

Medication Administration Module



Table of Contents

| | |
|---|-------------|
| About this Module/Overview/Objectives..... | Page 3 |
| Pre-test..... | Pages 4-5 |
| Chapter 1..... | Pages 6-11 |
| Overview | |
| Role of the Nurse in Medication Administration | |
| Board of Nursing | |
| Assigning of Tasks to Unlicensed Assistive Personnel | |
| Supervision of the Certified Medication Aide | |
| Personal-Accountability | |
| Medication Stewardship | |
| Chapter 2..... | Pages 11-15 |
| Medication Properties | |
| Special Considerations for the Administration of Medications to the Elderly | |
| Use of Antipsychotic medications in the residents with Alzheimer’s disease or other dementia related conditions | |
| Assessment prior to medication administration | |
| Use of G-tubes in medication administration | |
| Chapter 3..... | Pages 15-18 |
| Rights of Medication Administration | |
| Medication Administration Record (MAR) | |
| The Rule of 3 | |
| Chapter 4..... | Pages 18-27 |
| Texas Board of Nursing and Medication Administration | |
| Federal Nursing Facility Regulations | |
| F176: Self-Administration of Medications | |
| F329: Unnecessary Medications | |
| F 332 & F333: Medication Errors | |
| Impact of Working Conditions on Medication Errors | |
| Medication-Related Adverse Events | |
| State Nursing Facility Regulations | |
| Chapter 5..... | Pages 28-32 |
| Resources | |
| Videos | |
| Learning Activities | |
| Scavenger Hunt | |
| Institute for Safe Medication Practices (ISMP) | |
| CMS hand-in-hand Module 4 | |
| Internet Resources | |

About this Module:

When properly used, medications are a great resource for mankind; indiscriminately or improperly used, they can lead to anything from minor irritating problems to death. Medications are chemical compounds that modify human body processes. They may alter chemical reactions, fight, cure, or prevent disease, relieve disease symptoms, maintain health, aid in diagnosis, or alter a normal process. For example, psychotropic medications change behavior through altering, blocking, destroying, or augmenting brain chemicals. FDA studies show that medication errors injure about 1.3 million people in the United States each year and cause the death of 7,000¹. Safe medication administration is essential to nursing practice, and nurses need to have knowledge and skill in the techniques of administering all pharmaceutical agents because the nurse is the last line of defense to protect a resident against a medication error. In order to ensure resident safety, the Medication Administration Module of this tool-kit was developed.

Overview:

Medications are administered to individuals to diagnose, treat, or prevent illness. Drugs are potentially dangerous, even if they are meant to improve our health. It is important that those you care for take any and all medications that they are prescribed, correctly, ensuring that the doctor's orders are always followed. Medications have different ways in which they need to be given in order for them to work properly. The responsibility that you as the nurse have in medication administration will vary and be based on the needs of your residents and the policies and procedures that are in place at the facility in which you work. The administration of medications is a very important task that requires a great deal of attention while being performed, in order to be done safely.

Objectives:

The objectives for this module are:

- a. Describe the LVN's role in medication administration in a nursing facility.
- b. Identify the three factors that can make medication administration difficult in the elderly.
- c. Identify the federal regulations that involve medication administration.

¹ Food and Drug Administration (FDA). Preventable Adverse Drug Reactions: A Focus on Drug Interactions. <http://www.fda.gov/Drugs/DevelopmentApprovalProcess/DevelopmentResources/DrugInteractionsLabeling/ucm110632.htm>

Pretest:

1. Forgetting to administer a medication on time is an example of neglect.
 True False
2. All medications can be crushed.
 True False
3. Medication errors must be documented.
 True False
4. It is okay to sign off on a medication that someone else administers, even if you prepared the medication.
 True False
5. In a Nursing Facility, the LVN can delegate to a Certified Medication Aide (CMA) the administration of insulin.
 True False
6. If a resident refuses a medication, your only responsibility is to document the refusal.
 True False
7. You must have the informed consent for medication of a resident or responsible party signed prior to the administration of an antipsychotic medication.
 True False
8. When administering a medication, the right route must be considered. The nurse is responsible for ensuring that the medication can be administered in the route ordered.
 True False
9. It is the nurse's responsibility to ensure that residents are free from any medication errors.
 True False
10. Residents of long-term care facilities have the right to self-administer medications.
 True False
11. According to federal regulations for nursing homes, a significant medication error causes the resident discomfort or jeopardizes his or her health and safety.

True False

12. It is not necessary to have a clinical indication for medication that is being administered to a resident.

True False

13. A medication review should be done when a resident is readmitted to the nursing facility, even if they were only out for less than 24 hours.

True False

14. Falling is not considered a medication related adverse consequence.

True False

15. According to the Texas Board of Nursing, an LVN is not responsible for the clarification of a medication order that he/she does not understand.

True False

| Answers: | | | |
|-----------------|-------|-------|-------|
| 1. T | 2. F | 3. T | 4. F |
| 5. F | 6. F | 7. T | 8. T |
| 9. T | 10. T | 11. T | 12. F |
| 13. T | 14. F | 15. F | |

Chapter 1:

Overview:

Medication administration is an everyday part of the care that is provided to residents in a nursing facility. Due to the potential danger of medication administration, it is imperative that the nurse understand the importance of performing the task safely. Becoming proficient in all of the aspects of medication administration will ensure that the residents are kept safe through all areas of the care provided to them.

The nurse needs to understand not only the routes of medication, but the ways in which medications affect the elderly residents in their care, as well as the federal regulations that discuss medication administration. In addition, the nurse must also be able to report medication errors as required by facility policy and procedure and adequately supervise unlicensed personnel who are responsible for medication administration.

Role of the Nurse in Medication Administration:

The Texas Board of Nursing (BON) in their position statement 15.25² directs the LVN to work within their scope of practice, as dictated by the Nurse Practice Act (NPA). The LVN, based on knowledge and clinical judgment is expected to:

1. Know the common medical diagnoses, drug and other therapies and treatments;
2. Administer medications and treatments and perform procedures safely; and
3. Monitor, document, and report responses to medications, treatments, and procedures and communicate the same to other health care professionals clearly and accurately.

In the Texas Administrative Code (TAC), Title 22, Part 11, Chapter 217, Rule §217.11 Standards of Nursing Practice³, LVNs are required to:

1. (C) Know the rationale for and the effects of medications and treatments and shall correctly administer the same;
2. (D) Accurately and completely report and document... (iv) administration of medications and treatments; and
3. (N) Clarify any order or treatment regimen that the nurse has reason to believe is inaccurate, non-efficacious or contraindicated by consulting with the appropriate licensed practitioner and notifying the ordering practitioner when the nurse makes the decision not to administer the medication or treatment.

² Texas Board of Nursing. Practice – Texas Board of Nursing Position Statements. https://www.bon.texas.gov/practice_bon_position_statements_content.asp#15.25

³ Texas Administrative Code, Title 22, Part 11, Chapter 217, Rule §217.11. [http://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_floc=&p_ploc=&pg=1&p_tac=&ti=22&pt=11&ch=217&rl=11](http://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_floc=&p_ploc=&pg=1&p_tac=&ti=22&pt=11&ch=217&rl=11)

LVNs, in their educational preparation are taught how to administer medications and treatments as ordered by a physician, podiatrist, dentist, or any other practitioner legally authorized to prescribe the ordered medication. The LVN is required to know and understand not only the BONs position on medication administration, but also that of their facility. The BON does not dictate a list of medications, routes of administration, or any other specific information that may be relevant to determining whether or not a task is within the scope of practice for a LVN, as they allow for LVNs who have the proper training to engage in certain practices that those without the training would otherwise be unable to do.

Assigning of Tasks to Unlicensed Assistive Personnel⁴:

According to the Texas Administrative Code (TAC), Title 22, Part 11, Chapter 217, Rule §217.11: Standards of Nursing Practice, (2) Standards Specific to Vocational Nurses, the LVN is a directed scope of practice under the supervision of the RN or any higher level licensure. The LVN, by his/her scope of practice is not allowed to delegate tasks to other individuals; however he/she is within their scope to assign specific tasks to unlicensed personnel, as long as the individual has the educational preparation, experience, and knowledge to handle the assigned task. With regards to medication administration, the LVN is capable of assigning this task to a Certified Medication Aide (CMA), as long as he/she maintains appropriate supervision of the CMA. The medication aide program is mandated by the Texas Health and Safety Code, Chapter 242, Subchapter N⁵, with regards to the administration of medications to facility residents, and they are widely used throughout nursing homes in the state. If the nursing facility has CMAs in place to assist with medication administration, there need to be safe systems in place to support the CMA role.

- a. Supervision of the Certified Medication Aide:** In a nursing home, it is ultimately the responsibility of the immediate supervisor, in most cases the LVN, to ensure that the CMA is practicing within their certification and performing medication administration safely. The LVN needs to be aware that checking the MAR for proper administration of resident medications is part of the oversight process. In the event that the LVN does not feel as though the CMA can effectively perform the requirements of administering medications, that information needs to be passed on to the RN who oversees the LVN's practice. Medication administration in nursing homes is a complex process that requires a collaborative effort between the CMA, LVN, and the RN to ensure safe medication administration. Assigning the task of medication administration to the CMA allows for the nursing staff to focus on all the other aspects of resident care. Facility policy will dictate which aspects of medication administration a CMA cannot be responsible for, but in general, those include: the use of

⁴ Texas Board of Nursing. LVN Scope of Practice. https://www.bon.texas.gov/rr_current/217-11.asp

⁵ Texas Health and Safety Code, Title 4, Subtitle B, Chapter 242, Subchapter N.
<http://www.statutes.legis.state.tx.us/Docs/HS/htm/HS.242.htm#242.608>

insulin, intravenous medications, and respiratory medications; evaluation and reevaluation of a resident's condition; and resident assessment, just to name a few.

Personal Accountability:

Personal accountability, by definition is the willingness to answer for the outcomes that are a result of the choices you make, behaviors you display, and actions you take⁶. Nurses are held to a higher standard of personal accountability, as detailed in the National Association of Practical Nurse Education and Services Standards of Practice for Licensed Practical/Vocational Nurses. The LVN is held to a code of ethics that includes the nurse accepting personal responsibility (for his/her actions)⁷. Nurses are also expected to be responsible for their professional practice by developing and maintaining current knowledge, skills, and abilities. Prior to any administration of medication, the LVN must understand that he/she is personally accountable for every aspect of the administration process. Any time that the LVN feels as though he/she may not be able to perform the task effectively and safely, he/she must ensure that the RN is aware of the issue, in order to assist the LVN in obtaining the needed knowledge or training.

Medication Stewardship:

By definition, stewardship is the activity or job of protecting and being responsible for something. As a nurse, you are already in a role of stewardship, being responsible for ensuring the safety and high quality of the care you provide to your residents. You are also charged with engaging in practical reasoning with regards to providing all levels of resident care. As a steward of your profession, you have the ability to effect change. Medication administration is an area where you, as the steward, can effect positive change for the good of the residents. A nurse needs to ensure that he/she is being a good steward of their resident's medications as a whole, however, there are three specific categories of medication stewardship that are of significant importance:

- a. Antimicrobial Medication Stewardship⁸:** The potential contribution that nurses can make to the management of antimicrobials within any care setting could significantly impact the development of antimicrobial resistance (AMR) and healthcare associated infections (HCAs) and Multidrug Resistant Organisms (MDROs). In the past 10-15 years, there has been a significant increase in the prevalence of micro-organisms that are resistant to antimicrobial treatments. The inappropriate and overuse of antibiotics is recognized as a serious problem in nursing homes. Overexposure to antibiotics allows the emergence of bacterial strains that are resistant to treatment. When this occurs, it is harder to treat infections and complications develop resulting in increased costs, resident morbidity, and resident mortality. There are many instances within the nursing home in which systemic

⁶ Mind Tools. Developing Personal Accountability. <http://www.mindtools.com/pages/article/developing-personal-accountability.htm>

⁷ National Association of Practical Nurse Education and Services (NAPNES), Inc. NAPNES Standards of Practice for Licensed Practical/Vocational Nurses. http://www.napnes.org/Archives_NoAccess/standards.pdf

⁸ Journal of Infection Prevention. Covering more Territory to Fight Resistance: Considering Nurses' Role in Antimicrobial Stewardship. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3083718/>

antibiotics are not generally indicated; this means that the resident may have a positive result of a bacteria, however, providing them with antibiotics would be unnecessary⁹:

1. Positive urine culture in an asymptomatic resident.
2. Urine culture ordered solely because of change in urine appearance.
3. Nonspecific symptoms or signs not referable to the urinary tract, such as falls or mental status change (with or without a positive urine culture).
4. Upper respiratory infection (common cold).
5. Bronchitis or asthma in a resident who does not have COPD.
6. "Infiltrate" on chest x-ray in the absence of clinically significant symptoms.
7. Suspected or proven influenza in the absence of a secondary infection (but DO treat influenza with antivirals).
8. Respiratory symptoms in a resident with advanced dementia, on palliative care, or at the end of life.
9. Skin wound without cellulitis, sepsis, or osteomyelitis (regardless of culture result).
10. Small (<5cm) localized abscess without significant surrounding cellulitis (drainage is required of all abscesses).
11. Decubitus ulcer in a resident at the end of life.
12. Acute vomiting and/or diarrhea in the absence of a positive culture for shigella or salmonella, or a positive toxin assay for *Clostridium difficile*.

b. Antipsychotic Medication Stewardship¹⁰: On March 2, 2015, the US Government Accountability Office (GAO) released an analysis of antipsychotic prescribing patterns in the United States, based on 2012 data gleaned from Medicare Part D Prescription Drug Event claims and the Minimum Data Set. Although progress has been made in reducing antipsychotic use in nursing homes, the GAO identified an antipsychotic prescription in one-third of all long-stay nursing home residents with dementia who do not have a diagnosis of schizophrenia or bipolar disorder—the two FDA-approved indications for antipsychotic medications. There are many reasons why this harmful prescribing practice continues, including lack of education and low staffing levels, but it is the responsibility of the nurse to advocate for his/her residents and work with facility administration as well as the prescriber, to come up with alternative ways to care for residents that can further reduce the use of antipsychotics in older patients with dementia. Given the strong evidence of the harms associated with off-label antipsychotic use, inappropriate prescribing is now being factored into nursing home quality measures as well as in the CMS Five-Star Quality Rating for nursing homes.

c. Pain Medication Stewardship¹¹: Chronic pain is a common problem among nursing home residents that is often difficult to manage, mismanaged, or not managed at all. Yet uncontrolled pain or suboptimal pain management can decrease residents' quality of life and lead to worsening of other medical conditions and increase the risk of immobility, falls, and

⁹ Agency for Healthcare Research and Quality. 12 Common Nursing Home Situations and Infection Control Guidelines for MRSA, C. Difficile, and VRE Pocket Cards. <http://www.ahrq.gov/professionals/quality-patient-safety/patient-safety-resources/resources/nh-aspguide/module1/toolkit2/pocketcards.html>

¹⁰ Annals of Long-Term Care Clinical Care and Aging. Improving Medication Prescribing: Antibiotics and Antipsychotics. <http://www.annalsoflongtermcare.com/article/improving-medication-prescribing-antibiotics-and-antipsychotics>

¹¹ Annals of Long Term Care Clinical Care and Aging. Managing Chronic Pain in Older Adults: A Long-Term Care Perspective. <http://www.annalsoflongtermcare.com/article/managing-chronic-pain-older-adult-long-term-care>

other complications. Every resident deserves appropriate pain management, and the nurse must be adequately prepared with the knowledge and information to meet their residents' needs. Pain medication stewardship is important because of its impact on the quality of the care residents receive. The opposite of the overuse of antimicrobials antipsychotics, and pain medications are often under used in the nursing home population. There are many factors that complicate and hamper the appropriate management of pain in older adults, including a high prevalence of dementia, sensory impairment, and disability. Other issues that may exacerbate the problem are erratic staffing patterns, high turnover of nursing and administrative staff, along with the limited presence of a physician. Having a good understanding of pain can enable nurses to develop an individualized plan of care for their residents who experience pain, ensuring more optimal pain management. The nurse must be able to:

1. Understand Pain: Pain is defined as an unpleasant sensation that is both a sensory and emotional experience associated with an actual and/or potential tissue injury. Pain can be present even when a person cannot communicate it, such as in the case of Alzheimer's disease and other dementia related conditions. The LVN should be aware that pain can be acute or chronic and in many of the residents that they care for, it will be chronic pain and is whatever the resident says that it is.
2. Assess Chronic Pain: Assessment and proper diagnosis of chronic pain will depend on accurate historical and clinical information, along with evidence that is found during an examination. When assessing for pain, the resident's perception of their pain is the most important factor and can be determined either verbally or through the use of a pain scale. While examining a resident reporting pain, the healthcare provider should assess the characteristics of this individual's pain and how much is known about the pain, including the frequency or chronicity of pain and any precipitating and alleviating factors. Knowledge of any current and previous pain management approaches is essential to properly develop a plan of care.
3. Developing a Care Plan: When developing a plan of care, if the resident's pain is excruciating, it is sometimes necessary to treat his or her pain before all relevant information has been gathered or the cause has been identified. Caution should be used when doing this, however, as medications administered to alleviate pain may mask the cause of the pain and may lead to not accurately identifying its source. Goals of a person-centered approach to developing a plan of care should be based on an individual's preferences; knowledge of the pain's location, characteristics, and causes; and knowledge of the patient's condition, prognosis, risk factors, comorbidities, and existing medication regimen. It is important to establish realistic expectations regarding pain relief or pain management/tolerance. The nurse should also determine whether there are any underlying causes of pain that can be alleviated without the use of medications, put the plan of care into action, set a time frame for re-evaluating the patient's pain management, and monitor the patient for complications and side effects of pain medications.
4. Managing Chronic Pain: It is essential to make individual, resident-specific decisions when managing a resident's pain. As previously noted the nurse should first determine the cause of the pain and attempt to alleviate that cause and/or modify the resident's activity and environment, focusing on non-pharmacologic management strategies, including lifestyle interventions. Thereafter, medications can be used, starting with over-

the-counter (mild) pain medications and then progressing to stronger prescription-strength medications, if needed. Throughout this process, it is imperative for the nurse to periodically re-evaluate the resident's pain management to determine whether the plan needs to be revised to optimize pain management.

5. **Starting with Non-pharmacological Management:** Some general principles should be followed when starting pain management. First and foremost, reassurance, comfortable positioning (especially in bed/chair-bound individuals), and a comfortable, supportive environment should be provided. A quiet place, for instance, may make pain more tolerable. Overstimulation that can occur from bright lights or loud, noisy places should be avoided. Therefore, during such times, residents may fare better spending time in their room or other quiet areas, rather than more noisy common areas. Ensuring that the environment is not too hot or too cold may also assist in decreasing pain. The nurse should consider recommending the use of cold packs and/or warm compresses to help minimize the resident's pain. In addition, lifestyle management needs to be encouraged, including getting adequate sleep, eating a balanced diet, drinking plenty of water, limiting caffeine intake, stopping smoking, and performing appropriate exercises and physical activities. Non-aggravating regular exercise can help these patients maintain or develop balance, strength, and stamina, preventing injuries that can worsen pain or lead to new pain. When moving a particular part of the body does not aggravate pain and contractures are not present, the nurse should consider discussing physical therapy with the physician, as this can increase circulation and prevent deconditioning, muscle atrophy, and fatigue, all of which can worsen pain. After the cause of pain has been determined and attempts have been made to remove that cause, non-pharmacologic measures should be initiated and continued even when medications are deemed necessary, as the concomitant use of these measures and pharmacotherapy can increase the efficacy of pain management. Although the aforementioned non-pharmacologic measures may bring substantial relief and reduce the need for analgesics, they may sometimes be insufficient to control a patient's pain. In such cases, the nurse should discuss with the need to consider pharmacologic management options with the provider.

Ultimately, as the resident's advocate, the nurse is responsible for ensuring medications are being prescribed for the right reason. In certain situations, as described above, medications can be given in excess or under used. It is imperative that the nurse is aware of these situations as a steward of the care being provided to the residents.

Chapter 2:

Medication Properties¹²:

Medication properties such as absorption, distribution, metabolism, and excretion make up the pharmacokinetic profile of a medication and affect the medication's action, peak concentration, duration of action, and bioavailability.

¹² Thompsonhealth. Thompson Health Medication Study guide for Nursing Candidates.
https://www.thompsonhealth.com/Portals/0/_Careers/PDF/MedicationStudyGuide_Nov2011.pdf.

- a. Absorption:** a medication must be absorbed into the bloodstream before it can act in the body. There are many ways in which absorption can happen:
- i. Oral tablets must first disintegrate into smaller particles and dissolve in the gastric juices before being absorbed.
 - ii. Most absorption of oral medications takes place in the small intestine.
 - iii. Oral solutions are usually absorbed more quickly, as they do not have to disintegrate first.
 - iv. Tablets that have an enteric or thick coating are absorbed slower, to prevent disintegration in the stomach or to provide a timed release of the medication.
 - v. Medications given IM must first be absorbed through the muscle.
 - vi. Rectal suppositories must first dissolve to be absorbed through the mucosa
 - vii. Medications given via IV do not need to be absorbed since they are given directly into the blood.

Many factors affect the absorption of a medication, such as the form of the medication, the chemical makeup of the medication, the route of administration, interactions with substances in the GI tract, and the resident's characteristics.

- b. Distribution:** after being absorbed, a medication is distributed into the blood and other tissues in the body. Various conditions can affect the amount of a medication that is distributed through the body.
- i. In a resident with significant edema, the medication will have to be distributed to a larger volume than in a resident without edema; the dosage of the dose may need to be increased to accommodate this condition.
 - ii. In a resident who is dehydrated, the medication is distributed to a smaller volume; therefore the dose would need to be decreased for this condition.
 - iii. In residents who are obese, special consideration needs to be taken, as some drug dosages may not distribute well into the fatty tissue.
- c. Metabolism:** the liver metabolizes most medications and may be increased, decreased, or unchanged due to liver disease.
- i. Residents with liver disease must be monitored closely for desired drug effects or toxicity.
- d. Excretion:** excretion by the kidneys is one of the ways that a medication is eliminated from the body.
- i. Residents with decreased renal function need lower doses and maybe longer dosage intervals to avoid drug toxicity.

Elderly residents have decreased hepatic and renal perfusion which may result in the need for lower dosages and/or longer dosage intervals (decreased frequency) to avoid drug toxicity.

Special Considerations for the Administration of Medications to the Elderly¹³:

¹³ California State Board of Pharmacy. Drug Therapy Considerations in Older Adults. http://www.pharmacy.ca.gov/publications/health_notes_drug_therapy.pdf

Chronic medical conditions require treatment, and the treatment of choice often remains medication therapy. In the elderly, medication treatment can be especially difficult due to several factors: polymedicine, also known as polypharmacy; adverse medication reactions; and altered medication action.

- a. **Polymedicine:** The definition of polymedicine is the increasing number of medications, (five or more) and is related to a similarly increasing number of medical problems. There are many different factors that contribute to the polymedicine that is generally seen in the elderly. These include: multiple disease processes, multiple healthcare providers (primary care physician, specialists, etc.), use of OTC medications, and resident-driven prescribing. The nurse caring for these residents should understand the reasons behind polymedicine in order to be an advocate for the resident by identifying the polymedicine and working with the physician to remove any unnecessary medications.
- b. **Adverse medication reactions:** The elderly residents often have prescriptions for medications that may be more likely to cause adverse drug reactions. These reactions can be due to the age-associated physiological changes or it can be caused by a drug to drug interaction. The nurse must be aware of these changes in order to ensure resident safety against issues such as falls or a worsening of other medical conditions.
- c. **Altered Medication Action:** As a person ages, a number of natural physiological changes occur that alter the way the body handles medications. Age-related alterations in drug action reflect the changes in body composition and organ function associated with the natural aging process. For many medications, age-related changes in pharmacokinetics and pharmacodynamics can be anticipated. Additional factors, such as nutritional status, medication to medication interactions, and co-morbidity with other medical conditions may also contribute to the complexity of drug action in the older patient. It is imperative that the nurse administering the medications to these residents understands that the resident is at risk for altered medication actions to ensure increased monitoring after their administration.

Use of Antipsychotic Medications in the Residents with Alzheimer's disease or other Dementia related conditions¹⁴:

Psychotropic medications are commonly administered to older adults to manage behavior and psychiatric symptoms, particularly those who have dementia. These drugs are known to have potentially serious side effects, to which older adults are more vulnerable. Nurses care for older adults in many different practice settings but have varying degrees of knowledge about these kinds of medications. Because of severe adverse side effects and inappropriate prescribing practices, the use of psychotropic medications first came under scrutiny with nursing home residents. As a result, the Omnibus Budget Reconciliation Act of 1987 (OBRA '87), federal legislation mandating minimum health and care requirements for nursing homes, placed limitations on the use of psychotropic medications with nursing home residents. Age-related changes such as altered absorption, altered distribution, changed hepatic metabolism, reduced renal excretion, and altered neurophysiology all affect pharmacokinetics and pharmacodynamics.

¹⁴ Journal of Gerontology Nursing. Psychotropic Medication Use among Older Adults: What all Nurses Need to Know. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3128509/>

Comorbid medical diagnoses and polypharmacy, **are** common in many older adults, **which** also affect the pharmacokinetic and pharmacodynamic properties of psychotropic medications, putting older adults at increased risk for adverse drug reactions and interactions.

Antipsychotic medications, typically given for psychotic symptoms (e.g., delusions, hallucinations), are also frequently administered to manage disruptive behavior in residents with cognitive impairment. **There are times when a nurse does not need to give the antipsychotic medication. Nurses must know their patients and the care provided should be person centered. To understand what can occur when giving an antipsychotic medication, the nurse must know their side effects and potential adverse reactions.**

Antipsychotic medications include both typical (older generation) and atypical (newer generation) drugs. Typical antipsychotic medications (e.g., haloperidol [Haldol[®]]) have several serious adverse effects that can affect quality of life, including tardive dyskinesia, acute extrapyramidal side effects (EPSEs), and neuroleptic malignant syndrome (NMS). Atypical antipsychotic medications (e.g., olanzapine [Zyprexa[®]], quetiapine [Seroquel[®]]), generally produce fewer of the adverse effects commonly associated with the typical antipsychotic medications. Weight gain is common, especially with clozapine (Clozaril[®]) and olanzapine. Initially, atypical antipsychotics were considered a safer alternative in treating older adults with psychotic symptoms or agitation associated with dementia. However, warnings from the U.S. Food and Drug Administration (FDA) have emerged regarding the use of these medications with older adults due to cardiac, cerebrovascular, and mortality risks associated with their use in patients with dementia, and therefore resulted in the placement of a black box warning on these medications that indicates the associated risks and that these drugs are not approved for use in residents with Alzheimer's disease or other dementia related conditions. The LVN must be knowledgeable about antipsychotics and their potential adverse effects in order to ensure the safety of their residents.

Assessment Prior to Medication Administration:

The prudent LVN will have obtained information about the resident to safely administer the ordered medication. This includes knowing the resident's diagnosis, symptoms, allergies, health history, and why the medication is indicated for the resident. Often times, many of the medications that are being administered to nursing home residents require some sort of physical assessment prior to their administration, for example, a blood glucose needs to be obtained prior to the administration of insulin; a blood pressure reading needs to be obtained prior to administering a blood pressure medication; lab values may need to be reviewed prior to administration of a blood thinner; etc. This assessment will ensure that the medications are administered safely and that errors will be decreased.

The LVN must also know about the medication prior to administering it to the resident. The crucial information includes the normal dosage range, the acceptable routes of administration,

and the expected response of the medication, adverse reactions, side effects, and interactions with other medications, as well as those that are contraindicated.

Use of G-tubes in Medication Administration:

For residents who are unable to take medications orally, use of an existing G-tube may be required for medication administration to take place. CMS requires, in accordance with F425¹⁵, that the nursing facility, in consultation with the pharmacist, must provide procedures for the accurate administration of all medications. The nurse is responsible for understanding these policies and procedures prior to the administration of any enteral medications. The procedures must reflect current standards of practice, including but not limited to:

1. Types of medications that may be safely administered via a G-tube;
2. Appropriate dosage forms;
3. Techniques to monitor and verify that the tube is in the right location (depending on the tube) before administering medications;
4. Preparing medications for enteral administration, administering drugs separately, diluting medications as appropriate, and flushing the tube before, between, and after drug administration; and
5. **Those** medications with known incompatibilities that must not be given at the same time.

When administering medications via tube feeding, the standard of practice is to administer each medication separately and flush the tubing between each medication. An exception would be if there is a physician's order that specifies a different flush schedule for an individual resident, for example because of a fluid restriction. The American Society for Parenteral and Enteral Nutrition (ASPEN)¹⁶ provides the following guidance related to the minimum flushing during medication administration:

- a. Prior to administering medication, stop any feeding that is being administered (if the resident is on feedings), if not, then check for patency of the tube and flush with at least 15 mL of water,
- b. Flush with at least 15 mL of water after each medication is given,
- c. When finished administering medications, flush with at least another 15 mL of water.

Failure to flush before and in between each medication administration is considered a medication error. It is the LVN's responsibility to ensure understanding of these procedures prior to administering medications to a resident with a G-tube, this includes being familiar with the "no crush" medication list.

Chapter 3:

¹⁵ Survey & Certification Letter 13-02-NH. Nursing Homes – Clarification of Guidance related to Medication Errors and Pharmacy Services. <http://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/SurveyCertificationGenInfo/Downloads/Survey-and-Cert-Letter-13-02.pdf>

¹⁶ American Society for Parenteral and Enteral Nutrition. Enteral Nutrition Practice Recommendations. <http://pen.sagepub.com/content/33/2/122.short?rss=1&ssource=mfr>

Rights of Medication Administration:

The number of “rights” of medication administration can vary significantly depending on the source that is being used. Some sources dictate 7 “rights”, while others make the case for 9 “rights”. The overwhelming majority of sources, however, discuss 6 “rights” of medication administration. These “rights” include¹⁷:

- a. **Right Drug:** Determining that you have the right medication involves checking the medication label against the MAR at least three times before administering it. The exact times you perform these three checks will depend on how the medication is stored and the facility’s policy, but in many situations, the nurse would check as the medication is removed from the storage area, as it is prepared, and at the resident’s bedside before the medication is administered. In addition to checking the label against the MAR to make sure you have the right medication, check also that you have the right dose, are planning to give it by the right route, and that it is the right time. Verify the medication’s expiration date at this time as well.
- b. **Right Dose:** In some facilities, there is a unit-dose system to help reduce the risk of medication errors. In facilities where unit-dose systems are not in use, the nurse may need to perform conversions or dosage calculations. If the nurse is new to practice or does not perform calculations often, the calculations should be double checked prior to the administration of the medication. When an oral medication is being administered, it is sometimes necessary to give only a portion of a tablet. To break a scored tablet in half, use a cutting device to improve accuracy. If the tablet does not break evenly, discard it, if the facility policy allows it, and cut another tablet. If it is a controlled substance, the nurse should follow the facility policy for discarding it. If the resident is unable to swallow pills, the nurse may have to crush a medication and mix it with food or a beverage before administering it. Use a crushing device, such as a mortar and pestle. When mixing the medication, use the smallest amount of food or fluid possible. Because medications can alter the taste of food, avoid mixing it with the resident’s favorite foods and beverage as this might diminish the resident’s desire to eat or drink them. It is best practice to check with a pharmacist or a medication guide to determine if it can be cut or crushed, as some medications such as sublingual, enteric-coated, and time-released cannot be cut or crushed.
- c. **Right Route:** The route used to administer the medication will be indicated on the physician’s order. If this information is missing from the order or the specified route is not the recommended route, notify the physician for clarification. When giving an injection, the nurse should verify that the preparation of the medication is intended for parenteral use. Most manufacturers label parenteral medications “for injectable use only” in order to help prevent errors and should be check carefully.

¹⁷ Assessment Technologies Institute. Medication Administration 1: Six rights.
http://www.atitesting.com/ati_next_gen/skillsmodules/content/medication-administration-1/equipment/safety.html

- d. **Right Time:** Medications are usually ordered to be given at certain frequencies, intervals, or times of day (such as “hour of sleep”). The nurse should become familiar with the medications that he/she is giving, why they are ordered for certain times, and whether or not the time schedule is flexible. Some medications must be given during the resident’s waking hours to allow uninterrupted sleep. Most facilities recommended a time schedule for administering medications ordered at specific intervals (q4h, q6h, q8h). Most facilities also have a policy indicating how soon before or how long after the scheduled time a medication can be administered. For routinely ordered medications, such as antibiotics, 30 minutes before or after the scheduled time is commonly acceptable. When medications are ordered on a PRN basis, the nurse needs to use clinical judgment to determine the right time based on the resident’s situation and condition.
- e. **Right Resident:** before giving a medication, the nurse needs to ensure that he/she is giving it to the right person. The nurse should use two identifiers, which may vary by facility policy and generally include the resident’s name and birth date. These identifiers should be checked against the resident’s identification band or by using the MAR. No matter how long the nurse has been caring for the resident or how well the nurse knows the resident, each time medication is to be administered; two identifiers should be used to confirm that it is the right resident.
- f. **Right Documentation:** accurate documentation must be available before and after the medication is administered to ensure that it is prepared and administered safely. Medication orders should clearly state the resident’s first and last name, the name of the medication that was ordered, the dose, the route, the time that the medication was to be administered, and the signature of the prescriber. If any of this information is missing, the nurse should notify the prescriber and obtain clarification prior to administering the medication. After the nurse administers the medication, he/she must place their initials in the designated space by the medication as soon as possible to indicate that the dose was given. Failure to document or incorrect documentation can be considered a medication error in itself and can cause error as well.

While most literature details these aforementioned 6 “rights”, a 7th “right”, the Right Reason (indication) is definitely one that the LVN should be taking into consideration each and every time he/she administers a medication, from the initial dose to each subsequent dose, even if it is for the same resident. With this “right”, the LVN is confirming the rationale for the ordered medication, to determine what it is treating. Resident conditions change, and while there may have been an indication (or reason) for the medication on Monday, that is not to say that the indication remains the same on Tuesday.

Medication Administration Record (MAR):

The MAR is a legal document. Facilities are free to use any version of a MAR as long as it includes the following elements: name, date of birth, physician’s name, allergies, dates, medication information, time of administration, and a place for the initials of the individual who

administers the medication. Many facilities choose to use an electronic MAR in the hopes of decreasing the number of medication errors that occur in the facility, thereby ensuring a safer environment for the residents. Still, there are facilities that use paper medication administration records. No matter which type of a MAR the facility currently uses, it is the responsibility of the LVN to understand how to accurately document the administration of medication on the resident's MAR. TAC, Title 22, Part 11, Chapter 217, Rule §217.11: Standards of Nursing Practice, dictates the LVN's responsibility to (D) Accurately and completely report and document: (iv) administration of medications and treatments. The LVN must understand all of the components of the MAR and how to use it. If the LVN feels as though he/she requires additional training in order to ensure accuracy of documenting medications, it is their responsibility to inform their supervisor and seek out said training. Additionally, the LVN must understand that "If it isn't documented, it wasn't done". The MAR is crucial to the safety of the resident, as anything that isn't documented will be noted as not having been done, which could result in a double dose of medication being administered to an individual. This is one way in which medication errors occur.

The Rule of 3¹⁸:

Evidenced-Based Best Practice states that prior to the administration of medication to a resident, not only should the nurse check the first 5 "rights" but he/she should perform 3 checks of the "right", in order to ensure that the medication is administered safely. These checks should be performed:

- a. #1: When the medication is removed from the secure or locked area. The prescription label should be checked against the MAR to ensure that they match.
- b. #2: As the medication is removed from the bubble pack, multi-dose bottle, poured liquid, etc. the nurse should again check the prescription label against the MAR.
- c. #3: The final check should occur at the resident's bedside just before medications are given.

Comparing the information 3 times is a safety mechanism, that when followed correctly, not only decreases the number of medication errors that occur but maintains the resident's safety of being given medications that: may not be theirs, may have been discontinued and are no longer indicated for their condition, or that may be the wrong dosage. The more safety mechanisms that the LVN can employ while providing care to the resident the better the quality of care will be and the lower the risk for errors.

Chapter 4:

¹⁸ Basic Medication Administration Course. http://www.ct.gov/dcf/lib/dcf/behavioral_health_medicine/pdf/basic_pre_course.pdf.

Texas Board of Nursing and Medication Administration:

The Texas BON, through the Nurse Practice Act (NPA) dictates all of the LVN's responsibilities, as mentioned in the role of the nurse in medication administration section. Below are the specific BON rule sections, position statements, and links for easier access to the information:

1. Texas Administrative Code, Title 22, Part 11, Chapter 217, Rule §217.11 Standards of Nursing Practice.
[http://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=22&pt=11&ch=217&rl=11](http://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=22&pt=11&ch=217&rl=11)
2. Texas Occupations Code, Title 3, Subtitle E, Chapter 301 Nurses, Subchapter A General Provisions, Sec. 301.002 Definitions.
<http://www.statutes.legis.state.tx.us/Docs/OC/htm/OC.301.htm>
3. TX BON Differentiated Essential Competencies of Graduates of Texas Nursing Programs.
http://www.bon.texas.gov/pdfs/publication_pdfs/delc-2010.pdf
4. TX BON Rules and Guidelines Governing the Graduate Vocational and Registered Nurse Candidates or Newly Licensed Vocational or Registered Nurse.
http://www.bon.texas.gov/practice_guidelines.asp#RG_GoverningGraduate_Vocational
5. Position Statement 15.25: Administration of Medication & Treatments by LVNs.
https://www.bon.texas.gov/practice_bon_position_statements_content.asp#15.25
6. Position Statement 15.3: LVNs Engaging in Intravenous Therapy, Venipuncture, or PICC Lines. https://www.bon.texas.gov/practice_bon_position_statements_content.asp#15.3
7. Position Statement 15.27: The Licensed Vocational Nurse Scope of Practice.
https://www.bon.texas.gov/practice_bon_position_statements_content.asp#15.27

The LVN should have a full understanding of their scope of practice as well as their knowledge and skill level before ever accepting an assignment that could potentially put the safety of their resident in question.

Federal Nursing Facility Regulations:

Nursing facility residents have special care needs that in many cases require more intensive medication management and alternative forms of medication administration. Subsequently, there are many federal regulations (known as F-Tags) that discuss medication administration and ensuring the safety of the residents that you are caring for. The F-Tags that are specific to the nurse's responsibility include: F176, F329, F332, and F333.

- A. **F176¹⁹**: **The right to self-administer medications** if the interdisciplinary team, as defined by §483.21 (b)(2)(ii), has determined that this practice is **clinically appropriate**. The LVN must

¹⁹ Centers for Medicare and Medicaid Services (CMS) State Operations Manual Appendix PP. https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107ap_pp_guidelines_ltcf.pdf

understand that the resident may request to self-administer their medications. If/when the resident makes this request, the LVN should notify the interdisciplinary team, so that a determination of safety may be made prior to the resident exercising that right. It must also be determined by the interdisciplinary team who will be responsible (the resident or nursing staff) for storage and documentation of the administration of the drugs, as well as the location of the drug administration (e.g., the resident's room, nurses' station, or activities room). Appropriate notation of these determinations should be placed in the resident's care plan. The decision that a resident has the ability to self-administer medication(s) is subject to periodic re-evaluation based on any change in the resident's status. The facility may require that the drugs be administered by the LVN or medication aide, until the care planning team has the opportunity to obtain the information necessary to make an assessment of the resident's ability to safely self-administer medications. If the resident chooses to self-administer drugs, the decision should be made at least by the time the care plan is completed within seven days after completion of the comprehensive assessment.

B. F329¹⁸ (1): §483.45 (d) Each resident's drug regimen must be free from unnecessary drugs.

An unnecessary drug is any drug when used:

1. In excessive dose (including duplicate drug therapy); or
2. For excessive duration; or
3. Without adequate monitoring; or
4. Without adequate indications for its use; or
5. In the presence of adverse consequences which indicate the dose should be reduced or discontinued; or
6. Any combination of the reasons above.

C. F329² (2): §483.45 (e) Psychotropic Drugs. Based on a comprehensive assessment of a resident, the facility must ensure that:

§483.45(e)(3)-(5) will be implemented beginning November 28, 2017 Phase 2

1. Residents who have not used psychotropic drugs are not given these drugs unless the medication is necessary to treat a specific condition as diagnosed and documented in the clinical record;
2. Residents who use psychotropic drugs receive gradual dose reduction, and behavioral interventions, unless clinically contraindicated, in an effort to discontinue these drugs.
3. Residents do not receive psychotropic drugs pursuant to a PRN order unless that medication is necessary to treat a diagnosed specific condition that is documented in the clinical record; and
4. PRN orders for psychotropic drugs are limited to 14 days. Except as provided in §483.45(e) (5), if the attending physician or prescribing practitioner believes that it is appropriate for the PRN order to be extended beyond 14 days, he or she should document their rationale in the resident's medical record and indicate the duration for the PRN order.

5. PRN orders for anti-psychotic drugs are limited to 14 days and cannot be renewed unless the attending physician or prescribing practitioner evaluates the resident for the appropriateness of that medication.

The Centers for Medicare and Medicaid Services (CMS) released Survey and Certification Letter (S&C) 13-35-NH²⁰ in May 2013 with a list of the approved diagnoses for which an antipsychotic medication may be prescribed to a nursing facility resident. The following is a list of the approved diagnoses:

1. Conditions Other than Dementia:

- ✓ Schizophrenia
- ✓ Schizo-affective disorder
- ✓ Schizophreniform disorder
- ✓ Delusional disorder
- ✓ Mood disorders
- ✓ Psychosis in the absence of dementia
- ✓ Tourette's Syndrome
- ✓ Huntington's Disease
- ✓ Hiccups (not induced by other medications)
- ✓ Nausea and vomiting associated with cancer or chemotherapy
- ✓ Medical illnesses with psychotic symptoms and/or treatment related psychosis or mania

As the nurse and resident's advocate, it is your responsibility to ensure that your residents are not receiving medications that are unnecessary, based on their treatment plan. Additionally, the nurse has a responsibility to ensure that the residents medication regimen helps promote or maintain their highest practicable mental, physical, and psychosocial well-being, as identified by the resident and/or their representative and in collaboration with the attending physician and staff in the facility. The nurse must also be mindful that the residents, in which he/she is providing care, receive only those medications, in doses and for the duration clinically indicated, to treat the condition that has been assessed.

Medications are an integral part of the care provided to the residents in a nursing facility. While assuring that only those medications required to treat the resident's assessed condition are being used, reducing the need for and maximizing the effectiveness of medications are important considerations for all residents. Therefore, as part of all medication management, including antipsychotics, it is important for the nurse and the rest of the interdisciplinary team to consider non-pharmacological approaches.

²⁰ CMS Survey and Certification Letter 13-35-NH. <http://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/SurveyCertificationGenInfo/Downloads/Survey-and-Cert-Letter-13-35.pdf>

The nurse is also has some responsibility in the six medication management considerations. These considerations include:

1. Considering the indications for use of medications, including initiation or continued use of antipsychotic medication: this should be done when checking initial medication/intervention selections and if there is a need to modify or discontinue a current medication intervention. All prescribed medications should be clinically indicated and evidence of the assessment indicating necessity should be in the resident's medical records. **If the facility fails to do this they can be cited at F329 related to unnecessary medications.**
2. Monitoring for efficacy and adverse consequences: the key here is to track the resident's progress towards the therapeutic goal(s) and to detect the emergence or presence of any adverse consequences. It is important that the nurse understands the indications and goals of the medications that they are administering to the resident. The parameters for monitoring of the resident should be based on the individual resident's condition, the properties of the medication and its associated risks, therapeutic goals, and the potential for significant adverse consequences. **If the facility fails to do this they can be cited at F329 related to unnecessary medications.**
3. Checking the dose, to include duplicate therapy: A prescriber will order medication(s) for a resident based on several different factors, including their diagnosis/diagnoses, signs and symptoms, current condition, age, current medication regimen, review of any test/lab results, information about the resident that is provided by the interdisciplinary team, the type of medication(s), and the goals being considered. Additionally, the route of administration of the medication will also influence the dose received. Even when the dose of a medication is within the therapeutic range, adverse consequences can occur, therefore, it is important to ensure proper monitoring while the resident is on the medication. Unless there is a rationale that would support the benefits of duplicate therapy, it is generally not indicated in most residents. **If the facility fails to do this they can be cited at F329 related to unnecessary medications.**
4. Check the duration: It is important for the nurse to understand that depending on the resident, some conditions may require extended treatment, while others may resolve and no longer require medication therapy. There should be periodic re-evaluation of the medication regime to determine whether prolonged or indefinite use is indicated. Any time that there is continued use of a medication, the indications for that use should be documented and easily accessible in the resident's medical record. The nurse should also ensure that he/she is including in the medication administration record, any stop dates that appear in the physician's order, to ensure that the medication is not continued past the last day of the prescription. **If the facility fails to do this they can be cited at F329 related to unnecessary medications.**
5. Tapering of a medication dose/Gradual Dose Reductions (GDR) for antipsychotic medications: The nurse will have several opportunities while providing care to a resident

to evaluate the effects of their prescribed medications on their function and behavior, and to consider whether or not the medications can be reduced, discontinued, or modified in any other way. Tapering of medications may be indicated if the resident's condition has improved or stabilized, the underlying causes of the original symptoms have resolved, and/or non-pharmacological interventions have been effective in reducing the symptoms. Tapering applies to all medications, while a gradual dose reduction applies specifically to the tapering / attempted tapering of antipsychotic medications.

6. Prevent, identify, and respond to adverse consequences: The nurse should be aware of the adverse consequences of the medications that he/she is administering. It is possible that a resident has an unanticipated reaction to a medication, which was not preventable; however, many adverse drug reactions can be anticipated, minimized, or prevented. Some adverse consequences may occur quickly, while others may occur over time. It is important that the nurse is aware of: any allergies that a resident may have to medications; other medications, to include over the counter medications and herbal/nutritional supplements that may not be compatible with their prescribed medications; and conditions, history, or sensitivities that would contraindicate use of the medication. **If the facility fails to do this they can be cited at F329 related to unnecessary medications.**

D. F332 & F333¹⁸ : The facility must ensure that:

1. [F332] §483.45(f)(1) It is free of medication error rates of 5 percent or greater; and
2. [F333] §483.45(f)(2) Residents are free of any significant medication errors.
 - a. A **medication error** is defined as the preparation or administration of medications or biologicals which is not in accordance with:
 - i. The prescriber's order;
 - ii. Manufacturer's specifications (not recommendations) regarding the preparation and administration of the medication of biological;
 - iii. Accepted professional standards and principles which apply to professionals providing services. Accepted professional standards and principles include the practice regulations in the state of Texas and current commonly accepted health standards established by national organizations, boards, and councils.
 - b. A **significant medication error** means one which causes the resident discomfort or jeopardizes his or her health and safety. The significance of medication errors, when reviewed by a surveyor will depend on:
 - i. The resident's condition – in some instances, a medication error may not have significant consequences for the resident, while in others, it may. For example, a fluid pill erroneously administered to a dehydrated resident may have serious consequences, but if given to a resident with normal fluid balance, it may not. The LVN should be aware that all medication errors have the potential to be significant, depending upon that resident's condition and should ensure following the facility's policies and procedures for reporting of such errors.

- ii. Drug category – if the medication is from a category that usually requires the resident to be titrated to a specific blood level, a single medication error could alter that level and precipitate a reoccurrence of symptoms or toxicity. This is especially important with a medication in which the therapeutic dose is very close to the toxic dose (known as the narrow therapeutic index (NTI)). Examples of medications with NTI are as follows: Anticonvulsant: phenytoin (Dilantin), carbamazepine (Tegretol); Anticoagulants: warfarin (Coumadin); Antiarrhythmic: digoxin (Lanoxin); Antiasthmatics: theophylline (TheoDur); Antimanic Drugs: lithium salts (Eskalith, Lithobid).
- iii. Frequency of Error - If an error is occurring with any frequency, there is more reason that it may be classified as significant. For example, if a resident's medication was omitted several times, as verified by reconciling the number of tablets delivered with the number administered, classifying that error as significant would be more in order. This should be considered along with the resident's condition and the medication category.

The LVN should fully understand the federal regulations governing medication errors in the facility. In addition to the federal regulations, there are best practices centered on medication errors and what may cause them. It was noted in the Institute of Medicine's (IOM) first Quality Chasm report, *To Err is Human: Building a Safer Health System*, that medication-related errors were a significant cause of morbidity and mortality; they accounted for one out of every 131 outpatient deaths and one out of every 854 inpatient deaths. Medication errors were estimated to account for more than 7,000 deaths annually. With the growing reliance on medication therapy as the primary intervention for most illnesses, patients receiving medication interventions are exposed to potential harm as well as benefits. Benefits are effective management of the illness/disease, slowed progression of the disease, and improved patient outcomes with few if any errors. Harm from medications can arise from unintended consequences as well as medication error (wrong medication, wrong time, wrong dose, etc.). With inadequate nursing education about patient safety and quality, excessive workloads, staffing inadequacies, fatigue, illegible provider handwriting, flawed dispensing systems, and problems with the labeling of drugs, nurses are continually challenged to ensure that their patients receive the right medication at the right time.

- a. **Medication Errors:** Medication errors can be defined as: 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. Some of the factors that are associated with medication errors include: medications with similar names or similar packaging; medications that are not commonly used or prescribed; commonly used medications to which many residents are allergic (e.g., antibiotics, opiates, and Nonsteroidal Anti-inflammatory Drugs (NSAIDs)); and medications that require testing to ensure proper (i.e., nontoxic) therapeutic levels are maintained (e.g., lithium, warfarin, and digoxin). These errors can occur in all settings and may or may not cause an adverse drug event (ADE). The most common types of errors that resulted in a death involved the wrong dose, wrong medication, and the wrong route of administration. It should be noted that there are five

stages of the medication process in which an error can occur, this include: ordering/prescribing, transcribing and verifying, dispensing and delivering, administering, and monitoring and reporting. The nurse is not responsible for all of these factors; however, he/she should be aware of the areas in which they are responsible, and how to ensure medication safety in those areas.

- i. Transcribing and verifying:** In the nursing home setting, the nurse has the responsibility of transcribing and verifying the physician's orders. Often times, this would occur if the order is being received via telephone. When receiving a telephone order from a physician, it is imperative that the nurse reads back the order and obtains clarification for any part of the order that was misunderstood or not understood at all.
 - ii. Medication administration:** Nurses are the primary ones responsible for the administration of medications. Even in a setting in which there is a medication aide, the responsibility for the medications administered to the residents falls to the nurse. The nurse is responsible for ensuring the "rights" of medication administration in order to decrease the risk of an adverse drug event. Research on medication administration errors (MAEs) reported that there was an error rate of approximately 60 percent, mainly in the form of wrong time, wrong rate, or wrong dose. In the event that the LVN is faced with an error, such that the medication is not available, the responsibility of the nurse extends past just circling the medication and initialing that it isn't available. The nurse is responsible for following the facility's procedures for when medications aren't available. Guidelines for dealing with this type of situation include (but are not limited to): informing the supervising RN, informing the pharmacy, informing the prescriber of the unavailable medication and acting on any additional orders provided, and accurately documenting in the resident's MAR, the unavailability of the medication. This information is crucial to pass on to the next shift, in the event that the medication is still unavailable at the end of the LVNs current shift.
- b. Impact of Working Conditions on Medication Errors:** Medication safety for residents is dependent upon systems, process, and human factors, which can vary significantly across healthcare settings.
- i. System Factors:** these are factors that can influence medication administration and include staffing levels, shift length, resident acuity, and organizational climate.
 - 1. Nurse Staffing:** When looking at medication administration errors, it should be noted that when there is a lack of staffing, the workload of those who are working increases and that has a significant impact on the rate of errors. The effect of heavy workloads and inadequate numbers of nurses can also be manifested as long workdays, providing resident care beyond the point of effective performance. Other findings support the importance of adequate nurse staffing and understanding the impact of shift work in decreasing medication errors. A review of incident reports found that the major contributing factors to errors were inexperienced staff, followed by insufficient staffing, agency/temporary staffing, lack of access to resident information, floating staff, no 24-hour pharmacy, and code situations.

2. Organizational Climate: Organizational issues include the presence of favorable working conditions, effective systems, policies and procedures, and technologies that enable safety or contribute to MAEs. Lack of appropriate policies, procedures, and protocols can impact medication safety. In a study of malpractice cases, medication errors were associated with lack of administration protocols and ineffective nurse supervision in delegating administration. However, even when policies are in place, they may not necessarily improve safety, as these policies may not always be followed. In order to decrease this risk factor, the nurse should ensure that he/she is aware of all of the policies for medication administration and that there is adherence to these policies.

ii. **Process Factors:** are factors that influence medication administration, including: latent failures that can instigate events resulting in errors, such as administrative processes, technological processes, clinical processes, and factors such as interruptions and distractions.

1. Distraction and interruptions: Factors such as distractions and interruptions, during the process of delivering care can have a significant impact on medication safety. Nurses believed the cause of their reported medication errors and near errors were interruptions and distractions. In a MEDMARX® data base analysis, distractions and interruptions were prominent contributing factors to medication errors. Furthermore, these findings are supported by three reviews of the literature: one found that distractions and interruptions interfered with preparing and administering medication, potentially causing errors; interruptions were perceived as causing medication errors in the second review; and the third indicated that rapid turnover and changes as well as distractions and interruptions contributed to errors. While administering medications, it is important that the nurse focus solely on that task and none other, to ensure that he/she is not distracted from the task at hand, and thereby not committing an error.

iii. **Human Factors:** There are a wide range of system-related human factors that can impact medication administration. These factors include characteristics of individual providers (e.g., training, fatigue levels), the nature of the clinical work (e.g., need for attention to detail, time pressures), equipment and technology interfaces (e.g., confusing or straight-forward to operate), and the design of the physical environment (e.g., designing rooms to reduce spread of infection and patient falls). In order to decrease the risk for medication errors, the nurse needs to be diligent in: obtaining the necessary training needed to adequately perform the task of medication administration, working to improve his/her time management skills, requesting in-servicing or training on the use of unfamiliar equipment, understanding his/her limitations and knowing when to ask for assistance, in an attempt to maintain a safe environment for the residents being cared for.

c. **Medication Error Procedures:** In an ideal environment, nurses would acknowledge and factually report all medical errors and "near misses" in an effort to improve future patient safety by better identifying systemic safety lapses. The timely and accurate reporting of medical errors should be an essential part of a facility's overall risk-reduction strategy. Medical error reporting has focused historically on the individuals involved, rather than the

systems and processes that allowed the error to occur. The LVN, when a medication error has been identified, should try to determine how the error was made, in an effort to keep it from happening in the future. Each facility will have policies in place for the reporting procedures of medication errors. It is imperative that the nurse is aware of where to locate these policies, to ensure that the proper procedures are followed. Best practice guidelines for medication error reporting are: immediately document details of the error on the MAR; immediately notify your supervisor and the resident's physician; know your facility's policy for medication errors, and know that it is in state regulation that medication errors are to be reported on an incident report per Texas Administrative Code, Title 40, Part 1, Chapter 19, Subchapter T, Rule §19.1923 Incident or Accident Reporting²¹.

- d. Medication Related Adverse Events²²:** Adverse events related to high risk medications can have devastating effects to the nursing facility residents. Proper management of high risk medications represents a serious challenge for facilities, and merits close attention not only by the top management of the facility, but also by the LVN. In February 2014, the Office of the Inspector General (OIG) released its report, "*Adverse Events in Skilled Nursing Facilities: National Incidence Among Medicare Beneficiaries.*" The OIG found that one in three skilled nursing facility (SNF) residents were harmed by an adverse event or temporary harm event within the first 35 days of a SNF stay and 37 percent of the adverse events were related to medication. The second most frequent cause of medication related adverse events was excessive bleeding related to anticoagulant use causing harm ranging from hospitalization to death. It is of the utmost importance that the LVN who is caring for a resident who is receiving a high risk medication carefully monitor the resident for any signs/symptoms of an adverse event, in order to be able to respond quickly and decrease the risk of any harm to the resident. In the event that the LVN does recognize that the resident is showing any possible signs/symptoms of an adverse events, he/she should ensure that the rest of the interdisciplinary team is notified and that the event is accurately documented.
- e. Culture of Safety²³:** The Texas BON, in its July 2015 newsletter discusses that nurses need to embrace a culture of safety where they work. The TAC dictates that the nurse must promote concepts integral to patient safety and the importance of the nursing role in carrying out key tasks to enhance a culture of safety. The nurse is required to promote a safe environment for all the residents that he/she cares for, no matter what the setting.

State Nursing Facility Regulations Regarding Medication Administration:

In many places throughout the Texas Administrative Code, the LVN would be able to find the regulations regarding the administration of medications, in the event that he/she is not familiar with them. Many of the state regulations are in line with those of CMS and the F-Tags that a

²¹ Texas Administrative Code, Title 40, Part 1, Chapter 19, Subchapter T, Rule §19.1923 Incident or Accident Reporting. [http://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=40&pt=1&ch=19&rl=1923](http://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=40&pt=1&ch=19&rl=1923)

²² Survey and Certification Letter 15-47-NH. Medication-Related Adverse Events in Nursing Homes. <http://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/SurveyCertificationGenInfo/Downloads/Survey-and-Cert-Letter-15-47.pdf>

²³ TX BON Quarterly Newsletter July 2015. https://www.bon.texas.gov/pdfs/newsletter_pdfs/2015/July2015.pdf

facility can be sited for during a survey. The following are the regulations with their specific links to the codes:

1. TAC, Title 40, Part 1, Chapter 19, Subchapter E, Rule §19.418 Self-administration of drugs:
[http://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=40&pt=1&ch=19&rl=418](http://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=40&pt=1&ch=19&rl=418)
2. TAC, Title 40, Part 1, Chapter 19, Subchapter J, Rule §19.901 Quality of Care, (13) Medication errors:
[http://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=40&pt=1&ch=19&rl=901](http://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=40&pt=1&ch=19&rl=901)
3. TAC, Title 40, Part 1, Chapter 19, Subchapter K, Rule §19.1010 Nursing Practices, (b) & (d)(1):
[http://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=40&pt=1&ch=19&rl=1010](http://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=40&pt=1&ch=19&rl=1010)
4. TAC, Title 40, Part 1, Chapter 19, Subchapter P, Rule §19.1508 Drug Administration:
[http://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=40&pt=1&ch=19&rl=1508](http://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=40&pt=1&ch=19&rl=1508)
5. TAC, Title 40, Part 1, Chapter 19, Subchapter T, Rule §19.1923 Incident or Accident Reporting (a):
[http://texreg.sos.state.tx.us/public/readtac\\$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=40&pt=1&ch=19&rl=1923](http://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=40&pt=1&ch=19&rl=1923)
6. Texas Health and Safety Code, Title 4, Subtitle B, Chapter 242, Subchapter N Administration of Medication: <http://www.statutes.legis.state.tx.us/Docs/HS/htm/HS.242.htm>

It is the responsibility of the nurse to know not only their scope of practice with regards to medication administration but the state and federal regulations that govern the practice. Full understanding of all of the regulations ensures that the nurse practices within their license, knowledge, abilities, and all of the requirements of the regulatory requirements. Additionally, it allows for the LVN to advocate for the resident in the event that a facility policy is not in line with the current state and federal regulations or those of the nurse's licensure.

Chapter 5:

Resources:

- a. **Videos:** The following are links to video resources that show the severity of medication errors in the U.S. as well as information on how to prevent them (included among them are real-life stories of the harm caused by medication administration errors) :

- I. Medication & Error Prevention: Case Studies:
<https://www.youtube.com/watch?v=bkzYoTONZps>

- II. Medication Safety: A Patient’s Story:
<https://www.youtube.com/watch?v=CspIrlJ2bd4>
- III. Dennis Quaid talks about his twins and medical Negligence:
<https://www.youtube.com/watch?v=GEDMYsm3Nxs>
- IV. Medication Errors:
<https://www.youtube.com/watch?v=-BQrDVpZU0w>
- V. Chasing Zero: Winning the War on Healthcare Harm:
<https://www.youtube.com/watch?v=MtSbgUuXdaw>
- VI. 5 rights to preventing medication errors:
<https://www.youtube.com/watch?v=OlhE8JXDnsk>
- VII. Medication: Preparing Meds – The Six Rights:
<https://www.youtube.com/watch?v=kdB0PmsX2ng>
- VIII. TV NEWS: Baby Dies Due to Medication Error at Seattle Children’s Hospital:
<https://www.youtube.com/watch?v=6JWstD9ov6o>
- IX. Prescription for danger, medication errors inside nursing homes:
<https://www.youtube.com/watch?v=V0uA6RCacwI>
- X. Nursing Home Medication Errors:
<https://www.youtube.com/watch?v=ax9PoJ35IMY>
- XI. Reducing the usage of anti-psychotic medications in Texas nursing homes
<https://www.youtube.com/watch?v=HnW6reQegc8>
- XII. Reducing Antipsychotic Drug Use in Long-term Care Settings
<https://www.youtube.com/watch?v=wjSVY3kf9S8>
- XIII. Charged with Manslaughter for a drug error:
<https://www.youtube.com/watch?v=0j-MScJM0So>

b. Learning Activities: The following learning activities were created to be used as checks on learning throughout the module or as additional activities to enhance the learning process.

I. Learning Activity #1:

Medication Errors: The student will identify whether a given error is significant or non-significant. In the below table, the student should circle “NS” if the example is a non-significant error and “S” if the example is a significant error.

| Medication Order Omissions | | |
|----------------------------|----|---|
| 1. Haldol 2mg BID | NS | S |
| 2. Motrin 800mg BID | NS | S |
| 3. Quinidine 200mg TID | NS | S |
| 4. Nirol Oint. One inch | NS | S |
| 5. Multivitamin QD | NS | S |
| 6. Coumadin 4mg QD | NS | S |
| 7. Tylenol 250mg | NS | S |
| 8. Digoxin .25mg QD | NS | S |

| | | | |
|-----------------|------|-------|------|
| Answers: | | | |
| 1. NS | 2.NS | 3. S | 4. S |
| 5. NS | 6. S | 7. NS | 8. S |

II. Learning Activity #2:

Medication Case Study: Read the below scenario to the students and have them answer the following questions:

1. What should the LVN have done prior to calling the medical doctor?
2. What significant information should have been available in the resident's chart?
3. Are there any interventions that could have been done before administering the Risperdal for her agitation? If yes, what are they?
4. What should be in the resident's medical record prior to administration of the initial dose?

Scenario: Mrs. White is a newly admitted resident at the Shady Pines Nursing Facility. Her diagnosis is dementia. The family members informed the nurse that prior to being admitted, their mother was sexually assaulted at her previous nursing home. The perpetrator was arrested. This is not part of her medical or psychological records. Mrs. White is always agitated when people walk into her room. She begins to yell "Get out!" and "Leave me alone!" The nurse aide reported this as an ongoing behavior for the past week. The medical doctor was notified and he has prescribed Risperdal for her agitation.

III. Learning Activity #3:

Clinical Indications for Medications Case Studies: Read the below scenarios. After reading each scenario, ask the students the following questions:

1. Is the medication the right medication for the symptoms/diagnosis described?
2. Is the medication mentioned in the scenario clinically indicated?
 - a. If it is not clinically indicated, what information is missing that would determine if there was any indication?
 - b. If it is clinically indicated, what should the LVN be monitoring for?
3. Would the medication be considered necessary or unnecessary?
 - A. An 85-year old female had been taking Lansoprazole since admission. Her record includes the diagnosis of gastroesophageal reflux (GERD). There are no clinical symptoms documented.
 - B. A 77-year old female has been taking long-acting Oxybutin. Her record shows an overactive bladder and urinary incontinence. Review of the medical progress notes and plan of care support the effectiveness of the medication. Her toileting needs have gone down from four times nightly to one time nightly. Her incontinence has gone from daily to twice weekly.
 - C. An 88-year old male has been taking Risperidone twice daily. His record indicates diagnoses of dementia and agitation. There is no reference of Risperidone found in

- the primary physician's progress notes for use of this medication. The plan of care mentions mood and behavior with a psychiatrist consult as a plan of action. The psychiatry notes discuss the dementia and agitation and lists Risperidone as the planned treatment. However, there is no documentation of target systems, behavioral interventions, or evidence of a gradual dose reduction.
- D. A 78-year-old male has been taking Gabapentin three times daily. His medical history lists dementia, degenerative joint disease (DJD), and chronic lumbar five (L5) radiculopathy as diagnoses. He has no history of seizure disorder. The medical notes list dementia and DJD as being stable, and there are no triggers for pain listed on the MDS. There is no mention of the medication on the plan of care.

Answers:

- A. The medication is the correct medication to treat this diagnosis. It is not clinically indicated and is missing the documentation in the record of the medication or symptoms. It would be considered unnecessary.
- B. This is the correct medication to treat this diagnosis. According to the documented symptoms that this resident is experiencing, the medication would be clinically indicated for this resident. There is a risk of a cholinergic reaction in older adults, and this resident should be monitored the resident for any side effects and document those accordingly. This medication would be considered necessary.
- C. The medication is not the correct medication to treat this diagnosis. It is not clinically indicated as there is little information to support its use in the medical record. This medication would be considered unnecessary.
- D. The medication is not the correct medication to treat this diagnosis. It is not clear if this medication is clinically indicated, as there is no documentation in the records to support its use. This would be considered unnecessary at this time.

IV. Learning Activity #4:

Gradual Dose Reduction (GDR) Case Studies: Break the class into three groups, and give each group one sheet of flipchart paper. Have each group assign a leader. Each group is to give an answer for each GDR case.

- A. Resident #1 is an 87-year-old resident at your nursing facility. He has been a resident at the facility for three years. Since being admitted to the facility, he has been on the same dose of Sertraline for a history of depression. What additional information would the LVN need to know to determine whether or not he is a candidate for GDR?
- B. Resident #2 has been a resident at your facility for the past 10 months. The doctor's orders show that she is on Haloperidol, an antipsychotic used to treat hyperactivity. The doctor's orders do show that her Haloperidol was reduced four months ago without any worsening of behavioral symptoms. What would be the next step for the LVN to take?
- C. Resident #3 is a 100-year-old resident at your facility. He has been a resident for nine months. Doctor's orders read "Restoril 30mg at bedtime as needed." What should the LVN do to determine if GDR can take place for this resident?

Answers:

- A. The LVN needs to know what the symptoms are in this resident that are requiring the use of the medication to begin with. If there are no clear symptoms for use, then tapering until discontinued would be warranted.
 - B. With this resident, GDR was successful in the first attempt. The LVN should discuss this resident's condition with the supervising RN and involve the prescriber, as there should be a second attempt to further reduce or possibly discontinue the medication.
 - C. First, the LVN should determine how often the resident is using the medication and whether there have been any previous attempts to taper the resident off of the medication. Secondly, the LVN should determine through the MAR if there has been a previous attempt to taper the resident and was the attempt successful or not. Even if it was unsuccessful previously, the LVN should discuss with the supervising RN and the prescriber the possibility of a second attempt at GDR.
- c. Policies Scavenger Hunt:** At the beginning of each clinical rotation, have each student do a scavenger hunt to find the policies related to Medication Administration in the facility. Have the students find and give a brief description of the policies that they found:
- A. Medication Administration
 - B. Medication Cart
 - C. Administration of medications via G-tube
 - D. Certified Medication Aide
 - E. Antipsychotics
 - F. Medication Errors
 - G. Medication Documentation
 - H. Medication Deviance

Once the students have identified and found all of the policies, discuss what the policies are and how they function to ensure safety for the residents within the facility.

- d. Institute for Safe Medication Practices (ISMP):** is devoted entirely to medication error prevention and safe medication use. ISMP represents over 35 years of experience in helping healthcare practitioners keep patients safe, and continues to lead efforts to improve the medication use process. The ISMP puts out many helpful resources to assist healthcare providers in preventing medication errors. The following are two of their resources and the links to access them:
- A. List of Confused Drug Names (Sound Alike, Look Alike):
<https://www.ismp.org/tools/confuseddrugnames.pdf>
 - B. Oral Dosage Forms that Should Not Be Crushed:
<http://www.ismp.org/tools/donotcrush.pdf>
 - C. High –Alert Medications in Community/Ambulatory Healthcare:
<http://ismp.org/communityRx/tools/ambulatoryhighalert.asp>

- e. **CMS Hand in Hand Module 4:** CMS Hand in Hand is a training series for nursing homes that offers modules with many different topics, with module 4 discussing the dementia care, and the actions and reactions that are being taken by the healthcare providers giving the LVN tools to use instead of antipsychotic medications, thus being a good steward of the use of those medications. To download this module, one simply needs to go to the following website: <https://surveyortraining.cms.hhs.gov/pubs/HandinHand.aspx> and register with the information requested. The download is free of charge, with the modules being made available for download immediately after you register. You may download all of the training series, or just module 4.
- f. **Internet Resources:** Below are a few available internet resources for providers to access for additional information related to the topics discussed in this module:
- A. University of Iowa Geriatric Education Center: <https://www.healthcare.uiowa.edu/igec/iaadapt/>
 - B. Texas Quality Matters Website: <http://www.hhs.texas.gov/qmp>
 - C. Food and Drug Administration Black Box Warning: <http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/ucm124830.htm>
 - D. Be MedWise: <http://www.bemedwise.org/index.html>