Acticin Nix Kwell RID
✓ Sedative	Medications that calms, soothes or quiets without causing sleep	Luminal Mebaral Amytal **Seconal**
Selective estrogen receptor modifiers	Medications that (1) increase bone thickness and (2) reduce factures; used to treat osteoporosis	Evista Miacalcin
Sympathomimetic	Medications that (1) relieve spasms in the air passages of the lungs and (2) increase the aeration of the lungs; strong bronchodilators with serious side effects	**Proventil** Volmax Isuprel Alupent
✓ Thyroid medication	Meds used to (1) treat hypothyroidism and for replacement therapy (2) treatment after the thyroid gland has been surgically removed or gland has undergone radiation treatment to destroy its cells	Synthroid Levoxyl
✓ Uricosuric medications	Medications (drugs) are substances that increase the excretion of uric acid in the urine, thus reducing the concentration of uric acid in blood plasma. (used for gout)	**Allopurinol**
Vasoconstrictors	Medication that (1) constrict blood vessels and (2) increase blood pressure`	Levophed
✓ Vasodilators	Medications that (1) dilate (enlarge) blood vessels and (2) increase their ability to carry blood; commonly used to treat angina pectoris(chest pain)	Nitrostat Tabs Isordil Nitro- Dur Transderm -Nitro
Wax emulsifiers	Medications used to remove wax buildup of the ear(s)	Debrox Murine Earwax Removal system
Xanthine	Medications that cause bronchodilation; used for acute asthma attacks	Uniphyl Theo-24

Solids and Liquids-Examples



Solid dosage forms. A) tablets; B) scored tablets; C) enteric-coated tablets; D) capsules; E) controlled release capsules; F) gelatin capsules (Delmar/Cengage Learning)

Liquid preparations contain a medication that has been dissolved or suspended. When these med are prescribed/ordered for internal use, the medication is absorbed through the stomach or intestinal walls. Below are some of the different types of liquid preparations:

Type of Liquid Medication	Description
Aerosols	May Contain medications, ointments, creams, lotion, powders, or liquids; packaged in pressurized container; an example would be and inhaler use to treat asthma
Elixirs	Medication dissolved in a solution of alcohol and water that has been sweetened and flavored (there are also non-alcohol types)
Emulsions	Fine droplets of oil in water or water in oil
Liniments	Medications used externally, with massage, to produce a feeling of heat to the area of the body
Lotions	Medications used externally, without massage, to treat skin conditions; may be a clear solution, suspension, or emulsion
Mixtures & Suspensions	Medication that have been mixed with a liquid but not dissolved in it
Solutions	One or more medication dissolve in an appropriate liquid
Sprays	Medications used mainly to treat nose & throat conditions
Syrups	Meds mixed in a concentrated solution of sugar and water, then flavored

Understanding Diabetes and Administration of Insulin

Review pages from Chapter 9 Hartman Text- Endocrine System

Causes of Diabetes:

Insulin is a hormone produced by the **pancreas** it's job is **to convert glucose into energy** which will control blood sugar. Diabetes can be caused by too little insulin, resistance to insulin, or both.

To understand diabetes, it is important to first understand the normal process by which food is broken down and used by the body for energy. Several things happen when food is digested:

- A **sugar called glucose** enters the bloodstream. Glucose is a source of fuel for the body.
- An organ called the **pancreas** makes insulin. The **role of insulin is to move** glucose from the bloodstream into muscle, fat, and liver **cells,** where it can be used as fuel (converting into energy)

People with diabetes have **high blood sugar because their body cannot move sugar into fat**, liver, and **muscle cells** to be stored for energy. This is because either:

- Their pancreas does not make enough insulin
- Their cells do not respond to insulin normally
- Both of the above

There are two major types of diabetes. The causes and risk factors are different for each type:

Type 1 diabetes can occur at any age, but it is most often diagnosed in children, teens, or young adults. In this disease, the body makes little or no insulin. Daily injections of insulin are needed. The exact cause is unknown, but is believed to be an autoimmune disease which causes the immune system antibodies to attack and destroy insulin-producing cells in the pancreas. Onset is young adulthood; people with type 1 diabetes require ***insulin injections*** to survive.

Type 2 diabetes makes up most diabetes cases. It most often occurs in adulthood. But because of high obesity rates, teens and young adults are now being diagnosed with it. Many people with type 2 diabetes do not know they have it.

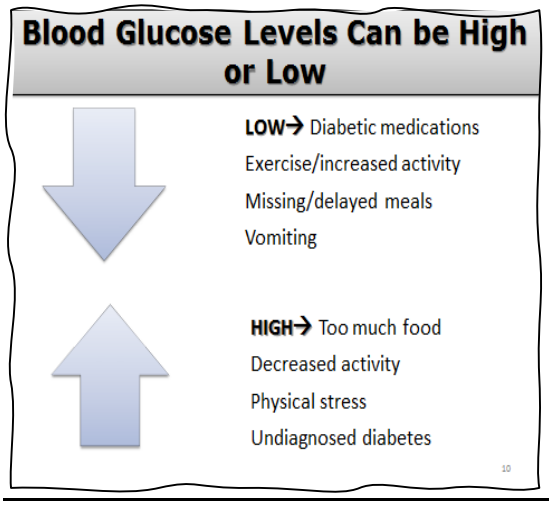
One other causes of diabetes in women:

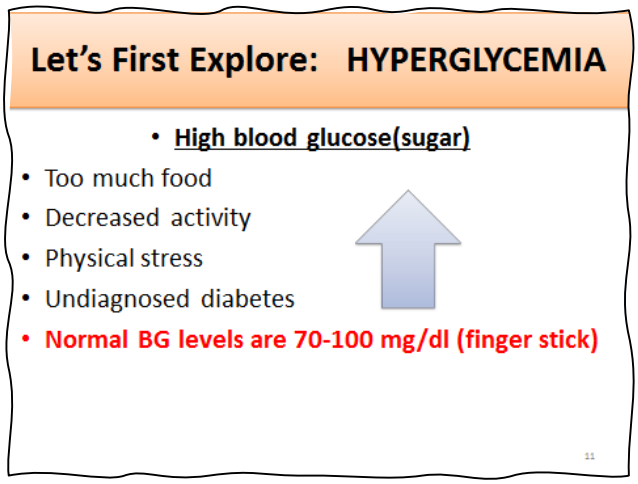
Gestational diabetes **is** high blood sugar that develops at any time during pregnancy in a woman who does not have diabetes.

Diabetes affects more than 20 million Americans. Over 40 million Americans have pre-diabetes (which often develops before type 2 diabetes). If your parent, brother or sister has diabetes, you may be more likely to develop diabetes

- Because **type 2 diabetes develops slowly**, some people with high blood sugar have no symptoms.
- Symptoms of type 1 diabetes develop over a short period. People may be very sick by the time they are diagnosed.
- After many years, diabetes can lead to other serious problems.

Understanding diabetes is an important part of a caregiver's education. 18.2 million People are diabetics. 12.2 million Diabetics are over the age of 60. According to the CDC one out of three people born in 2000 were diabetic. By the year 2050 diabetes will increase by 165%. Diabetes is the 7th leading cause of death. So you can see the importance of your understanding diabetes and the care needs of this disease





Exams and Tests

Blood tests:

- **Fasting blood glucose level** -- diabetes is diagnosed if it is higher than 126 mg/dL twice. Levels between 100 and 126 mg/dL are called impaired fasting glucose or pre-diabetes. These levels are risk factors for type 2 diabetes.
- **Hemoglobin A1c** test --
  - Normal: Less than 5.7%
  - Pre-diabetes: 5.7% - 6.4%
  - Diabetes: 6.5% or higher
- **Oral glucose tolerance test** -- diabetes is diagnosed if glucose level is higher than 200 mg/dL 2 hours after drinking a glucose drink. (This test is used more often for type 2 diabetes.)

Screening for type 2 diabetes in people who have no symptoms is recommended for:

- Overweight children who have other risk factors for diabetes, starting at age 10 and repeated every 2 years
- Overweight adults (BMI greater than 25) who have other risk factors
- Adults over age 45, repeated every 3 years

Hyperglycemia- is when the resident has too little insulin, not enough insulin, eating too much, not getting enough exercise, physical or emotional stress.

"Diabetic Coma" – (ketoacidosis) is a complication of diabetes, when the blood glucose remains too high for extended period of time or is if left untreated can lead to ketoacidosis.

Remember "Sugar" is the primary fuel that the body uses for energy. Insulin, a hormone produced in the pancreas that metabolizes blood sugar, is either deficient or non-existent in the blood of diabetes patients. If the body cannot burn sugar, it will burn stored fat, and ketone build up will begin.

When ketone levels become too high, the risk of ketoacidosis is raised, and this emergency condition can lead to **coma and even death** in serious cases. High levels of ketones are therefore more common in people with type 1 diabetes or people with advanced type 2 diabetes.

When to become concerned? Ketone testing is recommended if any of the following occurs:

- Blood sugar is on or above 250 mg/dl for **two consecutive** tests
- When any illness occurs such as pneumonia, heart attack, or stroke (as even minor illnesses can cause ketones)
- vomiting or diarrhea
- depression or stress
- pregnancy

❑ Some signs of hyperglycemia are increase thirst and urination, stomach pain, hunger, sweet fruity breath odor. Contact appropriate medical provider any time a resident is experiencing increased symptoms or blood sugar readings > than 250mg/dl for two consecutive readings

Discuss an endocrine system disorder and related care guidelines

- **Diabetic Ketoacidosis (Hyperglycemia)**
  - **Causes**: too little insulin; undiagnosed diabetes; going without insulin or not enough; too much food; not enough exercise; or physical or emotional stress
  - **Symptoms**: Increased **thirst** or **urination; hunger;** weakness; rapid, weak pulse; headache; low blood pressure; dry skin; flushed cheeks; drowsiness; slow, deep, and labored breathing; nausea and vomiting; abdominal pain; sweet, **fruity breath odor**; **air hunger; unconsciousness**
  - Occurs gradually overtime of Uncontrolled blood glucose level (running high for several days)

Symptoms of Diabetes

High blood sugar level can cause several symptoms, including:

- ❑ Blurry vision
- ❑ Excess thirst**
- ❑ Fatigue
- ❑ Hunger***
- ❑ Urinating often*
- ❑ Weight loss or gain
- ❑ Dry, flushed skin
- ❑ **Loss of consciousness (diabetic coma)**

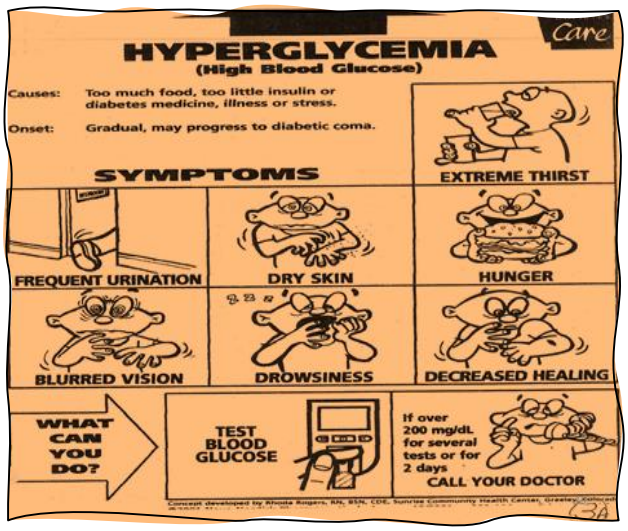
The 3 Polys

1.Polyuria-→passing large volume urine due to more sugar in the urine and as a result person feels thirsty and tends to drink more which is the 2nd P -→

2) Polydipsia →excessive thirst

and feeling hungry constantly, and a desire to eat sweet foods which is the last P →

3) Polyphagia-→ excessive hunger = eating more

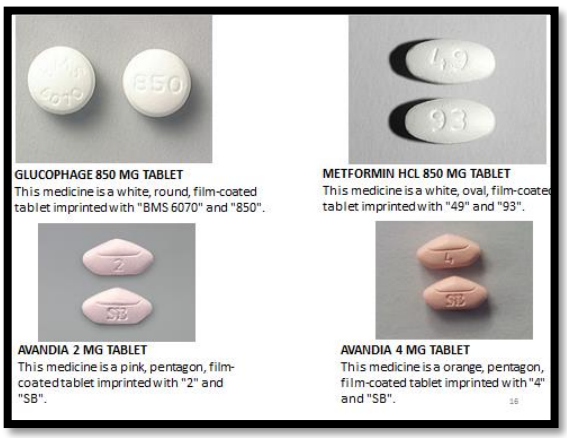


CARE OF THE DIABETIC THE 4 m'S

1. Monitoring
2. Medications
   - ❑ ROUTINE AND / OR SLIDING SCALE-- Insulin's
   - ❑ Order for coverage
   - ❑ Document results
   - ❑ Document insulin given
3. Meals
4. Motivating (exercise)

Common Oral anti-hyperglycemic agents (medications)

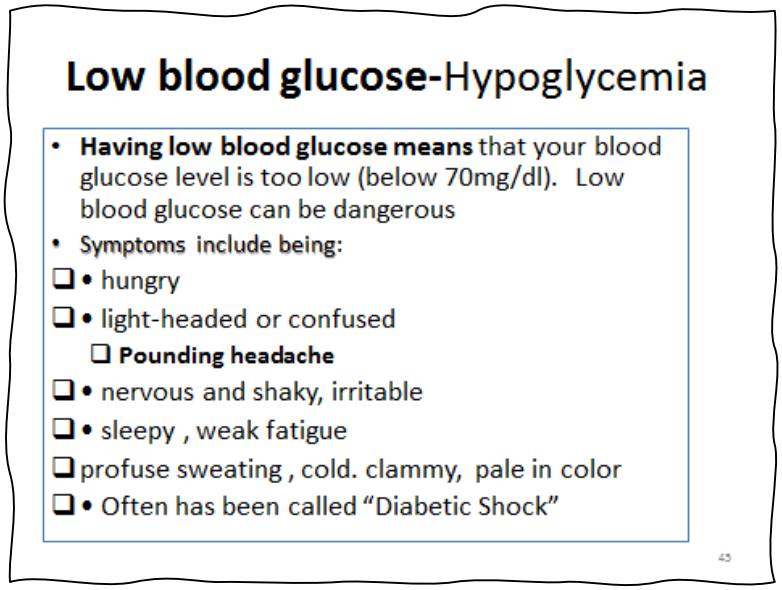
Glyburide	Metformin
Avandia	Glucophage

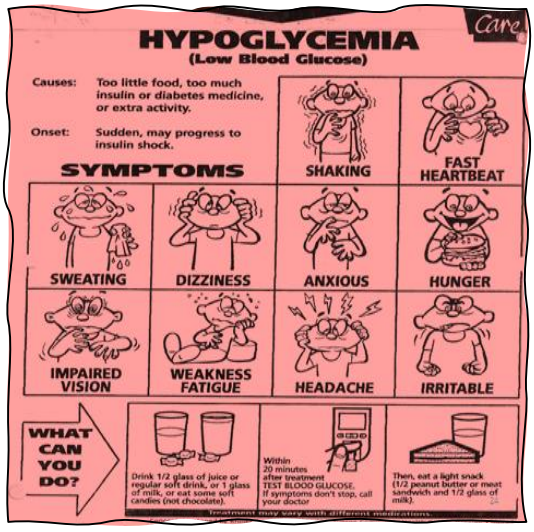


"Insulin-shock "otherwise known as ***hypoglycemia*** results from too much insulin or too little food.

- ❑ This happens when a resident is given insulin or their oral diabetic medication and the person skips a meal or doesn't eat all their food. Vigorous exercise can cause rapid absorption of food causing hypoglycemia.
- ❑ A resident having vomiting and diarrhea is at risk for insulin shock.
- ❑ First signs of insulin shock you should be aware of are: feeling weak or different, nervousness, dizziness, and perspiration. These are signs that the resident needs food. Immediately you need to give them food that is rapidly absorbed such as a lump of sugar, hard candy or a glass of orange juice. Call the resident doctor or 911 when the resident is showing signs of insulin shock.

Having low blood glucose: (hypoglycemia) means the blood glucose level is too low (below 70mg/dl). Low blood glucose can be dangerous. **Usually is sudden onset**!!!

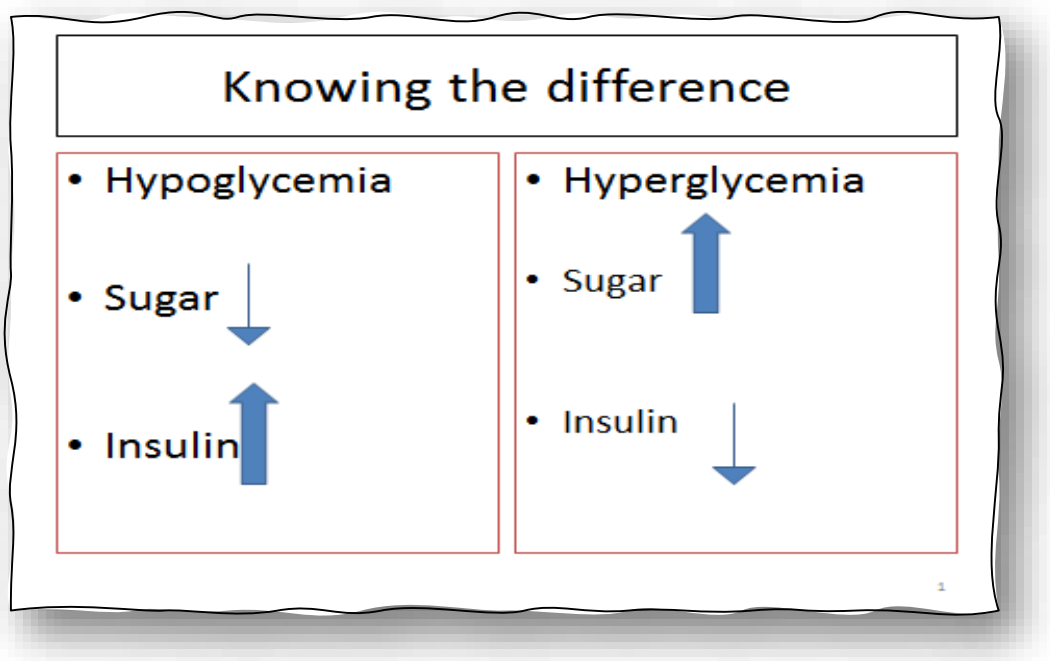


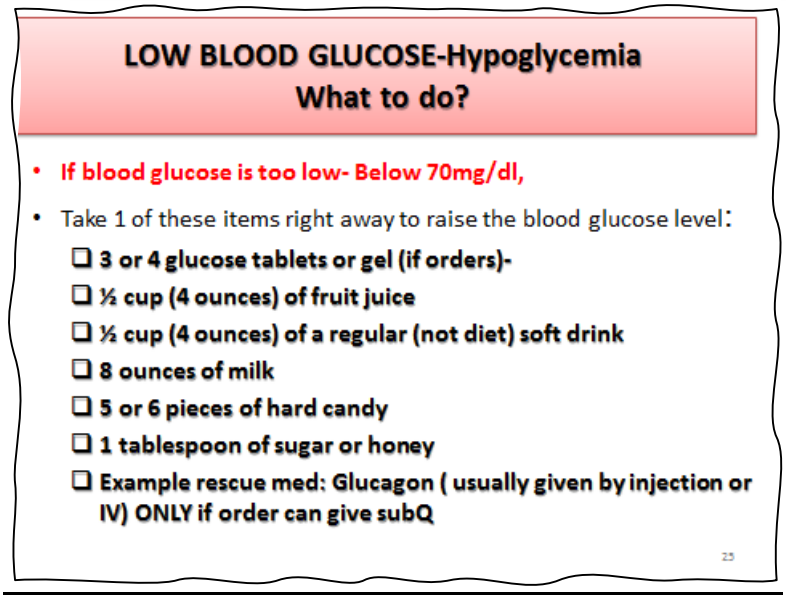


This is considered a **sudden illness** and must be treated immediately, knowing what to do during the emergency is the caregiver's responsibility: Oral hypoglycemic medication such as glucagon could be ordered PRN.

Importance of eating meals and at the same time each day, snacks as appropriate can prevent episodes of hypoglycemia. Moderate exercise, taking medication properly, and monitoring blood glucose levels are all important elements in the care of person's with diabetes.

If the blood glucose is too low, If it's below 70mg/dl, may give 1 of these items right away to raise the person's blood glucose level: (only if alert, and able to swallow)

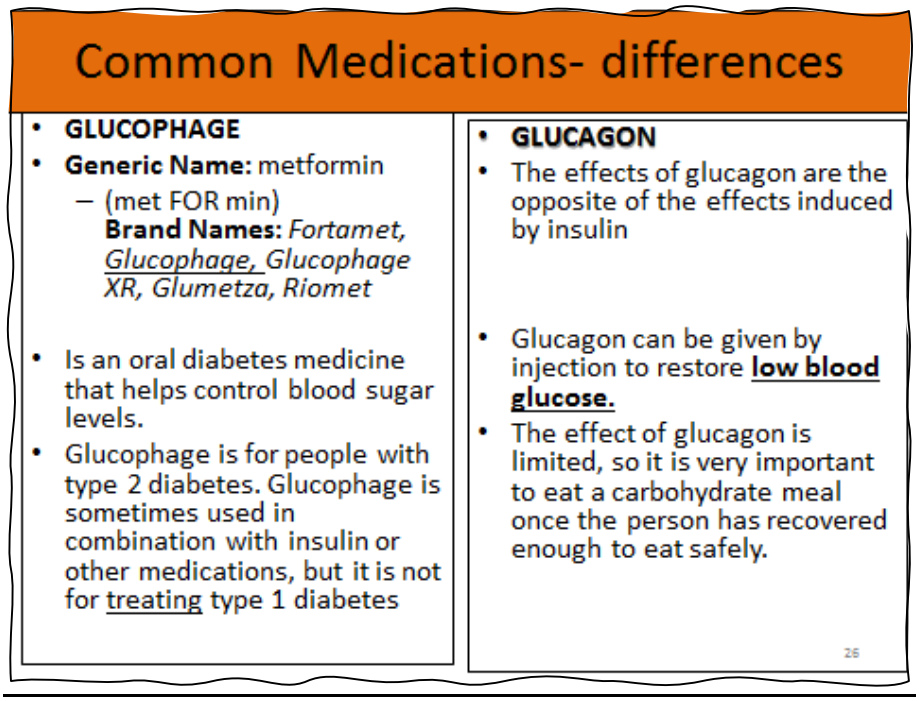




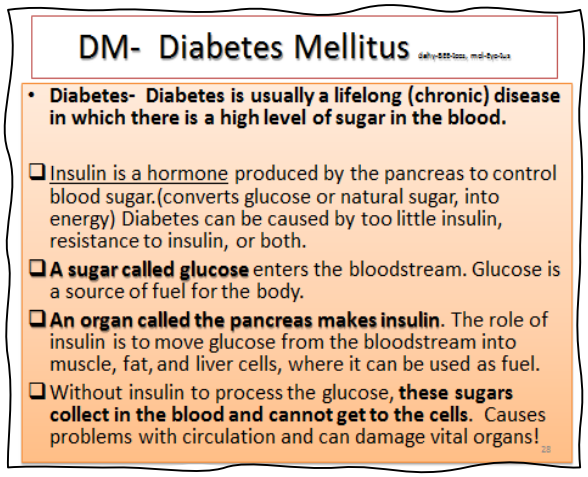
Example med is glucagon-If low blood sugar is not treated, it may progress to severe low blood sugar that can include: disorientation, seizures, unconsciousness, and death.

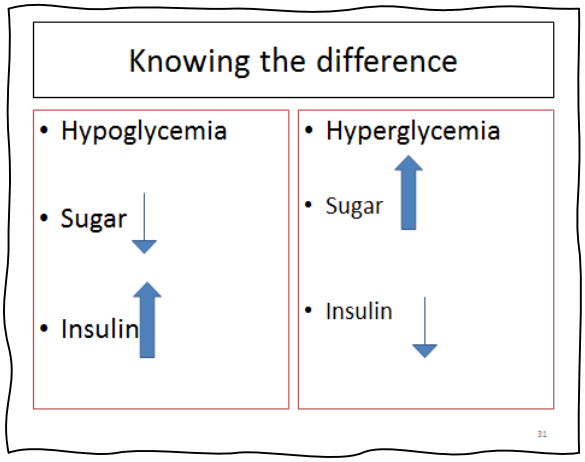
- Low blood sugar symptoms should be treated with a quick source of sugar which should always be carried with you. If you do not improve or you are unable to take a quick source of sugar, you should be treated with Glucagon or with intravenous glucose at a medical facility

Glucagon is a treatment for insulin coma or insulin reaction resulting from severe low blood sugar. If ordered Glucagon can be given while awaiting medical assistance.



In Review:





Earlier in the chapter you learned the pancreas is responsible for producing insulin which is needed to move sugar from our blood stream to each of our cells for energy**. Without insulin sugar would collect in the blood stream** depriving the cells nutrients to work. This collection of sugar in the blood stream causes problems with circulation and damages vital organs.

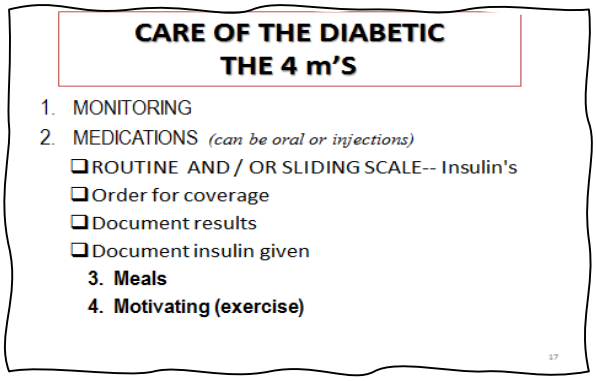
Diabetes complications: These problems are known as diabetes complications and include:

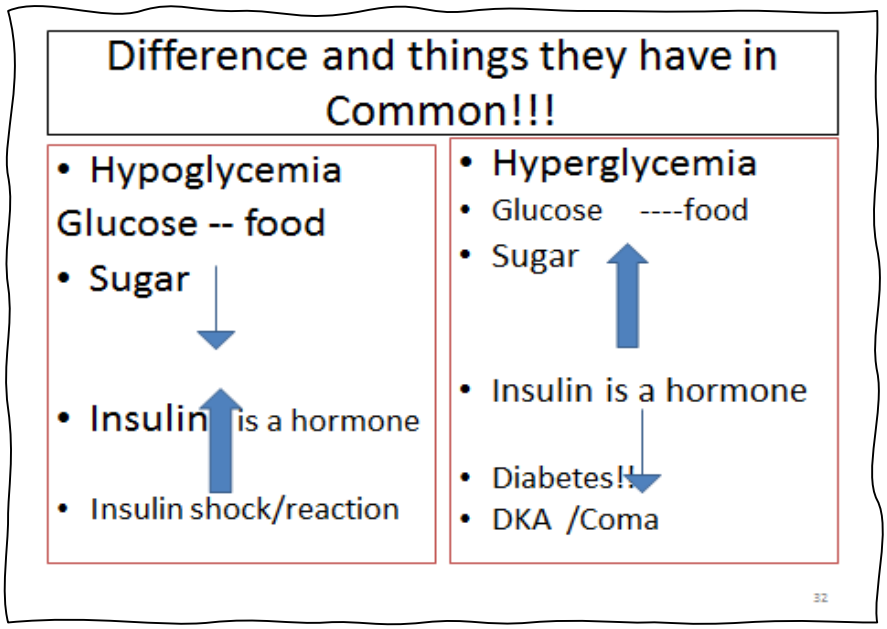
- **Eye problems,** including trouble seeing (especially at night), light sensitivity, blindness in the future. Damage to the eyes can cause vision loss and blindness
- **Painful sores and infections** of the leg or foot, which if left untreated, leads to removal of the foot or leg. Poor wound healing can lead to leg and foot ulcers, infected wounds and gangrene. Gangrene can lead to amputation
- **Nerves in the body can become damaged,** causing pain, tingling, and a loss of feeling, problems digesting food, erectile dysfunction
- **Kidney problems,** which can lead to **kidney failure**
- Weakened immune system, which can lead to more frequent infections
- **Circulatory changes** that can cause heart attack, stroke, and poor circulation, poor wound healing, kidney and nerve damage.

Treatment

With type **2 diabetes, the disease may be reversed with lifestyle changes**, especially losing weight through exercising and eating healthier foods. Also, some cases of type 2 diabetes can be improved with weight-loss surgery.

- There is no cure for type 1 diabetes.
- Treating both type **1 diabetes and type 2 diabetes** involves medicines, diet, and exercise to control blood sugar level.





Test your knowledge – One More Time!!!!

Insulin is a_____?? Produced in the_____?? Secreted into the _____

and then carried to the_____!! Its job is to convert_____ into_____!

1. Cold and Clammy need some Candy? Hypoglycemia or Hyperglycemia
2. Hot and dry on a sugar high? Hypoglycemia or Hyperglycemia
3. There are _____major Types of Diabetes…. They are called: _____and_____?

4. Glucose comes from the Food you eat? True or False
5. Insulin is a chemical made in your pancreas? True or False
6. Glycemia = sugar -→ Hyperglycemia = High blood sugar also can mean diabetes True or False

7. Insulin shock or insulin reaction means Hypoglycemia or low blood glucose? True or False
8. Hypoglycemia happens suddenly blood sugar drops True or False
9. Diabetic Ketoacidosis DKA- blood sugars gradually high for several days (coma) True or False

Answers: hormone, pancreas, bloodstream, cells or cell doors, glucose into energy!

1. Hypoglycemia, 2. Hyperglycemia 3. Two (Type 1 and Type 2) 4. True 5. True 6. True 7 True 8 True 9. True

INSULIN- Background Insulin has been available since 1925. It was initially extracted from beef and pork pancreases. In the early 1980's, technology became available to produce human insulin synthetically. Synthetic human insulin has replaced beef and pork insulin in the US. And now, insulin analogs are replacing human insulin.

Characteristics of Insulin

Insulin(s) are categorized by differences in:

- **Onset** (How quickly they act)
- **Peak** (How long it takes to achieve maximum impact)
- **Duration** (How long they last before they wear off)
- **Concentration** (Insulin(s) sold in the U.S. have a concentration of 100 units per ml or U100. In other countries, additional concentrations are available. *Note: If you purchase insulin abroad, be sure it is U100.*
- **Route of delivery** (whether they are injected under the skin or given intravenously)

Types of Insulin's

Clear or Cloudy what's the difference??

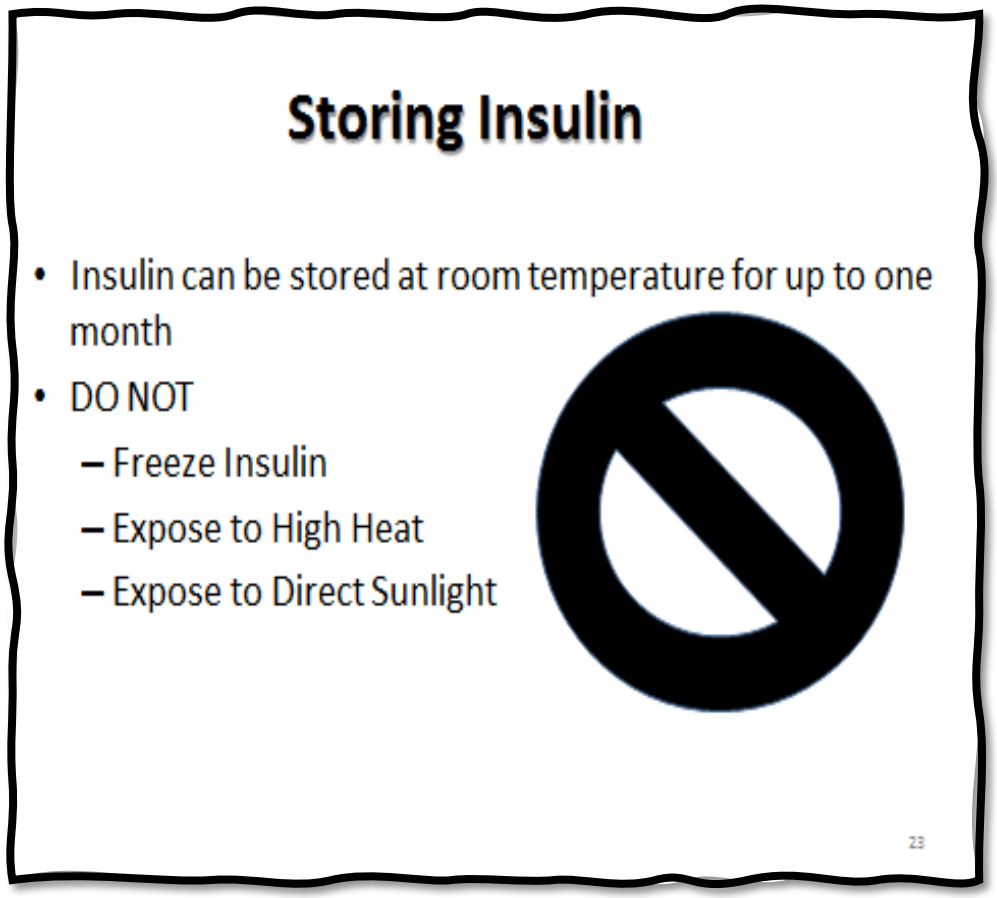
- ❑ Regular and Humalog are normally Clear
- ❑ NPH, 70/30 or Lente are normally Cloudy

Preparing Insulin: ***Gently roll to warm or blend insulin NEVER Shake****!* *Cloudy insulin will always need to be blended.*

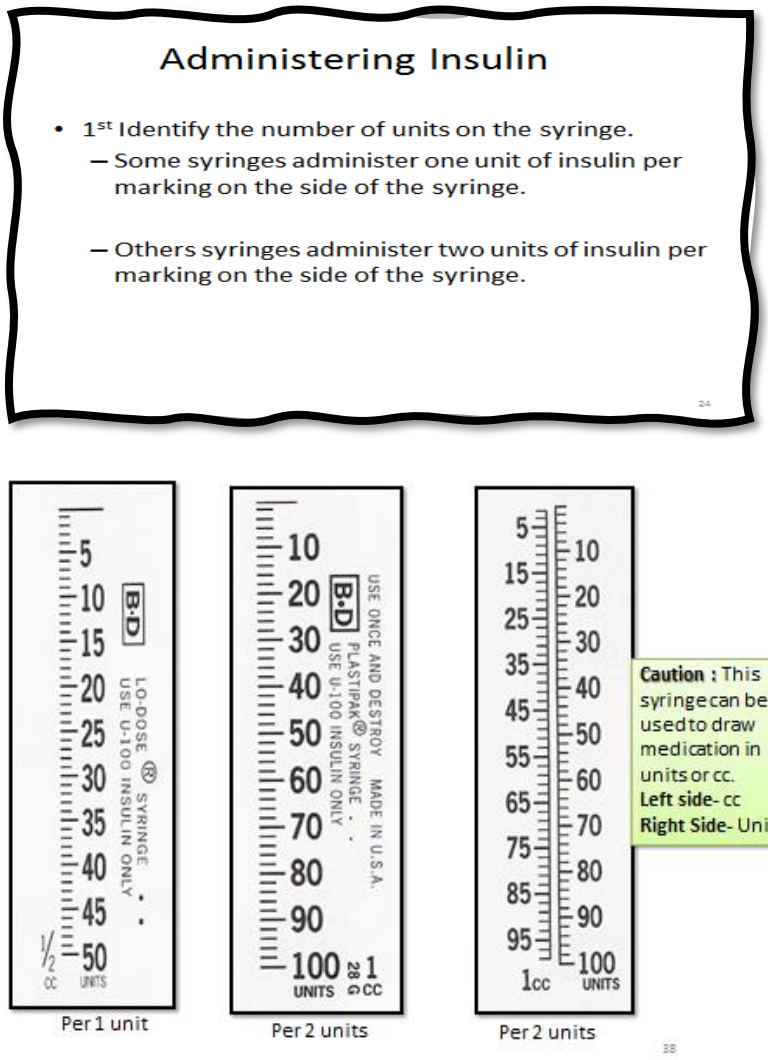
Preparing Tips*:* First time use: Remove cap, wipe with alcohol, and **write date and your initials** on the bottle the day it is first opened.

Place on hard surface to insert the needle, and then invert to draw up number of "units to be administered per medical practitioner's orders.

Storing Insulin:



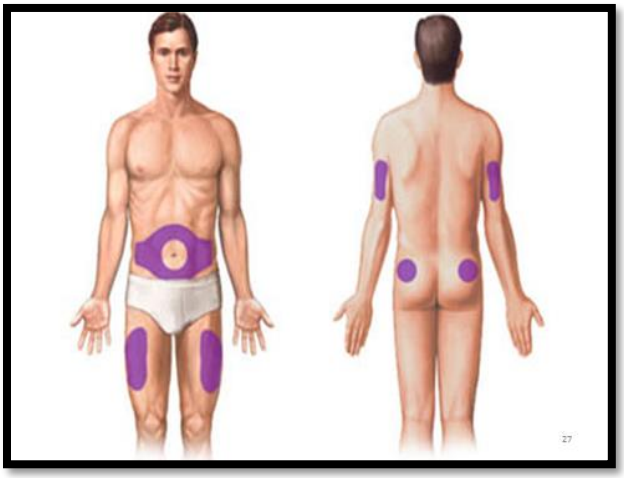
***Importance of dating bottle when first opened-can be stored then @ room temperature for up to one month.*



Injecting Insulin - Insulin is usually injected into the fatty tissue just under the skin.

The most common places to inject insulin are:

- the abdomen (belly), the back of the upper arms,
- the upper buttocks and the outer thighs.
- Choose a place to make the injection, and wipe the skin with an alcohol swab prior to administering injection
- **If using abdomen- sites are located and injected 2" (inches) from the umbilicus (belly button)**
- **Insulin is <u>usually injected into the fatty tissue</u> just under the skin. This is also called subcutaneous (subQ) tissue.**



Rotating sites- decreases trauma and ensures proper absorption of insulin

Administration of Insulin

- Insulin pens are loaded with pre-filled insulin cartridges.
-
- Advantages over syringes.
  - Prefilled cartridges , no need to fill syringe.
  - Most have easy to read and easy to adjust dials

Disadvantages over syringes.

- Insulin types cannot be mixed.
- Not all types of insulin can be administered with an insulin pen.

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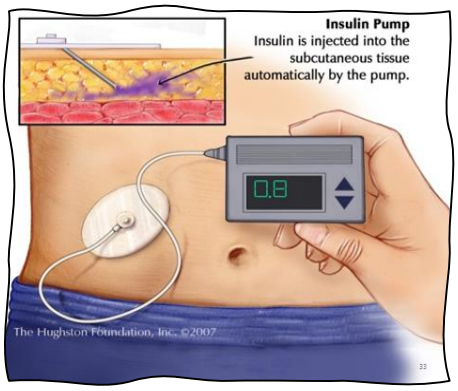

Administration of Insulin

- Insulin Pumps
  - **Advantages**
    - Programmable to give certain amount of insulin every hour
    - Can give insulin one time before meals or when blood sugar is high
    - Frees diabetics from injections
  - **Disadvantages**
    - Pumps can only use rapid acting insulin
    - Constant connection to medical device

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Monitoring Blood Glucose: Checking the Blood Glucose Blood glucose monitoring is the main tool we have to check diabetes control. This check tells us the blood glucose level at any one time.

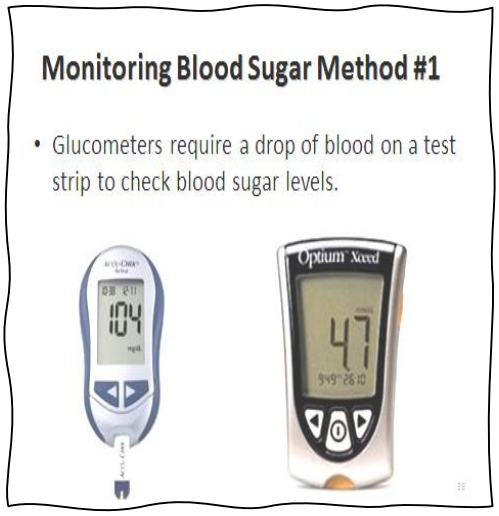
High blood glucose, make notes in log and talk with health care team about need to change or assist resident with meal planning or selection, physical activity, or diabetes medicines.

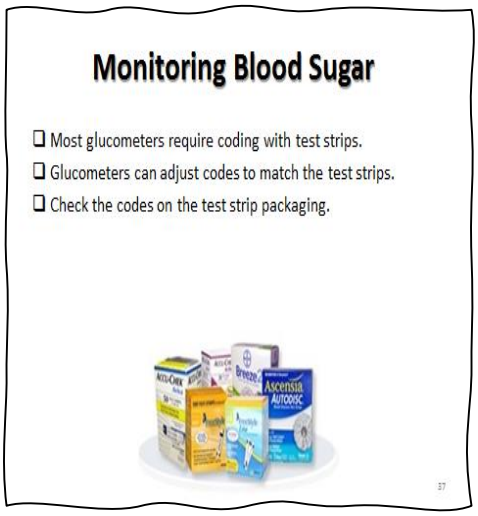
Checking Blood Glucose

There are three methods of checking and/or monitoring blood sugar:

- Glucometers
- Continuous Glucose Monitors (CGM)
- A1C (Blood Test)

- Blood glucose monitoring is the main tool we have to check diabetes control.
- This check tells us the blood glucose level at any one time
- *Normal blood sugars* range for 70-100, in the elderly 100-150. Any blood sugar test over 200 should be reported





Monitoring Blood Sugar Method #2

- Continuous Glucose Monitors (CGM)
  - Typically used with insulin pumps but sometimes independently.
  - Reads blood sugar levels continuously.
  - Helps blood sugar levels and to see patterns of ups and downs.
  - **Not** yet accurate enough to replace glucometers and test strips.

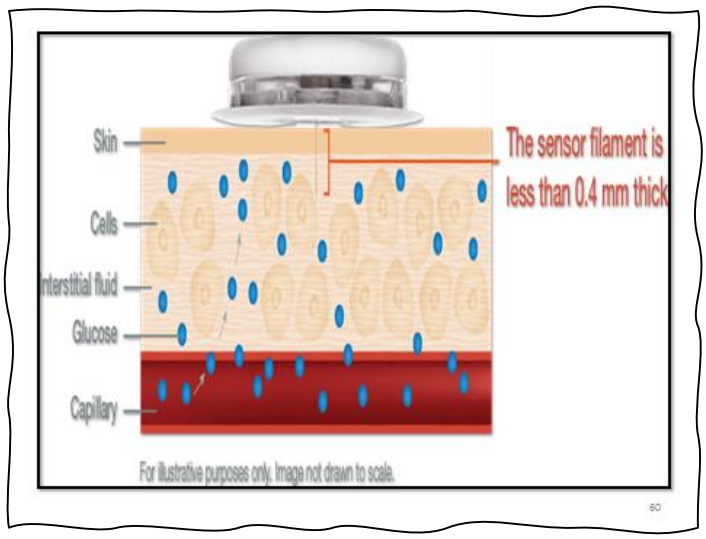
1. A small sensor cannula inserted beneath the skin measures glucose in interstitial fluid. Top left and bottom right are CGM's.
2. Top right and bottom left are insulin pumps.

Monitoring Blood Sugar Method #3

- A1c - is a blood test performed at a lab or doctor's office.
  - Allows the medical providers to see how well controlled diabetes has been in the past two to three months.
  - This test should be done at a minimum of 2 times per year. Many endocrinologists recommend testing every 3 months.

Monitoring Blood Sugar Method #4

- **Hate Blood Glucose Monitor (Fingersticks)?**
- **Continuous Glucose Monitoring may be the answer!**
- Are glucose readings different between CGM and BGM?
- Instead of taking glucose readings from your blood, **CGM sensor glucose readings are taken from the interstitial fluid (ISF),** a thin layer of fluid that surrounds the cells of the tissues below your skin.
- Blood glucose readings tend to be about 5 to 10 minutes ahead of interstitial glucose readings. For most treatment decisions, sensor readings from the FreeStyle Libre 14 day system can replace fingerstick readings
- https://www.freestylelibre.us/support/overview.html



Fingersticks are required for treatment decisions if:

- ❑ You see "Check Blood Glucose" symbol on the CGM
- ❑ When symptoms do not match system readings,
- ❑ When you suspect readings may be inaccurate, or
- ❑ When you experience symptoms that may be due to high or low blood glucose.

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Sliding scale Insulin: **The term "sliding scale**" refers to the progressive increase in the pre-meal or nighttime insulin dose, based on pre-defined blood glucose ranges. Sliding scale insulin regimens approximate daily insulin requirements. **Simply:** Insulin is administered based on the blood-glucose test results, as ordered by the medical practitioner.

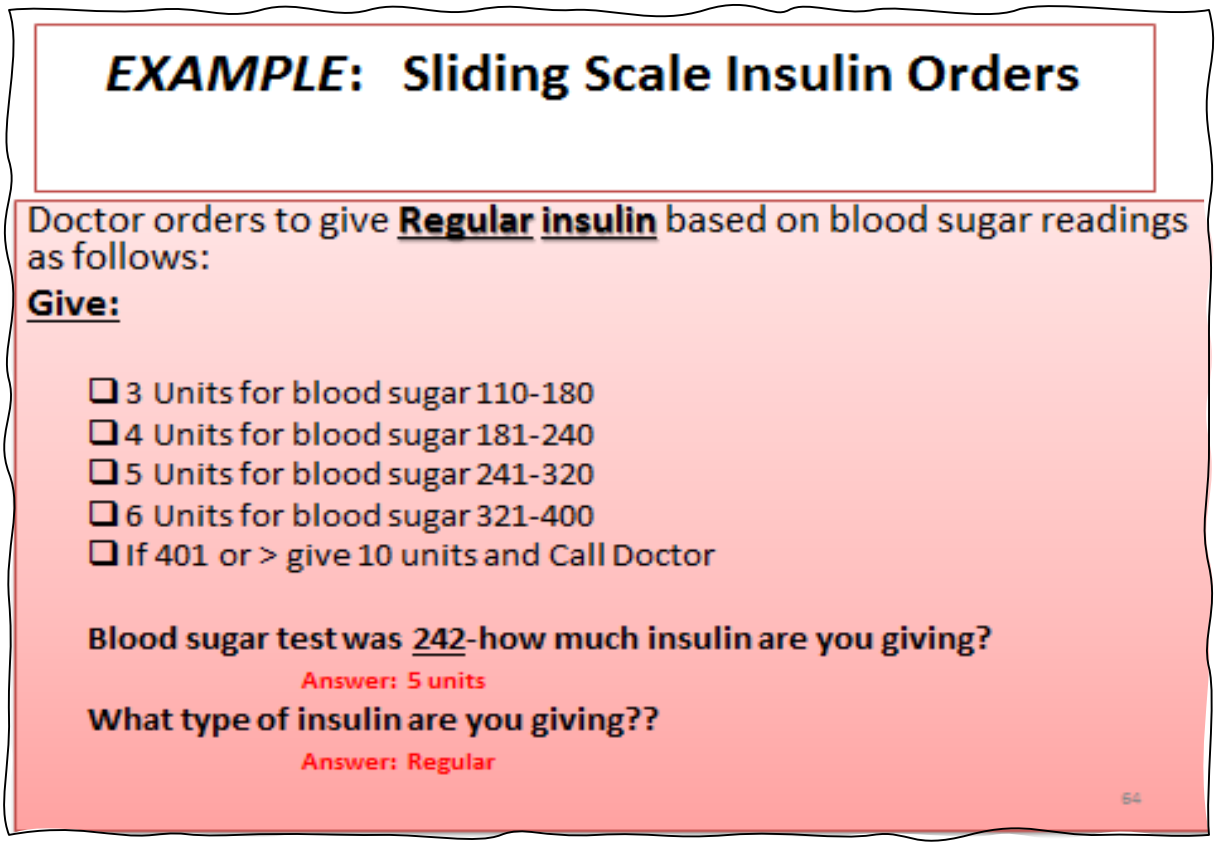
EXAMPLE of Sliding Scale Insulin Orders:

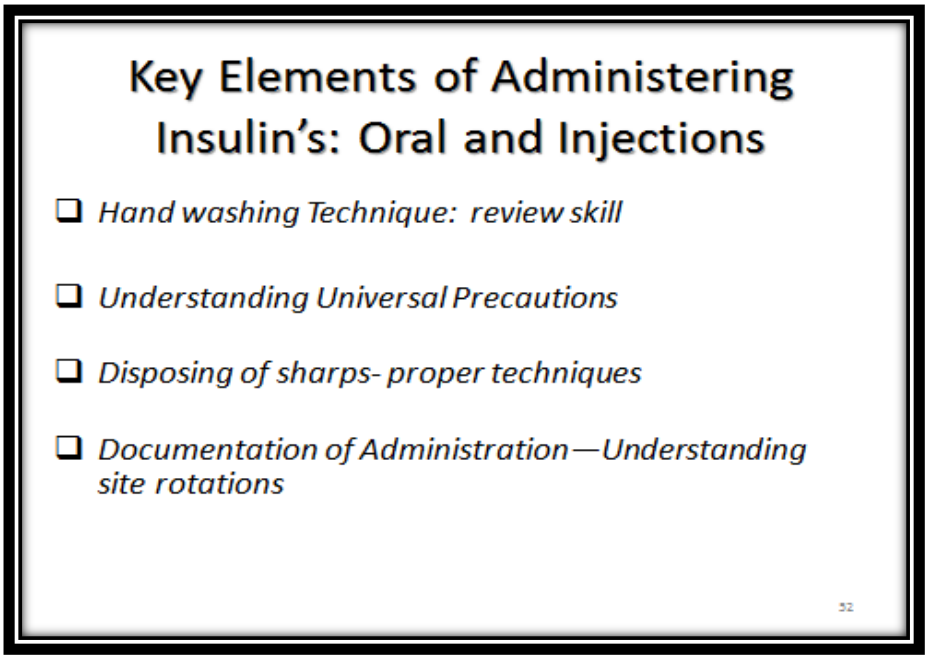
Take **Regular** insulin:

- ☐ • 3 Units for blood sugar 110-180
- ☐ • 4 Units for blood sugar 181-240
- ☐ • 5 Units for blood sugar 241-320
- ☐ • 6 Units for blood sugar 321-400
- ☐ • If 401> give 10 units & Notify doctor

Common Insulins - Sub Q- injectable

Lantus	Novolog mix 70/30 Flex-pen
Humalog	Levemir



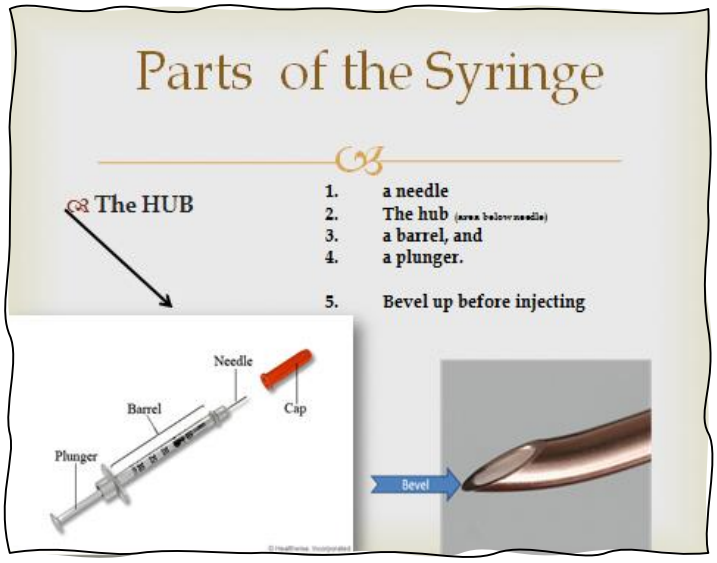


A diabetic Care Plan is completed to help understand your role as a caregiver with diabetics.

Diabetic Care Plan
❑ **Provide** right portions of healthy foods. This should include foods that have less salt and fat
❑ **Serve** meals at the same time each day
❑ **Encourage** the resident to eat all that is served
❑ **Provide** appropriate exercise opportunities for the resident to improve circulation. Make it fun!
❑ **Observe** resident management dosing of insulin or blood testing
❑ **Perform** blood testing as directed by doctor's orders
❑ **Inspect** daily your resident's feet & provide good foot care as needed. Slightest irritation or sore can lead to infection
❑ **Encourage** diabetic resident to wear comfortable, well fitted shoes that do not hurt their feet. White cotton socks are best to use to absorb sweat
❑ **Never** trim or clip diabetic's toenails. A nurse or doctor should do this

Let's Practice

- ✓ Gather equipment
- ✓ MARS
- ✓ Draw up and inject into oranges
- ✓ Rotation sites- understanding importance



Drawing up/ and injecting a prepared Insulin Medication Dose

Steps		Completed
	Assemble equipment needed: Syringe, alcohol wipes, gloves, bio box, Sliding Scale MAR, insulin vial *(simulated)*	
	Check MAR: *Right* Resident, Drug, Dosage Route & Time, (site)	
	Wash or Sanitize Hands	
	Drawing up Dose	
	Assumption is you have checked the blood glucose – instructor will give you the reading— you must read MAR & administer appropriately- completing the all of the following Steps	
1.	Put on gloves	
2.	Check Insulin Site Rotation & find site, assess amount of Insulin needed check MAR	
3.	May document blood glucose test reading, site injection will be given in, put dose amount of units per sliding scale orders on MAR.	
4.	May prepare resident, clean site with alcohol *(optional) will allow site to dry*	
5.	***Check the insulin bottle to make sure it hasn't expired***	
6.	Cleanse the rubber stopper (top) of insulin vial with alcohol –**label date & initials if you opening for first time. Gently roll insulin vial to warm or blend insulin NEVER Shake insulin!**	
7.	Pull syringe plunger back to dose level (units you will give)	
8.	While stabilizing on a hard surface, Insert syringe into vial- push units of air into vial	
9.	Pull back to dose level extract insulin from vial (dose must be flush with dose needed) Exact dose – no bubbles no errors	
10.	Snap out bubbles	
11.	Remove syringe from vial –	
12.	Prepare resident for injection	

Injecting a prepared Insulin Medication Dose	
1. Check MAR: compare documentation—Site, Units, Type of insulin drawn up read and confirm	
2. Provide Privacy	
3. Gloves are on	
4. Review Insulin Site Rotation & find a site (2" from belly button if using abdomen)	
5. Cleanse the site with alcohol *(if haven't done so must do now)*	
6. Stabilize skin (gentle pinch) with 1 hand & insert syringe at a 90° angle w/ other hand	
7. With hand that is holding the syringe… insert syringe at a 90° angle by gently dropping wrist and insert needle into skin *(Remember it's not a dart game)*	
8. Within 5 seconds push plunger all the way down *(be gentle do not use thumb)*	
9. Pull needle straight out once given	
10. Dispose of used sharp properly	
11. Cleanse apply gentle pressure at site with alcohol pad if needed *(notable bleeding*)	
12. Remove gloves and Wash or sanitize hands	
13. Document administration (initials in appropriate box) If you did not put all information in as you did your cross-checking be sure all info is recorded now- Blood glucose reading, site injection was given , how many units were administered, your initials as the caregiver who administered the Insulin	
14. Discuss what is your next step- you have just given the resident their insulin?	

HOMEWORK:

Study:

Chapter 15 Review: Medication Services

From "Providing Home Care" Do Review question Chapter 9- pages 50-51 "Diabetes"

Review the following all pages of this Medication Services Booklet and your notes from Lecture

*Hartman Textbook e6---:*Chapter 9 pages 131-137

1. Which of the following are symptoms commonly experienced by people who have diabetes?
   (A) Excessive thirst, extreme hunger, frequent urination
   (B) Weight gain, poor appetite, leg swelling
   (C) Diarrhea, hyperactivity, dark yellow urine
   (D) Infrequent urination, swollen lymph nodes, excessive energy

2. Which of the following terms is another name for insulin reaction?
   (A) Hypoglycemia
   (B) Diabetic coma
   (C) Sugar diabetes
   (D) Insulin-free

3. Which of the following is another name for diabetic ketoacidosis?
   (A) Hypoglycemia
   (B) Insulin reaction
   (C) Insulin shock
   (D) Hyperglycemia

4. The best way for a CG to provide foot care for a diabetic resident is to
   (A) Cut the resident's toenails to keep them short and clean
   (B) Encourage the resident not to wear socks
   (C) Make sure the resident is barefoot most of the time
   (D) Observe the feet regularly for signs of irritation

5. The most common form of diabetes is
   (A) Type 1 diabetes
   (B) Type 2 diabetes
   (C) Pre-diabetes
   (D) Gestational diabetes

6. Which of the following is an over-the-counter drug?
   (A) Heart medication (such as nitroglycerin)
   (B) Acetaminophen (such as Tylenol)
   (C) Antibiotics (such as penicillin)
   (D) Pain medication (such as codeine)

7. Which of the following is a way CGs may help residents with **self-administered** medications?

(A) Mix medication with food or drink
(B) Take the medication out of the bottle for the resident
(C) Provide food or water to take with medication
(D) Place the medication in the resident's mouth

8. What are the 5 Rights of Medication Management?
   a. _____
   b. _____
   c. _____
   d. _____
   e. _____

9. Medical use, potential for abuse and addiction, can lead to severe psychological and physical dependence
   a. True
   b. False

10. If a medication is ordered to be given at 12pm, it can be given:
   a. Anytime during the day
   b. After lunch
   c. Between 8:00am and 12:00pm
   d. Between 11:00am to 1:00pm

11. When administering insulin, the vial must always be shaken to blend or warm the insulin
   a. True
   b. False

12. Zantac is an example of which class of medications?
   a. Respiratory drug
   b. Gastrointestinal tract drug
   c. Cardiovascular drug
   d. None of the above

13. Insulin injections are to be administered
   a. IM
   b. IV only
   c. Subcutaneous (SubQ)
   d. Intradermal

14. Hypoglycemia is **not** considered a sudden illness or life threating?
   a. True
   b. False
   c.

15. When administering insulin, it is measured in?
   a. cc or ml
   b. A vial
   c. Units
   d. Mg.

16. An individual's scope of practice is:
    a. What one can and cannot do in one's job
    b. How long one can practice a task before getting it right
    c. What one feels like doing at one's job
    d. What ones sees needs to be done no matter the person's training

17. Medication References can and must include which of the following
    a. A current drug reference guide is available for use by personnel members, and
    b. A current toxicology reference guide is available for use by personnel members
    c. Nursing procedures books for medications
    d. Both a and b

18. The abbreviation: NSAID(s) means?
    a. Never say drugs used
    b. Non- steroid inflammatory medications
    c. Non-steroidal anti-inflammatory drugs
    d. None of the above

19. The abbreviation: qid or QID means?
    a. Three times per day
    b. Four times a day
    c. Every other day
    d. Every morning

20. What are the schedules based on?
    a. Valium, Ativan, Klonopin, Restoril
    b. Their potential for abuse and addiction
    c. To Combat and control drug abuse
    d. Cocaine, Demerol, Morphine, Ritalin

See Practice Exam issued or request from your instructor