

Psychotropic Drug Use in Assisted Living



**Inservice Approved for two (2) CEUs by the
North Carolina Division of Health Service Regulation (DHSR)**

This inservice is produced by Moffitt Healthcare to help meet the state's yearly
inservice requirements for assisted living facilities

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Objectives

1. Name 3 categories of psychotropic drugs
2. Name 3 neurotransmitters that psychotropic drugs can affect
3. Define “half-life” and “steady state”
4. Describe how the concepts of half-life and steady state affect a drug’s maximum benefit
5. Determine what a drug’s steady state is when given it’s half-life
6. Name 3 possible outcomes for medication administration in general
7. Name 7 factors that influence how a drug affects a resident
8. Define “first line treatment” and discuss why drugs should not be considered as a first line treatment for behavioral symptom management
9. Name 3 common side effects of psychotropic medication
10. Describe 3 general caregiving options in dealing with difficult behaviors that could be tried before giving a psychotropic drug

What are psychotropic drugs?

Psychotropic drugs are a class of psychiatric drugs that actually include several different categories of medications. These drugs affect brain chemistries that regulate mood and behavior. These classes of meds belong in the psychotropic drug group:

1. Antidepressants
2. Antipsychotics
3. Mood disorders
4. Antianxiety
5. Hypnotics

There are other drugs in this group, used to treat such conditions as ADHD, but are not included in this inservice due to being prescribed primarily to children.

Antidepressants

Antidepressant medications are used primarily to treat depression. They are also used at times for other conditions, like:

1. Certain eating disorders
2. Substance abuse
3. Sleep disorders
4. ADHD
5. Migraines
6. Chronic pain
7. Obsessive/compulsive disorder

Antipsychotics

A “psychosis” is a mental state in which the person is detached from reality and has at least one of these:

1. Delusions (false belief that is not based in reality, such as the resident believing that staff members are trying to poison her)
2. Hallucinations (false sensory perception that is not based in reality, such as hearing voices or seeing things that aren't there)

Antipsychotics are drugs given to manage behaviors that arise from delusions, hallucinations, or disordered thoughts. They are actually approved only for use in schizophrenia and bipolar disease and were originally given to patients with those conditions. But they are increasingly being used to manage non-psychotic conditions. These drugs are also sometimes called *neuroleptics* or *tranquilizers*.

Antipsychotics tend to block dopamine release in the brain. This can increase psychotic episodes. In other words, antipsychotics can actually worsen the very psychotic behaviors that they are supposed to relieve.

Mood disorders

Drugs in this class are also called mood stabilizers. These meds are used to treat extreme, intense, or deep mood swings. They are primarily used to treat bipolar disorder, but are also used to treat schizoaffective disorder and borderline personality disorder. Lithium was the first mood stabilizer approved by the FDA.

Several mood stabilizers are also in the anticonvulsant category. Depakote, for example, has long been used for seizure control, but is being increasingly used to manage difficult behaviors in the elderly with dementia population.

Antianxiety

Antianxiety drugs are used to help lessen the feelings of anxiety, especially when the anxiety is severe enough to interfere with ADLs. They are also known as minor tranquilizers.

Antianxiety meds are very widely prescribed for a multitude of conditions, even in the absence of any physical problem. The patient's "sense of being anxious" is often enough to get a prescription for a medication in this class. Drinking alcohol is the most consumed antianxiety substance.

Hypnotics

Hypnotics are sleeping meds. They are used to help a person fall asleep and to counter insomnia. They are often prescribed along with antidepressants.

Studies are increasingly showing that using hypnotics in the elderly leads to more risks than benefits. Some sleeping meds can cause psychosis (delusions and hallucinations), which can lead to requests for prescriptions for antipsychotics.

How psychotropic drugs work

No one knows exactly how psychotropic drugs work. What we do know is that they work on the brain and central nervous system to alter brain chemistry. This, in turn, affects mood and behavior.

Neurotransmitters are chemicals that cross from one neuron (nerve cell) to another, carrying with it a chemical message. Psychotropic drugs are designed to target certain symptoms by targeting specific neurotransmitters. Some of these include:

1. Dopamine
2. Serotonin
3. Epinephrine
4. Norepinephrine
5. Acetylcholine
6. Somatostatin
7. Melatonin
8. Endorphins
9. Cortisol
10. Glutamate
11. And many others...

It is important to understand that medications are sometimes prescribed for reasons other than what it was originally designed and approved for. For example, Depakote has traditionally been used as an anti-seizure drug. But it was found to calm certain undesirable behaviors in the dementia population. It is now used in some long-term care facilities more for behavior control than for seizure control.

PRN psychotropic meds

Because of the nature of psychotropic drugs, there are certain requirements that must be met before they can be given on a PRN basis. These requirements, listed below, must be noted in the medication order or included in the resident's care plan, and recorded in the MAR (Medication Administration Record) as well:

1. Exact dose
2. Time frame between doses
3. Maximum dose the patient can have in a 24 hour period
4. Behavior specific instructions, including symptoms that might require the use of the medication

Half-life and steady state

Usually, when we give a drug to calm or counter a challenging or difficult behavior, we want it to work right away. One common question in long-term care is, “How long is it going to take before this drug helps to get rid of that behavior?” Understanding the concepts of “half-life” and “steady state” are important to appreciating why many medications don’t have the desired effect right away.

Once in the body, drugs do not remain in the body permanently. The body metabolizes the medication. The word “metabolism” literally means “change.” The body uses chemical reactions to change chemicals into useful substances, or to get rid of poisonous ones. Metabolism makes it easier for water to absorb the chemical so that it can be excreted by the body, mostly through urine.

Food is metabolized in order to pull out the nutrients that help the body to function. Medications are metabolized (broken down) to be eliminated by the body, because meds are generally a foreign substance that throws the body “off balance.” The body gets rid of chemicals, like drugs, so that it does not build up and become toxic.

All medications, even vitamins, would harm us if there was no way for our body to eliminate them or break them down. They would build up to toxic levels. But they don’t usually become toxic, thanks to the liver, as most of the metabolism of drugs is done by this organ.

Metabolism doesn’t happen instantly. It takes time for the body to break down chemicals. The time it takes for a medication (or any type of chemical) to be broken down and eliminated by the body depends on many factors, including:

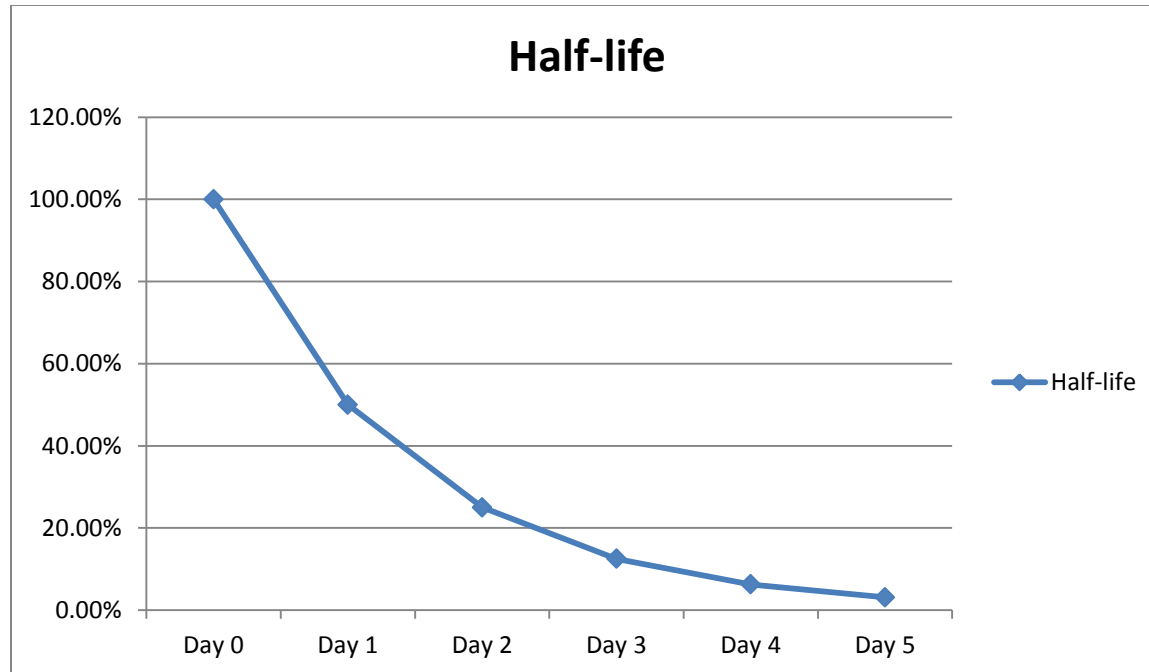
1. Type of medication
2. Amount of med
3. Age of person
4. Diet
5. Hormone balance
6. Impaired liver or kidney function
7. Gender
8. Presence of other meds (drug-on-drug interactions)
9. Ethnic differences
10. Nutritional state
11. Environmental factors
12. Many disease states

In the world of medications, a “**half-life**” is the amount of time it takes for half of the drug to be eliminated from the body. Half-life is affected by the elimination rate, which is specific to the individual resident. This concept of half-life is used quite a bit in science and medicine.

Here is the way a half-life works: If a drug’s half-life is 24 hours, that means that 24 hours after a drug is taken, half of the drug (50%) has been eliminated from the body. At first glance, it might

seem that if 50% of the drug is eliminated within the first 24 hours, then the rest of it (the other 50%) would be eliminated during the next 24 hours. But half-life works differently.

Only half of the remaining amount of the drug will be eliminated during the next 24 hours. So within the next 24 hours (assuming that no further doses are taken), half of what's left of the drug (50% of what is left, or 25% of the original dose) will have been eliminated. After another 24 hours, half of the yet remaining amount (50% of what's left, or 12.5% of the original dose) of the drug has been eliminated. 87.5% of the drug (50% + 25% + 12.5% = 87.5%) of the drug will have been eliminated in 3 days, or 72 hours.



In the above chart, the blue line represents how much of our drug is in the body at the end of each day.

“Day 0” is the day the drug was given, so there is 100% of the drug in the body in the beginning. At the end of Day 1, 50% of the med remained in the body. At the end of Day 2, 25% of the drug remained. At the end of Day 3, 12.5% remained.

Day 4, only 6.25% was left, and at the end of Day 5, just a little over 3% of the drug is still left in the body. During each 24 hour period, half of the drug that was present at the beginning of the day was eliminated by the end of the 24 hour period.

Eventually, all of the drug will be eliminated, if the person does not take any more of it. After a cycle of roughly 5 half-lives, the vast majority of the drug would be broken down and discarded by the body.

The above scenario assumes that the resident takes only one dose, as is often the case with a PRN dose. But what about taking the med on a routine basis? In that case, the body can never

completely get rid of the drug, because the resident keeps taking it in. It's a continual cycle: he takes fresh doses, but his body is constantly eliminating a certain amount of it. What we want is for the resident to reach a **steady state**.

A "steady state" is reached when the rate the drug being taken is equal to the rate the drug is eliminated. At this point, the amount of drug in the body is balanced, not decreasing or increasing. *This is the point where the resident receives the maximum benefit from the medication.* It takes about 5 half-lives to get to the steady state.

As an example, let's look at Zoloft, which is commonly given for depression. The half-life of Zoloft is 1 to 4 days, which means that it could take up to 4 days for half of the drug to leave the system. Since steady state is achieved at 5 half-lives, it would take at least 5 days (1 x 5), or as long as 20 days (4 x 5), before the desired effect of the drug is noticed. At the steady state point, the true effects and benefits of the drug can be seen.

Now it's important to realize that the resident could show some relief of a symptom (or a side effect) before the steady state level is reached, but maximum benefits should not be expected until that time. It is important to be patient if relief is not seen right away. Increasing the dose cannot get to the steady state level any faster. All that will do is to risk overdosing or forcing toxic levels.

In the next section, the half-life and steady state times of many psychotropics are listed in the drug name chart.

Drug categories and names

The five groups of psychotropic medications and many of the drugs in those groups are listed in the chart below. Before we get there, please first note the following information. It helps to explain what you will find in the chart.

1. In the first column, the drug categories are given in **bold** print. Specific medications are listed under each category name.
2. The generic name of the drug is listed first. Brand names are listed next.
3. The half-life is given for each drug where available. Each half-life is given in terms of hours, except for the few exceptions where “d” (days) is given.
4. The “~” figure seen before some of the numbers means “about” or “around.”
5. The steady state represents 5 half-lives and is in some cases rounded off. As with Half-life, the numbers represent hours, unless “d” (days) is noted.
6. The column “Sedation” refers to the calming effect of a medication. Sedation can range from “just enough to take the edge off” to being completely unresponsive.
7. “GI effects” refers to stomach or intestinal irritation. The outcome of this would include nausea, vomiting, constipation, diarrhea, abdominal pain, bloating or cramping, increased gas, or any irritation to any part of the GI tract, which includes organs from the mouth to the colon.
8. “Orthostatic hypotension” refers to the blood pressure dropping too much when getting up to a standing position. Normally, the BP should not fall much. A drop of more than 20 points systolic BP or 10 points diastolic BP would indicate orthostatic hypotension.
9. *Antipsychotics* are a class of drugs that have the ability to cause EPS (**extrapyramidal symptoms**), discussed in a later section.
10. For these types of meds: mood disorder, antianxiety, and hypnotics, the degree of the side effects is not listed due to insufficient data. General info is included otherwise.
11. Any medication which causes significant sedation will increase the possibility of falls and fall precautions should be followed.
12. In the side effects columns, you will notice anywhere from 0 to 5 plus (+) signs. The number of + signs indicates the likelihood and/or severity of that side effect.
 - a. A dash (-) = no data
 - b. 0 = side effect not usually seen
 - c. + = minimal
 - d. ++ = moderate
 - e. +++ = high
 - f. ++++ = very high
 - g. +++++ = highest

Drug name generic/brand	Half-life	Steady state	Sedation	GI effects	Orthostatic hypotension
Antidepressants					
Amitriptyline/Elavil	31-46	155-230	++++	++++	++++
Clomipramine/Anafranil	19-37	95-185	+++	+++++	++
Desipramine/Norpramin	12-24	60-120	+	++	+
Doxepin/Sinequan	8-24	40-120	+++	++	++
Duloxetine HCL/Cymbalta	8-17	40-85	+	+++	0
Imipramine/Tofranil	11-25	55-125	++	++++	+++
Nortriptyline/Pamelor	18-44	90-220	++	+++	+
Protriptyline/Vivactal	67-89	335-445	+	++	+
Trimipramine/Surmontil	7-30	35-150	+++	+	++
Citalopram/Celexa	33	165	0/+	++++	0/+
Escitalopram/Lexapro	27-32	135-160	0/+	++++	+
Fluoxetine/Prozac	1-16d	5-80d	0/+	+++++	0/+
Fluvoxamine/Luvox	~15	~75	0/+	+++++	0
Paroxetine/Paxil	10-24	50-120	0/+	+++++	0
Sertraline/Zoloft	1-4d	5-20	0/+	+++++	0
Isocarboxazid/Marplan	-	-	++	++++	+++
Phenelzine/Nardil	-	-	+	-	+
Tranlycypromine/Parnate	~2	~10	+	-	0
Amoxapine/Asendin	8	40	++	++	+
Bupropion/Wellbutrin	8-24	40-120	++	0/+	+
Maprotiline/Ludiomil	21-25	105-125	++	0/+	+
Trazadone/Desyrel	4-9	20-45	++++	+++	++
Vilazodone/Vibryd	25	125	0	++	-
Mirtazapine/Remeron	20-40	100-200	+++	+++	++
Nefazodone/Serzone	2-4	10-20	++	++++	+
Venlafaxine/Effexor	5-11	25-55	0	+++	0
Desvenlafaxine/Pristiq	11-14	55-70	0	++	0
Olanzapine/Symbyax	1-16d	5-80d	++	++	+++
Selegiline/Emsam	18-25	90-125	0/+	+++	+++
Antipsychotics					
Chlorpromazine/Thorazine	24	120	+++	++	+++
Thioridazine/Mellaril	4-10	20-50	+++	+	+++
Fluphenazine/Prolixin	18	90	+	+++	+
Perphenazine/Trilafon	9-12	45-60	++	++	+
Trifluoperazine/Stelazine	18	90	+	+++	+
Olanzapine/Zyprexa	21-54	105-270	++	+	++
Aripiprazole/Abilify	75-146	375-730	+	0	+
Paliperidone/Invega	23	115	+	++	++
Haloperidol/Haldol	~18	~90	+	++++	+

Loxapine/Loxitane	8	45	+	++	+
Molindone/Moban	2	10	+	++	+
Thiothixene/Navane	34	170	+	+++	+
Clozapine/Clozaril	8-12	40-60	+++	0	+++
Lurasidone/Latuda	~18	~90	++	+++	0/+
Quetiapine/Seroquel	~6	~30	++	0	++
Ziprasidone/Geodon	~7	~35	++	++	++
Risperidone/Risperdal	3-20	15-100	+	++	++
Iloperidone/Fanapt	~18-33	~90-165	++	+	++
Asenapine/Saphris	~24	~120	++	+	0/+
Mood disorders				GI	
Lithium carbonate/Eskalith CR, Lithobid	~24	~120		severe	
Carbamazepine/Carbatrol, Tegretol	25-65	125-325	Yes	Yes	
Valproic acid/Depakote, Depakene	9-16	45-80	Yes	Yes	
Anxiolytics (Anti-anxiety)					
Alprazolam/Xanax	~6-27	30-135			
Chlordiazepoxide/Librium	5-30	25-150	Yes		
Clonazepam/Klonopin	18-50	90-250	Yes	Yes	
Clorazepate/Tranxene	40-50	200-250	Yes		
Diazepam/Valium	20-80	100-400	Yes		
Lorazepam/Ativan	10-20	50-100	Yes		
Oxazepam/Serax	5-20	25-100	Yes		
Bupirone/BuSpar	2-3	10-15			
Hydroxyzine/Vistaril, Atarax	-	-	Yes	Yes	
Hypnotics (usually taken at night)					
Estazolam/ProSom	10-24	50-120	Yes		
Flurazepam/Dalmane	47-100	235-500	Yes		
Quazepam/Doral	39-73	195-365			
Temazepam/Restoril	3.5-18.4	17.5-92	Yes		
Triazolam/Halcion	1.5-5.5	7.5-27.5	Yes		
Diphenhydramine/Benadryl	-	-	Yes	Yes	
Doxylamine/Unisom	-	-			
Zaleplon/Sonata	~1	~5			
Zolpidem/Ambien	~2.8	~14			
Chloral hydrate	7-10	35-50		Yes	
Midazolam/Versed	~2-7	~10-35			
Eszopiclone/Lunestra	~6	~30			
Ramelteon/Rozerem	1-2.6	5-13			

To get an idea of the information we can glean from the chart above, let's take a quick look at three random drugs: Remeron, Risperdal, and Klonopin.

Remeron

Remeron is an antidepressant commonly used to treat major depressive disorder. With a half-life of 20-40 hours, it reaches steady state in 100-200 hours ($20 \times 5 = 100$ and $40 \times 5 = 200$), so it will be at least 4 days (4 days = 96 hours) after beginning this med before you will notice the full benefits (and full extent of side effects) from it.

Remeron is in the “high risk” category for sedation and GI upset, meaning that it is likely to have some sedation and GI upset effects. As a moderate risk for orthostatic hypotension, there is a decent chance that it could cause some blood pressure issues when the resident gets up to a standing position. Be careful to allow time for positional changes to help reduce the chance of getting “woozy” or dizzy when getting up.

Risperdal

Risperdal is a broadly used antipsychotic, frequently prescribed for the treatment of schizophrenia, dementia, bipolar disorder, and other mental health diagnoses. It has a half-life of 3-20 hours, so its main benefits will be seen anywhere from 15 hours to 4 days after the initial dose.

It carries low risk for sedation and a moderate risk of GI upset and blood pressure drop.

Klonopin

Klonopin is an anti-anxiety drug that is used to treat panic disorder, anxiety, and seizures. With a half-life of 18-50 hours, it could take up to 10 days before the maximum benefits are seen. With such a long time interval between initial dose and steady state, benefits should not be expected for the first several days.

It does not carry a risk for low BP, but there is risk for sedation and GI problems. Somnolence (drowsiness) and depression are the two main side effects that are blamed for having to discontinue this drug.

Side effects of psychotropic drugs

The chart in the last section gave some brief information about several side effects that are common to psychotropic drugs. In this section, we want to take a closer look at possible side effects that are seen with the use of psychotropic medications.

Earlier we took a brief look at how psychotropic drugs are supposed to work. We should realize that within the human body, there are millions of biochemical, electrical, and mechanical processes taking place every second. Scientists only partially understand the hugely complex play and interplay of many of these reactions. And many others are only poorly understood, if at all.

The result of our incomplete understanding, and huge variety of factors that influence how the body handles a certain medication, leaves a lot of uncertainty with regard to how a resident will handle that drug. Once a drug is given there are several possible outcomes. At least one of the following (and often more than one) will happen:

1. The medication will have the desired effect
2. The medication will not have the desired effect
3. The medication will have an undesired effect
4. The medication will interact with other drugs, chemicals, or food

Desired effect

First, a medication can have the desired effect. The desired effect is the reason why the drug would be given in the first place. There are several reasons why medications are prescribed or taken. They are listed below.

1. *Promote health* (the med can help keep the body functioning properly and ward off disease, such as taking aspirin once a day to reduce the risk of a stroke)
2. *Reduce symptoms* (like taking Tylenol for a headache, or hydrocortisone cream to decrease itching)
3. *Heal a disease or illness* (for instance, taking an antibiotic to fight an infection)
4. *Control or alter a behavior* (drugs for psychotic or socially unacceptable behavior, antidepressants, antianxiety medications)
5. *Control a disease* (illness is not eliminated, only managed, such as with blood pressure drugs, diabetes meds, etc.)

A desired effect for a blood pressure medication, for instance, would be that the med helps to bring down the blood pressure. A desired effect for a diabetes medication would be to lower blood sugar. A desired effect for a pain pill would be to decrease pain. A desired effect of a psychotropic would be to lessen an undesirable or unwanted behavior.

Not desired effect

This is different than merely having an undesired effect. Maybe the drug given for pain relief was helpful, but only partial relief was obtained. The desired effect, total pain relief in this case, was the goal, but not fully accomplished. Medications without the desired effect might not be effective at all, or be only partly effective.

Another example of the desired effect not being obtained would include Digoxin given to straighten out a heart arrhythmia, but it fails to do the job, or the PT/INR lab test being too high after an adjustment in the Coumadin dosage. End results from drugs such as these often don't go far enough or they go too far.

We can see a very common “not desired effect” in long-term care with pain meds. Often the pain med will have little or no effect and the resident still has pain. This is an example of a drug not having the desired effect, which would be total pain relief.

Maybe the drug seems not to help at all, or maybe it helps a little. When any drug does not have the desired effect, the full benefit we hope for does not happen.

Undesired effect

An undesired effect of a medication is an effect that is not wanted. These effects are all negative (not being wanted), but they are not necessarily harmful. Low key side effects are of the type that might not cause harm, but are still annoying or otherwise undesirable.

Drugs in this category cause signs or symptoms that we call *side effects* and *allergies*. A side effect can be either an expected or unexpected consequence of taking a drug. For example, it is commonly known that sublingual nitroglycerin, given for acute chest pain (angina), often causes both a drop in blood pressure and a headache, due to its vasodilation effects.

Whereas the side effects of nitroglycerin are expected, they are still undesired. What makes them expected is that they are predictable. You would expect there to be a reasonable chance of the side effect happening. Constipation that happens when taking narcotic meds or iron supplements is another example of an undesired, yet predictable, effect.

Probably the most commonly listed side effects of medications in general are the “GI triad” symptoms of nausea, vomiting or diarrhea. GI problems are also common with the use of psychotropic meds.

An unexpected side effect is one that you don't think (or would predict) is going to happen. They can be obscure or rare, as in a chronic cough when taking an ACE inhibitor blood pressure med, or an atypical reaction (opposite of what you would expect) where a resident becomes more agitated after starting an antianxiety drug, which is supposed to reduce agitation.

One important note about the difference between a side effect and an allergy is that a drug is often continued despite the presence of the side effect, *if the benefits of the med outweigh the*

problems caused by it. However, side effects can often be severe enough that the drug has to be discontinued or changed in dose, strength or frequency in order to lessen those unwanted effects.

Allergic reactions are common in all age groups. A true allergy develops as the body responds in initiating a chemical chain reaction in dealing with what the body perceives to be a foreign threat. An allergy to a substance is normally created in one of two ways:

1. First time exposure to the substance (medication, food, etc.) causes the body to manufacture an antibody (IgE). You won't have the reaction at this point. However, future exposures activate the IgE to cause your white blood cells to release histamine, which causes the allergic reaction.
2. An allergy can also happen without the body first making the IgE antibody, but the mechanism behind this is complex and poorly understood.

The most common allergic reactions are hives and rashes. Penicillin and related antibiotics are the most frequent culprits. The cause of hives not induced by a medication is usually hard to pinpoint.

An allergy is essentially a side effect that will usually negate the use of the medication. The unwanted effects of the drug are such that there is high risk for harm or death to the resident. Here are some examples of an allergy response:

1. Resident becomes short of breath or develops angioedema (puffy face, lips or tongue) or rash after starting an antibiotic for a urinary tract infection
2. Asthma or hives after taking aspirin
3. Severe skin reaction and rash when taking Dilantin

The most important and immediately life threatening allergic reaction is *anaphylaxis*, or anaphylactic shock. This condition is marked by a combination of several symptoms, which could include swelling of the face, lips or tongue, rash, asthma-like attack with difficulty breathing and wheezing, chest or throat feeling tight, and rapid or irregular heartbeat. Anyone experiencing this condition needs immediate emergency care.

Anaphylaxis usually happens within the first hour (often within minutes, even seconds) of taking the medication. However, the condition could occur up to four hours after taking the first dose of the drug.

If you notice what you think could be an allergic reaction to a medication, please report the incident immediately! You should follow the facility's policy and procedure in obtaining vital signs, notifying the physician, documentation, and all other interventions as appropriate.

Drug-on-drug interactions

The vast majority of residents in assisted living are on multiple prescribed medications. When two different meds are taken (does not have to be the same time of day) the chemicals from those meds will mix inside the body and can cause conflict with each other. One study has shown that

a person who takes six medications has at least an 80% chance for a drug-on-drug interaction. The more medicines a person takes, the more likely drug-on-drug interactions will occur.

Fortunately, most such interactions are not harmful. Frequently, the effects of one drug on another are not noticeable and no known harm comes to the resident. But keep in mind that although you might not notice any problem, the interaction could be interfering with treatment. This is especially true when one drug counters, or decreases, the effects of another drug.

Other drugs “potentiate” or increase the effects of other medications. A classic example of this is the increase in PT/INR lab results when the resident is taking aspirin along with Coumadin. Both aspirin and Coumadin interfere with clotting time, making it more likely for the resident to have bleeding.

Please note that foods are a common source of drug interaction problems. Cranberries increase Coumadin’s effectiveness, while high vitamin K foods, like broccoli, kale and spinach, decrease it.

Factors that influence how a drug affects a particular resident include:

1. Age
2. Presence of multiple diseases or conditions
3. Nutritional state
4. Gender
5. Ethnic group
6. Individual genetic makeup
7. Eating certain kinds of foods
8. Alcohol consumption
9. Time of day
10. Dose and strength amount
11. Taking other medications
12. Environmental factors
13. Hormonal balance
14. Impaired liver or kidney function
15. Route of administration
16. Emotional state
17. Developing tolerance

Studies show that antipsychotics can provide moderate relief of challenging behaviors associated with dementia. However, the decrease in behavior severity comes at a price. Unfortunately, adverse or side effects are rather common among residents with dementia who take antipsychotics. Some of the side effects listed in recent studies include:

1. Pneumonia
2. UTIs
3. Stroke
4. Pulmonary embolism (blood clot in the lungs)

5. Swelling in the extremities
6. Accelerated mental decline
7. Increased risk of death
8. Significant weight gain
9. Increased risk for diabetes
10. Sedation
11. Orthostatic hypotension (BP drops too much after standing)
12. Gastrointestinal upset
13. Incontinence
14. Impaired balance
15. Falls
16. Impotence
17. Lethargy
18. Rapid heart rate
19. Dry mouth
20. Low white blood cell count
21. Parkinsonism
22. Depressed mood

Extrapyramidal symptoms (EPS) are side effects caused by antipsychotics. The extrapyramidal system in the human body governs involuntary reflexes and movement. When something damages the extrapyramidal system, you will notice certain symptoms, usually associated with the face or with the motion of the body.

Muscle spasms of the neck, tongue, and eyes are common. Other side effects include the inability to initiate movement or not being able to stop a movement, Parkinsonism, which is not true Parkinson's disease (but rather a condition that mimics some of the traits of Parkinson's disease), and tardive dyskinesia. We will take a closer look at this latter symptom below.

Thorazine and Mellaril are low risk for EPS. Antipsychotics that are high risk for EPS include: Haldol, Prolixin, Stelazine, Navane, and Moban.

Tardive dyskinesia is a syndrome, a one of the extrapyramidal side effects caused by long-term use of the antipsychotics, called *neuroleptics*, as we mentioned earlier.

You can see tardive dyskinesia by the movements a person makes. Those movements are repetitive, involuntary, random, purposeless movements. You will usually see those kind of movements in the face. It can also affect the torso and legs.

You might see lip smacking, grimacing, tongue protrusion, rapid eye movement, puckering, or pursing of the lips. These signs are often mistaken for signs of the illness that the meds are given to treat.

Tardive dyskinesia should not be confused with the unrelated tremors seen in patients with Parkinson's or other similar disorders. In Parkinson's disease, the resident will have trouble moving. With tardive dyskinesia, the resident will have difficulty *not* moving.

It is very difficult to treat. And it's often incurable. After 1 year on certain antipsychotics (typical type), approximately 26% of the elderly are affected. After 2 years, the rate doubles to 52%. After 3 years, the rate is 60%. So it's not at all uncommon.

Can a patient with tardive dyskinesia ever get rid of these movements? The answer is: sometimes. These side effects may stay with the resident throughout life, even if the medications are discontinued. But with some residents, the signs could decrease in severity or even go away completely, though it may take years to get to this point.

An interesting point is that tardive dyskinesia was unknown until the 1950s. It was during this time that antipsychotics started to be widely prescribed. Females, the elderly, residents with diabetes, and those with acute neurological side effects from an antipsychotic seem to be at greater risk for developing tardive dyskinesia.

The *AIMS* evaluation (Abnormal Involuntary Movement Scale) can be done to assess objectively the level or trends in tardive dyskinesia symptoms.

The bottom line for using any medication is this: the drug is inappropriate if the risks outweigh the benefits.

First line treatment

A variety of treatment options can be used to treat most illnesses and conditions. For example, high blood pressure can be treated with low salt diet, no added salt, omitting certain foods, high blood pressure pills, losing weight, and others. Anemia might be treated with foods that are high in iron, iron supplements, and even blood transfusions if necessary.

Pharmacology and non-pharmacology options

There are two main types of treatment or therapy for any condition: pharmacology (medication) and non-pharmacology (not a medication). Aspirin, Aricept, Thorazine, Albuterol, and Coumadin are examples of medications. Physical therapy, diet changes, weight control, dressing changes, compression stockings, and a knee brace are a few examples of non-drug therapies.

A first line treatment is the sort of treatment that should be considered at the beginning of the condition or problem.

There are many factors that go in determining what the best course of therapy is when considering treatment options. Just a few of those factors include:

1. Tolerance of a medication or other treatment
2. Severity of the illness or condition
3. Age, gender, ethnic group
4. Presence of comorbidities (other diseases)
5. Compliance with therapy
6. How well previous treatment options worked

Back to our previous example of high blood pressure, let's suppose that you were recently diagnosed with this problem.

In general, when a diagnosis is made, a non-drug route is first considered. When the diagnosis of HTN (hypertension, or high blood pressure) is made, we can ask a question like: "What can I do to get the blood pressure to come down without using medications?"

You could think about certain lifestyle factors. Do you smoke? Do you drink alcohol? Are you overweight? What is your diet like? Is there a lot of stress in your life? Do you have close relatives who have high BP?

These are some of the questions you would ask. Your answers to them will help determine treatment. Sometimes, changes in your lifestyle are all it takes to get the blood pressure to come down. But other times, a medication is considered, especially if the blood pressure is really high, or there is a strong family history of it, and so on.

Even if a medication is prescribed right in the beginning, an "easy" medication is usually tried first. A diuretic is often prescribed at this point. A physician would not normally order the

strongest blood pressure medication initially. The doctor would wait to see if the “weaker” meds would work before trying a harder drug.

No matter what treatment is prescribed for a condition, whether or not medications are involved, the first level of treatment is called the *first line* treatment. As is frequently the case, therapies are added, dropped, and changed later on, depending on how the person responds to this first line treatment.

First line treatment for mental health or behavior issues should not include the use of psychotropic medications. This is due to two major reasons:

1. Psychotropic drugs are very powerful chemicals with lots of side effects
2. Psychotropic drugs often create problems that are more severe than the behavior

So what are the “first line” treatments that you can use?

1. The very first goal of treatment and the management of behavior symptoms is to do no harm.
2. Look for reversible and treatable causes of the behavior issue. Many behaviors are not caused by the dementia process itself, but other problems, such as UTI or other infection, medication problems, pain, hunger, environmental factors, being ignored, fear, etc.
3. Realize that fear and pain are two of the most common reasons why a resident might be anxious, combative, aggressive, etc. Try to find the reason why a resident behaves the way he/she does.
4. Check out the environment for clues. Is the TV on too loud, or is some inappropriate programming on? Are other residents, visitors, or staff talking too loud or making other noise? Create and maintain a calm environment.
5. Don't treat the resident as if he is a child.
6. Give one command at a time, and one that is easy to follow.
7. Don't try to control the resident. Try to lessen or contain the behavior.
8. Don't wait before a problem happens before thinking about what to do. Expect problem behaviors. Try to tailor your response to the individual resident. Each person has a history and likes that you can appeal to. In other words, don't offer broccoli to the resident who hates vegetables.
9. Activities are very important for the person who suffers from depression. Try to get her to be involved, but don't push.
10. Reminiscing can bring back pleasant memories. Using this tactic can help certain low key behaviors, but it will probably be ineffective when dealing with outright hostility or belligerence.
11. Do not agree or disagree with the person's altered sense of reality. If you agree, you'll only confirm the false perception and increase her agitation. If you disagree, you risk becoming part of the problem, a “conspirator,” as it were. Sometimes a hallucination or delusion is based on something real in the present or in the past. This behavior can be tricky to deal with, because it can be an out-working of a legitimate fear or real experience.
12. Respond to the emotions and redirect and reassure as needed.

13. Never ignore threats to do harm.
14. Draw boundaries and do not let residents engage in inappropriate behaviors. For instance, it is unprofessional to joke with residents who make sexual advances.
15. Do not argue with the resident, as this is a “no win” situation for both.
16. Notice and document the type of delusion or hallucination. This could help the physician to prescribe a more appropriate medication, if one is needed.
17. Don't tell the person that she is just “imagining things.” Not only will this not help, but it will likely get her defenses up. Such comments will not be helpful.
18. If a resident with dementia accuses you or someone else of stealing, offer to help find the item.
19. Maintain good lighting in the area. A 60 year old needs 3 times the lighting that a 20 year old needs.
20. Bad language, whether from a person who has dementia or not, is more likely in times of stress, frustration, or anger. Try to de-escalate the situation by dealing with the foundational issue when possible.
21. Limit caffeine and diuretics late in the day. Trips to the bathroom at night interrupt the sleep cycle, which can be a problem, especially in residents with dementia.
22. Don't forget any pain management that might be necessary. Pain often leads to loss of sleep and difficult behaviors. Be alert for nonverbal cues to pain, such as grimacing or other similar facial expressions, holding a body part, and of course, complaints of pain.
23. Light to moderate exercise or activity helps some behaviors, like sundowning, by occupying the mind and body. If the person is showing symptoms of an unwanted behavior, redirect or refocus her to doing something useful, but nothing too heavy or involved.
24. Pick your battles. Not all unwanted behaviors are disruptive, dangerous, or difficult.
25. Don't use psychotropic medications as a restraint. This is a form of chemical restraint and not allowed except for medically necessary episodes, with MD order, and for a short duration. Documentation should fully support the use of all medications.
26. Follow your policies and procedures in every aspect of your caregiving. You received training when you were hired. Remember and use that training.
27. As an alternative to restraint, use a wander guard bracelet, chair or bed alarm, or similar device as ordered and allowed by the facility you work in.
28. Don't forget that every effect has a cause. You might not discover what the cause of a specific behavior is, but try to find it. Talk to coworkers and look for clues from the resident, the environment, time of day, recent visitors, etc.
29. Do not force personal care.
30. Consider using another caregiver if a resident refuses meds or care. Sometimes a change in approach can make a difference.
31. Don't try to handle extreme situations by yourself. Get assistance as needed for the more serious behavioral problems.
32. Assist the resident with all ordered therapies, such as compression stockings, supplemental oxygen, and so on. But don't force them to get the treatment. Remember that all residents have the right to refuse treatment, including medications, but do make an effort to gain compliance.
33. Providing consistent caregivers will help to establish routines in caregiving, which tends to counter anxiety when dealing with new/changing caregivers.

34. Assist the resident to use or wear eye glasses, hearing aids, and any other device or prosthetic that improves sensory function.
35. If possible, take outside and expose to sunlight, especially later in the day.
36. Asking permission is one of the best but most neglected things a caregiver can do. Many challenging behaviors stem from a resident's agitation at thoughts of being controlled or being told what to do.

Much of the above can be summarized in this: whenever possible, treat their behavior with your behavior, not with drugs.

The bottom line is that psychotropic medications have their place, but can be over-prescribed. They can produce numerous and severe side effects, including early death. There are definitely some cases when drugs should be used, especially when the resident is deemed at risk to harm self or others.

For most problem behaviors, try non-medicine kinds of treatment first.

In view of the above information that we've covered on side effects and first line treatments, it could still be appropriate to consider giving psychotropic medications if any of these criteria apply:

1. The resident poses a danger to herself or others
2. Significant, disrupting agitation remains despite non-pharmacy interventions
3. The resident has anxiety along with agitation or hallucinations
4. Need to decrease agitation for clinical or diagnostic test, or care intervention

Use of psychotropic meds in residents with dementia

The first thing we need to understand about the use of psychotropic medications is that there is no approved drug given strictly to dementia residents for behavior control. Stated another way, there is no FDA-approved drug for behavior control in dementia.

Medications that are used to control behaviors in dementia residents are also used in other people, such as those with bipolar, schizophrenia, severe depression, and other mental health problems.

We tend to think of a medication as a substance that targets a specific organ or symptom. In some cases, this can be true, but the drug can still have effects that we don't desire. We covered this in detail earlier.

Psychotropic meds have lots of undesired effects which can be more profound than the benefits they give.

Psychotropic medications are usually prescribed for a wide variety of behaviors for a wide range of illnesses or diagnoses. Take a look at the chart below:

Condition	Behaviors						
	Anger	Depression/ sadness	Impulsive	Defiant/ destructive	Anxious	Losing focus	Manipulative
Disorderly conduct	X	X		X			X
Anxiety disorder	X	X	X		X	X	
Bipolar disorder	X	X	X	X		X	X
Obsessive compulsive			X		X		
Post- traumatic stress	X	X			X	X	
Dementia	X	X	X	X	X	X	X

You will notice that there is quite a bit of overlap of different symptoms among the listed conditions. For instance, being anxious is a common symptom of anxiety disorder, obsessive compulsive disorder, and post-traumatic stress disorder.

Also notice how dementia is the one diagnosis that includes all of the above listed behavior types.

Because of the overlap of symptoms, there is not one specific med for anxiety for the resident with anxiety disorder, and another med for the resident with traumatic stress. The same

antianxiety drug is often given to both. However, mental health issue is different for both and each resident will likely have a different response to the drug.

Notice how the dementia resident could have any of the symptoms listed above. The psychotropic drug he is on could be the same drug given for any of these other conditions.

So, what does this all mean? What we are saying is that there is no mental health drug given specifically for residents with dementia that will target specific symptoms. The same Risperdal given for the aggressive behavior in a resident with dementia is also given to the schizophrenic or for bipolar disorder, or the autistic child, or the sufferer of Tourette's syndrome.

As mentioned earlier, no antipsychotic medication is FDA approved for use of behavior control caused by dementia. However, many such medications are prescribed for use in this population. Using any medication for any purpose other than what it is directly approved for is called "off label use" of the drug.

Antipsychotics, for example, have been shown to have poor to moderate positive effect in dementia residents, but the side effects are often more severe and more common than benefits. In other words, the risks often outweigh the benefits. Therefore, in the dementia population, antipsychotics should not routinely be given.

The worst possible side effect, death, has been shown to be 1.6 to 1.7 times higher with the use of certain antipsychotics. Causes of death were mostly related to heart failure and infections.

This is the bottom line: psychotropics are a powerful class of drugs. For the most part, they should be limited to cases of severe distress or severe behaviors that pose a safety risk for the resident or others.

Special caregiving tips

In addition to the topics that we've covered in this inservice, there are several other very important points to make. Knowing and remembering these special caregiving tips will improve your caregiving for residents who take psychotropic medications:

1. Antipsychotic medications should not be stopped suddenly without an order from a qualified professional (such as doctor, nurse practitioner, etc.).
 2. Antipsychotics should be considered as short-term use drugs.
 3. Expect that any of the medications listed in this inservice could have an effect on the person's ability to think clearly, drive a car, or perform any task that could be dangerous.
 4. Dose amount in the elderly should be lower than the amount of the drug that would normally be given to a younger patient. Otherwise, toxic levels of the drug could be reached more quickly.
 5. It is almost always best to try a nonpharmacological (no drugs) approach first when managing difficult behaviors.
 6. In many cases, the risk and severity of side effects is greater than any benefits the resident might receive from the psychotropic drug.
 7. The majority of psychotropic drugs take several days before maximum benefits can be seen.
 8. Alcohol reacts badly with virtually all psychotropic medications, and should be avoided.
 9. Remember that a behavior can be the result of an internal or external stimulus. Examples of internal stimuli include:
 - a. Hunger
 - b. Pain
 - c. Fear
 - d. Need to use the bathroom
 - e. Decreased sensory input (poor eyesight, hearing, etc.)
- Examples of external stimuli include:
- a. Change in caregiver
 - b. Hospitalization
 - c. People
 - d. Objects
 - e. Travel
 - f. Environment

Thanks for taking this course! Understanding and applying the principles and tips outlined in this inservice will help you to more effectively and safely administer psychotropic medications.