HELPING PATIENTS WITH SELF-ADMINISTRATION OF MEDICATIONS

Abstract:

Most people can safely self-administer their own medications but if a mistake is made there is potential for harm and damage. The practice laws that govern the Certified Nurse Assistant (CNA) practice role in each state may require CNAs who oversee patients' medication self-administration to have special training, pass a test, and obtain certification. Basic knowledge about patient self-administration of medications include evaluation of whether a patient can self-administer medications safely and accurately. There is potential for mistakes and harm but most patients can learn to self-administer medications effectively and safely if they are properly educated and supported to do so appropriately and by following the five-rights of safe medication administration.

Learning Objectives:

1. Identify what substances are considered medications.
2. Identify the six rights of medication administration.
3. Identify a medication error.
4. Help patients learn and perform self-administration of medications.

Introduction

Certified nursing assistants (CNAs) work in hospitals, long-term facilities, and other healthcare settings. They also work with patients who live at home but need professional help to maintain their health and independence. One aspect of home care is helping patients with self-administration of medications. Many patients who live at home but need the assistance of a CNA are often taking multiple prescription medications. Some of these medications have serious side effects. Some can be dangerous if the dose is too high or too low, or if an extra dose is taken. Most people can safely self-administer their medications but if a mistake is made there is potential for harm and damage. The practice laws that govern the CNA profession in each state may require CNAs who supervise patients' medication self-administration to have special training, pass a test, and obtain certification. Basic information about self-administering medications and the information a CNA needs to evaluate whether a patient can self-administer his or her medications safely and accurately.

Medication Self-Administration

Self-administration of medications is typically not complicated. There is potential for mistakes and harm but most patients can learn to self-administer medications effectively and safely if they are properly educated and they have support. Principles of self-administration of medications that patients should know include: 1) The definition of a medication, 2) The six rights of medication administration,
3) Medication errors, 4) Side effects, 5) Medication interactions,
6) Basic principles of self-administration of medications, and
7) Resources for a patient who self-administers medications.

If these are learned and retained and if patients are periodically evaluated for their knowledge virtually anyone can take medications by themselves.

Definition of Medication

Many people think that the term medication refers only to a prescription medication, a drug that has been ordered by a physician or other health clinician and dispensed by a pharmacy. But the definition of a medication is more complex and it cannot be explained in a few words. A medication is defined as:

1. A substance that is used to cure, diagnose, prevent, or treat a disease.
2. A substance that is intended to enhance mental or physical well-being.
3. A substance that has a measurable effect on human physiology or a measurable effect on the signs and symptoms of a disease or illness.
4. A substance that can cause side effects, some minor and some very serious.

It is not necessary for patients to memorize this information but this definition, particularly point #3, does contain an important teaching point for anyone who self-administers medication.

Over-the-counter drugs, vitamins, and supplements should all be considered medications. There is a common perception that these substances are essentially harmless because they are available without a prescription. Substances that are available without a prescription can

have adverse effects so substances bought at a grocery store or off the shelf at a pharmacy are not completely safe.

There are many potentially harmful effects that can be caused by over-the-counter medications, vitamins, and supplements that are marketed as herbal or natural. The same cautions and considerations should be used when taking an over-the-counter medication, a vitamin, or a supplement as when taking a prescription medication.

Self-Administration of Non-prescription Medication

Over-the-counter drugs, vitamins, and supplements are generally safer than prescription medications but safer does not mean that they are free from potential harm. These substances should be treated as medication; they can have a measurable effect on human physiology and they can cause side effects.

An over-the-counter drug, a vitamin, or a supplement can affect a person's health in many ways and a patient who self-administers medications should understand this principle.

Over-the-counter Medications

There are multiple ways in which over-the-counter medications can potentially be harmful. Three of the most common are drug interactions, incorrect usage, and duplicate ingredients.

Drug Interactions

Over-the-counter cough and cold relief products often contain a cough suppressant called dextromethorphan and/or a decongestant such as phenylephrine or pseudoephedrine. Dextromethorphan should not be used by someone who is taking certain antidepressants (for example, phenelzine, trade name Nardil) or even some of the more commonly used antidepressants (for example, Lexapro, Paxil, or Prozac). The combination can cause a serious drug interaction.

The decongestants that were mentioned, phenylephrine and pseudoephedrine, should be avoided by people who have cardiac disease or hypertension as these drugs can increase heart rate and elevate the blood pressure. Aspirin and ibuprofen may interfere with the effects of warfarin (Coumadin). Warfarin is a commonly prescribed medication that is used to prevent blood clots. Aspirin and ibuprofen can cause serious gastrointestinal bleeding in certain people.

Incorrect Usage

Acetaminophen (Tylenol) is one of the most popular over-the-counter pain medications. The maximum amount of acetaminophen that should

be taken in a 24-hour period is 4000 mg.

If someone has dental pain or flu-like symptoms and does not get
relief with the standard dose, it is tempting to increase the dose. Acetaminophen may be perceived as harmless but inadvertent overdose with acetaminophen is one of the most common causes of
acute liver failure and acute liver failure may require a liver transplant
if other treatments do not work.

Duplicate Ingredients

Many over-the-counter cough and cold medications, and other products, have similar ingredients and/or identical ingredients. Failing
to read the labels can result in duplicate medications being taken. For
example, acetaminophen is commonly combined with prescription
analgesics like Vicodin but a patient may not realize that acetaminophen and Tylenol are the same drug.

Vitamins

Vitamins are natural substances needed for optimal health. Consequently, some people believe that any amount of vitamin is safe
and that large doses of vitamins are beneficial. However, more is not

always better and excessive dosing of vitamins can be harmful. Serious cases of vitamin A and vitamin D poisoning have been reported when people take large amounts of these vitamins daily and
there is no evidence that exceeding the recommended daily amount
(RDA) of any vitamin will improve health or cure a disease. In addition, vitamin D and vitamin E may interfere with the therapeutic
action of medications such as digoxin, diuretics, and warfarin.

Supplements

Supplements are not tested in the same way as prescription drugs. This makes it difficult to determine if a supplement is safe or if a supplement will interact with a prescription or over-the-counter medication. Supplements may be perceived as safe and "natural" but they can also cause harm. St. John's wort is an herbal supplement that is often marketed as a natural antidepressant. St. John's wort may work for this purpose but it can cause serious drug interactions with many commonly prescribed medications.

Weight loss supplements typically contain caffeine or substances such as guarana that act like caffeine, and caffeine is potentially dangerous for people with cardiac disease or hypertension. Yohimbine is recommended for treating erectile dysfunction and kava is recommended for the treatment of anxiety but cases of serious liver damage have been reported after the use of these products.

There are other potentially harmful effects that can be caused by over-the-counter medications, vitamins, and supplements that are marketed as herbal or natural. These examples show why a person should be educated and informed on the of over-the-counter medications, vitamins, and supplements even though they are marketed as herbal or natural. Consumers should read the product label so they know the ingredients, recommended doses and other important information.

Medication-Food Interactions

Medication-food interactions are uncommon but they can occur with non-prescription as well as prescription medications. Some medications must be taken with food while others must be taken on an empty stomach.

When food is consumed when taking a medication, there can be significant interactions, and these are important to know. For example, people who take warfarin should avoid foods that contain high amounts of vitamin K. Foods high in vitamin K include kale and spinach. An antidepressant medication known as *MAO inhibitors* can interact with certain types of cheeses and with liver. Grapefruit juice can significantly interfere with cholesterol-lowering medications such as Lipitor and Mevacor. If alcohol is ingested along with an antidepressant or a sedative, such as Valium, excessive drowsiness can occur. The potential side effects and interactions of medications will be discussed in more detail later on.

Six Rights of Medication Administration

The six rights of medication administration are guidelines that help ensure safe and effective use of medications. These guidelines should be reviewed with patients who self-administer medications.

Table 1: Six Rights of Medication Administration

Right Drug
Right Dose
Right Route
Right Time
Right Patient
Right Reason

The *right drug* means that the correct medication should be used and given to the right person. In hospitals and other healthcare facilities CNAs, nurses, and physicians are taught to be sure they are administering the correct drug to the patient who needs it. The physician's order will be reviewed and the label on the container or bottle will be matched against the order. Patients who self-administer medications cannot do this but they can inspect medications and read labels to ensure that the proper drug was dispensed or purchased and that they are using the right drug.

The *right dose* is a crucial part of medication administration; the patient should use the correct number and/or amount of the medication. This advice seems simple but numerous medication errors

occur because an incorrect dosage was taken. Prescription drugs and over-the-counter medications have dosage instructions on the label. An example would be a label that reads, “Take one tablet by mouth, three times a day.”

The *right route* is an important part of medication self-administration. Medications can be taken orally, by injection, intravenously, intra-nasally, rectally, vaginally, topically, by the otic route, or by the ophthalmic route. Over-the-counter and prescription medications have instructions on their labels that inform the user how the drug should be taken and these instructions will include the proper route of administration. An example would be a label that reads, “Put two drops in each eye, twice a day.”

The *right time* refers to the time of day when the medication should be taken and the proper separation between doses. An example would be a label that reads, “Apply the cream to the affected areas once a day before bedtime.”

The *right patient* is more of a concern in hospitals or other healthcare facilities where multiple medications are given to many different patients but it may also be a concern for patients in a family setting where family members have been prescribed different medications or doses. A patient should be instructed to routinely check the label before taking a prescription medication to ensure the drug has been prescribed.

The right patient can also refer to age, reproductive status, and pre-existing medical problems. Certain medications should not be given to

children, women who are pregnant, or if the patient has a specific medical problem. The final guideline is a bit more complex than the others and it primarily refers to prescription drugs.

The *right reason* refers to need. Medications are used to cure, diagnose, prevent, or treat a disease, so any drug that is prescribed by a physician is for a specific patient need. In order for a patient to be sure of taking a medication for the right reason he or she must: 1) know his or her medical history; and, 2) know the purpose of taking a particular medication. This does not mean that patients need to have a sophisticated level of knowledge about diseases and pharmacology but they should know what medical conditions they have and should be able to identify the purpose of drugs they are taking. For example, a patient who has diabetes should be aware that diabetes is a chronic disease that affects blood sugar, and should be able to recognize that metformin is a drug that is used to control blood sugar.

Medication Errors

Medication errors are common. There are millions of medication errors that occur every year and medication errors can cause significant harm or even death. Certified Nursing Assistants who are working with patients who self-administer medications need to have a basic understanding of medication errors so that they can: 1) teach patients about medication errors, and 2) recognize when a medication error has occurred.

Definition of a Medication Error

A medication error is defined as a deviation from safe medication practices that has the potential to cause harm. It is not important that

patients know and memorize this definition but they should be aware and taught that medication errors can cause injury or death. The primary point that patients should understand is that it is never a good idea to deviate from safe medication practices.

The six rights of medication administration should always be practiced. This may seem simple but it is not. Consider the following examples.

Example I: Right Time

A patient is scheduled to take her prescription pain medication, oxycodone 10 mg, at 14:00 PM. She loses track of time and took it at 14:10 PM.

Example II: Physician Change of Order

The physician prescribed an antibiotic to be taken for 10 days. After considering the results of some laboratory tests the physician decided that the antibiotic was no longer needed and advised the patient to stop taking it; the patient, however, continued to take the drug. No harmful effects occurred.

Example III: Correct Medication

A 78-year-old man was prescribed metoprolol 100 mg, a commonly used antihypertensive medication. He was to take one tablet every morning. The patient was then prescribed prednisone and he was told to take five tablets on the first day, four tablets the following day, and so on. After getting the prednisone from the pharmacy he took one prednisone tablet and five metoprolol tablets. The patient is observed in an emergency room for six hours and his blood pressure and pulse remain normal.

These examples involve a mistake and a deviation from safe medication administration but the implications and the consequences of each situation are very different.

Case Example Discussion

The following discussion points highlight the key aspects with regard to the case scenarios above that the CNA should be aware of with regard to patient self-administration of medication.

Example I: Right Time

Taking oxycodone 10 minutes past the scheduled time posed a slight possibility that the patient might have developed some pain as the effects of the previous dose wore off but there was no risk for serious harm. However, some drugs need to be tightly scheduled in order to be effective. A patient who assumes that is it safe to take a medication 10 minutes ahead of or behind schedule may then decide that if 10 minutes is acceptable then 20 minutes is okay and and so on.

Example II: Physician Change of Order

Continuing to use a medication after it has been discontinued by the prescriber may be a problem. In the situation described above, the patient is being exposed unnecessarily to the side effects of a drug that is not needed. Improper use of an antibiotic can allow for a drug-resistant infection to occur.

Example III: Correct Medication

The patient has taken five times the prescribed amount of a medication that can lower heart rate and blood pressure to dangerous levels but fortunately this did not happen.

Medication Errors and the Six Rights of Medication

The six rights of medication administration can be useful for teaching patients about common medication errors.

Right Drug

Taking the wrong drug can have serious consequences. Patients should be instructed to take only the medications that have been prescribed for them. They should not take a medication that has been prescribed for someone else. They should not take a medication that was previously prescribed but was discontinued by a physician or another health clinician. Doing any of these would be considered a medication error.

If a patient is using two medications that are similar, he or she should be instructed to always check labels before taking the drug. An example would be a 57-year-old woman who uses two types of insulin where one has a duration of action of several hours and the other lowers blood sugar for 24 hours or longer. Should she confuse the two insulin preparations and inject a very large amount of the longer-acting preparation, her blood sugar could become dangerously low and the hypoglycemia last for so long that she would need to be hospitalized.

Right Dose

Medication doses are calculated carefully. Taking too much can be dangerous. It was mentioned previously that over-use of acetaminophen is a common cause of acute liver failure, and many medications can be dangerous if an incorrect dose is taken. Patients should be instructed that *more is not better* and *less is not better*.

More is Not Better:

All medications have an effective dosing range, and it has been proven that taking a dose that is beyond the top of a dosing range will not be more effective and it increases the risk of side effects. This warning applies to prescription medications and over-the-counter medications.

Less is Not Better:

Some patients may take less of a medication than what has been prescribed or may not take an over-the-counter medication according to the directions. They may do this to save money or because they are afraid of taking too much, or for any number of reasons but the dosing range of a drug has both a high and a low dose.

The lowest dose is the minimal amount that will be effective. Anything below the dose will not serve the purpose of a medication, and it will not cure, diagnose, prevent, or treat a disease, or have a meaningful effect on human physiology.

Avoid Trying to Catch-up:

A 66-year-old man takes Lasix 40 mg, one tablet a day. This is a commonly prescribed drug that increases urine output. Lasix is used to control hypertension. He forgets to take the drug for four days so on the fourth day he takes four tablets in order to "catch-up." His primary care physician monitors the patient with frequent phone calls and no harm occurs but there was potential for dehydration and low blood pressure.

Double-dosing:

Double-dosing is one of the most common medication errors. Many people take multiple medications and have done so for years. It is very easy for a patient to forget taking a medication dose and then to mistakenly take it again.

Professional Errors:

Physicians, pharmacists, and other health clinicians do make prescribing and dispensing errors involving an incorrect dose. In the pharmacy, this can happen if the prescription was incorrectly read or if two medications look very much alike and the wrong one is given to a patient.

Right Route

Medication bottles or containers have directions that instruct the user on the proper route of administration. If the incorrect route of administration is used the medication may not be effective and it may even be harmful. Examples of this are listed here.

Example I: Wrong Prescription Drops

Prescription eye drops and prescription ear drops are both dispensed in small containers that are similar in size and appearance. Because of this, people instill ear drops into their eyes or vice versa. This can cause damage to the eyes or ears and will not provide the patient with the beneficial effects of the medication.

Example II: Spiriva

Spiriva is a medication that is used for treating chronic obstructive pulmonary disease. Spiriva is supplied in a capsule but it is used in a hand-held inhaler. However, as Spiriva is identical in appearance to an oral capsule swallowing Spiriva is a common occurrence. This is not harmful but the medication does not work when it is taken by mouth.

Example III: Route of Medication

Some medications are designed to be chewed. Some are designed to be swallowed. Others can be cut or broken in half and some cannot. Certain drugs can be crushed and mixed with food if needed while others must be taken as a whole capsule or tablet.

Errors in using the proper route of administration can have adverse effects. For example, extended-release medications are made so that when they reach the stomach the drug is slowly absorbed into the bloodstream. These medications must be swallowed whole to work as intended. If an extended-release medication is chewed or broken in half, the drug can be rapidly and erratically absorbed, causing high blood levels.

Analgesic Patches:

Analgesic patches that contain Fentanyl must never be broken open. These patches contain a very high amount of drug and they are designed to slowly be absorbed through the skin. If the integrity of a fentanyl patch is disrupted the patient can be exposed to a dangerous amount of the drug.

Right Time

Some medications must be taken at a specific time while others allow some leeway but patients should be encouraged to follow the scheduled times for their medications as closely as is practical. They cannot be expected to know which medications can be taken safely ahead of or behind schedule and which cannot. Taking a drug at the wrong time is seldom harmful or ineffective for patients who self-administer medications yet there are exceptions.

Analgesics that are used on a schedule should be taken at the advised or prescribed time. If they are not, the blood level of the drug may become too low and the patient may have breakthrough pain. Antibiotics should be taken at the prescribed times to maintain blood levels as well.

Right Patient

Patients should only take medications that have been prescribed for them. This may seem to be obvious but many people mistakenly take the wrong medication, saying later that they "just grabbed the bottle and didn't read the label." Inadvertent ingestion of a family member's or spouse's medication is a very common medication error.

The patient should be instructed that they should always check the label on the bottle or container before taking a medication. Dispensing errors also happen when a pharmacy accidentally gives someone the wrong medication, either the wrong drug or the wrong dose.

Right Reason

Medication errors involving the right reason can occur when someone is prescribed a medication that is inappropriate. These errors can also happen when individuals will attempt to diagnose themselves and borrows a prescription medication or takes an over-the-counter product to treat a symptom.

One of the most common "right reason" medication errors occurs when someone decides to restart a medication that the physician has discontinued or a patient decides to stop taking medications.

Medication Side Effects and Drug Interactions

There are many highly effective drugs available but the science of pharmacology has not yet been able to make medications that only produce therapeutic effects. Basic knowledge of medication side effects and potential drug interactions are highlighted in this section.

Medication Side Effects

All medications have side effects. A side effect is defined as *an unwanted and possibly harmful effect caused by a medication*. Some side effects are minor and some can be quite serious. Certain side effects are common and predictable and others are quite rare and it is not possible to know who they will affect or when.

Medication side effects are not always predictable and many are not. It is not practical to expect patients to know all of the possible side effects of their medications. A quick look at the prescribing information for a popularly prescribed medication such as Lipitor (used to lower blood cholesterol) shows that the use of this medication has been associated with many significant side effects.

Side effects will vary. Mild and temporary stomach upset is a common side effect of aspirin. Unless this side effect is persistent and causes significant pain it is not harmful or serious and therapy with aspirin can be continued. Ringing in the ears and blood in the stool are also relatively common side effects of aspirin but these are obviously dangerous, and aspirin therapy would be stopped if they occurred. Patients who self-administer medications should know which medication side effects are considered serious and when to call the prescribing physician.

Lipitor was mentioned as an example of a medication that can cause many side effects. Stomach upset can happen and it is not serious but muscle pain or muscle weakness may be signs of a rare, serious side effect in which Lipitor causes a breakdown of muscle tissue and kidney damage. People who take Lipitor should call their prescribing physician immediately if they are having muscle pain or muscle weakness.

Drug Interactions

As with medication side effects, there are so many possible medication interactions that it is impossible and impractical for a patient to have current information about this topic. Medication interactions are like side effects in that some are quite serious while some are relatively

benign. It is also possible that while two medications may interact, the benefit of the drugs may outweigh the risk of the medication interaction. Because of these complexities, and to make sure that harmful medication interactions do not occur, there is essentially one point that patients need to know regarding medication interactions - *always check first* with a physician, pharmacist, or other health clinician before taking any new medication.

Patient Education for Self-Administration

Self-administering medications in most situations and for most patients is not difficult. The information that has been provided up to this now may seem to have presented medication self-administration as quite complex. But with the proper instruction and with good follow-up assessments, essentially anyone can learn to effectively and safely take their own medications. The practical tips that are outlined below will help accomplish that goal. They can also be used as teaching points and they can be used to assess a patient's knowledge of medication administration.

Patients who self-administer medication should be aware of the following points:

- Talk to a physician or a pharmacist before adding an over-the-counter medication, vitamin, or natural/herbal supplement to the medication regimen. All of these substances should be considered to be medications.

- Read the labels of over-the-counter medications before using them in order to avoid harmful interactions with prescription medications.

- Natural/herbal supplements are not tested like over-the-counter and prescription medication. Finding information about drug interactions and adverse effects can be difficult.

- Read the labels of all over-the-counter medications. This will help avoid taking medications that may have similar ingredients or the same ingredients.

Right Drug

Patients should be taught to check prescription labels to be sure the right drug was dispensed. The drug label should be compared with the medication; prescription medication bottles have a description of the medication printed on the label, for example, "This medication is a peach colored tablet with an imprint code of Z 2304 on the tablet."

Also, patients should be advised to not start or stop taking prescription medications unless doing so was recommended by a physician or other health clinician.

Adult medications should not be given to children. If a woman is pregnant, she should not take an over-the-counter medication, a supplement, extra doses of vitamins, or a prescription medication unless the physician has approved.

The following are brief instructions to provide for patients who will be self-administering medication:

Right Dose

- Take the recommended or prescribed amount of over-the-counter and prescription medications. Do not skip dose or take extra doses to catch up if a dose was missed.
- Taking more or less of a medication will not be helpful and may be harmful.
- Read the labels to determine the correct dose.

Right Route

- Prescription and over-the-counter medications have instructions for the proper route of administration.
- Do not alter or change a medication.

Right Time

- Do not deviate from the recommended or prescribed interval between doses.

Right Patient

- Check prescription bottle labels to make sure the correct medication was given.
- Never take a medication that is not prescribed. A friend or family member may have hypertension same as the patient but that

does not mean that their medications will be safe and effective for someone else.

Right Reason

- Patients who self-administer medications should know what medical problems they have.
- Patients who self-administer medications should keep a list of the medications they take.
- They should know what each one is and why it has been prescribed.

Medication errors will occur at times. Patients should know the basics of medication errors and they should know who to call if a medication error occurs.

The side effects of medications should also be known. Patients who self-administer medications should know which medication side effects are considered serious and when to call the prescribing physician.

Patients should be able to know and identify the following aspects of medication self-administration:

- What medical problems they have.
- What medications they take.
- The purpose of each medication.
- How and when to take their medications.
- The serious side effects of medications.
- Who to call if they have a question or a problem with their medications.

Practical Tips for Self-administration

The following practical tips will help health clinicians and assistive personnel to support patients who self-administer their own medications. Whether a medication is prescribed or over-the-counter, these practical tips will apply.

Make a Medication List

The patient can make a list of all medications being taken, including names, dosages, reason for use, the times the medications should be taken, how to take them, and side effects. A health clinician or assistive personnel who can verify the information such as a pharmacist, MD, RN or CNA should check the list to be sure it is accurate. The patient should make a copy and keep the information in a safe and easily accessible place.

Medication Timers

Medication timers are basically alarm clocks that can be set to ring or alarm at specific times during the day. When the alarm goes off, the patient will know it is time to take a medication. Medication watches that serve the same function are also available.

Medication Organizers

A medication organizer is a small plastic container that is used to hold medications. These are very popular and the most commonly used ones are "week-long" organizers. These have seven separate containers labeled Monday through Sunday. The patient simply places the day's supply of medications in the appropriate part of the container.

Medication "calendars" are another option. The patient writes down what needs to be taken each day and makes a note on the calendar after taking a dose.

Medication Cards

Medication cards are printed material that can be placed in a prominent position where the patient can easily access them.

Patient Resources

Patients who self-administer medication need resources that they can access if they have a question or problem. Over-the-counter medications are labeled with the basic facts needed to take the drug safely, and prescription medications are often dispensed with a patient education sheet that has information about the drug that patients need to know. There is an enormous amount of drug information on the internet, but patients should be discouraged from using the internet as a resource for medication questions. There are some very good drug information websites but there are many that are less than reputable.

Professional resources for medication information are the patient's physician, the dispensing pharmacist, other health clinicians who are caring for the patient. Telephone resources such as poison control centers and nurse help lines that are sponsored by health insurance companies are another way patients can seek guidance. Patients who self-administer medications should have all these telephone numbers at hand.

For *non-emergency* situations, patients should call the physician, the pharmacist, or other health clinicians. If there is an emergency or a medication error that occurs, the patient should call the poison control center or the nurse help line. Poison control or the nurse help line will be able to determine if the situation is emergent and direct the patient to the appropriate resource.

Summary

Most people can safely self-administer their medications but if a mistake is made there is potential for harm and damage. The practice laws that govern the CNA practice role in each state may require CNAs who supervise patients' medication self-administration to have special training, pass a test, and obtain certification.

Self-administering medications in most situations and for most patients is not difficult. With the proper instruction and with good follow-up assessments, essentially anyone can learn to effectively and safely take medications.

Practical tips have been raised that will help to accomplish goals of medication self-administration. These tips can also be used as teaching points for patients and can be used to assess a patient's knowledge of medication administration. Patients do not need to have a sophisticated level of knowledge about diseases and pharmacology but they should know what medical conditions they have and they should be able to identify the purpose of drugs they are taking.